A DECISIONAL BALANCE MEASURE OF READINESS FOR CHANGE IN ANOREXIA NERVOSA

by

SARAH JANE COCKELL

B.A. (Hon), Queen's University

M.A., University of British Columbia

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Department of Psychology

The University of British Columbia
Vancouver, Canada

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Abstract

Women with anorexia nervosa tend to be ambivalent about change and resistant to treatment. A growing number of researchers suggest that this ambivalence must be targeted early on, before attempting to engage clients in action-oriented treatment that focuses on immediate symptom reduction. However, in order to appropriately address client ambivalence, it must be accurately evaluated with empirically validated instruments. The purpose of this thesis was to develop and validate a Decisional Balance (DB) measure of readiness for change in anorexia nervosa. In Study 1, 246 women with anorexia nervosa completed the DB, and a subset completed the DB again one week later. Unlike traditional decisional balance measures that have two factor (pro-con) solutions, factor analytic techniques indicated that a three factor solution provided the best fit for the DB data in this study. These factors included general negative consequences of the disorder (Burdens), valued achievