Motivation to Change and Anorexia Nervosa: Relation between Expressions of Motivation to Change and Outcome in Psychotherapy

A thesis submitted for the Degree of Master of Arts in Psychology in the University of Canterbury by

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2013

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Acknowledgements

I would like to acknowledge the contribution of supervisor Dr Virginia McIntosh who offered guidance, consistent encouragement, and commitment to shaping my research and writing skills for the entire duration of this project. I wish to thank supervisor Dr Janet Carter who shared her knowledge and wisdom at key stages of the thesis.

I also thank my friends and family for their patience and humour, particularly my mother for her many hours of proof reading. Lastly I would like to express my gratitude to my husband Nick Ydgren for his endless devotion, support, and ability to lift my spirits over the course of this project and also throughout my clinical training.

Abstract

Use of language is thought to be particularly important when considering an individual's motivation to change. The present thesis has expanded on existing knowledge of the relation between motivation to change and psychotherapy outcome for individuals with anorexia nervosa. This was accomplished by rating 148 audiotaped psychotherapy sessions with four measures of motivation to change. Data were derived from an existing clinical trial of three types of psychotherapy (Cognitive-Behaviour Therapy, Interpersonal Therapy, and Specialist Supportive Clinical Management). Three sessions were rated for each of the 53 participants who received up to twenty sessions of psychotherapy, early (sessions 1-5, middle (sessions 6-14), and late (sessions 15-20). Participant expressions of motivation to change were analysed across sessions, within sessions (beginning, mid, and end intervals), by change talk type, and therapy type for those with good and poor outcomes. Resistance and readiness to change, positive psychotherapy process, and readiness to recover from anorexia nervosa were also examined.

The main findings were significantly more positive change talk expressed in the beginning than mid and end therapy intervals and significantly more negative change talk expressed in the beginning than end therapy interval and in the mid than end interval. When change talk type was examined, a significant difference in the ratio of positive to negative change talk expressed between change talk types was found.

Results from other motivation measures indicated that readiness to change was expressed significantly more frequently in the middle and late than early phase of therapy. There were higher levels of positive process in psychotherapy in the late than early phase of therapy, and higher levels in those with good than poor outcomes. There were significantly

higher levels of readiness to recover from anorexia nervosa expressed in the middle and late phases of therapy than in the early phase, and higher levels in those with good than poor outcomes.

Limitations to these results include a modest sample size, rater biases, and lack of reliability measures. Notwithstanding these limitations, the present study has produced several potentially important findings that merit further investigation.

Literature Review

Overview

This section provides an introduction to anorexia nervosa, including the classification and identification of the disorder, a brief history of treatments of the disorder, and an overview of the psychotherapy treatments relevant to this study. The treatment overview includes a description of the three treatments in the clinical trial from which this study is derived and reviews research on each of these. Motivation and readiness for change and their measurement are discussed, and research relating to anorexia nervosa, motivation, and measurement are reviewed.

Introduction to anorexia nervosa. Anorexia nervosa is an eating disorder associated with significant morbidity and mortality (Sullivan, 1995). Each organ system of the body can be affected by potentially irreversible medical complications, that are particularly damaging to the developing body (Katzman, 2005).

Diagnostic criteria of anorexia nervosa. Criteria for diagnosis of anorexia nervosa are defined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (Association, 2000). Critical features are refusal to maintain a minimally normal body weight for height and age, intense fear of weight gain, disturbance in the perception of body shape or size, and amenorrhea.

Anorexia nervosa is divided into two subtypes: restricting type and binge-eating/purging type. The restricting subtype classifies individuals who accomplish weight loss primarily via dieting, fasting, or excessive exercise (Beumont, Arthur, Russell, & Touyz, 1994). Binge-eating and purging are not regular methods of compensating for binge eating. The binge-eating/purging subtype classifies individuals who regularly engage in binge-eating,

purging, or both. Most individuals with anorexia nervosa who binge-eat also purge by self-induced vomiting, or the use of laxatives, enemas, or appetite suppressants. This subtype also includes individuals who do not binge-eat, but frequently use self-induced vomiting, laxatives, diuretics, or enemas to purge following the consumption of small or normal quantities of food.

Prevalence of anorexia nervosa. Prevalence of strictly defined anorexia nervosa with a body mass index of 17.5kg/m² is estimated to be between 0.28 and 2.2% (Keski-Rahkonen et al., 2007). Studies examining prevalence of anorexia nervosa have used psychiatric case registers, hospital medical records, general practitioner and community health records, which tend to underestimate the incidence of eating disorders in the community as not all individuals with these illnesses present for treatment (Hoek & van Hoeken, 2003). A recent study reported a lifetime prevalence rate of 0.6% for anorexia nervosa (Hudson, Hiripi, Pope Jr, & Kessler, 2007). When anorexia nervosa is defined using more lenient criteria with a body mass index less than 19kg/m², prevalence rates are 3.7% (Garfinkel et al., 1996). Prevalence rates are highest for women aged between 15 and 19 years (Lucas, Crowson, O'Fallon, & Melton, 1999).

The incidence of anorexia nervosa in males has been reported in few studies with rates below 1.0 and probably 0.5 per 100,000 population per year(Lask & Bryant-Waugh, 2000). The female to male ratio for anorexia nervosa is estimated to be 10:1 (Keel, Weltzin, Hsu, & Bulik, 1991).

The prevalence of anorexia nervosa is reported to be higher in western countries than in non-western countries where rates of below 0.05% have been found (Makino, Tsuboi, & Dennerstein, 2004). Some studies suggest that the incidence has increased over time,

however there is debate over whether this is accurate or due to measurement error (Hoek & van Hoeken, 2003).

Comorbidity. Comorbidity of anorexia nervosa and other Axis I disorders in individuals with anorexia nervosa who present for treatment is very high (O'Brien & Vincent, 2003). Major depression is the most frequently diagnosed comorbid disorder found in the majority of individuals with anorexia nervosa (70-86%) (Herzog, Keller, Sacks, Yeh, & Lavori, 1992; O'Brien & Vincent, 2003). Anxiety has been suggested to be central to the etiology and maintenance of anorexia nervosa with comorbidity rates reported between 37% and 60% (Bulik, 1995; Bulik, Sullivan, Fear, & Joyce, 1997). In particular, OCD is common, with comorbidity rates of 16-41% found (Bulik, 1995; Kaye, Bulik, Thornton, Barbarich, & Masters, 2004). Substance abuse is not commonly found in eating disorder inpatients with the restricting subtype of anorexia nervosa, but has been reported in 9.5% of those with the binge-eating/purging subtype (Braun, Sunday, & Halmi, 1994).

Personality disorders are often found in individuals with anorexia nervosa (Braun, et al., 1994). In particular, obsessive-compulsive personality disorder is reported in 35% of anorexia nervosa outpatients and avoidant personality disorder is also common (O'Brien & Vincent, 2003; Skodol et al., 1993) (Diaz-Marsa, Carrasco, & Saiz, 2000). Higher prevalence rates of Cluster B personality disorders are found in individuals with the binge-eating/purging subtype (Wonderlich & Mitchell, 1997). Reviews of personality traits and anorexia nervosa identified the most common traits characterising the disorder are perfectionism, obsessive-compulsiveness, neuroticism, negative emotionality, harm avoidance, high reward dependence, low self-directedness, and low cooperativeness (Cassin & von Ranson, 2005) (Diaz-Marsa, et al., 2000). Personality traits may be risk factors or consequences of the disorder, have a common cause, or influence the outcome or course of anorexia nervosa

(Wonderlich, Lilenfeld, Lawrence, Scott, & James, 2005). Their review, summarised two prospective studies that found neuroticism predicted development of anorexia nervosa, and perfectionism and negative emotionality were likely to both predispose and maintain the disorder. Additionally, Wonderlich and colleagues (2005) found certain personality traits may reflect the long term complications of anorexia nervosa including; drive for thinness, ineffectiveness, restraint, poor interoceptive awareness, and conformance to authority.

Complications of anorexia nervosa. Anorexia nervosa is a serious psychiatric disease that has devastating effects on the lives of its sufferers. Frequently it has severe complications, impacting upon many areas of development. Anorexia nervosa has the highest death rate of all psychiatric illnesses with 5-10% of its sufferers dying from complications of the condition (Patton, 1998; Sullivan, 1995). Cardiac arrest due to arrhythmias is often the cause of death (Katzman, 2005; Kohn, Golden, & Shenker, 1998). Suicide accounts for more than one quarter of deaths, while over half of deaths are due to medical complications (Pompili, Mancinelli, Girardi, Ruberto, & Tatarelli, 2004; Sullivan, 1995). Common complications include problems with circulation, osteoporosis, anaemia, fertility and depression. Gastrointestinal dysfunction, cardiovascular and pulmonary complications, electrolyte disturbances, renal dysfunction, muscle weakness, hypometabolism and dehydration are all acute complications of anorexia nervosa (Mitchell & Crow, 2006; Zogheib, Rey, & Losay, 1993). Women with a history of anorexia nervosa have increased rates of miscarriage, premature delivery, and infertility (Bulik, Sullivan, Fear, Pickering, & McCullin, 1999).

Anorexia nervosa leads on to many chronic complications such as osteoporosis, a condition where bone loss leads to weakening of the bone structure and increased fracture risk (Mehler, Cleary, & Gaudiani, 2011; Rigotti, Neer, Skates, Herzog, & Nussbaum, 1991).

Fatigue, reduced concentration, lanugo, pitting oedema, vomiting, bruising, cold intolerance, cognitive impairment and lack of interest are other on-going symptoms that may occur (Deter & Herzog, 1994; Szmukler, 1992). Recovery from the disorder leads to amelioration of many of the symptoms, however other symptoms such as stunting of growth and osteoporosis have a risk of more permanent impact.

Outcome of anorexia nervosa. Final outcome and course are important when considering a disorder. The course of anorexia nervosa is highly unpredictable and variable (Pike, 1998). While half of the individuals who develop anorexia nervosa will recover, often the condition will persist or the course will be lethal (Sullivan, 1995). The high mortality and morbidity rates of anorexia nervosa had led to substantial interest in studying factors that may contribute to outcome.

Treatment of anorexia nervosa. Although psychotherapies are considered the most effective treatments for anorexia nervosa, the mechanisms are not well understood, with lack of evidence in the form of clinical trials supporting the efficacy of a single treatment type over others (Anderson et al., 2000; Association, 2000; Hay, 2004; Wilson & Agras, 2001; Yager & Powers, 2000). Clinical experience has provided some evidence that suggests psychotherapy has an important function in reducing symptoms of the illness and preventing relapse in anorexia nervosa (Yager & Powers, 2000). The aims of different psychotherapies are diverse and may include: to educate individuals in physical and nutritional rehabilitation, to help individuals modify dysfunctional eating attitudes and behaviours, to improve their interpersonal functioning, and attend to comorbid psychopathology that is maintaining the eating disorder (Yager & Powers, 2000). The psychological preparedness and perceived ability to change of individuals with anorexia nervosa, known as readiness to change, has been found to shift less over the course of treatment than in individuals with other eating

disorders (Geller, Zaitsoff, & Srikameswaran, 2005). Consistent targeting of an individual's motivation is usually necessary to achieve therapy goals (Yager & Powers, 2000).

Overview of Treatment

Historical treatments for anorexia nervosa have been derived from clinical evidence and philosophy. A psychoanalytic approach was largely employed into the late 1960's, then a behavioural approach adopted in the 1970's (Beumont, Russell, & Touyz, 1993). Cognitive treatments became central in the late 1970's, and this trend continues today with various forms of cognitive therapy used to treat individuals with anorexia nervosa (Fairburn, Cooper, Shafran, & Wilson, 2008).

The treatment objective is weight restoration, but there is debate about the way this should occur. Recovery processes may involve combining more than one treatment approach depending on how the individual responds (Peterson & Mitchell, 1999). Different physical treatment approaches for anorexia nervosa include pharmacological treatments such as antidepressant and antipsychotic medications, hospitalisation with nasogastric feeding, partial hospitalisation, behavioural programmes, clinical management, nutritional treatment, and educational behavioural treatment.

Psychological treatments have an essential role in the treatment of anorexia nervosa. Individual psychotherapies include psychoanalytic, object relations, ego-oriented individual therapy, cognitive-analytical therapy, family therapy, as well as the treatments in this study; cognitive-behavioural therapy, interpersonal therapy, and specialist supportive clinical management.

Psychotherapy Treatments in the Present Study.

Cognitive Behaviour Therapy (CBT). CBT involves a number of techniques including self-monitoring of food and fluid intake, relaxation, cognitive restructuring, assertiveness, chaining, graded exposure, and relapse prevention (Beck, Rush, Shaw, & Emery, 1979). Individuals learn to challenge dysfunctional thoughts about weight, shape, and eating through a collaborative approach to help individuals develop more realistic beliefs (Kleifield, Wagner, & Halmi, 1996). Few controlled studies of cognitive-behavioural treatments for anorexia nervosa exist, with the evidence classed as weak due to inconclusive results , small sample size, or poor study design (Bulik, Berkman, Brownley, Sedway, & Lohr, 2007; Butler, Chapman, Forman, & Beck, 2006). High dropout rates lead to research limitations such as small sample size and reduced power in intent-to-treat analyses, hence the lack of research efficacy (Halmi et al., 2005).

Interpersonal Therapy. Interpersonal Therapy (IPT) is a psychotherapy developed by Klerman and colleagues for the treatment of depression, with the goals of reducing the individual's level of depression and improving their interpersonal functioning (Klerman, Weissman, Rounsaville, & Chevron, 1984). IPT has been studied for the treatment of bulimia nervosa and binge-eating disorder and shown to be of similar effectiveness to CBT. Similar to CBT, there are few controlled studies that have examined the efficacy of IPT (Bulik, et al., 2007).

IPT for anorexia nervosa involves focusing on the individual's interpersonal functioning rather than disordered eating, on the grounds that symptoms of the illness are thought to be intimately linked with interpersonal functioning (Cooper, 2005; McIntosh, Bulik, McKenzie, Luty, & Jordan, 2000). Symptoms such as body image distortion, loss of weight, and dysfunctional eating are believed to occur due to psychobiological and

psychodynamic mechanisms (McIntosh, et al., 2000). IPT serves to address central areas of dysfunction by addressing interpersonal issues linked with etiology and maintenance of the individual's symptoms (McIntosh, et al., 2000). For individuals with anorexia nervosa, preliminary results suggest IPT produces similar outcomes to CBT in the long term, however CBT seems to bring about improved outcomes more quickly than IPT (Carter et al., 2011).

Specialist Supportive Clinical Management. Specialist Supportive Clinical Management (SSCM) was created by the investigators of the Christchurch randomised clinical trial from which the current study data were derived, therefore there is no previous research for this treatment. It involves a combination of clinical management and supportive psychotherapy as part of standard clinical practice in an outpatient setting (McIntosh et al., 2006). McIntosh and colleagues developed SSCM for anorexia nervosa with a focus on the clinical management aims of a return to normal eating and attainment of a normal weight (McIntosh et al., 2005). The treatment goal are to provide care, support, education, and a nurturing therapeutic relationship, to assist the individual to make changes in eating, exercise and compensatory behaviours, leading to weight gain, (McIntosh, et al., 2006). These goals are achieved via open communication between the individual and therapist, exploration of concerns and prejudices about the illness, and on-going education about the illness, identification of core symptoms, and relapse prevention (McIntosh, et al., 2006).

Supportive psychotherapy is the other essential component of SSCM. Supportive psychotherapy has been used for the treatment of a number of psychiatric conditions and in medical settings (Hellerstein, Pinsker, Rosenthal, & Klee, 1994; Rockland, 1993). The therapist facilitates support, acceptance, and warmth towards the individual, with a collaborative stance to work toward agreed upon goals (Luborsky, McLellan, Woody, O'Brien, & Auerbach, 1985). Reflection, verbal and nonverbal attending, open-ended

questioning, reassurance, active listening, and therapist self-disclosure are used to encourage the individual to make changes (McIntosh, et al., 2006). SSCM for individuals with anorexia nervosa includes three phases: First, introduction to treatment, identification of symptoms, setting mutually agreeable aims for weight gain and eating. Second, on-going monitoring, reassurance, and encouragement to achieve the goals of therapy. Third, the focus changes to planning for potential future problems and addressing the end of the therapy relationship (McIntosh, et al., 2006).

Recent interest in specialist supportive clinical management vs CBT and IPT. The Christchurch randomised clinical trial from which the current study data were derived found SSCM to be more effective in comparison with two other forms of psychotherapy: CBT and IPT (McIntosh, Jordan, Carter, Luty, & et al., 2005). CBT and IPT are more specialised psychotherapies than SSCM, with a strong rationale for the effectiveness of these treatments for anorexia nervosa, and it was hypothesised that these more specialised treatments would have a more successful outcome, however, SSCM was found to be more effective (McIntosh, Jordan, Carter, et al., 2005; McIntosh, Jordan, McKenzie, et al., 2005). Understanding reasons for the effectiveness of SSCM is important for enhancing treatment outcome. The unexpected finding has led to substantial international research interest and commencement of clinical trials comparing SSCM with other psychotherapies (McIntosh, et al., 2006). SSCM was recently compared with the Maudsley Model of Anorexia Nervosa Treatment for Adults (MANTRA) (n = 72) in a randomised control trial (Schmidt et al., 2012). In the aforementioned study, significant improvements in eating disorder outcomes occurred in both SSCM and MANTRA groups, however MANTRA participants were more likely to require treatment in addition to treatment protocol. The results of the controlled trial

verified SSCM as a helpful treatment for anorexia nervosa outpatients, however MANTRA may require adjustments (Schmidt, et al., 2012).

Results from the clinical trial relevant to the current study. Of the participants who completed treatment in the clinical trial, individuals who received SSCM had significantly better outcome ratings than individuals who received CBT and IPT (McIntosh, Jordan, Carter, et al., 2005). There were no significant differences in the CBT and IPT groups. When participants who did not complete treatment were included in analyses, SSCM was superior to IPT, SSCM and IPT were not different from each other, neither were SSCM and CBT (McIntosh, Jordan, Carter, et al., 2005). Given the clinical trial findings, motivation to change will be assessed across SSCM, CBT, and IPT groups in the present study.

Participants with anorexia nervosa using lenient and strict criteria were similar on most measures other than those related to weight such as BMI, weight, and body fat levels. As there were no significant differences found between individuals in the strict and lenient weight criteria groups in the clinical trial, motivation to change will not be assessed across lenient and strictly defined groups in the present study.

Understanding response to treatment of anorexia nervosa. Response to treatment, remission, relapse, and recovery are components of the course of anorexia nervosa (Pike, 1998). Furthering knowledge of anorexia nervosa involves examining response to treatment. It is important to understand which parts of treatment are effective so that treatment may be planned accordingly. Identification of factors predicting progress of the disorder may aid with treatment planning and decision making.

Factors Associated with Good Outcome of Psychotherapy for Anorexia Nervosa

Adherence to the therapy model. During psychotherapy if an individual progresses or recovers, it has typically been understood that this is due to the particular type of psychotherapy they have been receiving (McIntosh, Jordan, McKenzie, et al., 2005). Accuracy of delivery of a particular psychotherapy model is referred to as adherence. The therapists' ability to deliver a particular model of therapy can also be measured and is referred to as competence. Without establishing whether therapy has been delivered with satisfactory adherence to psychotherapy protocol, it cannot be determined if one type of psychotherapy produces superior outcomes over another (McIntosh, Jordan, McKenzie, et al., 2005). The research is mixed regarding the relation between therapist adherence and treatment outcome. Strong therapist adherence to psychotherapy protocol has been found to be predictive of positive outcome in naturalistic psychotherapy treatment (Ablon, Levy, & Katzenstein, 2006). In contrast, therapist adherence was not significantly related to treatment outcome in a process and outcome study of two interventions for bulimia nervosa (Loeb et al., 2005). There is a lack of studies regarding therapist adherence and outcome for anorexia nervosa.

Several benefits of using treatment manuals have been reported in the literature including provision of specific descriptions for treatment techniques, helping with therapist training, allowing objective comparison of psychotherapies in research studies, and measurement of different factors that the therapist delivers (Luborsky, et al., 1985). Treatment adherence is the degree to which the therapist uses or does not use the descriptions of the treatment manual (Luborsky, et al., 1985). Measuring treatment adherence requires employing a rating scale that measures the important elements of the specific therapy type.

Many instruments have been used to measure adherence to psychotherapy, for example the Collaborative Study Psychotherapy Rating Scale (CSPRS) was developed to identify differences between CBT, IPT, and clinical management for treatment of depression. Both specific mechanisms of the treatments and nonspecific factors such as therapeutic process issues and therapist directiveness are measured by the CSPRS, which is important when comparing different psychotherapies (Hill, O'Grady, & Elkin, 1992).

Therapeutic process. Mechanisms responsible for change in psychotherapy are referred to as therapeutic processes. Drawing conclusions about why a treatment is effective without examining process correlates of outcome can lead to erroneous assumptions about the treatment (Ablon & Jones, 1998). Substantial process elements of therapy are often shared across treatments, even when treatment conditions are well controlled (Ablon, et al., 2006). Some evidence suggests that it is possible to differentiate between the mechanisms of different types of psychotherapy (Blagys & Hilsenroth, 2002; Goldfried, Castonguay, Hayes, Drozd, & Shapiro, 1997), however the extent to which outcome from theoretically different psychotherapies is related to distinct psychotherapeutic aspects of the particular therapies, is unclear. There is a paucity of such research in the field of psychotherapy process and anorexia nervosa. Effective therapy aims to develop self-observation in the individual (Goldfried, Raue, & Castonguay, 1998), increasing self-awareness by becoming more mindful of one’s actions, thoughts and feelings in a wide range of situations (Goldfried, et al., 1998). The way this is achieved may vary across different psychotherapies. For example, CBT may concentrate on the individual becoming more aware of the link between his or her own thoughts and feelings, while IPT may focus on increasing awareness of the impact of important relationships on symptoms or the illness (Goldfried, et al., 1998).

Therapeutic process, anorexia nervosa, and personality. Research regarding anorexia nervosa and personality disorder and therapeutic process is limited (Karwautz, Troop, Rabe-Hesketh, Collier, & Treasure, 2003). Many psychological disorders including anorexia nervosa are highly resistant to change, which often stems from personality and temperament traits, with individuals treated for most disorders with brief treatments relapsing or requesting further treatment within one to two years (Weston, Novotny, & Thompson-Brenner, 2004). Personality traits that influence an individual's capacity to relate interpersonally have been consistently evidenced to impact on outcome and therapeutic alliance (Binder & Strupp, 1997). Specific personality traits which may limit interpersonal functioning and therefore adversely affect psychotherapy include; suspiciousness, hostility, dependency, and inaccurate expectations of what therapy will involve (Mohr, 1995). Individuals with anorexia nervosa were also found to report less cooperativeness than controls (Klump et al., 2000). While higher levels of cooperativeness and self-directedness were found to predict recovery (Bulik, Sullivan, Fear, & Pickering, 2000).

Therapeutic alliance. Bordin's (1979) work has been influential in conceptualising the therapeutic alliance within psychotherapy. Therapeutic alliance is thought to consist of agreed upon goals, creation of a set of relevant tasks, and development of relationships. The theory was expanded by Gaston, who proposed that the four essential components of the therapeutic alliance are the individual's affective relationship with the therapist, the therapist's empathic ability, the individual's capability to work in therapy, and an agreement regarding therapy goals (Gatson, 1990). To further understand the relationship between therapeutic alliance and therapy outcome, relational and technical elements have been studied (Ackerman & Hilsenroth, 2003).

There has been a search for factors common to all psychotherapies that explain therapy outcome (Martin, Garske, & Davis, 2000). Non-specific factors such as motivation, therapeutic alliance, therapeutic feedback, and individual engagement in therapy, which are universal to all psychotherapies, have been found to relate to outcome in therapy. It has been debated whether therapeutic alliance is more important than psychotherapy type for determining therapy outcome (Safran & Muran, 1995). Therapeutic alliance is clearly an important element of the psychotherapy process.

Measures of alliance have been found to correlate with outcome in psychodynamic and eclectic therapies (Horvath & Symonds, 1991; Krupnick et al., 1996). A meta-analytic study, found that over a quarter of the ratio of client outcome was accounted for by the quality of the therapeutic alliance, providing support for the importance of therapeutic alliance (Lambert & Barley, 2001). In a separate meta-analysis, a moderate relation was found between therapeutic alliance and outcome of psychotherapy, regardless of the several other variables that were hypothesised to influence this relationship (Safran & Muran, 1995). Further, a review of over 2000 process-outcome studies found therapist attitudes and behaviours such as therapist credibility, skills, empathetic understanding and affirmation of the individual, to have a positive impact on the outcome of therapy (Orlinsky, Grave, & Parks, 1994).

While these empirical results point to the essential nature of the therapeutic alliance, the alliance alone is not sufficient for a positive outcome in psychotherapy (Hanly, 1994; Hentschel, 2005). This is important, as in some studies (such as in the clinical trial from which the current study derives in which the same therapists delivered more than one therapy) comparable alliance has been found across two or more therapies, but differences in outcome among treatments exist. Therapeutic alliance may also relate to the therapist-therapy

match, therefore cannot be assumed solely because the same therapists are delivering each type of therapy.

A meta-analysis studying the relation of alliance and outcome for individuals in psychotherapy identified important elements of the therapeutic relationship to contribute to establishing satisfactory alliance (Horvath, Del Re, Flückiger, & Symonds, 2011). Results indicated that the alliance is built when therapy tasks are well-matched to the individual's needs and that accurately gauging the individual's perception of the alliance is vital for the relationship (Horvath, et al., 2011). Further, the therapist's stance of neither internalising nor disregarding individual aggression or pessimism was best for maintaining the alliance (Horvath, et al., 2011). There is one study of therapeutic alliance in family based therapy for adolescents with anorexia nervosa, which found that strength of alliance did not predict weight or psychological outcomes at a 12 month follow up (Pereira, Lock, & Oggins, 2006). However, therapeutic alliance was related to weight gain early in the therapy process in the aforementioned study.

Therapist characteristics. Therapist interpersonal skills including cooperation, disclosure, and affect expression have been found to relate to the individual's participation in therapy with the Motivational Interviewing Skills Code (Moyers, Miller, & Hendrickson, 2005). This is consistent with a larger body of research highlighting the importance of the relation between a positive patient outcome and therapist interpersonal skills, regardless of psychotherapy type.

Distinguishing between therapist variables (e.g. interpersonal style, therapist attributes), facilitative attributes (empathy, warmth, congruence), and the therapeutic alliance is difficult. These notions are interdependent rather than completely separate concepts (Lambert & Barley, 2001). Research designs have been developed with the intention of

minimising therapist effects on outcome, however often there are identifiable differences attributable to the therapist (Lambert & Barley, 2001; Luborsky, et al., 1985).

A therapist's capacity to cultivate trust and confidence in the therapeutic relationship is a foundation for successful psychotherapy (Ackerman & Hilsenroth, 2003). This includes the therapist's capability to express a sense of competence in their ability to aid distressed individuals, as well as dependability, compassion, and a receptive stance to the relationship (Ackerman & Hilsenroth, 2003).

In a study of therapeutic alliance during treatment of inpatients with eating disorders (n=33), individual perception of the therapeutic alliance was identified as an important factor influencing the decision to remain in treatment (Gallop, Kennedy, & Stern, 1994). A positive perception of the alliance in the first three weeks of admission predicted an increased likelihood of remaining on the treatment programme (Gallop, et al., 1994). A more recent qualitative study examined eating disorder patients' (n=38) satisfaction with their therapists' professional qualities, with the goal of guiding clinicians toward a stronger therapeutic alliance (Gulliksen et al., 2012). Results indicated the therapist factors of acceptance, vitality, challenge, and expertise were associated with patient satisfaction (Gulliksen, et al., 2012). In order to identify whether these factors are also related to treatment outcome and adherence, further studies using experimental designs are required.

Patient characteristics. Patient characteristics also contribute to outcome in psychotherapy (Carter et al., 2012). There is consistent evidence demonstrating patient features are a central determinant of outcome (Horvath, 2005; Horvath & Luborsky, 1993). Specifically, outcome in therapy is related to patient input into the relationship, with a good outcome requiring patient contribution to be characterised by a positive sense of self and idealised view of the therapist (Ablon & Jones, 1998, 1999). This is often demonstrated

through the patient's sense of adequacy, effectiveness, and trust, as well as admiration or approval of the therapist, and acceptance of interventions without ambivalence or suspiciousness (Ablon & Jones, 1999; Lambert & Barley, 2001). Patient expectations of treatment have been found to predict perception of the alliance later in the therapy process (Gatson, 1990). It has been hypothesised that expectations of the alliance predict therapy outcome to a higher degree than the level of initial symptom improvement (Gatson, 1990).

With regard to alliance quality, patient factors demonstrated to impact the quality of the alliance are; problem severity, attachment quality, and the nature of the problems or disorder (Horvath, 2001). For example a study of patient attachment orientation and strength of therapeutic alliance in the early phase of psychotherapy found that attachment style was related to patient evaluation of the alliance (Hudson, et al., 2007). While secure attachment was associated with higher ratings of alliance, fearful, anxious, and avoidant attachment styles were linked with poorer ratings (Hudson, et al., 2007). Some studies suggest there is an interaction effect between severity of the patient's problems, therapeutic alliance, and skill of the therapist (Kivlighan, Patton, & Foote, 1998; Mallinckrodt & Nelson, 1991). This interaction effect is thought to be more striking with complex patients, and less notable in patients with less severe impairments (Kivlighan, et al., 1998; Mallinckrodt & Nelson, 1991). Additionally, when the therapeutic alliance is of lower quality, there is a higher likelihood of patient attrition in the beginning stages of therapy (Yeomans et al., 1994). Drop out early in therapy may influence the relation between severity and strength alliance as early drop out tends to occur at higher rates in more complex patients (Horvath, 2001). Personality disorders have been found to negatively impact the development of a quality therapeutic alliance (Hersoug, Monsen, Havik, & Hoglend, 2001; Muran et al., 1995).

A study of individuals with eating disorders (n=42) assessed eating characteristics and the patient's view of the therapeutic alliance over six CBT sessions (Waller, Evans, & Stringer, 2012). Results indicated an interaction between interpersonal and emotional elements of pathology and the therapeutic alliance by the sixth session, however, no links between the alliance and eating disorder symptom severity or initial eating pathology changes were evident (Waller, et al., 2012). Overall, patient factors were influential in the development of the therapeutic alliance in the context of this study.

Factors associated with poor outcome. Poor outcome is predicted by an individual's unwillingness or inability to become engaged in therapy. Individuals who are withdrawn and defensive have been found to have poor outcome compared with those who were not hostile or mistrustful (Gomes-Schwartz, 1978). Additionally, an individual's belief in treatment rationale has been found to be related to positive therapy outcome (Carter, et al., 2012). However, potency of the alliance and its relation to outcome is uncertain. For example, an individual's change that occurred after the second therapy session was not predicted by therapeutic alliance (Morgan, Crits-Christoph, Curtis, & Solomon, 1982). Conversely, alliance was predicted following later sessions, suggesting symptom reduction led to positive alliance rather than a positive therapeutic alliance leading to better outcome (Morgan, et al., 1982). In a prospective study of individuals with anorexia nervosa, at the 21 year follow up low BMI and greater severity of interpersonal and psychological issues were found to predict poor outcome (Lowe et al., 2001). A longer period between onset of the disorder and commencement of treatment is related to a lower probability of a good outcome and the illness is more difficult to treat in older than younger individuals (Agras et al., 2004).

Therapist reactions to individuals are important and although trained to work with challenging individuals, they can find it difficult to deal with interpersonal conflicts, which

can negatively affect the therapeutic process (Ackerman & Hilsenroth, 2001). The therapist can aim to improve this by identifying individual features that may lead to negative process, thus enhancing the therapeutic alliance (Ackerman & Hilsenroth, 2001).

Extratherapeutic factors. An individual's outcome in therapy is also attributable to factors outside of therapy (Lambert & Barley, 2001). Factors in the life of the individual that influence change such as spontaneous remission, environment, life events, and social support are likely to impact on treatment outcome (Asay & Lambert, 1999; Thomas, 2006). A meta-analytic study found the influence of social support on therapy outcome did not produce a large effect size, instead it was similar to the effect size associated with therapeutic alliance and therapy outcome (Roehrle & Strouse, 2008). Other extratherapeutic factors are assumed to combine and even exponentiate the effect of these external factors (Roehrle & Strouse, 2008).

Motivation to change

As a general concept, motivation has been defined as "the probability that a person will enter into, continue, and adhere to a specific change strategy'' (Miller & Rollnick, 1991). Characteristics of individuals with an eating disorder, particularly those with anorexia nervosa such as resistance to treatment and denial of illness, mean that improving motivation of these patients is difficult and demanding of therapists (Vansteenkiste, Soenens, & Vandereycken, 2005).

Resistance and motivation. Resistance to treatment and denial of illness tend to be clinically interpreted as conscious and active attempts to defend the egosyntonic nature of anorexia nervosa (Vitousek, Watson, & Wilson, 1998). One study asked individuals with anorexia nervosa to identify shifts in their attitudes during the course of the disorder and found the majority initially denied their illness (Noordenbos, 1992). Consistent with this

finding, individuals with anorexia nervosa may suppress the underlying reasons for their behaviours or may be unable to accurately identify their internal experiences (Crisp et al., 1991).This is likely to contribute to their resistance to change and maintenance of symptoms (Vitousek, et al., 1998).

Self determination theory. Self determination theory is a theory of change focusing on the nature of the motivation guiding people's behaviour (Vansteenkiste, et al., 2005). Whether behaviour is intrinsic or extrinsic and whether the individual perceives him or herself as the agent of his or her own actions is central to this theory (Vansteenkiste, et al., 2005). Disturbance of basic needs has been related to less intrinsic motivation and increased extrinsic aims, which can lead to a reduction in functioning and wellness (Deci & Ryan, 2000). Motivation levels during treatment are thought to be determined by factors such as level of suffering, expected outcome and problem identification (Drieschner, Lammers, & van der Staak, 2004). Underlying reasons behind patient motivation are known to contribute to whether or not changes are maintained (Norbo et al., 2008).

Motivation can be categorised into different types. Autonomous motivation refers to identified motivation, such as personal values and commitment, intrinsic motivation to constructs such as pleasure and enjoyment, while controlled motivation includes external motivation, including rewards, punishments and expectations, and introjected motivation to anxiety and emotions such as guilt and shame (Deci & Ryan, 1985, 2000). Self determination theory proposes that regardless of the individual's readiness to change, sustained change only occurs if target behaviour is autonomously, and ideally, intrinsically motivated (Deci & Ryan, 1985). Thus it is important to recognise not only which motivational stage best reflects the individual, but also why the s/he is at that stage (Norbo, et al., 2008). Additionally, poor

outcome, dropout, and failure to comply are reasons often cited when individuals in treatment with anorexia nervosa report low levels of motivation (Drieschner, et al., 2004).

Motivational interviewing. Motivational interviewing was developed to help therapists enhance intrinsic motivation to change (Miller & Rollnick, 1991). It is assumed each individual possesses an inner ability to achieve change. The therapist employs four principles: expressing empathy, developing discrepancy, increasing self-efficacy, and rolling with resistance to strengthen the individual's motivation levels (Miller & Rollnick, 1991). Motivational interviewing has produced successful results (Hettema, Steele, & Miller, 2005), but it is unclear which underlying mechanisms are responsible (Miller & Rollnick, 2002; Moyers, et al., 2005). One principle of motivational interviewing is that the individual takes responsibility for the decision of whether to change (Treasure & Schmidt, 2001). In the case of anorexia nervosa this is limited by the human capacity to last a certain period without food, and mental health legislation regulating a person's freedom to make this decision (Treasure & Schmidt, 2001). In accordance with motivational interviewing strategies, the therapist may reduce the likelihood of confrontation over the decision to change by opting to indirectly address the issue through society's rules rather than directly challenging or coercing the patient (Treasure & Schmidt, 2001).

The patient-therapist relationship is of high importance, with therapist expression of empathy, genuineness and equality given precedence throughout the delivery of motivational interviewing (Miller & Rollnick, 2002; Rollnick & Miller, 1995). Individuals are more likely to disclose more, contribute their ideas, cooperate, and argue less when these therapist characteristics are expressed (Moyers, et al., 2005). However, a review of motivational interviewing studies found participant engagement in therapy had only a small effect on treatment outcome (Apodaca & Longabaugh, 2009). Recognition of an individual's

autonomy is also kept central through use of strategies such as requesting permission before offering advice and information (Miller & Rollnick, 1991, 2002). Therapist behaviours inconsistent with a motivational interviewing approach such as confrontation, warning, overtly directing the individual, and giving advice without permission are at odds with the goal of reducing the individual's resistance (Moyers, et al., 2005).

Proposed underlying mechanisms of motivational interviewing include "change talk" – reinforcement of clients' verbal commitment to change including expressions of ability, desire, need, commitment, reasons, and taking steps to change (Moyers et al., 2007). Other mechanisms include; working on resolving clients' ambivalence to change (Miller & Rollnick, 2002), focusing on building intrinsic motivation to change (Vansteenkiste & Sheldon, 2006), and activating clients internal resources to facilitate change during psychotherapy, known as "client agency" (Faris, Cavell, Fishburne, & Britton, 2009). Collectively these proposed mechanisms of change that encourage a collaborative relationship between the therapist and individual, are known as the "motivational interviewing spirit" (Miller & Rollnick, 2002). Apodaca and Longabaugh's (2009) review of motivational interviewing for substance users found a large effect size for the effect of resistance to change on treatment outcome. Currently there is limited research regarding resistance, use of change talk, and treatment outcome.

Although use of motivational interviewing with the eating disorders is in the early stages (Killick & Allen, 1997; Treasure & Ward, 1997), it has been shown to be effective for addictive behaviours and health behaviours - areas where individuals are typically ambivalent about change (Burke, Arkowitz, & Dunn, 2002).

Limitations associated with motivational interviewing method. The strong emphasis on the four core principles may result in opportunities for reinforcement of an individual's statements of commitment being missed (Moyers, et al., 2005).

At a broader level, motivational interviewing interventions should be adapted to suit the individual rather than rigidly adhere to treatment manual definitions (Emmons & Rollnick, 2001). However, this becomes complicated by the need to have a standardised intervention that can be carefully evaluated (Emmons & Rollnick, 2001).

The Socratic method. The Socratic method has been used to increase motivation to change in individuals with eating disorders who are attending treatment. This technique was influenced by motivational interviewing and is well established in cognitive therapy (Vansteenkiste, et al., 2005). The Socratic method offers a structure encouraging individuals to reach conclusions themselves, by assisting them to consider positives and negatives of their symptoms (Vitousek, et al., 1998). It is assumed that behaviour change is maintained more successfully if the decision to change is experienced as being made by the individual, rather than being advocated by the therapist (Vitousek, et al., 1998).

The Socratic method is thought to be well suited to individuals with anorexia nervosa due to its emphasis on collaboration, systematic inquiry, openness and patience (Vitousek, et al., 1998). The absence of direct arguments for the patient to oppose helps to eliminate the power struggle between therapist and patient (Miller & Rollnick, 1991). Additionally, when the individual personally provides reasons to change, it is more persuasive and better remembered than via didactic teaching (Miller & Rollnick, 1991).

The transtheoretical model of change. Readiness for behaviour change has been conceptualised within a transtheoretical model of change (Prochaska, Diclemente, &

Norcross, 1992). When individuals attempt to change target behaviours, they are thought to move through five stages of change: precontemplation, contemplation, preparation, action, and maintenance (Prochaska, et al., 1992). Evidence supports these stages of change in both outpatients and individuals attempting to change on their own (DiClemente & Prochaska, 1985; DiClemente, Prochaska, & Gilbertini, 1985). A combination of discrete and continuous self-report measures have been used to identify clusters of individuals in each of the five stages of change (DiClemente et al., 1991; McConnaughy, DiClemente, Prochaska, & Velicer, 1989). Existing stages of change research found patient motivation was a predictor of short-term outcome in psychotherapy (Keithly, Samples & Strupp, 1980).

It is common for individuals to relapse and cycle through the stages more than once, this is known as the spiral model (Prochaska, et al., 1992). The majority of individuals who relapse do not go back to precontemplation each time; instead they will recycle to the contemplation or preparation stage (Prochaska & DiClemente, 1986). Individuals cycling through the stages are thought to learn from their errors and subsequently adjust their strategy of change (DiClemente, et al., 1991). Higher levels of readiness for change have been related to greater self-efficacy and satisfaction with therapy, as well as less anxiety about change (Rieger et al., 2000). Levels of self-efficacy, decisional balance, and outside temptations are thought to predict transition through the stages of change (Prochaska & Velicer, 1997). However, because individuals often fail to fit neatly into a discrete stage of change, this model has been criticised (Waller, 2012; Wilson & Schlam, 2004).

The transtheoretical model of change and eating disorders. Shift in decisional balance between the stages of change for individuals with anorexia nervosa and bulimia nervosa in treatment (who will be referred to as patients) has been studied (Blake, Turnbull, & Treasure, 1997). The study identified that bulimic patients were most likely to be in the

action stage, while anorexic patients were most likely to be in the precontemplation or contemplation stage when presenting for treatment (Blake, et al., 1997). This highlights the challenge in helping patients with anorexia nervosa to transition from denial or resistance to considering the possibility of making some initial changes. Patients with a higher ratio of 'pros' for change than 'cons' were more likely to be in the action stage, which highlighted the importance of a shift in the balance of 'pros' and 'cons' for those in the contemplation stage (Blake, et al., 1997).

Readiness for change is thought to be determined by two parts: first, recognition that the problem is important and second, confidence in one's ability, or self-efficacy (Treasure & Schmidt, 2001; Rollnick et al., 1999). Importance of change is related to how the problem behaviour links with the individual's values. For example, an individual with anorexia nervosa may not perceive any reasons to change. Confidence relates to the individual's self-efficacy at changing the problem behaviour. A patient may be confident she could change if she decided to do so, but she may not be willing to increase her food intake. Blending the components of importance and confidence can result in ambivalence about change (Treasure & Schmidt, 2001). Therapist strategy will depend on the individual's level of conviction and level of confidence. The therapist may aim to broaden the individual's knowledge, identify discrepancies between the present situation and the future, work collaboratively on creating a graduated plan for change, identify possible obstacles and problem solve for these, and encourage patient achievements (Treasure & Schmidt, 2001).

The transtheoretical model of change and decisional balance. Research examining the factor structure of decisional balance of individuals with anorexia nervosa who found that they were different from other populations (Cockell, Geller, & Linden, 2002). In addition to weighing up pros and cons, there was a third factor - functional avoidance, the

process of not dealing with unpleasant emotions and responsibilities (Cockell, et al., 2002). The tendency to engage in functional avoidance reflects the complicated nature of anorexia nervosa symptoms (Garner, Vitousek, & Pike, 1996). In the short term this feature of the disorder is negatively reinforcing, providing a way to avoid negative emotions, but it also precludes achievement of longer term goals, which tends to have a negative outcome (Cockell, et al., 2002). Functional avoidance was found to correlate with both pros and cons of change, consistent with the ambivalence of individuals with anorexia nervosa (Cockell, et al., 2002). This indicates it is likely to be more difficult to predict whether individuals with anorexia nervosa are ready to change than individuals from other populations.

The utility of the stages of change model may be limited at times as it was developed for single-symptom problems such as substance abuse (Geller, Cockell, & Drab, 2001). The model does not account for both behavioural symptoms and cognitive-affective features of eating disorders and the fact that some patients are willing to change certain symptoms but not others (Geller, et al., 2001). Additionally, self-report measures are sometimes unsuitable for such complexity, for example the stages of change model does not allow for description of complicated experiences (Geller, et al., 2001). However, when converted into an observer-rated format and used in conjunction with other measures, the stages of change model may provide useful information about the stage of change of individuals with anorexia nervosa.

The relation between motivation, psychotherapy, and outcome for depression. There is a paucity of research regarding motivation, psychotherapy and outcome for anorexia nervosa. However, similar research exists in the area of depression. A study of psychotherapy for depression and outcome of two psychotherapies (CBT and IPT) indicated patient engagement, sense of optimism, ability to analyse one’s own problems, and a willingness to take on different perspectives were related to outcome of psychotherapy for depression (Luty

et al., 2007). A study of psychotherapy and pharmacotherapy for depression and outcome of three treatments, IPT, CBT and antidepressant medication, found autonomous motivation was a stronger predictor of outcome than therapeutic alliance, and motivation predicted less severe post-treatment depression and higher remission rates (Zuroff et al., 2007). Another study found motivation and compliance with the requirements of CBT predicted positive outcome in depressed patients (Burns & Nolen-Hoeksema, 1992).

The relation of motivation, psychotherapy, and outcome in anorexia nervosa. Motivation to change in psychotherapy and outcome of treatment for anorexia nervosa have been linked, although there is little research in this area. A study using a new style of assessment interview examined motivational enhancement and impact on outcome in adolescent anorexia nervosa patients (Gowers & Smyth, 2004). Results indicated that significant behaviour change, early weight gain, and patient-therapist engagement were achieved in the higher motivation group, with these individuals gaining an average of 2kg while those in the less motivated group tended to lose weight (Gowers & Smyth, 2004). However, firm conclusions cannot be drawn due to the short period that individuals were followed and lack of a comparison group.

The Readiness and Motivational Interview (RMI) was developed to account for the multiple symptom domains of anorexia nervosa and the tendency for individuals to vary in their level of readiness to change in each area (Geller et al., 2008). The RMI is based on the Transtheoretical Model of Change, taking into account overlap between stages (Geller, et al., 2001). The RMI has been found to predict clinical outcome (Geller, et al., 2001; Geller, Drab-Hudson, Whisenhunt, & Srikameswaran, 2004). RMI scores have been shown to relate to anticipated difficulty, completion of recovery activities, enrolment in and dropout from treatment, change in symptoms and relapse, with these varying for each symptom domain

(Geller, et al., 2008). However, contrasting research suggests outcome in adult individuals with eating disorders was inconsistent with measures of readiness (Geller, et al., 2001; Pike, 1998).

In adolescent samples, preliminary results from self-report measures have been encouraging, with associations identified between higher readiness scores and greater self-efficacy, less concern about change, and more contentment with therapy (Rieger, et al., 2000). However, the desire to respond in a socially desirable manner may confound results in self-report measures. (Geller, et al., 2008) found that adolescents who were ambivalent about change had higher levels of depression, anxiety, somatic symptoms, and withdrawal, suggesting early treatment may more usefully focus on these areas, followed by weight restoration.

Another study examined factors relating to improvement in readiness and motivation for change and the relationship with body mass index (BMI) in individuals with eating disorders (Geller, Cassin, Brown, & Srikameswaran, 2009). They found that those who did not demonstrate an improvement in readiness to change also failed to show improvement in other areas of functioning (Geller, et al., 2009). In contrast, when individuals' level of readiness to change increased significantly, improvements were seen across all areas of functioning (Geller, et al., 2009). This highlights the importance of matching tasks in treatment to the patient's level of readiness in order to increase the likelihood of an improvement in functioning.

Use of Language

An individual's use of language is thought to be particularly important when considering conditions for change. An individual's use of language is seen as malleable and

as having potential to affect their decision to change behaviour (Moyers, et al., 2007). Self-perception theory states that when individuals articulate their own arguments in support of or against change, they become more confident of their own convictions (Bem, 1972). Hence, language has been identified as a predictor of outcome. “change talk” refers to an individual’s statements concerning the positive factors of change; optimism about behaviour change, and discontentment with current status (Miller & Rollnick, 2002). An individual’s collaboration and engagement are thought to be essential for the development of change talk – an important precursor for behavioural change (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003; Miller & Rollnick, 2002).

In studies of problem drinking, expressions of change talk have been found to relate to improved drinking outcomes, and negative change language to worse drinking outcomes. Strength and frequency of client resistance language in therapy predicted drinking outcome at long term follow up (Miller, Benefield, & Tonigan, 1993). In a study of change talk in problem drinkers, the pattern of commitment language over the course of therapy differed between outcome groups, with higher levels of commitment language uttered in the late stages of therapy by individuals with a good outcome than those with a poor outcome (Amrhein, et al., 2003). Similarly, in a motivational enhancement therapy study, higher levels of commitment language in the later phases of therapy were found to predict outcome in individuals with alcohol dependence (Campbell, Adamson, & Carter, 2010).

In Armhein and colleagues’ study, commitment language in particular was found to be a stronger predictor of outcome than the other language categories (ability, need, desire, reasons, and taking steps), however the other language categories affected the strength of commitment language (2003). Armhein and colleagues found commitment to change language was associated with drinking cessation the following year, with client language in

the later stages of the session most strongly predicting abstinence (2003). Ability change talk during the end interval within psychotherapy sessions was found to be a predictor of outcome for individuals with alcohol dependence (Campbell, et al., 2010). A 19 study review of motivational interviewing research identified amount of change talk expressed by substance users had a small to medium effect on treatment outcome (Apodaca & Longabaugh, 2009).

One study analysing recorded therapy sessions for alcohol dependent individuals showed significantly higher frequencies of patient change talk when counsellors were trained in motivational interviewing (Amrhein, Miller, Yahne, Knupsky, & Hochstein, 2004). Another motivational interviewing intervention found similar results for clients of mental health staff (Schoener, Madeja, Henderson, Ondersma, & Janisse, 2006). In motivational enhancement therapy, frequency of change talk predicted alcohol use even when baseline levels of readiness to change were accounted for (Moyers, et al., 2007). The frequency of change talk in at-risk drinkers who had been admitted to the Emergency Department and subsequently delivered a brief motivational intervention found that positive client change talk in the later stages of the intervention was associated with improved drinking outcomes at 12 month follow-up intervention (Bertholet, Faouzi, Gmel, Gaume, & Daeppen, 2010).

Change language has been found to predict positive behaviour change in individuals with drug abuse and in problem gamblers (Aharonovich, Amrhein, Bisaga, Nunes, & Hasin, 2008; Hodgins, Ching, & McEwen, 2009). Action-oriented change talk has been found to predict post-treatment reduction in cannabis use (Strang & McCambridge, 2004), and change talk to have a small to medium effect size on behavioural outcome in a review of individuals with substance use disorders (Apodaca & Longabaugh, 2009).

Motivation and change talk has also been studied when helping individuals to change food intake and exercise. A study examining the effect of motivational interviewing

compared with a health education intervention in women participating in a weight loss exercise programme found that sustained motivation over time in both conditions was associated with larger decreases in total calorie consumption and fat intake (Befort, Nollen, Ellerbeck, Sullivan, & Ahluwalia, 2008).

A study of safer sex intentions among HIV-negative methamphetamine users identified a link between expressions of safer sex intentions and behaviour outcome. Those who reported greater intention to follow safer sex recommendations used condoms more frequently than those who reported less intention (Mausbach, Semple, Strathdee, & Patterson, 2009). Another study assessed motivational enhancement and behavioural intentions in economically disadvantaged women at risk of HIV infection, finding that as participants increased their HIV-related knowledge, their expressions of motivation to change increased and they were less likely to engage in unsafe sex practices (Carey et al., 1997).Evidence that Change talk in therapy sessions is predictive of change is accumulating. However, to date there is a paucity of research relating to eating disorders.

Summary of motivation and methods for measuring this concept. Motivation to change and readiness to change are important factors when considering the outcome of psychotherapy. Individuals who demonstrate higher levels of motivation to change are more likely to have good outcomes from therapy, while those who are more resistant tend to have poorer outcomes. Motivation to change is particularly important for individuals with anorexia nervosa given the ego-syntonic nature of the disorder. Hence, further investigation of motivation to change in psychotherapy for individuals with anorexia nervosa is warranted.

In order to extend knowledge in this area it is necessary for an individual's motivation to be measured as accurately as possible throughout the course of psychotherapy. The next section discusses methods for measuring motivation behaviours and language.

Measurement

Observer rating. Observational measures are valuable tools for measuring behaviour and central to many areas of research (Bakeman & Gottman, 1997). Information about an individual's behaviour is often best captured by observer ratings than by self-reports (Connolly, Kavanagh, & Visweswaren, 2007). Observations of an individual's behaviour may either be taken in vivo or from recordings and transcripts of interactions. Observers are initially trained to rate the behaviour and may adhere to specific definitions of behaviour (Kazdin, 2008). Once training is finished, over time observers may gradually move away from definitions of behaviour, which is known as observer drift (Kazdin, 2008). Periodic retraining can aid reduction in drift (Kazdin, 2008). Additionally, expectations of the observer can influence their ratings e.g. biasing of observations in the expected direction (Kazdin, 2008).

Motivational Interviewing Skills Code Version 2.0. The Motivational Interviewing Skills Code Version 2.0 (MISC 2.0) is a behavioural coding system developed to assess patient and therapist performance in motivational interviewing treatment (Miller, Moyers, Ernst, & Amrhein, 2003). Target behaviours are counted e.g. an individual's speech concerning change or confrontation by the therapist. Additionally, individuals are rated on the dimensions of involvement: affect, engagement, cooperation and disclosure, and therapists are rated on empathy, acceptance, and egalitarianism (Miller, et al., 2003). Specifically, utterances are coded for six forms of speech (ability, commitment, desire, need, reasons and taking steps) that represent either movement toward or away from the behaviour that has been targeted for change (Miller at al., 2003).

The MISC has been used to calculate interrater reliability for motivational interviewing sessions aimed at quitting smoking with reliabilities of recorded behaviours

ranging from .51 to .80 (Moyers, Martin, Catley, Harris, & Ahluwalia, 2003). In addition, a randomised controlled trial of motivational interviewing identified that the MISC was of sufficient sensitivity to distinguish between four learning conditions across five time periods (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004).

The Four Process Categories of Client Resistance Behaviour and Signs of Readiness to Change from the Outcome Rating Scale (ORS). The Four Process Categories of Client Resistance Behaviour and Signs of Readiness to Change from the Outcome Rating Scale (ORS) is used to evaluate an individual's resistance to change and readiness to change in psychotherapy globally (Miller & Rollnick, 2002).The Four Process Categories of Client Resistance Behaviour Scale measures four key areas of resistance with a 5-point Likert scale, each consisting of a number of different sub-areas. The signs of readiness for change is a 6-item questionnaire with a 5-point Likert scale. the signs of readiness for change scale contains items to aid with identification of a window where the individual is most open to change (Miller & Rollnick, 2002).

When the therapist recognises that the individual is ready to change, the goal of therapy should shift from enhancing intentions to change and increasing confidence to building up commitment to a change plan (Miller & Rollnick, 2002). The ORS is useful because attempting to initiate change too early tends to result in increased resistance, while initiating change too late may lead to defensive strategies such as minimising, denying, rationalising, or projecting to reduce uneasiness (Miller & Rollnick, 2002). Often readiness to change develops over a period of time and ambivalence to change continues even once the patient has began to make changes (Miller & Rollnick, 2002). When the therapist determines that the patient is ready to change, a change plan can be created which should include goal setting, consideration of different options for change, establishing how change will occur, and

eliciting commitment to the change plan (Miller & Rollnick, 2002). The ORS is rated once the entire psychotherapy session has been listened to.

Patient Psychotherapy Process Scale. The Patient Psychotherapy Process Scale (PPPS), was developed to measure the occurrence of factors found to relate to change processes (Carter, et al., 2012). Analyses in the process of developing the scale indicated the PPPS is a reliable and valid measure of key patient change processes, with higher scores indicating a better response to psychotherapy (Carter, et al., 2012). The aforementioned scale is a 10-item questionnaire with each item rated on a 7-point Likert scale. After listening to the psychotherapy session, the PPPS is used to rate the session as a whole.

Anorexia Nervosa Stages of Change Questionnaire. The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) was developed to measure individuals' readiness to recover from anorexia nervosa. The ANSOCQ is based on the stages of change model and patient stage of change is determined through assessment of different features of the illness (Rieger, Touyz, & Beumont, 2002). In a general sense, the individual's self-efficacy for target behaviours is thought to be predictive of whether there is a shift in the decisional balance, thus progression from one stage to the next (Prochaska & DiClemente, 1986). The relationship between the decisional balance and role of self-efficacy is complex in the eating disorders. Some research suggests that although patient perception of the cons of having an eating disorder increase as the patient moves through the stages of change, the pros remain the same at every stage (Blake, et al., 1997). The ego-syntonic nature of anorexia nervosa may explain why the pros of having the disorder fail to reduce at the higher stages of change (Rieger, et al., 2002). While these findings make theoretical sense, the study used instruments of unknown psychometric status, and the majority of research supports that an individual's

perception of pros reduce and cons increase as they move up through the stages of change (Rieger, et al., 2002).

The ANSOCQ is a self-report measure that assesses symptoms of anorexia nervosa which include; features of body shape and weight, eating behaviours, strategies of weight control, emotional problems, certain personality characteristics, and interpersonal problems (Rieger, et al., 2000). Each of the scales' 20 items refers to a particular symptom and provides a choice of five statements about the individual's current behaviour or attitude regarding that symptom (Rieger, et al., 2000). If more than one statement per item is chosen, the average is calculated for the individual's score. The psychometric properties of the ANSOCQ including; internal consistency, test-retest reliability, convergent validity, discriminant validity, concurrent validity, and predictive validity are sound (Rieger, et al., 2000). Studies of individuals with anorexia nervosa have found that the crossover between higher scores on the cons of having an eating disorder to higher scores on the pros occurs in the contemplation, preparation, and action stages (Prochaska et al., 1994; Rieger, et al., 2000). Typically, movement into the action stage requires that the cons of the eating disorder outweigh the pros, and that the individual's level of self-efficacy to recover is at a level where s/he is willing to attempt to engage in change (Rieger, et al., 2002). Both higher self-efficacy and perceiving higher cons and lower pros of having anorexia nervosa contribute to an individual's increased readiness to change.

A study of the relation of readiness to recover and hospital admission in adolescents with anorexia nervosa found lower scores on the ANSOCQ predicted hospital admission (Ametller, Castro, Serrano, Martinez, & Toro, 2005). In the study, eighty percent of those in the pre-contemplation stage required hospital admission, and the proportion who were hospitalised moved decreasingly to zero for those in the maintenance phase. According to

these results, a individual in the action or maintenance stages has a lower probability of needing hospitalisation, and is more likely to do well in outpatient treatment (Ametller, et al., 2005).

Factor structure and the ANSOCQ. A factor-analytic study of the ANSOCQ identified three factors for motivation to recover from anorexia nervosa: items related to weight gain, items pertaining to eating, weight, and shape concerns, and items related to ego-alien aspects, the subjectively aversive features of the disorder (Rieger & Touyz, 2006). In the original factor analytic study, the weight gain factor emerged as the most important, accounting for greater than half of the variance in ANSOCQ scores. This is thought to portray the difficulty of generating the motivation to surrender a state of starvation in order to achieve a normal weight. Eating, weight, and shape concerns appeared to be a source of ambivalence as they tended to encompass an element of suffering, while at the same time low weight is interpreted positively by individuals (Rieger & Touyz, 2006). In the factor analytic study, the ego-alien factor accounted for almost as much variance as the eating, weight, and shape concern factor, illustrating that emotional and interpersonal difficulties were slightly less valued by individuals, therefore associated with slightly higher motivation levels.

Research Aims

The present research examines the relation of motivation for change and outcome in the treatment of anorexia nervosa. It was predicted that higher motivation for change and positive change talk would be related to better outcome in psychotherapy for anorexia nervosa (Rieger et al, 2000; Hasler et al, 2004; Geller et al, 2005; McHugh, 2007; Geller et al, 2008; Wade et al, 2009). Audiotaped psychotherapy sessions from a completed clinical trial of individuals with anorexia nervosa were examined for change talk and motivation for change. Participant motivation levels were analysed by type (CBT, IPT and SSCM), by phase

of psychotherapy (early, middle and late sessions), and across timed intervals within each therapy session. Statistical measures of association and change were applied to examine the relation between patient motivation and outcome. The present study aimed to investigate the following questions and related hypotheses:

1. What is the relation between participant use of language and psychotherapy outcome in individuals with anorexia nervosa?

   It was hypothesised that:

   a. Participants who expressed higher levels of positive change talk would have better outcomes in psychotherapy than those with lower levels of change talk.
   b. Participants who expressed higher levels of negative change talk would have poorer outcomes in psychotherapy that those with lower levels of negative change talk.
   c. Participants who expressed a higher ratio of positive to negative change talk would have better outcomes in psychotherapy.

2. How does the amount of change talk expressed over the course of therapy relate to outcome in psychotherapy?

It was hypothesised that:

   a. Participants who expressed higher levels of positive change talk in the late phase of therapy (sessions 16-20) would have better outcomes than those who expressed lower levels.
   b. Participants who expressed lower levels of negative change talk in the late phase of therapy would have better outcomes than those who expressed higher levels.

c. Participants who expressed a higher ratio of positive to negative change talk in the late phase of therapy would have better outcomes than those who expressed a lower ratio of positive to negative change talk.

3. How does the amount of change talk expressed during the intervals within therapy sessions relate to outcome in psychotherapy?

   It was hypothesised that:

   a. Participants who expressed higher levels of positive change talk in the final interval of therapy would have better treatment outcomes than those who expressed lower levels.
   b. Participants who expressed lower levels of negative change talk in the final interval of therapy would have better treatment outcomes than those who expressed higher levels.
   c. Participants who expressed a higher ratio of positive to negative change talk in the final interval of therapy would have better outcomes than those who expressed a lower ratio of positive to negative change talk.

4. Do participants with a good therapy outcome express a higher frequency of commitment and ability change talk than those with a poor outcome?

   a. It was hypothesised that commitment and ability language would be uttered more frequently by participants with a good outcome than those with a poor outcome.
   b. Exploratory hypothesis: How frequently are the other four change talk types (desire, need, reasons, and taking steps) uttered by those with good compared to those with poor outcomes?

5. How does the type of psychotherapy a participant receives relate to the proportion of positive to negative change talk and outcome, and does this vary over the phases of therapy?
    a. Exploratory hypothesis: It is unclear from existing research whether change talk would vary by type of therapy, and outcome. This question was investigated in the present study.
    b. Exploratory hypothesis: It is unclear from existing research whether change talk would vary by type of therapy and outcome across the phases of therapy. This question was investigated in the present study.
6. How do participant scores on the Four Process Categories of Client Resistance Behaviour Scale and Readiness to Change Scale (ORS) relate to outcome in psychotherapy?

    It was hypothesised that:

    a. Participants with lower resistance to change scores would have better outcomes in psychotherapy than individuals with lower scores.
    b. Participants with higher readiness to change scores would have better outcomes in psychotherapy than individuals with lower scores.
7. Is positive process in therapy different in those with good and poor outcomes?

    It was hypothesised that participants who scored highly on the PPPS would have better outcomes in psychotherapy than those with lower scores.

8. Is readiness to recover from anorexia nervosa (ANSOCQ score) different in those with good and poor outcomes?

It was hypothesised that participants with higher levels of readiness to recover from anorexia nervosa (on the ANSOCQ) would have better outcomes in psychotherapy than those with lower levels of readiness to recover from anorexia nervosa.

Methods

Overview of Study

Data for the present study were derived from rating audiotaped psychotherapy sessions from a completed clinical trial. In the clinical trial participants underwent a baseline assessment after which they were randomised to receive 20 psychotherapy sessions of one of three types: CBT, IPT, or SSCM. Once the treatment protocol was completed, an end-treatment assessment was conducted with a clinician unaware of treatment condition.

In the present study one session from the early, middle and late phases of therapy for each individual in the clinical trial was rated on measures of motivation, resistance, stage of change and change talk. Raters were unaware of participant outcome.

Background of the Clinical Trial

Participants

Participants in this study were part of a randomised clinical trial comparing three types of psychotherapy for the treatment of anorexia nervosa.

Inclusion criteria. Inclusion criteria for the study were female gender, aged 17-40 years with a current diagnosis of anorexia nervosa. Participants were diagnosed using a broader spectrum of low weight, with some participants meeting strict DSM-IV criterion for low weight (BMI≤17.5), and some meeting a more lenient criterion for low weight with a BMI between 17.5 and 19.0 kg/m². Those with a BMI below 14.5 kg/m² were excluded from the study as they were considered too unwell to engage in outpatient psychotherapy, and were referred to a specialist eating disorders clinic. All participants met DSM-IV anorexia nervosa criterion B, fear of weight gain, and criterion C, a body perception disturbance. Participants

were all maintaining a low body weight by means of food intake restriction and/or engaging in compensatory behaviours e.g. purging or excessive exercise (criterion A). The presence of amenorrhea (criterion D) was not required for inclusion in the study, due to debate surrounding this criterion in anorexia nervosa diagnosis (Beumont, et al., 1993).

Exclusion criteria. Individuals were not included in the clinical trial if there was a current severe major depressive episode, severe psychoactive substance dependence, bipolar I disorder, or schizophrenia. Individuals were not included if they had major medical or neurological illness, a developmental learning disorder or cognitive impairment. Additionally, individuals with a chronic, treatment-refractory course of anorexia nervosa (5+ years and unsuccessful treatments repeated), and those who were currently engaged in psychotherapy and unwilling to suspend this during the active phase of the clinical trial were not included.

Individuals taking a stable dose of psychotropic medication with no change to anorexia symptoms were not excluded from the study.

Recruitment, consent, and removal criteria. Participants were recruited from a wide base including health professional referrals, self-referral, and local media publicity. The study received ethical approval from the Southern Regional Ethics Committee. All participants gave written informed consent**.** Participants were able to withdraw from the study at any time. Suitable referrals were provided for further treatment for participants who withdrew from the study and wished to pursue alternative treatment. Those participants whose weight fell below a BMI of 14.5 were able to be temporarily suspended from treatment. The clinical trial had provision for any participant who came to meet exclusion criteria during the study to be withdrawn from the trial and referred for alternative specialist treatment.

Procedure

Participants were randomised to one of three psychotherapy conditions using permuted block randomisation. A research member of staff who was not involved in the study held a copy if the randomisation sequence. Once the baseline assessment was completed, the research assistant was informed which of the three therapies that the patient was randomised to. Participants were advised of randomisation during the first therapy session.

Drop-out occurred across all three phases of therapy, with 17 individuals not completing treatment. There were a variety of reasons for not completing treatment, however participants did not always provide exact reasons for discontinuation of therapy. In addition to drop-out, four were excluded from the study as they required hospitalisation for complications of anorexia nervosa. One participant who was hospitalised later died from what was likely to be complications of anorexia nervosa.

Therapists were experienced in treating individuals with eating disorders; two were clinical psychologists and one was a psychiatrist. Training and regular supervision sessions in each therapy modality were provided for the therapists. In the early training phase, both individual and group therapy supervision was held, then for the duration of the study, supervision was held primarily in group format. Review of recorded sessions by supervisors was undertaken to ensure adherence to protocol and continued therapist competence.

Consent to record all psychotherapy sessions was requested of participants in order to examine aspects of the psychotherapy process. Participants who did not give their consent were still included in other aspects of the study.

Audiotapes were selected randomly and reviewed for adherence to therapy protocol using an adaption of the Collaborative Study Psychotherapy Rating Scale (CSPRS) (McIntosh, Jordan, McKenzie, et al., 2005).

Measurement

Participants were assessed with the Structured Clinical Interview for DSM-IV (SCID) Axis I and Axis II at baseline, mid-treatment, and end-treatment, or on exit (Spitzer, Williams, Gibbon, & First, 1992). The SCID Axis I is a clinician-rated interview used to identify lifetime and current mood, anxiety, eating, and substance use disorders. The SCID Axis II is a clinician-rated interview used to determine the presence of personality disorder.

At completion of treatment, primary outcome was assessed on a four-point scale (4 = meets full criteria for spectrum anorexia nervosa, 3 = not full anorexia nervosa, but a number of features of eating disorders, 2 = few features of eating disorders, and 1 = no significant features of eating disorders). The measure was dichotomised and participants were rated as having either a good (global rating of 1 or 2) or poor recovery (global rating of 3 or 4) from anorexia nervosa. Those who had few or no features of eating disorders were classed as having a good outcome while participants who met full criteria for anorexia nervosa or had a number of features were classed as having a poor outcome.

The Current Study

Participants

Of the 56 participants in the clinical trial, 53 had recorded therapy sessions available for rating. Three participants' therapy sessions were not available due to two not giving consent for sessions to be recorded and one individual was hearing-impaired therefore audio-taping was not possible. Of the 53 participants with therapy sessions available for rating 33 had three sessions available across the three phases of therapy, 15 had two sessions available across two phases, and three had one session available in the first phase only. The total number of sessions available for rating was 148. Each CBT and IPT therapy session was approximately 50 minutes in duration, with the session recorded on one side of a 120 minute audiotape. SSCM had more session length variability with length of sessions between 30 and 50 minutes.

Procedure

A randomised sequence of numbers generated by a random number generator was used to select the sessions for rating. Three sessions for each participant were randomly selected for rating, one from each of early (sessions 2-5), middle (sessions 6-14), and late (sessions 15-19) phases of therapy. Sessions 1 and 20 were not sampled for rating due to the special nature of these therapy sessions.

For some therapy sessions (58 of 148), a typed verbatim transcript was available in addition to the audio recording of the session. Transcripts had been made of all sessions of some participants' therapy for a qualitative study of therapy process.

Training for rating. The primary rater was the thesis author who was trained by experienced raters (investigators in the clinical trial). Initially, didactic training was provided by study investigators experienced in the rating scales. The rater was trained to rate behaviour adhering to specific definitions of the rating scales.

Training in the Motivational Interviewing Skills Code (MISC 2.0) involved learning to identify six types of participant speech reflective of the importance of change, as well as participant speech demonstrating resistance to change. Observer training for rating the Four Process Categories of Client Resistance Behaviour, Signs of Readiness to Change (ORS), The Psychotherapy Process Scale (PPPS), and the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) involved didactic teaching about the meaning of each scale item. The rater and trainers initially co-rated psychotherapy sessions which were not part of the current study. Supervision was used as necessary to clarify problems that occurred during training. The rater was encouraged to take notes while listening to sessions to improve accuracy of behavioural ratings. The rater and trainers met regularly while sessions were being rated to minimise observer drift.

Procedure for coding the Motivational Interviewing Skills Code Version 2.0. The procedure used to rate the MISC was adapted from the training strategy for the MISC 2.0. The first pass was not made as global ratings were not required for this project and therapists did not necessarily use motivational interviewing as part of each of the three psychotherapies. A single pass was made, similar to the MISC 2.0 second pass where each utterance identified as change talk related to the target behaviour change was coded according to the MISC 2.0 guidelines (see Appendix). The rater stopped the tape as often as needed to identify and code each client utterance of change talk. If the client utterances relevant to the *target behaviour change* fell into any of the client language categories described in the MISC 2.0 then the

appropriate code was applied, if the utterance did not fit into the client language categories it was not coded. Instances of change talk were recorded sequentially by type and by strength with a positive or negative valence. Change talk with a positive valence is an inclination towards the *target behaviour change*, while a negative valence is an inclination away from the *target behaviour change*. The relevant target behaviour change utterance is given a strength score from -1 to -5 for negative valence utterances and +1 to +5 for positive valence utterances. Irrelevant statements were not coded rather than coded with a zero. Scores for each type of change talk were tallied after the entire session was rated. The session length was used to calculate three equal intervals (beginning, mid, end) in order to examine client language at different intervals within each session. The session length and interval length were recorded on the behaviour count coding forms, which were used to record each occurrence of client change talk within each interval of the session.

Procedure for coding the Four Process Categories of Client Resistance Behaviour, Signs of Readiness to Change, The Psychotherapy Process Scale, and the Anorexia Nervosa Stages of Change Questionnaire. The rater was trained to take notes of client utterances related to the items of each of these rating scales while listening to each therapy session. Once the entire session had been listened to, relevant items from the ORS, PPPS, and ANSOCQ were systematically coded.

Measurement

Four scales designed to assess participants' motivation levels were rated for all sampled psychotherapy sessions. Scales measured the use of change talk, readiness for change, whether the patient showed signs of unwillingness to change, patient interaction with

the therapist, goals for recovery, and whether or not the patient was contemplating change. These are outlined below:

Motivational Interviewing Skills Code Version 2.0 (MISC). The MISC (Version 2.0) is a mutually exclusive and exhaustive behavioural coding system for therapy sessions that evaluates audio recordings of psychotherapy sessions. A frequency tally of specific change language (ability, commitment, desire, need, reasons and taking steps) that represents either movement towards or movement away from the behaviour targeted for change is recorded for each interval of the therapy session.

The Four Process Categories of Client Resistance Behaviour and Signs of Readiness to Change from the Outcome Rating Scale. The ORS is used to globally evaluate patient resistance to change and readiness to change during psychotherapy sessions (Miller & Rollnick, 2002). The Four Process Categories of Client Resistance Behaviour measures four key areas of resistance using a 5-point Likert scale, each consisting of a number of different sub-areas (Miller & Rollnick, 2002). The Signs Of Readiness for Change is a 6-item questionnaire with a 5-point Likert scale (Miller & Rollnick, 2002).

Patient Psychotherapy Process Scale. The PPPS is a 10-item rating scale designed to measure the occurrence of the themes found to be associated with patients' change processes in psychotherapy (Carter, et al., 2012). Each scale item is rated on a 7-point Likert scale. Rating occurs after listening to the psychotherapy session in its entirety. Items assess important positive patient change processes including patient engagement in therapy, ability to process therapy issues based on the therapy model, ability to identify shifts and improvement, and to generalise therapeutic strategies to other problems (Carter, et al., 2012).

Anorexia Nervosa Stages of Change Questionnaire. The ANSOCQ is a 20-item self-report questionnaire that has been adapted as an observer rating scale. Individuals'

readiness to recover from anorexia nervosa is assessed in relation to the stages of change model in the following areas; body shape and weight, eating behaviours, weight control strategies, emotional difficulties, problematic personality characteristics, and interpersonal difficulties (Prochaska & Velicer, 1997). Each item contains five statements representing the stages precontemplation, contemplation, preparation, action, and maintenance (Rieger, et al., 2002). Each item requires the rater to choose a statement that best represents the individual's current attitude or behaviour regarding change to the different symptoms. Each item is scored from 1 (precontemplation-stage response) to 5 (maintenance-stage response), with a possible total score range of 0-100.

Outcome. Good and poor treatment outcome was defined in the same way as in the clinical trial. The global measure was dichotomised as either good (global rating of 1 or 2) or poor (global rating of 3 or 4) overall outcome as in the clinical trial.

Therapy phase and therapy session interval. It is important to distinguish clearly between the terms therapy *phase* and therapy session *interval* as the present study focuses on each of these in detail.

The course of 20 psychotherapy sessions was divided into three phases; early (sessions 1-5), middle (sessions 6-14), and late (sessions 15-20) which are referred to as therapy *phase* in the present study. Measures of motivation to change were assessed in each phase of therapy to investigate whether the level of motivation to change varied over the course of therapy.

Each psychotherapy session was timed and divided into three equal length intervals which are referred to as therapy session *intervals* in the present study, beginning, middle, and end. Measures of motivation to change were recorded across the three intervals within each

therapy session to investigate whether level of motivation to change varied within each therapy session

Statistical Analyses

Data entry and checking. Data were entered into an Excel spreadsheet by the rater and checked by another researcher. As they were entered, ratings and written codes were compared against the sum of codes entered into the spreadsheet.

MISC change talk counts were used to generate summary strength ratings for each interval of therapy sessions. The total amount of change talk for each session and for each interval within the session were summed and sub totals for each type of change talk were calculated. The total amount of change talk was summed across participants for early, middle, and late phases of therapy. All client change talk utterances were included in summing regardless of whether they were related to eating/weight gain/body image. For example, for a participant that expressed she had been engaging in steps towards improving her relationships with friends, these utterances were included in change talk counts. The decision to code all change related utterances was made because IPT for anorexia nervosa does not directly focus on eating/weight/body image issues.

To determine whether there was a change in participant language within a therapy session, the total amount of change talk in the first interval of the session was subtracted from the change talk total in the last interval of the session for each therapy session and participant. Ratings from the other three rating scales for each participant were summed for each session and for the beginning, middle and late interval of each therapy session.

Ratio scores were calculated to determine the relative importance of positive and negative change talk. Calculations were carried out for ratio of positive to negative change

talk over the course of therapy, by phase, interval, and type of change talk. The following formula was used to calculate the ratios:

$$\frac{\text{Positive change talk sum}}{(\text{Positive change talk Sum}) + (\text{Negative change talk Sum})}$$

Approach to missing data for outcome measures. It was not possible to rate all items on each measure for every participant because some psychotherapy sessions did not cover relevant material for every rateable item. Unrated items were not scored and analyses were conducted using the available data from each psychotherapy session. Omitting the item rather than rating it as zero prevented the sums from scales with items that had not been rated from being artificially skewed towards zero. For example, for item 13 of the ANSOCQ which relates to daily food consumption, if there was no discussion of daily food consumption in a therapy session, item 13 was rated as not applicable and omitted from any statistical analyses rather than rated as zero. Questionnaire items were pro-rated to calculate summed totals for cases where relevant material was not covered in sessions.

Approach to statistical analyses. All statistical analyses were conducted using Version 10 of the Statistical Package for the Social Sciences (SPSS, Version 10, SPSS, 1999). Data were checked for normality using normal probability plots. A significance level of $p < .05$ was used for statistical analyses. Continuous data are presented as means and standard deviations, and categorical data are presented as number of cases and percentages. Individual analyses are described below:

Characteristics of the sample. Demographic and clinical data were reported using descriptive statistics. Clinical variables included current anorexia nervosa status and history, physical measures, lifetime comorbidity, and personality measures.

Effect of outcome on change talk. Hypotheses 1a, 1b, and 1c were examined using the t-test for independent samples to compare differences in change talk (positive, negative, and ratio of positive to negative) for those with good and poor outcomes.

Effect of phase of therapy and therapy session interval and outcome on change talk, resistance and readiness to change, positive psychotherapy process, and readiness to recover from anorexia nervosa. Hypotheses 2a, 2b, 2c, 3a, 3b, 3c, 6a, 6b, 7, and 8 were examined with a series of repeated measures analyses of variance. In each model the relevant psychotherapy process variable was the dependent variable, with phase or therapy interval as the repeated measure.

To examine differences in motivation for change for those with good and poor outcomes, repeated measures analyses of variance models were constructed with phase or therapy session interval as the repeated measure and outcome status as the between subjects factor. These were entered into the model both as main effects and as two-way interactions.

Where these analyses of variance indicated significant phase effects, one-way analysis of variance or Fisher's least significant difference tests were applied independently to test the effect of outcome within each phase and therapy session interval.

Effect of outcome on type of change talk. Hypotheses 4a and 4b were examined using the t-test for independent samples to compare differences in the frequency of each type of change talk (ability, commitment, desire, need, reasons, and taking steps) for those with good and poor outcomes. Where significant effects were found, a ratio score was obtained to determine the relative proportion of total change talk that was the particular type of change talk (e.g. ability) for those with good and poor outcomes. The ratio score was calculated in the same way as described above for the proportion of positive to negative change talk. One-

way analysis of variance and Fisher's least significant difference tests were applied independently to test the effect of change talk type for those with good and poor outcomes.

Effect of therapy type, phase, and outcome on change talk. Hypotheses 5a and 5b were examined using ANOVA and repeated measures analyses of variance models to explore whether change talk would vary by type of therapy and outcome across the phases of therapy. To examine differences in motivation to change for those with good and poor outcomes within the three therapy groups, repeated measures analyses of variance models were constructed with two between subjects factors, therapy type and outcome status, and phase as the repeated measure. Where these analyses of variance indicated significant phase of therapy effects, one-way analysis of variance was utilised to test the effect of therapy or phase. Where ANOVAs indicated significant outcome effects, Fisher's least significant difference tests were used to test effect of outcome.

Where these analyses of variance indicated significant phase effects, one-way analysis of variance and Fisher's least significant difference tests were applied independently to test the effect of outcome and therapy within each phase. Two-way analyses of variance were used to examine differences on measures of motivation for those with good vs. poor outcome within the three therapy groups.

Results

Participant Characteristics

A description of participant characteristics is provided in order to generate an understanding of the sample and to enable the present study to be compared with other studies. Demographic and clinical data for the 53 participants in the current study are shown in Table 1.0.

The mean age of participants was 23.0 years. The majority of participants (33 of the 53) completed treatment (defined *a priori* as completing a minimum of 15 of the 20 therapy sessions). Drop-out occurred across all three phases of therapy with 16 of the 53 individuals not completing treatment. Reasons for drop-out were as follows, five participants did not find treatment helpful, four did not like the treatment, three experienced too many adverse life events, one deteriorated and did not wish to continue therapy, and three were not able to be contacted.

At baseline, approximately two-thirds of participants were in the strict weight range. Eighty-three percent of the sample had met strict weight criteria for anorexia nervosa at some point in their lifetime. Approximately 40% of the sample had a lifetime history of bulimia nervosa, 62.3% of major depression, 90.6% of one or more anxiety disorders, 20.8% of alcohol dependence, and 22.6% of substance dependence.

At the beginning of the clinical trial 15.1% of the sample were diagnosed with bulimia nervosa, 43.4% with major depression, 37.7% with one or more anxiety disorders, 3.8% with alcohol dependence, and 7.5% with substance dependence.

A large proportion of the sample had one or more personality disorder diagnoses (45.3%) with the most common being avoidant (28.3%), paranoid (18.9%), dependent (17.0%), and obsessive compulsive personality disorder (15.1%).

Table 1

Demographic and clinical information for the total sample of 53 participants with anorexia nervosa

	$\bar{x}$ (SD) or (n) %	Range
Age	22.98 (6.37)	(16-40)
Treatment status		
Completed	(n = 33) 62.3%	
Excluded	(n = 4) 7.5%	
Did not complete	(n = 16) 30.2%	
Physical Measures		
Baseline BMI (kg/m²)	17.27 (2.0)	(14.87-18.93)
Baseline weight (kg)	46.44 (3.93)	(38.9-56.9)
Anorexia nervosa history		
Age of onset (lenient AN criteria)	17.43 (5.38)	(8-38)
Age of onset (strict AN criteria)	18.0 (5.80)	(8-38)
Lifetime comorbidity		
Bulimia nervosa	(n = 22) 39.6%	
Major depressive disorder	(n = 33) 62.3%	
Bipolar II disorder	(n = 2) 3.8%	
Alcohol dependence	(n = 11) 20.8%	
Any substance dependence	(n = 12) 22.6%	
Panic disorder	(n = 7) 13.2%	
Agoraphobia without panic disorder	(n = 6) 11.3%	
Social phobia	(n = 16) 30.2%	
Simple phobia	(n = 14) 26.4%	
Obsessive compulsive disorder	(n = 9) 17.0%	
One or more anxiety disorders	(n = 48) 90.6%	

Personality Disorder Diagnosis	
Avoidant	(n = 15) 28.3%
Dependent	(n = 9) 17.0%
Obsessive compulsive	(n = 8) 15.1%
Passive aggressive	(n = 1) 1.9%
Self-defeating	(n = 4) 7.5%
Paranoid	(n = 10) 18.9%
Schizotypal	(n = 2) 3.8%
Schizoid	(n = 3) 5.7%
Histrionic	(n = 2) 3.8%
Narcissistic	(n = 3) 5.7%
Borderline	(n = 5) 9.4%
Conduct disorder	(n = 4) 7.5%
Antisocial	(n = 1) 1.9%
Current diagnoses (at beginning of treatment)	
AN strict criteria	(n = 31) 58.5%
AN lenient criteria	(n = 22) 41.5%
Bulimia Nervosa	(n = 8) 15.1%
Major depressive disorder	(n = 23) 43.4%
Bipolar II disorder	(n = 2) 3.8%
Alcohol dependence	(n = 2) 3.8%
Any substance dependence	(n = 4) 7.5%
Panic disorder	(n = 5) 9.4%
Agoraphobia without panic disorder	(n = 4) 9.4%
Social phobia	(n = 13) 24.5%
Simple phobia	(n = 14) 26.4%
Obsessive compulsive disorder	(n = 7) 13.2%
One or more anxiety disorders	(n = 20) 37.7%

Summary of Scores for Rating Scale Measures of Motivation and Outcome

Results of analyses for the following hypotheses are shown in Table 2: 1a expression of higher levels of positive change talk would relate to better outcomes; 1b expression of higher levels of negative change talk would relate to poorer outcomes; 6 higher scores on the ORS resistance and readiness measures would relate to better outcomes; 7 higher scores on the PPPS would relate to better outcomes and; 8 higher scores on the ANSOCQ would relate to better outcomes. Table 2 shows means and standard deviations for each of the rating scales and subscales, the Motivational Interviewing Skills Code, the Four Process Categories of Resistance And Readiness for Behaviour Change Scale, Patient Psychotherapy Process Scale, and Anorexia Nervosa Stages of Change Questionnaire for the total sample and for those with good and poor outcomes, and results of statistical tests comparing good and poor outcome groups.

There was no difference in the frequency of positive and negative change talk expressed by participants with good and poor treatment outcomes. Participants with a good treatment outcome expressed an average positive change talk frequency of 64.30 episodes per therapy session compared with 53.28 episodes for those with a poor outcome. For negative change talk those with a good outcome had a frequency of 22.55 episodes per therapy session compared with 32.94 for those with a poor outcome. For the total sample, participants expressed an average positive change talk frequency of 56.82 episodes per therapy session and an average negative change talk frequency of 29.60 episodes per therapy session as measured by the motivational interviewing skills code 2.0.

Table 2.0

Means and standard deviations for the total sample of 53 participants with anorexia nervosa and subgroups with good and poor outcome on The Motivational Interviewing Skills Code, the Four Process Categories of Resistance and Readiness for Behaviour Change Scale, Patient Psychotherapy Process Scale, and Anorexia Nervosa Stages of Change Questionnaire

Assessment Instruments	Total Sample	Outcome $\bar{x}$ (SD)		Statistics	
		Good	Poor	*t*	*p*
Motivational Interviewing Skills Code					
Positive	56.82 (44.59)	64.30 (43.72)	53.28 (44.80)	1.83	.18
Negative	29.60 (38.63)	22.55 (18.61)	32.94 (44.82)	2.18	.14
Four Process Categories of Client Resistance Behaviour					
Resistance to change	9.80 (8.20)	6.68 (5.57)	11.32 (8.81)	10.19	<.001*
Readiness to change	8.69 (5.84)	11.61 (6.16)	7.25 (5.16)	18.74	<.001*
Patient Psychotherapy Process Scale	31.75 (14.65)	38.91 (13.98)	28.37 (13.61)	17.55	<.001*
Anorexia Nervosa Stages Of Change Questionnaire	22.27 (16.86)	33.27 (19.68)	17.15 (12.45)	33.69	<.001*

* Significant difference (p<0.05) between groups (ANOVA)

The average score for the total sample on the resistance subscale of the Four Process Categories of Resistance Behaviour Scale was 9.80 from a possible score range of 0-68. Those with a good outcome had significantly lower scores on the Resistance Behaviour Scale than those with a poor outcome (F = 10.19, p < 0.001, 6.68 and11.32 for good and poor outcome groups, respectively).

The average score for the total sample on the Four Process Categories of Resistance Behaviour - readiness to change subscale was 8.69 from a possible score range of 0-24. Those with a good treatment outcome had significantly higher scores on this subscale (F = 18.74, p <0.001, 11.61 and 7.25 for good and poor outcome groups, respectively)

The average total score for participants on the Patient Psychotherapy Process Scale was 31.75 from a possible score range of 0-60. Those with a good outcome had significantly higher scores on this scale than those with a poor outcome (F =17.55, $p < 0.001$, 38.91 and 28.37. for good and poor outcome groups, respectively).

Participants scored an average of 22.67 on The Anorexia Nervosa Stages of Change Questionnaire from a total possible score range of 0-80. Those with a good outcome had significantly higher Anorexia Nervosa Stages of Change Questionnaire scores than those with a poor outcome (F =33.69, $p < .01$; 33.27 and17.15 for good and poor outcome groups, respectively).

Summary of ratio of positive to negative change talk scores and outcome

Results of analyses for hypothesis 1c which proposed that of a higher ratio of positive to negative change talk would relate to better outcomes are shown in Table 2.1. The ratio of positive to negative change talk was calculated for the total sample (n = 51) and for individuals with good and poor treatment outcomes. There was no significant difference in the ratio of positive to negative change talk (t = 1.21, p = .13) between participants with good and poor treatment outcomes. Ratio of positive to negative change talk for participants with a good treatment outcome was 0.71 and for those with a poor outcome 0.64.

Table 2.1

Ratio of positive to negative change talk across therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome $\bar{x}$ (SD)		Statistics	
	Total Sample	Good	Poor	t	*p*
Total change talk ratio	.66 (.17)	.71 (.14)	.64 (.18)	1.21	.13

Positive Change Talk

Positive Change Talk: Main Effects for Therapy Phase and Outcome

Results of analyses for hypothesis 2a which proposed higher levels of positive change talk in the late phase for those with better outcomes are shown in Table 3. For the amount of positive change talk expressed by participants, no phase effect was found, indicating the amount of positive change talk expressed among phases of therapy was not significantly different (F =2.37, $p < 0.10$). No outcome effect was found, indicating the amount of positive change talk expressed by those with good and poor outcomes was not significantly different (F = 1.99, p = 0.17).

Table 3.

Total positive change talk across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	61.91 (38.3)	37.18 (29.3)	46.89 (34.7)
	Middle	85.27 (62.5)	56.18 (56.9)	67.61 (59.8)
	Late	55.36 (31.2)	57.82 (31.7)	56.86 (30.9)
Total Sample		64.30 (43.72)	53.28 (44.80)	

Within-subjects effect (Phase) F = 2.37, p = 0.10

Between-subjects effect (Outcome) F = 1.99, p = 0.17

Positive Change Talk: Main Effects for Therapy Interval and Outcome

Results of analyses for hypothesis 3a which proposed higher levels of positive change talk in the final interval of therapy for those with better treatment outcomes are shown in Table 4. For the amount of positive change talk expressed by participants, an interval effect was found, indicating a significant difference in the amount of positive change talk expressed among therapy intervals (F = 6.58, p < 0.001). No outcome effect was found, indicating the amount of positive change talk expressed by those with good and poor outcomes was not significantly different (F = 6.32, p = 0.26).

Table 4.

Total positive change talk across beginning, mid, and late intervals of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Interval	Beginning	72.33 (59.7)	52.19 (38.1)	58.12 (45.8)[a]
	Mid	53.07 (37.4)	32.33 (29.0)	38.43 (32.7)[b]
	End	51.40 (23.1)	30.40 (20.8)	36.57 (23.3)[b]
	Total Sample	64.30 (43.72)	53.28 (44.80)	

Within-subjects effect (Phase) F = 6.58, p < 0.001
Means followed by the same letter superscript are not significantly different (p<0.05, Fisher's pair-wise least significant difference test)

Between-subjects effect (Outcome) F = 1.35, p = 0.26

Positive Change Talk: Effects of Therapy Interval

There was significantly more positive change talk expressed in the beginning than mid therapy interval ($t = -2.29$, $p = 0.03$), and in the beginning than end interval ($t = -3.39$, $p < 0.001$). There was no significant difference in the amount of positive change talk expressed in the mid and end therapy ($t = -1.65$, $p = 0.11$) intervals. Table 4 shows the average scores of 58.12, 38.43 and 36.57 episodes of negative change talk in the beginning, mid and end therapy intervals, respectively.

Positive Change Talk: Interaction of Interval and Outcome

There was no significant interaction effect between interval of therapy and outcome for positive change talk expressed by participants ($F = 0.33$, $p = 0.72$).

Negative Change Talk

Negative Change Talk: Main Effects for Therapy Phase and Outcome

Results of analyses for hypothesis 2b that proposed lower levels of negative change talk in the late phase for those with better outcomes are shown in Table 5. For the amount of negative change talk expressed by participants, no phase effect was found, indicating the amount of negative change talk expressed among phases of therapy was not significantly different ($F = 0.87$, $p = 0.43$). No outcome effect was found, indicating the amount of negative change talk expressed by those with good and poor outcomes was not significantly different ($F = .09$, $p = 0.77$).

Table 5.

Total negative change talk across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	23.18 (17.34)	19.82 (14.82)	21.14 (15.63)
	Middle	26.73 (20.54)	23.00 (13.46)	24.46 (16.34)
	Late	13.82 (8.13)	24.59 (21.94)	20.36 (18.40)
	Total Sample	22.55 (18.61)	32.94 (44.82)	

Within-subjects effect (Phase) F = 0.87, p = 0.43

Between-subjects effect (Outcome) F < 0.001, p = .077

Negative Change Talk: Main Effects for Therapy Interval and Outcome

Results of analyses for hypothesis 3b which proposed lower levels of negative change talk in the final interval of therapy for those with better treatment outcomes are shown in Table 6. For the amount of negative change talk expressed by participants, an interval effect was found, indicating a significant difference in the amount of negative change talk expressed among the three therapy intervals ($F = 16.21$, $p < 0.001$). No outcome effect was found, indicating the amount of negative change talk expressed by those with a good and those with a poor outcome was not significantly different ($F = 0.28$, $p = 0.60$).

Table 6.

Total negative change talk across beginning, mid, and end intervals of therapy for 51 participants with anorexia nervosa with good or poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n=15)	(n=36)	(n=51)
Interval	Beginning	25.07 (11.8)	30.28 (24.3)	28.75 (21.4) [a]
	Mid	25.80 (21.1)	24.03 (21.1)	24.55 (20.9) [a]
	End	13.23 (10.6)	17.14 (15.6)	16.0 (14.3) [b]
	Total Sample	32.94 (44.82)	22.55 (18.61)	

Within-subjects effect (Interval) $F = 8.10$, $p < 0.001$

Means followed by the same letter superscript are not significantly different ($p<0.05$, Fisher's pair-wise least significant difference test)

Between-subjects effect (Outcome) $F = 0.28$, $p = 0.60$

Negative Change Talk: Effects of Therapy Interval

There was significantly more negative change talk expressed in the beginning than end therapy interval and significantly more negative change talk in the mid than end therapy interval. There was no difference in the amount of change talk between the beginning and mid intervals. Table 6 shows the average scores were 28.75, 24.55 and 16.0 episodes of negative change talk for the beginning, mid and end therapy intervals, respectively.

Negative Change Talk: Interaction of Interval and Outcome

There was no significant interaction effect between interval of therapy and outcome for negative change talk expressed by participants (F = 0.05, p = 0.83)

Ratio of Positive to Negative Change Talk

Ratio of Positive to Negative Change Talk: Main Effects for Therapy Phase and Outcome

Results of analyses for hypothesis 2c which proposed expression of a higher ratio of positive to negative change talk in the late phase of therapy for those with better outcomes are shown in Table 7. For the ratio of positive to negative change talk expressed by participants, no phase effect was found, indicating the ratio of positive to negative change talk expressed among phases of therapy was not significantly different (F =2.35, p = 0.11). No outcome effect was found, indicating the ratio of positive to negative change talk expressed by those with good and poor outcomes was not significantly different (F = 1.35, p = 0.26).

Table 7.

Ratio of positive to negative change talk across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	.72 (.13)	.63 (.22)	.66 (.19)
	Middle	.70 (.23)	.62 (.27)	.65 (.25)
	Late	.77 (.12)	.72 (.18)	.74 (.16)
	Total Sample	.73 (.17)	.64 (.23)	

Within-subjects effect (Phase) F = 2.36, p = 0.11

Between-subjects effect (Outcome) F = 1.35, p = 0.26

Ratio of Positive to Negative Change Talk: Main Effects for Therapy Interval and Outcome

Results of analyses for hypothesis 3c that proposed expression of a higher ratio of positive to negative change talk in the final interval of therapy for those with better outcomes are shown in Table 8. For the ratio of positive to negative change talk expressed by participants, no interval effect was found, indicating the ratio of positive to negative change talk expressed among therapy intervals was not significantly different (F = 0.51, p = 0.60). No outcome effect was found, indicating the ratio of positive to negative change talk expressed by those with good and poor outcomes was not significantly different (F = 0.22, p = 0.65).

Table 8.

Ratio of positive to negative change talk across beginning, mid, and end intervals of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Interval	Beginning	.64 (.21)	.62 (.26)	.63 (.24)
	Mid	.71 (.32)	.63 (.33)	.66 (.32)
	End	.70 (.26)	.69 (.29)	.70 (.27)
	Total Sample	.69 (.18)	.65 (.22)	

Within-subjects effect (Interval) F = 0.51, p = 0.60
Between-subjects effect (Outcome) $F = 0.22$, $p = 0.65$

Ratio of Positive to Negative Change Talk: Main Effects for Change Talk Type and Outcome

Results of analyses for hypothesis 4 which proposed that commitment and ability language would be uttered more frequently than the other four language categories by individuals with a good outcome are shown in Table 9. For the ratio of positive to negative change talk expressed by participants, a main effect was found for the type of change talk, indicating a significant difference in the ratio of positive to negative change talk expressed among change talk types ($F = 16.21$, $p < 0.001$). No outcome effect was found, indicating the ratio of positive to negative change talk expressed by those with good and poor outcomes was not significantly different ($F < 0.001$, $p = 0.94$).

Table 9.

Ratio of positive to negative change talk across change talk type for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Change Talk Type	Ability	.38 (.32)	.44 (.39)	.42 (.37)[a]
	Commitment	.87 (29)	.88 (.28)	.88 (.28)
	Desire	.78 (.31)	.65 (.37)	.69 (.36)[a c]
	Need	.88 (.30)	.80(.35)	.83 (.33)
	Reasons	.46 (.35)	.43 (.36)	.44 (.36)[a c d e f]
	Taking Steps	.84 (.16)	.72 (.28)	.76 (.25)[a]
	Total Sample	.64 (.23)	.73 (.17)	

Within-subjects effect (Change Talk Type) F = 16.03, p <0.001

Between-subjects effect (Outcome) F <0.001, p = 0.94

Ratio of Positive to Negative Change Talk: Effects of Change Talk Type

For the ratio of positive to negative change talk expressed by participants for change talk type, there was significantly less ability change talk expressed than commitment (t = -9.88, p < 0.001), desire (t = -4.91, p < 0.001), need (t = -6.32, p < 0.001), and taking steps (t = 8.16, p < 0.001). Table 9 shows the average scores of 0.42, 0.88, 0.69, 0.83, and 0.76 for ability, commitment, desire, need, and taking steps, respectively. There was no significant difference in the amount of ability and reasons change talk (t < 0.001, p = 0.99), the average

scores were 0.42 and 0.44, respectively. There was significantly more commitment change talk expressed than desire ($t = 3.67$, $p < 0.001$), and reasons ($t = 2.89$, $p < 0.001$) change talk. Table 9 shows the average scores of 0.88, 0.69, and 0.44 for ratio of positive to negative change talk for commitment, desire, and reasons change talk, respectively. There was no significant difference in the amount of commitment and need change talk ($t = 2.05$, $p = 0.05$), the average scores were 0.88 and 0.83, respectively. There was significantly more desire change talk expressed than reasons ($t = 4.82$, $p < 0.001$). Table 9 shows the average scores of 0.69, and 0.44 for desire and need, respectively. There was no significant difference in the amount of desire and needs change talk ($t = -1.40$, $p = 0.17$), and taking steps change talk ($t = -1.91$, $p = 0.06$). The averages scores were 0.69, 0.83, and 0.76 for desire, need, and taking steps, respectively. There was significantly more needs change talk expressed than reasons ($t = 7.16$, $p < 0.001$), the average scores were 0.83 and 0.44 respectively. There was no significant difference in the amount of need and taking steps change talk ($t = 0.87$, $p = 0.40$), there averages scores were 0.83 and 0.76, respectively. There was significantly more taking steps change talk expressed than reasons ($t = -8.82$, $p < 0.001$), Table 9 shows the average scores were 0.76 and 0.44, respectively.

Ratio of Positive to Negative Change Talk: Interaction of Change Talk Type and Outcome

There was no significant interaction effect between change talk type and outcome for ratio of positive to negative change talk expressed by participants ($F = 1.03$, $p = 0.40$).

Ratio of Positive to Negative Change Talk: Main Effects for Therapy Type and Outcome

Results of analyses for hypothesis 5a which proposed to explore whether the type of psychotherapy a participant receives relates to the proportion of positive to negative change talk and outcome are shown in Table 10. For the ratio of positive to negative change talk expressed by participants, no main effects were found for therapy type, indicating no significant difference in the ratio of positive to negative change talk expressed among the three therapy types ($F = 0.38$, $p = 0.68$). No outcome effect was found, indicating the ratio of positive to negative change talk expressed by those with good and poor outcomes was not significantly different ($F = 0.92$, $p = 0.34$).

Table 10.

Ratio of positive to negative change talk across CBT, IPT, and SSCM therapies for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
Therapy Type	CBT (n = 12)	.70 (.19)	.67 (.14)	.68 (.15)
	IPT (n = 19)	.59 (.09)	.64 (.19)	.63 (.18)
	SSCM (n = 6)	.75 (.10)	.57 (.21)	.68 (.18)
	Total Sample (n = 37)	.70 (.13)	.70 (.13)	

Within-subjects effect (Therapy Type) $F = 0.38$, $p = 0.68$

Between-subjects effect (Outcome) $F = 0.92$, $p = 0.34$

Ratio of Positive to Negative Change Talk: Main Effects for Therapy Type, Phase of Therapy, and Outcome

Results of analyses for hypothesis 5b which proposed to explore whether the type of psychotherapy a participant receives relates to the proportion of positive to negative change talk, phase of therapy, and outcome are shown in Table 11. For the ratio of positive to negative change talk expressed by participants, no main effect of therapy type was found, indicating the ratio of positive to negative change talk expressed among the three therapy types was not significantly different (F = 1.20, p = 0.32). No outcome effect was found, indicating the ratio of positive to negative change talk expressed by those with good and poor outcomes was not significantly different (F = 3.60, p = 0.07). No phase of therapy effect was found, indicating the ratio of positive to negative change talk expressed among the three phases of therapy was not significantly different (F = 3.02, p = 0.06). There is no standard deviation for the SSCM poor outcome category for each phase as there was only a single participant in this category. Caution needs to be taken when interpreting these scores as they may not be representative of this population.

Interaction of Therapy Type, Phase of Therapy, and Outcome

There was no significant interaction effect between therapy type, phase of therapy, and outcome for ratio of positive to negative change talk expressed by participants (F = 0.03, p = 0.27).

Table 11.

Ratio of positive to negative change talk across phase of therapy and therapy type for 37 participants with anorexia nervosa with good and poor treatment outcomes

			Phase 1			Phase 2			Phase 3				
			Outcome $\bar{x}$ (SD)			Outcome $\bar{x}$ (SD)			Outcome $\bar{x}$ (SD)			Total Sample $\bar{x}$ (SD)	
		Total Sample	Total	Good	Poor	Total	Good	Poor	Total	Good	Poor	Good	Poor
Therapy Type	CBT (n=12)	.68 (.15)	.62 (.19)	.54 (.09)	.64 (.21)	.66 (.25)	.63 (.41)	.67 (.23)	.75 (.15)	.77 (.29)	.75 (.12)	.73 (.13)	.66 (.19)
	IPT (n=19)	.63 (.18)	.68 (.19)	.78 (.08)	.65 (.21)	.59 (.27)	.41 (.13)	.64 (.28)	.73 (.18)	.71 (.13)	.73 (.20)		
	SSCM (n=6)	.68 (.18)	.69 (.21)	.75 (.12)	.24	.73 (.25)	.81 (.13)	.17	.74 (.17)	.79 (.08)	.36		
		Total Sample $\bar{x}$ (SD)		.66 (.19)			.66 (.25)			.74 (.16)			

Within-subjects effect (Phase) $F = 3.02$, $p = 0.06$

Between-subjects effect (Therapy Type) $F = 1.20$, $p = 0.32$

Between-subjects effect (Outcome) $F = 3.60$, $p = 0.07$

Resistance to Change

Resistance to Change: Main Effects for Therapy Phase and Outcome

Results of analyses for hypothesis 6a that proposed lower resistance behaviour scores would be found in those with better outcomes are shown in Table 12. For the level of resistance to change expressed by participants, no phase effect was found, indicating the levels of resistance to change expressed among the three phases of therapy was not significantly different ($F < 0.001$, $p = 0.99$). No outcome effect was found, indicating the level of resistance to change expressed by those with good and poor outcomes was not significantly different ($F = 2.02$, $p = 0.17$).

Table 12.

Resistance to change across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	8.09 (5.8)	8.53 (8.5)	8.36 (5.7)
	Middle	5.64 (6.0)	11.35 (7.3)	9.11 (7.3)
	Late	6.73 (5.9)	10.00 (8.4)	8.71 (7.6)
	Total Sample	6.68 (5.57)	11.22 (8.82)	

Within-subjects effect (Phase) $F < 0.001$, $p = 0.99$

Between-subjects effect (Outcome) $F = 2.02$, $p = 0.17$

Readiness to Change

Readiness to Change: Main Effects for Phase of Therapy and Outcome

Results of analyses for hypothesis 6b which proposed higher readiness to change scores would be found in those with better outcomes are shown in Table 13. For the level of readiness to change expressed by participants, a phase effect was found, indicating a significant difference in levels of readiness to change expressed among the three phases of therapy ($F = 8.82$, $p < 0.001$). No outcome effect was found, indicating readiness to change expressed by those with good and poor outcomes was not significantly different ($F = 3.74$, $p = 0.60$).

Table 13.

Readiness to change across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	8.73 (6.36)	6.76 (5.34)	7.54 (5.73) [a]
	Middle	13.00 (5.04)	7.41 (4.85)	9.61 (5.57) [a]
	Late	13.00 (5.88)	10.00 (5.36)	11.18 (5.67) [b]
	Total Sample	11.16 (6.16)	7.31 (5.16)	

Within-subjects effect (Phase) $F = 8.82$, $p < 0.001$

Means followed by the same letter superscript are not significantly different ($p<0.05$, Fisher's pair-wise least significant difference test)

Between-subjects effect (Outcome) $F = 3.74$, $p = 0.60$

Readiness to Change: Effects of Phase of Therapy

Readiness was significantly lower in the early than the late phase of therapy (t = 3.56, p <0.001), and in the middle than late phase (t = -2.16, p = 0.04), while scores in the early and middle phases (t = 1.89, p = 0.07) were not different from one another. Table 13 shows the average scores of 7.54, 9.61 and 11.18 episodes of readiness to change in early, middle, and late phases of therapy, respectively.

Readiness to Change: Interaction of Phase and Outcome

There was no significant interaction effect between phase of therapy and outcome for levels of readiness to change expressed by participants (F = 2.12, p = 0.13).

Positive Process in Psychotherapy

Positive Process in Psychotherapy: Main Effects for Therapy Phase and Outcome

Results of analyses for hypothesis 7 which proposed higher scores on the PPPS would be found in those with better outcomes are shown in Table 14. For the PPPS, a phase effect was found, indicating a significant difference among the three phases of therapy (F = 5.66, p < 0.001). A significant outcome effect was found, indicating the level of positive process in psychotherapy for those with good and poor outcomes was significantly different (F = 5.32, p = 0.03).

Table 14.

Patient Psychotherapy Process Scale scores across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	37.18 (14.6)	25.41 (14.4)	30.04 (15.4)[a]
	Middle	42.73 (10.1)	31.47 (12.8)	35.89 (12.9)[ab]
	Late	42.45 (13.8)	35.35 (13.1)	38.14 (13.6)[b]
	Total Sample	38.91 (13.98)[c]	28.37 (13.61)[d]	

Within-subjects effect (Phase) $F = 5.66$, $p < 0.001$
Means followed by the same letter superscript are not significantly different ($p<0.05$, Fisher's pair-wise least significant difference test)

Between-subjects effect (Outcome) $F = 5.32$, $p = 0.03$

Positive Process in Psychotherapy: Effects of Phase of Therapy

Scores on the PPPS were significantly lower in the early phase of therapy than in the late phase ($t = -2.90$, $p < 0.001$), while scores in the early and middle ($t = -1.07$, $p < 0.29$), and middle and late ($t = -1.64$, $p < 0.11$) phases, were not significantly different from one another. Table 14 shows the PPPS scores of 30.04, 35.89 and 38.14 for early, middle, and late phases of therapy, respectively.

Positive Process in Psychotherapy: Effects of Outcome

There were significantly higher PPPS scores for those with good than poor therapy outcomes ($F = 5.32$, $p = 0.03$). Table 14 shows the average scores of 38.91 and 28.37 for those with good and poor outcomes, respectively.

Positive Process in Psychotherapy: Interaction of Phase and Outcome

There was no significant interaction effect between phase of therapy and outcome for the level of positive process in psychotherapy ($F = 0.59$, $p = 0.56$).

Readiness to Recover from Anorexia Nervosa

Readiness to Recover from Anorexia Nervosa: **Main Effects for Therapy, Phase, and Outcome**

Results of analyses for hypothesis 8 which proposed higher levels of readiness to recover from anorexia nervosa would be found for those with better outcomes are shown in Table 15. For the level of readiness to recover from anorexia nervosa, a phase effect was found, indicating a significant difference in the level of readiness to recover from anorexia nervosa among the three phases of therapy ($F = 6.17$, $p < 0.001$). A significant outcome effect was found, indicating the level of readiness to recover from anorexia nervosa for those with good and poor outcomes was significantly different ($F = 6.31$, $p = 0.02$).

Table 15.

Level of readiness to recover from anorexia nervosa across early, middle, and late phases of therapy for 51 participants with anorexia nervosa with good and poor treatment outcomes

		Outcome		Total Sample
		Good	Poor	
		(n = 15)	(n = 36)	(n = 51)
Phase	Early	25.00 (15.1)	14.82 (11.0)	18.82 (13.5)[a]
	Middle	37.27 (19.3)	18.88 (11.6)	26.11 (17.4)[b]
	Late	31.27 (18.3)	23.94 (13.9)	26.82 (15.9)[b]
	Total Sample	33.27 (19.68)[c]	17.06 (12.41)[d]	

Within-subjects effect (Phase) $F = 6.17$, $p < 0.001$
Means followed by the same letter superscript are not significantly different ($p<0.05$, Fisher's pair-wise least significant difference test)

Between-subjects effect (Outcome) $F = 6.31$, $p = 0.02$

Readiness to Recover from Anorexia Nervosa: Effects of Phase of Therapy

Readiness to recover from anorexia nervosa was significantly lower in the early phase of therapy than in either the middle ($t = -3.34$, $p < 0.001$) or late phases ($t = -2.96$, $p < 0.001$) of therapy, which were not different from one another ($t = -.042$, $p < 0.68$). Table 15 shows the average scores of 18.82, 26.11, and 26.82 for level of readiness to recover from anorexia nervosa in the early, middle, and late phases of therapy, respectively.

Readiness to Recover from Anorexia Nervosa: Effects of Outcome

There was a significantly higher level of readiness to recover from anorexia nervosa for those with good than poor therapy outcomes ($t = 10.99$, $p < 0.001$). Table 15 shows the average scores of 33.27 and 17.06 for those with good and poor outcomes, respectively.

Readiness to recover from anorexia nervosa: Interaction of Phase and Outcome

There was no significant interaction effect between phase of therapy and outcome for the level of readiness to recover from anorexia nervosa for participants (F = 2.42, p = 0.10).

Summary of Findings Related to Hypotheses

The main findings of the analyses are summarised below. The results do not support the hypotheses that participants with a good outcome would express more positive and less negative change talk over the phases of therapy than those with a poor outcome. Nor was the ratio of positive to negative change talk higher in those with a good outcome.

In partial support of the proposed hypotheses, when frequency of change talk was examined across the intervals of therapy, an interval effect was found indicating there was significantly more positive change talk expressed in the beginning than mid and end therapy intervals. In partial support of predictions, for the amount of negative change talk expressed by participants, an interval effect was found indicating there was significantly more negative change talk expressed in the beginning than end therapy interval and in the mid than end therapy interval. In contrast with predictions, the ratio of positive to negative change talk was not significantly higher in the final interval of therapy for those with good outcomes.

In partial support of proposed hypotheses, for the ratio of positive to negative change talk expressed by participants, a change talk type effect was found, indicating a significant difference in the ratio of positive to negative change talk expressed among change talk types. In summary and contrary to predictions, there was significantly less ability change talk expressed than commitment, desire, need, and taking steps change talk. Providing support for the proposed hypotheses, there was significantly more commitment change talk expressed than ability, desire, and reasons change talk. Other significant differences in the ratio of

positive to negative change talk were; more desire change talk was expressed than reasons change talk; more need change talk was expressed than reasons; and more taking steps change talk was expressed than reasons change talk.

For the ratio of positive to negative change talk expressed by participants, no effects of therapy type or outcome were found. When phase of therapy was also included as a between-subject factor, there were no significant findings for therapy effect, outcome effect, or phase of therapy effect.

Results from the other measures of motivation found that contrary to the proposed hypotheses, there were no main effects for phase or outcome for the level of resistance behaviours expressed. In partial support of proposed hypotheses, there was a significant phase effect for participant's level of readiness to change, with more readiness to change expressed in the middle and late phases of therapy than in the early phase. In partial support of proposed hypotheses, there were significant phase and outcome effects for the PPPS. There were higher levels of positive process in psychotherapy in the late than in the early phase of therapy, and participants with good outcomes expressed higher levels of positive process in psychotherapy than those with poor outcomes. In partial support of proposed hypotheses, there were significantly higher levels of readiness to recover from anorexia nervosa expressed in the middle and late phases of therapy than in the early phase, there was also a significant outcome effect. Individuals with good outcomes expressed higher levels of readiness to recover from anorexia nervosa than those with poor outcomes.

Discussion

The purpose of the present study was to explore and expand current understanding of the relationship between motivation to change and outcome in psychotherapy for individuals with anorexia nervosa. The study aimed to investigate the following primary areas: 1 Whether participants who expressed higher levels of positive, lower levels of negative, and a higher ratio of positive to negative change talk would have better outcomes in psychotherapy than those with lower levels of positive, higher levels of negative, and a lower ratio of positive to negative change talk; 2 Whether participants who expressed higher levels of positive, lower levels of negative, and a higher ratio of positive to negative change talk in the late phase of therapy would have better outcomes than those with lower levels of positive, higher levels of negative, and a lower ratio of positive to negative change talk; 3 Whether participants who expressed higher levels of positive, lower levels of negative, and a higher ratio of positive to negative change talk in the final interval of therapy would have better outcomes than those with lower levels of positive, higher levels of negative, and a lower ratio of positive to negative change talk; 4 Whether commitment and ability language would be uttered more frequently by participants with a good outcome than those with a poor outcome; 5 Whether change talk would vary by type of therapy across the phases of therapy for those with good and poor outcomes; 6 Whether participants with lower resistance to change and higher readiness to change scores would have better outcomes in psychotherapy than individuals with lower scores; 7 Whether participants who scored highly on the PPPS would have better outcomes in psychotherapy than those with lower scores; 8 Whether readiness to recover from anorexia nervosa (ANSOCQ score) were different in those with good and poor outcomes.

Overview

The characteristics of the sample are described and compared with other studies followed by discussion of the main research aims. Finally, limitations and implications of the present research are discussed.

Participant characteristics. The sample in the present study is different to some studies of individuals with anorexia nervosa as participants meeting both strict and lenient weight criteria were included. For the results of a longitudinal study comparing studies of individuals meeting full or partial eating disorder criteria, participant characteristics in the present study typically fell between the full and partial eating disorder groups for measures in their study including age of onset, BMI, Axis I and Axis II disorders (Crow, Agras, Halmi, Mitchell, & Kraemer, 2002). The present sample has slightly higher frequency of substance dependence and bulimia nervosa symptoms than samples in review of comorbidity in anorexia nervosa (Herzog, et al., 1992).

Relation between Participant Language in Psychotherapy and Outcome

Rejection of hypotheses 1a, 1b, and 1c – Participants with higher levels of positive change talk, lower levels of negative change talk, and a higher ratio of positive to negative change talk would have better outcomes in psychotherapy. Results from the current analyses do not support the hypotheses that participants who expressed higher levels of positive change talk and lower levels of negative change talk (as measured by the MISC version 2.0) would have better treatment outcomes than those with lower levels of positive change talk and higher levels of negative change talk. The total amount of positive and negative change talk expressed by participants with good and poor treatment outcomes was not significantly different. Nor was the ratio of positive to negative change talk higher for those with a good

outcome than for those with a poor outcome. There was a trend for participants with a good outcome to express more positive and less negative change talk than those who had a poor outcome, however this was not statistically significant.

Results from the present study are not consistent with previous studies of individuals with other disorders or at high risk for health problems. A number of studies of individuals with drinking problems where expressions of change talk were related to improved drinking outcomes and negative change talk to worse outcomes differed from the present study (Amrhein, et al., 2004; Bertholet, et al., 2010; Miller, et al., 1993). Specifically, Moyers and colleagues (2007) found that the frequency of change talk in motivational enhancement therapy expressed by individuals with alcohol use problems predicted future drinking behaviour. The type of disorder studied is a clear difference between the samples which may at least in part explain the differing change talk patterns. The lack of statistically significant findings in the present study relating to this hypothesis may be due to therapists in the clinical trial focusing on adhering to the allocated therapy condition as the purpose was not to deliver motivational enhancement therapy. A similar explanation may be offered for the contrast between the present study and studies that found expressions of change talk by substance users related to outcome (Apodaca & Longabaugh, 2009; Strang & McCambridge, 2004). Total positive and negative change talk findings in the present study were also contrary to health behaviour studies of weight loss programs and safer sex in HIV-negative drug users that found a relation between participant change talk and outcome (Befort, et al., 2008; Carey, et al., 1997; Mausbach, et al., 2009). It is possible that the egosyntonic nature of anorexia nervosa may result in fewer expressions of positive change talk, even in those with good outcomes, than in samples of many other disorders. Lack of research about motivation

to change for individuals with anorexia nervosa limits the opportunity for comparison of the present results with similar samples.

Non-significant results for total amount of positive and negative change talk expressed by participants with good and poor outcomes may be explained by Prochaska and colleagues' spiral model from the transtheoretical model of change (1992). These researchers propose that most individuals cycle through contemplation, preparation, and action stages more than once. For individuals with anorexia nervosa, cycling back to precontemplation may occur more frequently given the egosyntonic nature of the disorder (Blake, et al., 1997). In the present study, participants are likely to have been cycling through the stages of change at different rates during the course of therapy. Hence, when expressions of total positive and total negative change talk were averaged across the course of therapy, episodes of positive change talk did not occur more in those with good outcomes. However, when therapy was divided into within session intervals and therapy phases, it was clear that those with good outcomes expressed significantly more positive change talk than those with poor outcome at particular points in time. Interval and phase differences in outcome groups may be related to different patterns of cycling through the stages of change. Therapy phase and therapy session interval effects for good and poor outcome are discussed in more detail below.

It is possible that the concept of self-efficacy to recover from illness is less important for individuals with anorexia nervosa than for those with some other disorders such as substance dependence. An individual with anorexia nervosa may have self-efficacy to recover, however may not recognise the importance of recovering from the disorder, therefore will have low readiness to change (Treasure & Schmidt, 2001; Rollnick et al., 1999). An individual's readiness to change is thought to vary and current level of readiness is likely to be expressed through language use during therapy (Treasure & Schmidt, 2001).

Coding for only total change talk across therapy may be too crude a measure to analyse differences between those with good and poor therapy outcomes.

- The overall impact of the role of personality variables on expressions of motivation to change in the present study is unknown. The present study sample was consistent with previous findings of high prevalence rates of personality disorders in individuals with anorexia nervosa (Diaz-Marsa, et al., 2000; O'Brien & Vincent, 2003; Skodol, et al., 1993). Personality variables relating to ability to relate interpersonally are known to impact on therapeutic alliance and outcome (Binder & Strupp, 1997). The presence of traits such as suspiciousness, hostility, and low cooperativeness may influence motivation to change and therefore the amount of positive and negative change talk expressed in therapy. Potentially, personality psychopathology in some individuals may have made developing a strong therapeutic alliance difficult, thus indirectly reducing potential for expressions of motivation to change in therapy. For example, individuals with low levels of cooperativeness may have low motivation to change and therefore would utter fewer episodes of positive change talk during therapy sessions due to the presence of that personality trait. Fewer episodes of positive change talk may result in fewer opportunities for the therapist to reinforce expressions of motivation to change.

When interpreting the pattern of change talk expressed by participants with good and poor treatment outcomes, it is important to consider that the course of anorexia nervosa is variable and unpredictable (Pike, 1998). In particular, characteristics of individuals with anorexia nervosa such as resistance to treatment and denial of illness, mean that improving motivation in these individuals is difficult (Vansteenkiste, et al., 2005). The lack of a significant relationship between the total amount of positive and negative change talk

expressed by participants with good and poor treatment outcomes is consistent with the unpredictable nature of the disorder and characteristics of individuals with anorexia nervosa. Previous research found that greater than a quarter of the ratio of client outcome was accounted for by the quality of the therapeutic alliance (Lambert & Barley, 2001), and that therapist attitudes and behaviours have a positive impact on the outcome of therapy (Orlinsky, et al., 1994). In the present study, the difficult nature of treating individuals with anorexia nervosa may have influenced the quality of the therapeutic alliance in some cases and therefore also influenced the amount of change talk expressed.

Relation between Amount of Change talk Expressed Over the Phases of Therapy and Treatment Outcome

Rejection of hypotheses 2a, 2b, and 2c – Higher levels of positive change talk and lower levels of negative change talk, and a higher ratio of positive to negative change talk in the late phase of therapy would relate to better treatment outcomes. For each phase of therapy, there was no significant difference in the amount of positive or negative, or the ratio of positive to negative change talk expressed by participants. There was no main effect for outcome.

Results from the present study do not provide further support for existing studies of the relation between change talk, phase of therapy, and therapeutic outcome. Armhein and colleagues found commitment change talk uttered in the late phase of therapy related to outcome (2003). Similarly, higher levels of commitment language in the late phase of therapy were found to predict outcome in individuals with alcohol dependence (Campbell, et al., 2010). There are plausible explanations as to why the present results differ in some respects. First, the target behaviour change was different, as the participants in the present study had

anorexia nervosa while participants in previous research had drug or alcohol dependence. Although resistance to change is common to both alcohol dependence and anorexia nervosa, the egosyntonic nature of anorexia nervosa may lead to lower levels of change talk expression in the late phase of therapy than in individuals with drug or alcohol dependence. Secondly, therapeutic outcome goals differed across studies. Armhein and colleagues (2003) aimed for an outcome of abstinence from drug use, Campbell and colleagues (2010) for a reduction in drinking, whereas with anorexia nervosa, the goal is to reduce dietary restriction by engaging in increased eating. Finally, the previous studies were based on motivational interviewing/motivational enhancement therapy, while the present study was a clinical trial of CBT, IPT, and SSCM for anorexia nervosa. The differing foci of the therapies is likely to have produced different patterns of change talk across the course of therapy.

Self determination theory involves establishing whether behaviour is intrinsic or extrinsic and whether the individual perceives him or herself as the agent of his or her own actions (Deci & Ryan, 1985). Results of the present study could be viewed as consistent with self determination theory whereby participants with good outcomes did not express more positive change talk which may have been due to their behaviour being driven extrinsically (rather than intrinsically) and they may have perceived factors in their external environment as agents of change rather than themselves. The similar levels of change talk expressed by those with good and poor outcomes may reflect that a longer period psychotherapy would be necessary to observe a shift from extrinsic to intrinsically driven motivation.

Relation of Amount of Change talk Expressed during Intervals within Therapy Sessions and Treatment Outcome

Partial acceptance of hypotheses 3a, 3b, and 3c – Higher levels of positive change talk, lower levels of negative change talk, and a higher ratio of positive to negative change

talk in the final interval of therapy would relate to better treatment outcomes. Results partially support hypothesis 3b as there was significantly less negative change talk uttered in the end therapy interval than the beginning and mid intervals, however there was no main effect for outcome. Results did not support hypothesis 3a as more positive change talk was uttered in the beginning than mid and end intervals within therapy sessions, and there was no main effect for outcome. Similarly, hypothesis 3c was not supported as the ratio of positive to negative change talk was not significantly different in each of the three intervals for participants with good and poor outcomes. Although the hypotheses were not fully supported, the results indicated that the amount of negative change talk expressed across the therapy session was lowest in the end interval, however this did not vary for those with good and poor outcomes.

The current research does not provide further support for Campbell and colleagues' (2010) finding of stronger ability change talk during the end interval within psychotherapy sessions for individuals with a good outcome. The differing results may at least in part be explained by a notable difference in research questions between the present study and Campbell et al's study. In their study, ability change talk was found to be stronger in the end therapy interval while in the present study there was less negative change talk expressed in the end interval. In the present study the six change talk types were not separately analysed within therapy intervals due to the modest sample size. A lack of research about motivation to change in the eating disorders prevents comparison of results for this question with a similar sample.

The finding in the present study that participants expressed less negative change talk in the end therapy interval, yet over the entire course of therapy expressed the same amount of change talk is inconsistent with motivation theory. In the current study motivation to

change varies across therapy for individuals with both good and poor outcomes, and at certain points less negative change talk was expressed by those with both good and poor outcomes. The ambivalence and variation in readiness to change may be explained by individuals with anorexia nervosa cycling through the stages of change frequently (Blake, et al., 1997). In the present study, the lack of difference in expressions of change talk between those with good and poor outcomes at particular therapy intervals may reflect the fact of participants cycling through the stages of change at different rates during the course of therapy, regardless of treatment outcome.

The trend for less negative change talk to be uttered by participants in the end therapy interval may link with a larger body of research highlighting the importance of the relationship between a positive patient outcome and therapist interpersonal skills (Moyers, et al., 2005). Significantly less negative change talk as therapy sessions progressed may indicate improvement of the therapeutic alliance within each therapy session. This supports Moyers and colleagues' (2005) research regarding therapist interpersonal skills including cooperation, disclosure, and affect expression and their relation to participation in therapy. Negative change talk may be expressed at lower levels when the alliance between the therapist and patient has had time to develop in each session. This pattern of change talk expression may be related to other factors such as session structure, where participant use of language may be related to temporal order of particular therapy tasks during the session. For example, in SSCM, the therapist typically structures the session with normalised eating reviewed early in the session, and supportive psychotherapy for other life issues occurring later in the session.

The finding that expression of lower levels of negative change talk by participants with both good and poor outcomes in the end interval of therapy sessions is consistent with Crisp's (1991) finding that individuals with anorexia nervosa may suppress the underlying

reasons for their behaviours or may be unable to identify accurately their internal experiences. Regardless of treatment outcome, participants may engage in less avoidance of the reasons for their eating disorder in the end interval of therapy than the beginning and mid intervals.

Relation between Type of Participant Change Talk in Psychotherapy and Outcome

- Results provide partial support for hypothesis 4a – commitment and ability language would be uttered more frequently by those with good outcomes than by those with poor outcomes. Results provide partial support for hypothesis 4a as commitment language was uttered more frequently than desire and reasons change talk by participants with good and poor outcomes. However, ability language was not uttered more frequently than the other change talk types by individuals with good than poor outcomes.
- The present research is not consistent with Armhein and colleagues' (2003) finding that commitment and ability change talk were stronger predictors of outcome than the other change talk types. Possible explanations for these discrepant results include the differences in study design between Armhein and colleagues and the present study. Their study involved analysis of change talk over the intervals within a single session of motivational enhancement therapy for individuals with drug dependence, while the present study analysed change talk over the intervals within a 20 session course of psychotherapy for individuals with anorexia nervosa. Additionally, in Armhein and colleagues' study, feedback was provided in the interval in which significant differences in commitment change talk were found. In the present study feedback was provided according to the therapy model to which the individual had been allocated and the timing of feedback varied in each therapy type and as appropriate to the needs of the individual.

- In contrast with Campbell and colleagues (2010) who found ability change talk during the end interval within therapy sessions to predict outcome for individuals with alcohol dependence, expression of ability change talk was not related to outcome in the present study. Again, it must be acknowledged that study designs were not the same, which leads to a number of possible explanations for divergent results. First, as mentioned above, the target behaviour change was different. Second, Campbell and colleagues' (2010) study included assessment feedback in addition to motivational enhancement therapy sessions which was not included in their change talk coding analyses. The assessment feedback in their study may have contributed to higher or different expressions of motivation which may have been uttered as ability change talk.

Lack of significant ability and commitment change talk in the present study may relate to personality traits of individuals with anorexia nervosa. As mentioned above, common traits characterising the disorder include; perfectionism, obsessive-compulsiveness, neuroticism, negative emotionality, harm avoidance, low self-directedness, and low cooperativeness (Cassin & von Ranson, 2005). It is plausible that individuals with such personality traits may not express significantly higher amounts of commitment and ability language despite a good treatment outcome, as personality traits are typically enduring.

- **Relation between Type of Psychotherapy, Phase of Psychotherapy, Outcome, and Amount of Change talk**

Exploratory hypothesis 5a examined which type of therapy and outcome would have a higher proportion of positive to negative change talk? Hypothesis 5b explored which type of therapy, therapy phase, and outcome would lead to a higher proportion of positive to negative change talk? No statistically significant differences were found for hypothesis 5a in the proportion of positive to negative change talk expressed between therapy types in those with

good and poor outcomes. There was no significant main effect for therapy type, indicating that the proportion of positive to negative change talk was similar across CBT, IPT, and SSCM. Likewise, there was no significant effect for outcome, indicating the proportion of positive to negative change talk was similar for individuals with good and poor outcomes. There were only six participants in the SSCM group which may have limited the validity of this set of analyses.

Findings relating to hypothesis 5b revealed no statistically significant differences in the proportion of positive to negative change talk expressed in the three therapy types for those with good and poor outcomes over early, middle, and late phases of therapy. As there was only a single participant in the SSCM poor outcome category for each phase, these scores may not be representative of this population, making it difficult to draw valid conclusions regarding a therapy phase effect.

Notwithstanding the sample size limitations, findings from exploratory hypotheses 5a and 5b may indicate that the type of therapy is not important when considering the proportion of positive to negative change talk expressed by individuals with good and poor outcomes, regardless of whether change talk is analysed over therapy phase. Further investigations are required to determine whether therapy type is important in the study of motivation to change for individuals with anorexia nervosa.

Relation between the Four Process Categories of Client Resistance Behaviour Scale and Readiness to Change Scale (ORS) Scores and Outcome

Results from the current study indicate rejection of hypothesis 6a – participants with lower resistance behaviour scores would have better outcomes in across the phases of therapy than individuals with lower scores. For each phase of therapy, level of resistance behaviour as

measured by the Four Process Categories of Client Resistance Scale was not significantly different in participants with good and poor treatment outcomes. Contrary to the proposed hypotheses, individuals with a good outcome did not have significantly lower resistance to change scores than those with a poor outcome.

There are no similar studies of individuals with anorexia nervosa with which to compare results for hypothesis 6a. Results from the current study can be contextualized alongside existing theory which suggests resistance to treatment and denial of illness tend to be clinically interpreted as attempts to defend the egosyntonic nature of anorexia nervosa (Vitousek, et al., 1998).

The lack of support for this hypothesis may relate to the consistent finding that individuals with anorexia nervosa tend to suppress the underlying reasons for their behaviours (Crisp, et al., 1991). Thus, it is possible that participants with poor outcomes tended to suppress talking about resistant behaviours and their reasons for these in psychotherapy, therefore frequency of resistance behaviours were not significantly different between those with good and poor outcomes.

The presence of personality traits common to individuals with anorexia nervosa may have influenced the way resistance to change was expressed in therapy. First, this may have influenced therapist-patient interactions, and therefore the quality of resistance behaviours expressed. Second, the Four Process Categories of Client Resistance Scale may not have the sensitivity to measure some of the more subtle expressions of resistance of individuals with anorexia nervosa. For example, five of the 17 items of the scale measure direct resistance behaviours such as directly challenging the therapist, direct hostility, talking over the therapist, and cutting off the therapist. These items seldom required rating as it was very rare

for participants with either good or poor outcomes to engage in overt resistance behaviour. Third, it is possible that some of the more subtle expressions of resistance such as nonverbal cues were not captured through audio recordings of therapy sessions. There may have been a difference in the frequency of nonverbal resistance cues between those with good and poor outcomes. Observation of audio-visually recorded therapy sessions may offer insight into this possibility, although comes attached with other issues relating to confidentiality and potentially modified behaviour due to the presence of a video camera.

Results of the present study partially support hypothesis 6b – participants with higher readiness to change scores would have better outcomes in psychotherapy than those with lower scores. There was a significant phase effect, with participants in the late phase of therapy expressing higher levels of readiness to change than in the early and middle phases. There was no main effect for outcome.

A significant difference in the level of readiness to change in the late phase of therapy is consistent with Miller and Rollnick's (2002) theory that readiness to change develops over time and ambivalence about change persists even when the individual has begun to make changes. The absence of difference between outcome groups may represent the period of time required for readiness to change to develop. Absence of difference between outcome groups may reflect ambivalence to change despite those with good outcomes engaging in taking steps towards change.

Relation between Patient Psychotherapy Process Scale (PPPS) Scores and Outcome

Results of the current study support partial acceptance of hypothesis 7 – participants with good outcomes scored more highly on the PPPS across the phases of psychotherapy than those with lower scores. Analyses of participants' scores for the PPPS indicated there were

significantly higher levels of positive process in the late phase of therapy than in the early phase. There was an outcome effect indicating higher levels of positive process in therapy for those with good than poor treatment outcomes. Results from the present study support existing research that found the PPPS captured psychotherapy process variables that related to outcome for individuals with major depression (Carter, et al., 2012). There may be differences in the typical psychotherapeutic processes that occur in these two populations which may help to explain why there was no significant difference between positive psychotherapy processes during early and middle, and middle and late phases of therapy. Specific personality characteristics known to impact negatively on interpersonal functioning and therefore to have the potential to adversely affect psychotherapy in individuals with anorexia nervosa include low cooperativeness (Hersoug, et al., 2001; Klump, et al., 2000; Muran, et al., 1995). This may partly explain why positive process began to develop late in the course of psychotherapy.

Results for hypothesis 7 are consistent with the larger body of previous research examining therapeutic process and outcome. These results are consistent with the outcome of Safran and Muran's (1995) meta-analytic study of therapeutic alliance and outcome of psychotherapy. Lambert and Barley (2001) concluded from the results of their meta-analysis of therapeutic alliance and outcome that over a quarter of an individuals' outcome was accounted for by the quality of the therapeutic alliance, which is consistent with results of the present study.

The main effect for outcome in the present study is not consistent with the only other study of therapeutic alliance in the psychotherapy of individuals with eating disorders by Waller and colleagues (2012) which found no relation between therapeutic alliance and therapy outcome. The major difference in study designs was that Waller and colleagues did

not use the PPPS to measure positive process in therapy, therefore it is difficult to compare results. Further research is required to investigate hypothesis 7.

Relation between Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) Scores and Outcome

Current study results support partial acceptance of hypothesis 8 – higher levels of readiness to recover from anorexia nervosa (as measured by the ANSOCQ) would relate to better outcomes across the phases of psychotherapy. Participants had significantly higher levels of readiness to recover from anorexia nervosa in the middle and late phases of therapy, and participants with good outcomes expressed higher levels of readiness to recover than those with poor outcomes.

Significantly higher readiness to recover scores in the middle and late phases than in the early phase of therapy may indicate that the ANSOCQ is a more sensitive measure of readiness to change for individuals with anorexia nervosa than the ORS readiness to change measure. The ANSOCQ was designed specifically to measure readiness to recover in individuals with anorexia nervosa, while the ORS was designed for a wide range of problems.

The significant findings for hypothesis 8 provide support for existing theory regarding the stages of change whereby an individual's self-efficacy for target behaviours (in this case recovery from anorexia nervosa) is thought to be predictive of whether there is a shift in the decisional balance, thus progression from one stage to the next (Prochaska & DiClemente, 1986). Individuals in the present study who had a good outcome experienced more progression through the stages of change, and the present results indicate that stated readiness was particularly important in the middle and late phases of therapy.

The present study also provides support for Rieger and colleagues' (2002) theory that proposed movement into the action stage requires that the cons of the eating disorder outweigh the pros, and level of self-efficacy to recover is adequate for the individual to attempt to engage in change (Rieger, et al., 2002). The results of the present study are also consistent with Ametller and colleagues' (2005) study of the relation of readiness to recover and hospital admission in adolescents with anorexia nervosa, which found lower scores on the ANSOCQ predicted hospital admission.

Implications of the Present Study

The current study found that positive change talk was expressed significantly more frequently in the beginning than mid and end therapy intervals and that negative change talk was expressed significantly more frequently in the beginning and mid intervals than in the end interval. Taken together, there was more positive and negative change talk expressed in the first two intervals of the therapy session than in the end interval. Miller and Rollnick (2002) theorised that change talk represents the positive and negative factors of change; and optimism, ambivalence, or resistance to behaviour change. An implication of results of the present study is that the higher frequency of positive and negative change talk in the beginning and mid intervals may reflect participants' expressions towards and away from change, thus it may be particularly important for the therapist to attend to change language in the beginning and mid intervals of the therapy session. Listening carefully to the individual's use of language and responding sensitively during these intervals may help to boost the patient's level of motivation to change and contribute to positive change processes.

A further implication of the present study is that although change expression varied according to change talk type, the pattern was not significantly different in those with good and poor treatment outcomes. Therefore it may be best to attend to expressions of motivation

other than specific change talk types in individuals with anorexia nervosa engaging in psychotherapy.

The expression of readiness to change (ORS) was higher in the middle than early and late than middle phases of therapy. Similarly, there were significantly higher expressions of readiness to recover from anorexia nervosa (ANSOCQ) in the middle and late phases of therapy than in the early phase, and individuals with good outcomes expressed higher levels of readiness to recover from anorexia nervosa than those with poor outcomes. An implication of these findings is that therapy tasks could be planned to suit the individual's level of readiness to change. It may be sensible to progressively increase the difficulty of therapeutic activities throughout the course of psychotherapy to match the individual's level of readiness to change. Paying attention to the individual's level of readiness to change may provide insight as to the level of self-efficacy to recover and as to whether there is an impending shift in decisional balance (Prochaska & DiClemente, 1986; Rieger, et al., 2002). For readiness to recover from anorexia nervosa and therapy outcome, it is likely to be important to monitor the individual's current behaviour or attitude towards the symptoms of anorexia nervosa to ascertain whether they are doing well in therapy. Assessing specific symptoms of the disorder may provide more accurate information about therapy outcome than a more generalised readiness to change measure.

For positive process in psychotherapy, levels were higher in the late than in the early phase of therapy, and participants with good outcomes expressed higher levels than those with poor outcomes. The individual's collaboration and engagement are thought to be essential for the development of change talk – an important precursor for behavioural change (Amrhein, et al., 2003; Miller & Rollnick, 2002). The implications of this finding are first to match therapy tasks to the current level of positive process, which may improve towards the

end of therapy. Second, positive process is likely to be higher for individuals who are doing well in therapy, therefore continuously maintaining an awareness of positive processes would allow for alternative courses of action to be taken if positive process is low, thus increasing the chances of a good therapy outcome.

Strengths and Limitations of the Current Study

A major strength of the present study is its focus on the relation between motivation to change and outcome for individuals with anorexia nervosa. The published research is surprisingly sparse in the area of motivation to change and outcome for this population, and there is vast scope for further exploration of the area. A further strength of the present study is that the participants are from the New Zealand population, which is less well studied than some of the other developed nations such as North America.

Although sample size of the present study is moderate, at the time of conducting the clinical trial, it was the second largest random controlled trial for adults with anorexia nervosa. Another strength is that sessions were rated from all available participants in the trial, thereby increasing the representativeness of results to the anorexia nervosa population. Ratings were made over the course of therapy, reflecting that the constructs measured may change. Observer ratings were used to rate motivation to change in the present study which is often preferable and more accurate than self-reports. Ratings of the Four Process Categories of Client Resistance Behaviour and Signs of Readiness to Change Scales, PPPS, and ANSOCQ were made after hearing the full therapy session, enabling the rater to obtain a sound understanding of the session prior to making ratings. Listening to recordings of therapy sessions allowed the rater to pause and/or repeat parts of the session when needed, therefore increasing the accuracy of ratings. A further strength is that verbatim transcripts were available for 39% of sessions, improving the precision of observer ratings.

It is important to consider how factors such as sample size and study design may have influenced results obtained in the present study.

Study design. The sample size of the present study of 53 participants is modest which may have reduced the power to identify differences between the two treatment outcome groups. Due to the egosyntonic nature of anorexia nervosa it is particularly difficult to recruit and retain participants, and this is reflected in the small number of clinical trials studying individuals with anorexia nervosa (Bergh, Brodin, Lindberg, & Sodersten, 2002; Crisp, et al., 1991; Gowers et al., 2010; Schmidt, et al., 2012). A larger sample size may have produced significant differences in the total amount of positive and negative change talk, the frequency of resistance to change, and positive process in psychotherapy between individuals with good and poor treatment outcomes, each of which comparison showed a trend towards differences among groups.

A further limitation is the focus of psychotherapy in the clinical trial. The present study involved observer ratings of motivation and readiness to change in CBT, IPT, and SSCM psychotherapy sessions. Therapy sessions did not formally incorporate motivational interviewing techniques as described by Miller and colleagues (2003). Although therapists may have naturally used motivational techniques at times during psychotherapy, adhering to the type of therapy to which each participant was randomised was the primary objective. Adherence to therapy in the clinical trial was found to be very satisfactory and each of the three psychotherapies were easily differentiated by raters who were not aware of therapy type (McIntosh, Jordan, McKenzie, et al., 2005). A motivational interviewing focus in psychotherapy may have produced greater levels of participant change talk and therefore potentially significant results for amount of change talk expressed in individuals with good and poor treatment outcomes.

Treatment length of 20 sessions may have influenced treatment outcome in the clinical trial given the challenges associated with recovery from anorexia nervosa. Longer treatment duration may have led to a higher proportion of the sample meeting criteria for recovery from illness during the course of treatment, and may also have resulted in higher total levels of positive change talk and lower levels of negative change talk in participants with good outcomes in the present study.

Reliability and validity of the coding using the MISC 2.0 and other rating scales. The results of the present study rely on how accurately the coding tool captured what it was intended to measure, and how precisely the raters were able adhere to the measure. A modified version of the MISC 2.0 was the principal tool used to measure change talk in the present study. There are limitations associated with such tools including that the breadth of information measured is constrained by the measures of the tool (Moyers, et al., 2005) and lack of data regarding validity and reliability of the MISC 2.0 (Madson & Campbell, 2006). The strong emphasis on the four core principles of motivational interviewing may result in opportunities for reinforcement of patient statements of commitment being missed (Moyers, et al., 2005). Given that the rater in the present study was coding for only behaviours included in the chosen rating scales, it is possible that participants may have expressed motivation to change and resistance to change that were not included in the range of target behaviours of these rating scales.

Co-rating was not included as part of the present thesis therefore no measure of interrater reliability is available. There are two published studies that report reliability scores for the six types of change talk of the MISC 2.0, both of which found obtaining satisfactory reliability for coding of change talk by the definitions in the manual challenging to achieve (Amrhein, et al., 2003; Campbell, et al., 2010). However, ongoing training and monitoring

occurred for the duration of rating, contributing to rating accuracy. Interrater reliability data for this study will be published in the future.

There are also potential biases in the coding of data. Training of the rater was not by the original authors of the MISC 2.0. The MISC 2.0 manual was followed closely in the training and coding process, however decisions made about how to code utterances were dependent on interpretation of the manual and consultation with investigators from the clinical trial who were experienced in coding with the MISC 2.0. Although the manual was comprehensive, the process of coding was cognitively demanding, and with the additional task of rating the other three rating scales simultaneously, there is possibility for error and subjective interpretation.

A further source of bias may have occurred due to the rater not being blind to the hypotheses of the study. For example, the rater may have been more likely to expect that the total amount of positive change talk would be higher in therapy sessions that sounded like the participant may have been from the good outcome group. However, the occurrence of such bias is less likely given that there were a number of non-significant findings in the present study that did not support some of the hypotheses. A solution to this potential bias would be the use independent raters who were blind to hypotheses of the study.

Therapy transcripts were available for 58 of the 148 psychotherapy sessions. It is possible that accuracy of rating varied between sessions that were rated with both an audio recording and transcript, and those were rated exclusively from an audio recording.

Another possible limitation of this study is the choice of rating scales employed. The ORS and PPPS were designed for use with individuals who are engaging in psychotherapy with a range of problems. However, the characteristics of individuals with anorexia nervosa

may require more specialised measures that were designed specifically for that population. The consistency of results from the ORS Readiness to Change subscale and the ANSOCQ indicate that the ORS Readiness subscale was appropriate. However, it is uncertain whether the ORS Resistance to Change subscale and the PPPS satisfactorily measured what they were intended to measure in the present study.

Statistical analyses. Statistical analyses used in the present study do not permit causation to be assumed. The idea that an individual's speech causes behaviour change is thought to be too crude (Miller, et al., 2004). Instead it has been proposed that a third variable is likely to direct both an individual's use of language and to change behaviour (Miller, et al., 2004). Irrespective of whether use of change talk indicates a third variable is happening or is the cause of behaviour change, identifying the occurrence of change talk is a means for predicting if psychotherapy is assisting behaviour change. Following this, decisions regarding the best course for further treatment may be made.

Repeated measures ANOVAs were chosen to examine the dependent variables across therapy phase and therapy intervals. A consequence of employing repeated measures ANOVAs is that only participants who completed all three phases of therapy were able to be included in these analyses. This had the effect of reducing the sample size for those analyses as well as eliminating individuals who did not complete all three phases of treatment. Given the high therapy drop-out rate for individuals with anorexia nervosa, it would be useful to include data of individuals who completed only the first or second phases of psychotherapy.

Summary

The current study has provided support for the relation between expressions of motivation to change and therapeutic outcome in individuals with anorexia. Previously this

link had been established in the areas of behaviour change including alcohol and drug dependence, safer sex in non-HIV drug users, and in weight loss programs (Amrhein, et al., 2004; Apodaca & Longabaugh, 2009; Bertholet, et al., 2010; Carey, et al., 1997; Mausbach, et al., 2009; Miller, et al., 1993; Strang & McCambridge, 2004). Given the notable differences between the results of the present study and previous research examining expressions of motivation to change in the phases and intervals of therapy, further research on samples with anorexia nervosa is required to extend the knowledge regarding this population.

The current study identified the importance of the differences in readiness to change behaviours and readiness to recover from anorexia nervosa for individuals with good and poor treatment outcomes. Future research may focus on exploring this link further in individuals with anorexia nervosa.

Appendix A

Behaviour Counts Coding Form

ID_____ Session_____ Session length _____/3 = _____ : Interval length

Coder: _____ Date _____ Page 1/1

1st Interval starts at: 0000.	
2nd Interval starts at:	Starting verbage =
3rd Interval starts at:	Starting verbage =

Four Process Categories of Client Resistance Behaviour

ID_____ Session _____ Rater _____ Date: _____

Rate on scale of 0-4. The rating scale is as follows:

0 = not at all	1 = a little	2 = some	3 = a lot	4 = a great deal

1. Arguing. The client contests the accuracy, expertise, or integrity of the counsellor.

1a. Challenging. The client directly challenges the accuracy of what the counsellor has said

1b. Discounting. The client questions the counsellor's personal authority and expertise.

1c. Hostility. The client expresses direct hostility toward the counsellor.

2. Interrupting. The client breaks into and questions the counsellor in a defensive manner.

2a. Talking over. The client speaks while the counsellor is still talking, without waiting for an appropriate pause or silence.

2b. Cutting off. The client breaks in with words obviously intended to cut the counsellor off.

3. Negating. The client expresses an unwillingness to recognise problems, cooperate, accept responsibility, or take advice.

3a. Blaming. The client blames other people for problems.

3b. Disagreeing. The client disagrees with suggestions that are made.

3c. Excusing. The client makes excuses for his or her own behaviour.

3d. Claiming Impunity. The client claims that he or she is not in any danger.

3e. Minimising. The client suggests the counsellor is exaggerating risks or dangers, and that "it really isn't so bad".

3f. Pessimism. The client makes general statements about self or others that are pessimistic, defeatist, or negativistic in tone.

3g. Reluctance. The client expresses reservations and reluctance about information given.

3h. Unwillingness to Change. The client expresses lack of desire or unwillingness to change, or an intention not to change.

4. Ignoring. The client shows evidence of ignoring or not following the counsellor.

4a. Inattention. The client's response indicates that he or she has not been following or attending to the counsellor.

4b. Nonanswer. In answering a counsellor's query, the client gives a response that is not an answer to the question.

4c. No Response. The client gives no audible or nonverbal reply to the counsellor's query.

4d. Sidetracking. The client changes the direction of the conversation that the counsellor has been pursuing.

Signs of Readiness for Change

Rate on scale of 0-4. The rating scale is as follows:

0 = not at all	1 = a little	2 = some	3 = a lot	4 = a great deal

1. Absence of resistance. The wind seems to have gone out of the sails of resistance. Dissonance in the counselling relationship diminishes and resistance decreases.
2. Absence of discussion about the problem. The client seems to have talked enough about the area of concern. If the client has been asking questions about the problem area, these stop. There is a feeling of at least partial completion, of waiting for the next step.
3. Resolve. The client appears to have reached some kind of resolution, and may seem more peaceful, relaxed, calm, unburdened, or settled. This can also have a tone of loss, tearfulness, or resignation.
4. Change talk. The client makes direct change statements reflecting disadvantages of the status quo, advantages of change, optimism about change, and/or intention to change.
5. Envisioning. The client talks about how life might be after change. This can be mistaken for resistance, in that looking ahead to change often causes a person to anticipate difficulties if change were made. Of course, the client may also envision positive outcomes of change.

Patient Psychotherapy Process Scale (PPPS)

1. Did the patient identify a specific problem, topic or issue he/she wishes to focus on in the session?

0 Patient did not identify that he or she has any clear problem, topic or issue to discuss in therapy or seems uninterested in working with the therapist to find or focus on a topic.

1

2 Patient appeared to have a vague problem, topic or issue for discussion in session. Or the patient demonstrates only minimal motivation or interest to focus on a topic in the session.

3

4 Patient identified a general problem, topic or issue to discuss in therapy and/or seems willing to work with the therapist to refine the topic, or find and focus on a topic in the session.

5

6 Patient identified a specific problem, topic or issue that he or she wishes to discuss in the therapy session and demonstrated motivation/interest to focus on the topic(s).

2. Did the patient identify that progress has occurred?

0 Patient indicated that either there has been deterioration or that there had not been any progress.

1

2 Patient made some vague comment about change or that progress had occurred but was slow or minimal.

3

4 Patient indicates that some progress (symptom change or insight) has occurred. Implied by what s/he says or communicated in more subtle ways.

5

6 Patient indicates that substantial progress has occurred. Explicit in what s/he says.

3. Did the patient make any "in the moment" statements during the session that indicate new awareness had occurred?

0 Patient did not make any "in the moment" statements during the session. No evidence that new awareness occurred.

1

2 Patient made some general comment(s) that indicated some new awareness had occurred in the session; however, overall this was *limited*.

3

4 Patient indicated that a *moderate* degree of new awareness had occurred during the session as indicated by what s/he said or what s/he communicated in subtle ways.

5

6 Patient makes a number of clear "in the moment" statements and/or indicates that *considerable* new awareness had occurred.

4. How did the patient respond to therapeutic questions from the therapist? (challenging questions) during the session

0 Patient was hostile or defensive when asked therapeutic questions by the therapist.

1

2 Patient did not seem hostile or defensive, but often ignored the therapist's questions.

3
4 The patient displayed *satisfactory* attempts to respond to the therapist's questions. Some difficulty evident in processing the intent of the challenge.
5
6 Patient displayed *optimal* levels of response to therapist's questions during the session. Fully engaged even when therapist's questions were challenging.

5. Did the patient demonstrate ability to take others' perspectives?

0 Patient repeatedly failed to understand the perspective of another. Or no requirement to take others perspective.
1
2 Patient could reflect on the internal reality of another but seemed to have limited ability or interest. Predominately self-focused.
3
4 Patient generally seemed to grasp the "internal reality" of another as indicated by what the patient said and what s/he communicated in subtle ways. Satisfactory ability to take others' perspectives.
5
6 Patient demonstrated considerable capacity to understand the "internal reality" of another as indicated by what the patient said. Able to consider many possible perspectives.

6. Did the patient seem open to considering direct suggestions made by the therapist during the session?

0 Patient was hostile or dismissive to direct suggestions by the therapist.
1
2 Patient did not seem hostile or dismissive, but largely ignored the therapist's suggestions.
3
4 Patient displayed *satisfactory* consideration of the therapist's direct suggestions, as indicated by what the patient said or in more subtle ways.
5
6 Patient displayed *considerable* consideration of the therapist's direct suggestions during the session.

7. Did the patient consider or seem open to direct observations or reflections made by the therapist during the session?

0 Patient was hostile or dismissive when the therapist verbalized observations.
1
2 Patient did not seem hostile or dismissive, but largely ignored the therapist's observations.
3
4 Patient conveyed *satisfactory* consideration of the therapist's direct observations, as indicated by what the patient said or in more subtle ways.
5
6 Patient displayed *considerable* consideration of the therapist's direct observations during the session.

8. How did the patient respond to the therapist's request to consider hypothetical outcomes in relation to his/her own behavior during the session?

0 Patient was either hostile or dismissive of the therapist's hypothetical questions.

1
2 Patient did not seem hostile or dismissive, but largely ignored the therapist's hypothetical questions.
3
4 Patient displayed *satisfactory* consideration of the therapist's hypothetical questions.
5
6 Patient displayed *extensive* consideration of the therapist's hypothetical questions during the session, as indicated by what the patient said. Patient able to consider and elaborate further.

9. How did the patient respond to the therapist's questions or statements summarizing, restating, reinterpreting or reframing an event or situation during the session?

0 Patient was either hostile or dismissive of the therapist's questions or statements summarizing, restating, reinterpreting or reframing of an event(s).
1
2 Patient did not seem hostile or dismissive, but largely ignored the therapist's questions or statements summarizing, restating, reinterpreting or reframing
3
4 Patient displayed *satisfactory* consideration of the therapist's questions or statements summarizing, restating, reinterpreting or reframing.
5
6 Patient displayed *considerable* exploration of the therapist's questions or statements summarizing, restating, reinterpreting or reframing during the session, as indicated by what the patient said and demonstrates an ability to integrate or elaborate for him or her self.

10. Was the patient able to identify his/her feelings and link the feelings to thoughts or relevant situations in the session?

0 Patient repeatedly failed or seemed unable to identify and elaborate on his/her feelings.
1
2 Patient could reflect on some of his/her own feelings but seemed to have limited ability or interest in making connections between feelings and thoughts or situations.
3
4 Patient seemed to be able to satisfactorily identify and talk about his/her feelings, indicated by what the patient said and what the patient communicated in more subtle ways. With prompting is able to see links between feelings and thoughts or situations.
5
6 Patient demonstrated considerable capacity to independently understand, identify, differentiate and explore his or her own feelings in relation to thoughts or situations.

Anorexia Nervosa Stages of Change Questionnaire

DIRECTIONS: each of the items below is made up of five statements. For each item, please read the five statements carefully. Then select the statement (or statements) which best describe/s your *current* attitude or behaviour (not how you have been in the past or how you would like to be). If you have any problems, please ask for assistance. Your answers are completely confidential.

1. **The following statements refer to the patient gaining weight:**
   - The patient is not concerned with the need to gain weight.
   - The patient thinks s/he might be better off if s/he gained weight.
   - The patient has decided to attempt to gain weight.
   - The patient is putting a lot of effort into gaining weight.
   - The patient is working to maintain the weight gains s/he has made.

2. **The following statements refer to the patient's body weight:**
   - The patient does not think s/he needs to weigh at least BMI 18.5.
   - The patient thinks s/he might be better off if s/he weighed at least BMI 18.5.
   - The patient has decided that s/he will attempt to reach a weight of at least BMI 18.5.
   - The patient is putting a lot of effort into reaching a weight of at least BMI 18.5.
   - The patient is working to maintain a weight of at least BMI 18.5.

3. **The following statements refer to parts of the patient's body which may particularly concern him/her in terms of weight gain (such as hips, thighs, stomach or buttocks):**
   - The patient would in no way be prepared to gain weight on these body parts.
   - Sometimes the patient thinks s/he would be prepared to gain weight on these body parts.
   - The patient has decided s/he is prepared to gain weight on these body parts.
   - The patient is presently trying to gain weight on these body parts.
   - The patient is working to maintain the weight s/he gained on these body parts.

4. **The following statements refer to the patient's appearance:**
   - The patient does not want to be a normal weight because s/he would be less satisfied with his/her appearance at a weight of at least BMI 18.5.
   - The patient occasionally thinks about being a normal weight because in some ways s/he would be more satisfied with his/her appearance at a weight of at least BMI 18.5.
   - The patient has decided to reach a normal weight because s/he would be more satisfied with his/her appearance at a weight of at least BMI 18.5.
   - The patiently is presently trying to reach a normal weight because s/he will be more satisfied with his/her appearance at a weight of at least BMI 18.5.
   - The patient is working to maintain a normal weight because s/he is more satisfied with his/her appearance at a weight of at least BMI 18.5.

5. **The following statements refer to the patient's health:**
   - The patient does not believe s/he needs to be a normal weight because there are no risks to his/her health when s/he weighs below BMI 18.5.
   - The patient occasionally has thought about being a normal weight because of the risks to his/her health when s/he weighs below BMI 18.5
   - The patient has decided to reach a normal weight because of the risks to his/her health when s/he weighs below 18.5 BMI.
   - The patient is presently trying to reach a normal weight because of the risks to his/her health when s/he weighs below BMI 18.5.
   - The patient is working to maintain a normal weight because of the risks to his/her health when s/he weighs below BMI 18.5.

6. **The following statements refer to the importance of the patient's body shape and weight:**
   - The patient does not think s/he exaggerates the importance of body shape or weight in determining his/her happiness and success.
   - Sometimes the patient thinks s/he exaggerates the importance of body shape or weight in determining his/her happiness and success.
   - The patient has decided s/he needs to reduce the importance that s/he places on body shape or weight in determining his/her happiness and success.
   - The patient often tries to challenge the importance s/he places on body shape or weight in determining his/her happiness and success.
   - The patient has succeeded in reducing the tendency to place too much importance on body shape or weight in determining his/her happiness and success and wants to stay this way.

7. **The following statements refer to the patient's fear of fatness:**
   - The patient thinks her fear of becoming fat is not excessive.
   - The patient occasionally thinks that his/her fear of becoming fat because it is controlling him/her.
   - The patient knows that fear of becoming fat has caused problems and s/he is now trying to correct this.
   - The patient has succeeded in reducing fear of becoming fat and wants it to stay this way.

8. **The following statements refer to weight loss:**
   - The patient would prefer to lose more weight.
   - Sometimes the patient thinks it might be time to stop losing weight.
   - The patient has decided it is time to stop losing weight.
   - The patient is trying to stop losing weight.
   - The patient has managed to stop losing weight and hopes to stay this way.

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

- The patient might think about gaining muscle on purpose, but would never think of gaining fat on purpose.
- Sometimes the patient thinks s/he may need to gain some fat even though s/he would prefer to have only muscle.
- The patient has decided that to be healthy s/he needs to have some fat on his/her body.
- The patient realises s/he needs to have some fat on his/her body and is working to achieve this.
- The patient has 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:

- The patient would in no way be prepared to gain at least 1 kg a week.
- Sometimes the patient thinks s/he would be prepared to gain at least 1 kg a week.
- The patient has decided that in general it would be best to gain at least 1 kg a week.
- The patient is putting a lot of effort into gaining at least 1 kg a week.
- The patient is working to maintain his/her weight but would be prepared to gain at least 1kg a week if necessary.

11. The following statements refer to certain shape and weight standards the patient may have for evaluation his/her body (such as only being satisfied with his/her body when his/her thighs are not touching, when specific bones can be seen, when his/her stomach is flat, when s/he is below a certain weight or when s/he fits into certain clothes).

- The patient does not believe the standards s/he uses to evaluate his/her body are too strict.
- Sometimes the patient thinks the standards s/he uses to evaluate his/her body may be strict.
- The patient has decided the standards s/he use to evaluate his/her body are too strict and need to be changed.
- The patient is putting a lot of effort into changing the strict standards s/he uses to evaluate his/her body.
- The patient has managed to let go of the strict standards s/he used in the past to evaluate his/her body and am hoping to keep it this way.

12. The following statements refer to certain foods the patient 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 the patient would strictly avoid and would not even consider eating.
- There are certain foods which the patient tries to avoid, although sometimes s/he thinks it might be ok to eat them occasionally.
- The patient thinks s/he is too strict in the food s/he allows myself to eat and has decided s/he will attempt to eat food s/he usually avoids.
- The patient is putting a lot of effort into regularly eating foods s/he usually avoids.

13. **The following statements refer to daily food consumption:**
    - The patient believes there is no need for him/her to eat 3 standard size meals and a snack each day.
    - Sometimes the patient thinks s/he should eat 3 standard size meals and a snack each day.
    - The patient has decided s/he needs to eat 3 standard sized meals and a snack each day.
    - The patient is putting a lot of effort into eating 3 standard size meals and a snack each day.
    - The patient is working to maintain a current eating pattern which includes 3 standard size meals and a snack.

14. **The following statements refer to time spent thinking about weight (such as thoughts about becoming fat, counting the calories or fat content of food, or calculating the amount of energy used when exercising):**
    - The patient thinks there is nothing wrong with the amount of time s/he spends thinking about his/her weight.
    - The amount of time the patient spends thinking about his/her weight is a problem sometimes.
    - The patient has decided s/he needs to use strategies to help reduce the amount of time s/he spends thinking about his/her weight.
    - The patient is using strategies to help reduce the amount of time s/he spends thinking about his/her weight.
    - The patient used to spend too much time thinking about his/her weight which s/he has 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 his/her lips, needing to eat food in a specific order or needing to stick to the same food plan each day):**
    - The patient thinks there is nothing that s/he needs to change about the way s/he eats meals.

- The patient sometimes thinks s/he needs to change aspects of the way s/he eats meals.
- The patient has decided s/he will try to change aspects of the way s/he eats meals.
- The patient is putting a lot of effort into changing aspects of the way s/he eats meals.
- The patient has succeeded in changing aspects of the way s/he eats meals and wants it to stay that way.

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

- The patient thinks there is no need for him/her to change the feelings s/he associates with eating or not eating.

- The patient sometimes thinks s/he needs to change the feelings s/he associates with eating or not eating.

- The patient has decided s/he will try to change the feelings s/he associates with eating or not eating

- The patient is putting a lot of effort into changing the feelings s/he associates with eating or not eating

- The patient has succeeded in changing the feelings s/he associates with eating or not eating wants it to stay that way.

17. The following statement refers to methods the patient may use to control his/her weight (such as restricting eating, exercising, vomiting, taking laxatives or other pills). More than one statement may be selected for the different methods used for weight control. Please indicate which weight control methods the patient is referring to in the spaces provided.

- The patient thinks there is nothing wrong with the methods _____ used for weight control.

- The patient has been thinking that there may be problems associated with the methods _____ used for weight control.

- The patient has decided to attempt to stop using certain methods _____ for weight control.

- The patient is putting a lot of effort into stopping certain methods _____ for weight control.

- The patient has managed to stop using certain methods _____ for weight control and would like to keep it this way.

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

- The patient thinks s/he does not have any emotional problems which s/he needs to work on.

- The patient sometimes thinks s/he may have certain emotional problems which s/he needs to work on.

- The patient has certain emotional problems which s/he has decided to work on.

- The patient is actively working on his/her emotional problems.

- The patient's emotional problems have improved and s/he is 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 life):

- The patient thinks s/he does not have any problems in the way s/he approaches life that s/he needs to work on.

- The patient sometimes thinks s/he may have certain problems in the way s/he approaches life that s/he needs to work on.

- The patient has certain problems in the way s/he approaches life that s/he has decided to work on.

- The patient is actively working on his/her problems in the way s/he approaches life.

- The patient's problems in the way s/he approaches life have improved and s/he is trying to keep it this way.

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

- The patient thinks s/he does not have any problems in relationships with others s/he needs to work on.

- The patient sometimes thinks s/he may have certain problems in relationships with others that s/he needs to work on.

- The patient has certain problems in relationships with others that s/he has decided to work on.

- The patient is actively working on his/her problems in relationships with others.

The patient's problems in relationships with others have improved and s/he is trying to keep it this way.

References

Ablon, J. S., & Jones, E. E. (1998). How expert clinicians' prototypes of an ideal treatment correlates with outcome in psychodynamic and cognitive-behavioural therapy. *Psychotherapy Research, 8*, 71-83.

Ablon, J. S., & Jones, E. E. (1999). Psychotherapy process in the national institute of mental health treatment of depression collaborative research program. *Journal of Consulting and Clinical Psychology, 67*, 64-75.

Ablon, J. S., Levy, R. A., & Katzenstein, T. (2006). Beyond brand names of psychotherapy: Identifying empirically supported change processes. *Psychotherapy: Theory, Research, Practice, Training, 43*, 216-231.

Ackerman, S. J., & Hilsenroth, M. J. (2001). A review of therapist characteristics and techniques negatively impacting the therapeutic alliance. *Psychotherapy: Theory, Research, Practice, Training, 38*(2), 171-185.

Ackerman, S. J., & Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting the therapeutic alliance. *Clinical Psychology Review, 23*(1), 1-33.

Agras, W. S., Brandt, H. A., Bulik, C. M., Dolan-Sewell, R., Fairburn, C. G., Halmi, K. A., & et al. (2004). Report of the national institutes of health workshop on overcoming barriers to treatment research in anorexia nervosa. *International Journal of Eating Disorders, 35*(4), 509-521.

Aharonovich, E., Amrhein, P., Bisaga, A., Nunes, E. V., & Hasin, D. S. (2008). Cognition, commitment language, and behavioral change among cocaine-dependent patients. *Psychology of Addictive Behaviors, 22*, 557-562.

Ametller, L., Castro, J., Serrano, E., Martinez, E., & Toro, J. (2005). Readiness to recover in adolescent anorexia nervosa: Prediction of hospital admission. *Journal of Child Psychology and Psychiatry, 46*(4), 394-400.

Amrhein, P., Miller, W. R., Yahne, C. E., Knupsky, A., & Hochstein, D. (2004). Strength of client commitment language improves with therapist training in motivational interviewing. *Alcoholism: Clinical and Experimental Research, 28*(5), 74-80.

Amrhein, P., Miller, W. R., Yahne, C. E., Palmer, M., & Fulcher, L. (2003). Client commitment language during motivational interviewing. *Journal of Consulting and Clinical Psychology, 71*, 862–878.

Anderson, A., Devlin, M., Egger, H., Herzog, D., Mitchell, J., Powers, P., . . . Zerbe, K. (2000). Practice guideline for the treatment of patients with eating disorders (revision) *American Journal of Psychiatry, 157*(1), 1-39.

Apodaca, T. R., & Longabaugh, R. (2009). Mechanisms of change in Motivational Interviewing: A review and preliminary evaluation of the evidence. *Addiction, 104*(5), 705-715.

Asay, T. P., & Lambert, M. J. (1999). The empirical case for the common factors in therapy: Quantitative findings. In M. A. Hubble, B. L. Duncan & S. D. Miller (Eds.), *The Heart and Soul of Change: What Works in Therapy* (pp. 33–56). Washington, DC: American Psychological Association.

Association, A. P. (2000). *Diagnostic and statistical manual of mental disorders, fourth edition, text revision*. Washington, DC: American Psychiatric Association.

Bakeman, R., & Gottman, J. M. (1997). *Observing interaction: Introduction to sequential analysis*. New york: Cambridge University Press.

Beck, A., Rush, J., Shaw, B., & Emery, G. (1979). *Cognitive Therapy of Depression*. New York: Guildford Press.

Befort, C. A., Nollen, N., Ellerbeck, E. F., Sullivan, J. L., & Ahluwalia, J. S. (2008). Motivational interviewing fails to improve outcomes of a behavioral weight loss program for obese African American women: a pilot randomized trial *Behavioral Science, 31*(5), 367-377.

Bem, D. J. (1972). Self-Perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1-62). New York: Academic Press.

Bergh, C., Brodin, U., Lindberg, G., & Sodersten, P. (2002). Randomized controlled trial of a treatment for anorexia and bulimia nervosa. *Proceedings of the National Academy of Sciences of the United States of America, 99*(14).

Bertholet, N., Faouzi, M., Gmel, G., Gaume, J., & Daeppen, J. (2010). Change talk sequence during brief motivational intervention, towards or away from drinking. *Addiction, 105*(12), 2106-2112.

Beumont, P. J., Arthur, B., Russell, J., & Touyz, S. (1994). Excessive physical activity in dieting disorder patients: Proposals for a supervised exercise program. *International Journal of Eating Disorders, 15*, 21-36.

Beumont, P. J., Russell, J. D., & Touyz, S. W. (1993). Treatment of anorexia nervosa. *The Lancet, 341*(8861), 1635-1640.

Binder, J. L., & Strupp, H. H. (1997). “Negative process”: A recurrently discovered and underestimated facet of therapeutic process and outcome in the individual psychotherapy of adults. *Clinical Psychology: Science and Practice, 4*(2), 121-139.

Blagys, M. D., & Hilsenroth, M. J. (2002). Distinctive activities of cognitive behavioral therapy: A review of the comparative psychotherapy process literature. *Clinical Psychology Review, 22*, 671-706.

Blake, W., Turnbull, S., & Treasure, J. (1997). Stages and processes of change in eating disorders: Implications for therapy. *Clinical Psychology and Psychotherapy, 4*(3), 186-191.

Braun, D. L., Sunday, S. R., & Halmi, K. A. (1994). Psychiatric comorbidity in patients with eating disorders. *Psychological Medicine, 24*(4), 859-867.

Bulik, C. M. (1995). Anxiety disorders and eating disorders: A review of their relationship. *New Zealand Journal of Psychology, 24*, 51-62.

Bulik, C. M., Berkman, M. D., Brownley, K. A., Sedway, J. A., & Lohr, K. N. (2007). Anorexia nervosa treatment: A systmatic review of randomised controlled trials. *International Journal of Eating Disorders, 40*(4), 310-320.

Bulik, C. M., Sullivan, P. F., Fear, J. L., & Joyce, P. (1997). Eating disorders antecedent anxiety disorders: A controlled study. *Acta Psychiatrica Scandanavica, 96*, 101-107.

Bulik, C. M., Sullivan, P. F., Fear, J. L., & Pickering, A. (2000). Outcome of anorexia nervosa: Eating attitudes, personality, and parental bonding. *International Journal of Eating Disorders, 28*(2), 139-147.

Bulik, C. M., Sullivan, P. F., Fear, J. L., Pickering, A., & McCullin, M. (1999). Fertility and reproduction in women with anorexia nervosa: A controlled study. *Journal of Clinical Psychiatry, 60*(2), 130-135.

Burke, B. L., Arkowitz, H., & Dunn, C. (2002). The efficacy of motivational interviewing and its adaptations: What we know so far. In W. R. Miller & S. Rollnick (Eds.), *Motivational Interviewing* (pp. 217–250). New York: Guilford Press.

Burns, B. D., & Nolen-Hoeksema, S. (1992). Therapeutic empathy and recovery from depression in cognitive-behavioral therapy: A structural equation model. *Journal of Consulting and Clinical Psychology, 60*(3), 441-449.

Butler, A. C., Chapman, J. E., Forman, E. M., & Beck, A. T. (2006). The empirical status of cognitive-behavioral therapy: A review of meta-analyses. *Clinical Psychology Review, 26*(1), 17-31.

Campbell, S. D., Adamson, S. J., & Carter, J. D. (2010). Client language during motivational enhancement therapy and alcohol use outcome. *Behavioural and Cognitive Psychotherapy, 38*(4), 399-415.

Carey, M. P., Maisto, S. A., Kalichman, S. C., Forsyth, A. D., Wright, E. M., & Johnson, B. T. (1997). Enhancing motivation to reduce the risk of HIV infection for economically

disadvantaged urban women. *Journal of Consulting and Clinical Psychology, 65*(4), 531-541.

Carter, F. A., Crowe, M., Carlyle, D., Jordan, J., McIntosh, V., O'Toole, V., . . . Joyce, P. (2012). Patient change processes in psychotherapy: development of a new scale. *Psychotherapy Research, 22*(115-126).

Carter, F. A., Jordan, J., McIntosh, V. W., Luty, S. E., McKenzie, J. M., Frampton, C., & Bulik, C. M. (2011). The long-term efficacy of three psychotherapies for anorexia nervosa: A randomized, controlled trial. *International Journal of Eating Disorders, 44*(7), 647-654.

Cassin, S. E., & von Ranson, K. M. (2005). Personality and eating disorders: A decade in review. *Clinical Psychology Review, 25*(7), 895-916.

Cockell, S. J., Geller, J., & Linden, W. (2002). The development of a decisional balance scale for anorexia nervosa. *European Eating Disorder Review, 10*, 359-375.

Connolly, J. J., Kavanagh, E. J., & Visweswaren, C. (2007). The convergent validity between self and observer ratings of personality: A meta-analytic review. *International Journal of Selection and Assessment, 15*(1), 110-117.

Cooper, M. J. (2005). Cognitive theory in anorexia nervosa and bulimia nervosa: Progress, development and future directions. *Clinical Psychology Review, 25*(4), 511-531.

Crisp, A. H., Norton, K., Gowers, S., Halek, C., Bowyer, C., & Yeldham, D. (1991). A controlled study of the effect of therapies aimed at adolescent and family psychopathology in anorexia nervosa. *British Journal of Psychiatry, 159*, 325-333.

Crow, S. J., Agras, W. S., Halmi, K., Mitchell, J. E., & Kraemer, H. C. (2002). Full syndromal verses subthreshold anorexia nervosa, bulimia nervosa, and binge eating disorder: a multicentre study. *International Journal of Eating Disorders, 32*(3), 309-318.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self determination in human behaviour*. New York: Plenum Press.

Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behaviour *Psychological Inquiry, 11*, 227-268.

Deter, H. C., & Herzog, W. (1994). Anorexia nervosa in a long-term perspective: results of the Heidelberg-Mannheim Study. *Psychosomatic Medicine, 56*(1), 20-27.

Diaz-Marsa, M., Carrasco, J. L., & Saiz, J. (2000). A study of temperament and personality in anorexia and bulimia nervosa. *Journal of Personality Disorders, 14*(4), 352-359.

DiClemente, C. C., & Prochaska, J. O. (1985). Processes and stages of change: Coping and competence in smoking behavior change. In S. Shiffman & T. A. Wills (Eds.), *Coping and Substance Abuse* (pp. 319- 343). San Diego, CA: Academic Press.

DiClemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., & Rossi, J. S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology, 59*, 295-304.

DiClemente, C. C., Prochaska, J. Q., & Gilbertini, M. (1985). Self-efficacy and the stages of self-change of smoking. *Cognitive Therapy and Research, 9*, 181-200.

Drieschner, K. H., Lammers, S. M. M., & van der Staak, C. P. F. (2004). Treatment motivation: an attempt for clarification of an ambiguous concept. *Clinical Psychology Review, 23*, 1115-1137.

Emmons, K. M., & Rollnick, S. (2001). Motivational interviewing in health care settings: Opportunities and limitations. *American Journal of Preventive Medicine, 20*(1), 68-74.

Fairburn, C. G., Cooper, Z., Shafran, R., & Wilson, G. T. (2008). Eating disorders: A transdiagnostic protocol. In D. H. Barlow (Ed.), *Clinical Handbook of Psychological Disorders: A Step-By-Step Treatment Manual* (4th ed.). New York: The Guilford Press.

Faris, A. S., Cavell, T. A., Fishburne, J. W., & Britton, P. C. (2009). Examining motivational interviewing from a client agency perspective. *Journal of Clinical Psychology, 65*(9), 955-970.

Gallop, R., Kennedy, S. H., & Stern, D. (1994). Therapeutic alliance on an inpatient unit for eating disorders. *International Journal of Eating Disorders, 16*(4), 405-410.

Garfinkel, P. E., Lin, E., Goering, P., Spegg, C., Goldbloom, D., Kennedy, S., & et al. (1996). Should amenorrhoea be necessary for the diagnosis of anorexia nervosa? Evidence from a Canadian community sample. *British Journal of Psychiatry, 168*(4), 500-506.

Garner, D. M., Vitousek, K. B., & Pike, K. M. (1996). Cognitive-behavioral therapy for anorexia nervosa. In K. D. Brownnell & J. P. Foreyt (Eds.), *Handbook of eating disorders: Physiology, psychology, and treatment of obesity, anorexia, and bulimia* (pp. 94-144). New York: Guilford Press.

Gatson, L. (1990). The concept of the alliance and role in psychotherapy: Theoretical and empirical considerations. *Psychotherapy, 27*, 143-153.

Geller, J., Brown, K. E., Zaitsoff, S., Menna, R., Bates, E. B., & Dunn, C. (2008). Assessing readiness for change in adolecents with eating disorders. *Psychological Assessment, 20*(1), 63-69.

Geller, J., Cassin, S. E., Brown, K. E., & Srikameswaran, S. (2009). Factors associated with improvements in readiness for change: Low vs normal BMI eating disorders. *International Journal of Eating Disorders, 42,* 40-46.

Geller, J., Cockell, S. J., & Drab, L. D. (2001). Assessing readiness for change in the eating disorders: The psychometric properties of the readiness and motivation interview. *Psychological Assessment, 13*(2), 189-198.

Geller, J., Drab-Hudson, D. L., Whisenhunt, B., & Srikameswaran, S. (2004). Readiness to change dietary restriction predicts short and long term outcomes in the eating disorders. *Eating Disorders: Journal of Treatment and Prevention, 12,* 209-224.

Geller, J., Zaitsoff, S., & Srikameswaran, S. (2005). Tracking readiness and motivation for change in individuals with eating disorders over the course of treatment. *Cognitive Therapy and Research, 29*(5), 611-625.

Goldfried, M. R., Castonguay, L. G., Hayes, A. M., Drozd, J. F., & Shapiro, D. A. (1997). A comparative analysis of the therapeutic focus in cognitive- behavioral and psycho-dynamic- interpersonal sessions. *Journal of Consulting and Clinical Psychology, 65,* 740-748.

Goldfried, M. R., Raue, P. J., & Castonguay, G. (1998). The therapeutic focus in significant sessions of master therapists: a comparison of cognitive-behavioral and psychodynamic-interpersonal interventions. . *Journal of Consulting and Clinical Psychology Review, 66,* 803-810.

Gomes-Schwartz, M. (1978). Effective ingredients in psychotherapy: Prediction of outcome from process variables. *Journal of Consulting and Clinical Psychology, 46,* 1023-1035.

Gowers, S. G., Clark, A. F., Roberts, C., Byford, S., Barrett, B., Griffiths, A., . . . Roots, P. (2010). A randomised controlled multicentre trial of treatments for adolescent anorexia nervosa including assessment of cost-effectiveness and patient acceptability – the TOuCAN trial. *Health Technology Assessment, 15*(15).

Gulliksen, K. S., Espeset, E. M. S., Nordbø, R. H. S., Skårderud, F., Geller, J., & Holte, A. (2012). Preferred therapist characteristics in treatment of anorexia nervosa: The patient's perspective. *International Journal of Eating Disorders, 0*(0), 0-0.

Halmi, K., Agras, W. S., Crow, S. J., Mitchell, J. E., Wilson, G. T., Bryson, S. W., & Kraemer, H. C. (2005). Predictors of treatment acceptance and completion in Anorexia nervosa. *62, 7*(776-781).

Hanly, C. (1994). Reflections on the place of the therapeutic alliance in psychoanalysis. *International Journal of Psychoanalysis, 75,* 457-467.

Hay, P. (2004). Australian and New Zealand clinical practice guidelines for the treatment of anorexia nervosa. *Australian & New Zealand Journal of Psychiatry, 38*, 000-000.

Hellerstein, D. J., Pinsker, H., Rosenthal, R. N., & Klee, S. (1994). Supportive therapy as the treatment model of choice. *Journal of Psychotherapy, Practice, Research, 3*, 300-306.

Hentschel, U. (2005). Therapeutic alliance: The best synthesizer of social influences on the therapeutic situation? On links to other constructs, determinants of its effectiveness, and its role for research in psychotherapy in general. *Psychotherapy Research, 15*, 9-23.

Hersoug, A. G., Monsen, J. T., Havik, O. E., & Hoglend, P. (2001). Quality of early working alliance in psychotherapy: Diagnoses, relationship, and intrapsychic variables and predictors. *Journal of Psychotherapy Practice & Research, 10*(14), 205-216.

Herzog, D. B., Keller, M. B., Sacks, N. R., Yeh, C. J., & Lavori, P. W. (1992). Psychiatric comorbidity in treatment-seeking anorexics and bulimics. *Journal of Child Psychology and Psychiatry, 31*, 810-817.

Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1*(1), 91-111.

Hill, C. E., O'Grady, K. E., & Elkin, I. (1992). Applying the Collaborative Study Psychotherapy Rating Scale to rate therapist adherence in cognitive-behavior therapy, interpersonal therapy, and clinical management. *Journal of Consulting and Clinical Psychology, 60*, 73-79.

Hodgins, D. C., Ching, L. E., & McEwen, J. (2009). Strength of commitment language in motivational interviewing and gambling outcomes. *Psychology of Addictive Behaviors, 23*, 122-130.

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

Horvath, A. O. (2001). The alliance. *Psychotherapy, 38*(4), 365-372.

Horvath, A. O. (2005). The therapeutic relationship: Research and theory. *Psychotherapy Research, 15*, 3-7.

Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy, 48*(1), 9-16.

Horvath, A. O., & Luborsky, L. (1993). The role of the therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology, 61*, 561-573.

Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology, 38*, 139-149.

Hudson, J. I., Hiripi, E., Pope Jr, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the national comorbidity survey replication. *Biological Psychiatry, 61*(3), 348-358.

Karwautz, A., Troop, N. A., Rabe-Hesketh, S., Collier, D. A., & Treasure, J. L. (2003). Personality disorders and personality dimensions in anorexia nervosa. *Journal of Personality Disorders, 17*(1), 73-85. doi: 10.1002/1098-108x(199504)17:33.0.co;2-v

Katzman, D. (2005). Medical Complications in adolescents with anorexia nervosa. *International Journal of Eating Disorders, 37*, S52-S59.

Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., & Masters, K. (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *The American Journal of Psychiatry, 161*(12), 2215-2221.

Kazdin, A. E. (2008). *Behavior modification in applied settings* (6th ed.). Long Grove: Waveland Press, Inc.

Keel, P. K., Weltzin, T. E., Hsu, L. K., & Bulik, C. M. (1991). An open trial of fluoxetine in patients with anorexia nervosa. *Journal of Clinical Psychiatry, 52*(11), 464-471.

Keski-Rahkonen, A., Hoek, H. W., Susser, E. S., Linna, M. S., Sihvola, E., Raevuori, A., . . . Rissanen, A. (2007). Epidemiology and course of anorexia nervosa in the community. *American Journal of Psychiatry, 164*(8), 1259-1265.

Killick, S., & Allen, C. (1997). ‘‘Shifting the balance’’—motivational interviewing to help behavior change in people with bulimia nervosa. *European Eating Disorder Review, 5*, 33–41.

Kivlighan, D. M., Patton, M. J., & Foote, D. (1998). Moderating effects of client attachment on the counselor experience-working alliance relationship. *Journal of Counseling Psychology, 45*, 274-278.

Kleifield, E. I., Wagner, S., & Halmi, K. A. (1996). Cognitive-behavioral treatment of anorexia nervosa. *Psychiatric Clinics of North America, 19*(4), 715-737.

Klerman, G. L., Weissman, M. M., Rounsaville, B. J., & Chevron, E. S. (1984). Interpersonal psychotherapy of depression. New York: Basic Books.

Klump, K. L., Bulik, C. M., Pollice, C., Halmi, K. A., Fichter, M. M., Berrettini, W. H., . . . Kaye, W. H. (2000). Temperament and character in anorexia nervosa. *Journal of Nervous and Mental Disease, 188*(9), 559-567.

Kohn, M., Golden, M. H., & Shenker, I. R. (1998). Cardiac arrest and delirium: Presentations of the refeeding syndrome in severely malnourished adolescents with anorexia nervosa. *Journal of Adolescent Health, 22*(3), 239-243.

Krupnick, J. L., Sotsky, S. M., Simmens, S., Moyer, J., Elkin, I., Watkins, J., & Pilkonis, P. A. (1996). The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: Findings in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology, 64*, 532-539.

Lambert, M. J., & Barley, D. E. (2001). Research summary on the therapeutic relationship and psychotherapy outcome. *Psychotherapy Research, 38*, 357-361.

Lask, B., & Bryant-Waugh, R. (2000). *Anorexia Nervosa and Related Disorders in Childhood and Adolescence* (2nd ed.). Hove: Psychology Press.

Loeb, K. L., Wilson, G. T., Labouvie, E., Pratt, E. M., Hayaki, J., Walsh, B. T., . . . Fairburn, C. G. (2005). Therapeutic alliance and treatment adherence in two interventions for bulimia nervosa: A study of process and outcome. *Journal of Consulting and Clinical Psychology, 73*(6), 1097-1107.

Lowe, B., Zipfel, S., Buchholz, C., Dupont, Y., Reas, D. L., & Herzog, W. (2001). Long-term outcome of anorexia nervosa in a prospective 21-year follow-up study. *Psychological Medicine, 31*(5), 881-890.

Luborsky, L., McLellan, A. T., Woody, G. E., O'Brien, C. T., & Auerbach, A. (1985). Therapist success and its determinants. *Archives of General Psychiatry, 42*, 602-611.

Lucas, A. R., Crowson, C. S., O'Fallon, W. M., & Melton, L. J. (1999). The ups and downs of anorexia nervosa. *International Journal of Eating Disorders, 26*, 397-405.

Luty, S. E., Carter, J. D., McKenzie, J. M., Rae, A. M., Frampton, C. M. A., Mulder, R. T., & Joyce, P. R. (2007). Randomised controlled trial of interpersonal psychotherapy and cognitive–behavioural therapy for depression. *The British Journal of Psychiatry, 190*(6), 496-502.

Madson, M. B., & Campbell, T. C. (2006). Measures of fidelity in motivational enhancement: A systematic review. *Journal of Substance Treatment, 31*(1), 67-73.

Makino, M., Tsuboi, K., & Dennerstein, L. (2004). Prevalence of eating disorders: A comparison of western and non-western countries. *Medscape General Medicine, 6*(3), 49-55.

Mallinckrodt, B., & Nelson, M. L. (1991). Counselor training level and the formation of the therapeutic working alliance. *Journal of Counseling Psychology, 38*, 14-19.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*(3), 438-450.

Mausbach, B. T., Semple, S. J., Strathdee, S. A., & Patterson, T. L. (2009). Predictors of safer sex intentions and protected sex among heterosexual HIV-negative methamphetamine users: an expanded model of the Theory of Planned Behavior. *AIDS Care, 21*(1), 17-24.

McConnaughy, E. A., DiClemente, C. C., Prochaska, J. Q., & Velicer, W. F. (1989). Stages of change in psychotherapy: A follow-up report. *Psychotherapy, 26*, 494-503.

McIntosh, V. V. W., Bulik, C. M., McKenzie, J. M., Luty, S. E., & Jordan, J. (2000). Interpersonal psychotherpay for anorexia nervosa. *International Journal of Eating Disorders, 27*, 125-139.

McIntosh, V. V. W., Jordan, J., Carter, F. A., Luty, S. E., & et al. (2005). Three psychotherapies for anorexia nervosa: A randomized, controlled trial. *The American Journal of Psychiatry, 162*(4), 741-747.

McIntosh, V. V. W., Jordan, J., Luty, S. E., Carter, F. A., McKenzie, J. M., Bulik, C. M., & Joyce, P. R. (2006). Specialist supportive clinical management for anorexia nervosa. *International Journal of Eating Disorders, 39*, 625-632.

McIntosh, V. V. W., Jordan, J., McKenzie, J. M., Luty, S. E., Carter, J. F., Carter, D., . . . Joyce, P. R. (2005). Measuring therapist adherence in psychotherapy for anorexia nervosa: scale adaptation, psychometric properties, and distinguishing psychotherapies. *Psychotherapy Research, 15*, 339-344.

Mehler, P. S., Cleary, B. S., & Gaudiani, J. L. (2011). Osteoporosis in anorexia nervosa. *Eating Disorders, 19*(2), 194-202. doi: 10.1080/10640266.2011.551636

Miller, W. R., Benefield, R. G., & Tonigan, J. S. (1993). Enhancing motivation for change in problem drinking: A controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology, 61*, 455-461.

Miller, W. R., Moyers, T. B., Ernst, D., & Amrhein, P. (2003). Manual for the Motivational Interviewing Skills Code (MISC) v. 2.0., from http://casaa.unm.edu/codinginst.html

Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York: Guilford Press.

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). New York: Guilford Press.

Miller, W. R., Yahne, C. E., Moyers, T. B., Martinez, J., & Pirritano, M. (2004). A randomized trial of methods to help clinicians learn motivational interviewing. *Journal of Consulting and Clinical Psychology, 72*, 1050–1062.

Mitchell, J. E., & Crow, S. (2006). Medical complications of anorexia nervosa and bulimia nervosa. *Current Opinion in Psychiatry, 19*(4), 438-443.

Mohr, D. E. (1995). Negative outcome in psychotherapy: A critical review. *Clinical Psychology: Science and Practice, 2*(1), 1-27.

Morgan, R. L., L., Crits-Christoph, P., Curtis, H., & Solomon, J. (1982). Predicting the outcomes of psychotherapy by the Penn Helping Alliance rating method. *Archives of General Psychiatry, 39*, 397-402.

Moyers, T. B., Martin, T., Catley, D., Harris, K. J., & Ahluwalia, J. S. (2003). Assessing the integrity of motivational interviewing: Reliability of the motivational interviewing skills code. *Behavioural and Cognitive Psychotherapy, 31*, 177–184.

Moyers, T. B., Martin, T., Christopher, P. J., Houck, J. M., Tonigan, J. S., & Amrhein, P. C. (2007). Client language as a mediator of motivational interviewing efficacy: Where is the evidence? . *Alcoholism: Clinical and Experimental Research, 31(Suppl. 3)*, 40-47.

Moyers, T. B., Miller, W. R., & Hendrickson, M. L. (2005). How does motivational interviewing work? Therapist interpersonal skill predicts client involvement within motivational interviewing sessions. *Journal of Consulting and Clinical Psychology, 73*, 590-598.

Muran, J. C., Gorman, B. S., Safran, J. D., Twining, L., Samstag, I. W., & Winston, A. (1995). Linking in-session change to overall outcome in short term cognitive therapy. *Journal of Consulting and Clinical Psychology, 63*, 651-657.

Noordenbos, G. (1992). Important factors in the process of recovery according to patients with anorexia nervosa. In W. Herzog, H. C. Deter & W. Vandereycken (Eds.), *The course of eating disorders: Long-term follow-up studies of anorexia and bulimia nervosa* (pp. 304-322). New York: Springer-Verlag.

Norbo, R. H. S., Gulliksen, K. S., Espeset, M. S., Skarderud, F., Geller, J., & Holte, A. (2008). Expanding the concept of motivation to change: The content of patients' wish to recover from anorexia nervosa. *International Journal of Eating Disorders, 41*, 635-642.

O'Brien, K. M., & Vincent, N. K. (2003). Psychiatric comorbidity in anorexia and bulimia nervosa: Nature, prevalence, and causal relationships. *Clinical Psychology Review, 23*, 57-74.

Orlinsky, D. E., Grave, K., & Parks, B. K. (1994). Process and outcome in psychotherapy: Noch einmal. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behaviour change* (pp. 270-376). Oxford: John Wiley & Sons.

Patton, G. C. (1998). Mortality in eating disorders. *Psychological Medicine, 18*(4), 947-951.

Pereira, T., Lock, J., & Oggins, J. (2006). Role of therapeutic alliance in family therapy for adolescent anorexia nervosa. *International Journal of Eating Disorders, 39*(8), 677-684.

Peterson, C. B., & Mitchell, J. E. (1999). Psychosocial and pharmacological treatment of eating disorders: A review of research findings. *Journal of Clinical Psychology, 55*(6), 685-697.

Pike, K. M. (1998). Long-term course of anorexia nervosa: Response, relapse, remission, and recovery. *Clinical Psychology Review, 18*, 447-475.

Pompili, M., Mancinelli, I., Girardi, P., Ruberto, A., & Tatarelli, R. (2004). Suicide in anorexia: A meta-analysis. *International Journal of Eating Disorders, 36*(1), 99-103.

Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In W. R. Miller & N. Heather (Eds.), *Treating addictive behaviors: Processes of change* (pp. 3-27). New York: Plenum Press.

Prochaska, J. O., Diclemente, C. C., & Norcross, J. C. (1992). In search of how people change. *American Psychologist, 47*, 1102-1114.

Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of behaviour change. *American Journal of Health Promotion, 12*, 38-48.

Prochaska, J. O., Velicer, W. F., Rossi, J. S., Goldstein, M. G., Marcus, B. W., Rakowski, W., . . . Rossi, S. R. (1994). Stages of change and decisional balance for 12 problem behaviors. *Health Psychology, 13*, 39-46.

Rieger, E., & Touyz, S. (2006). An investigation of the factorial structure of motivation to recover in anorexia nervosa using the anorexia nervosa stages of change questionnaire. *European Eating Disorder Review, 14*, 269-273.

Rieger, E., Touyz, S., & Beumont, P. (2002). The Anorexia Nervosa Stages of Change Questionnaire: Information regarding its psychometric properties. *International Journal of Eating Disorders, 32*, 24-38.

Rieger, E., Touyz, S., Schotte, D., Beumont, P., Russell, J., Clarke, S., . . . Griffiths, R. (2000). Development of an instrument to assess readiness to recover in anorexia nervosa. *International Journal of Eating Disorders, 28*, 387-396.

Rigotti, N. A., Neer, R. M., Skates, S. J., Herzog, D. B., & Nussbaum, S. R. (1991). The clinical course of osteoporosis in anorexia nervosa. *JAMA: The Journal of the American Medical Association, 265*(9), 1133-1138. doi: 10.1001/jama.1991.03460090081037

Rockland, L. H. (1993). A review of supportive psychotherapy. *Hospital Community Psychiatry, 44*, 1053-1060.

Roehrle, B., & Strouse, J. (2008). Influence of social support on success of therapeutic interventions: A meta-analytic review. *Psychotherapy Theory, Research, Practice, Training, 45*, 464-476.

Rollnick, S., & Miller, W. R. (1995). What is motivational interviewing? *Behavioural and Cognitive Psychotherapy, 28*, 325–334.

Safran, J. D., & Muran, J. C. (1995). The therapeutic alliance. *In Session: Psychotherapy in Practice, 1*(1), 1-5.

Schmidt, U., Oldershaw, A., Jichi, F., Sternheim, L., Startup, H., McIntosh, V., . . . Treasure, J. (2012). Out-patient psychological therapies for adults with anorexia nervosa: randomised controlled trial. *British Journal of Psychiatry, 201*(5).

Schoener, E. P., Madeja, C. L., Henderson, M. J., Ondersma, S. J., & Janisse, J. J. (2006). Effects of motivational interviewing training on mental health therapist behavior. *Drug and Alcohol Dependence, 82*, 269-275.

Skodol, A. E., Oldham, J. M., Hyler, S. E., Kellman, H. D., Doidge, N., & Davies, M. (1993). Comorbidity of DSM-III-R eating disorders and personality disorders. *International Journal of Eating Disorders, 14*(4), 403-416. doi: 10.1002/1098-108x(199312)14:4<403::aid-eat2260140403>3.0.co;2-x

Spitzer, R. L., Williams, J. B. W., Gibbon, M., & First, M. B. (1992). The Structured Clinical Interview for DSM-III-R (SCID): history, rationale and description. *Archives of General Psychiatry, 49*, 624-629.

Strang, J., & McCambridge, J. (2004). Can the practitioner correctly predict outcome in motivational interviewing? *Journal of Substance Use Treatment, 27*(1), 83-89.

Sullivan, P. F. (1995). Mortality in anorexia nervosa. *American Journal of Psychiatry, 152*, 1073-1074.

Szmukler, G. I. (1992). Neuropsychological impairment in anorexia nervosa: Before and after refeeding. *Journal of clinical and experimental neuropsychology, 14*(2), 347-352.

Thomas, M. L. (2006). The contributing factors of change in therapeutic process. *Contemporary Family Therapy, 28*(2), 201-210.

Treasure, J., & Schmidt, U. (2001). Ready, willing and able to change: Motivational aspects of the assessment and treatment of eating disorders. *European Eating Disorder Review, 9*, 4-18.

Treasure, J., & Ward, A. (1997). A practical guide to the use of motivational interviewing in anorexia nervosa. *European Eating Disorder Review, 5*, 102–114.

Vansteenkiste, M., & Sheldon, K. M. (2006). There's nothing more practical than a good theory: Integrating motivational interviewing and self-determination theory. *British Journal of Clinical Psychology, 45*, 63-82.

Vansteenkiste, M., Soenens, B., & Vandereycken, W. (2005). Motivation to change in eating disorder patients: A conceptual clarification on the basis of self-determination theory. *International Journal of Eating Disorders, 37*, 207-219.

Vitousek, K., Watson, S., & Wilson, G. T. (1998). Enhancing motivation for change in treatment-resistant eating disorders. *Clinical Psychology Review, 18*, 391–420.

Waller, G. (2012). The myths of motivation: Time for a fresh look at some received wisdom in the eating disorders? . *International Journal of Eating Disorders, 45*, 1-16.

Waller, G., Evans, J., & Stringer, H. (2012). The therapeutic alliance in the early part of cognitive-behavioral therapy for the eating disorders. *International Journal of Eating Disorders, 45*(1), 63-69.

Weston, D., Novotny, C. M., & Thompson-Brenner, H. (2004). The empirical status of empirically supported psychotherapies: Assumptions, findings, and reporting in controlled clinical trials. *Psychological Bulletin, 130*(4), 631-663.

Wilson, G. T., & Agras, W. S. (2001). Practice guidelines for eating disorders. *Behavior Therapy, 32*, 219-234.

Wilson, G. T., & Schlam, T. R. (2004). The transtheoretical model and motivational interviewing in the treatment of eating and weight disorders. *Clinical Psychology, 24*, 361-378.

Wonderlich, S. A., Lilenfeld, L. R., Lawrence, P. R., Scott, E., & James, E. N. (2005). Personality and anorexia nervosa. *International Journal of Eating Disorders, 37*(S1), S68-S71.

Wonderlich, S. A., & Mitchell, J. E. (1997). Eating disorders and comorbidity: Empirical, conceptual, and clinical implications. *Psychopharmacology Bulletin, 33*, 381-390.

Yager, J., Andersen, A. E., Devlin, M., Egger, H., Herzog, D., Mitchell, J., , & Powers, P., Yates, A., & and Zerbe, K. . (2000). Practice guidelines for the treatment of patients with eating disorders (Rev. ed.). *American Psychiatric Association*.

Yeomans, F. E., Gutfreund, J., Selzer, M. A., Clarkin, J., Hull, J. W., & Smith, T. E. (1994). Factors related to drop-outs by borderline patients: Treatment contract and therapeutic alliance. *Journal of Psychotherapy Practice and Research, 3*, 16-24.

Zogheib, A. P., Rey, C., & Losay, J. (1993). Severe complications and mortality in mental eating disorders in adolescence. On 99 hospitalized patients. *Archives Francaises de Pediatrie, 50*(9), 755-762.

Zuroff, D. C., Koestner, R., Moskowitz, D. S., McBride, D. S., Marshall, M., & Bagby, M. R. (2007). Autonomous motivation for therapy: A new common factor in brief treatments for depression. *Psychotherapy Research, 17*(2), 137-147.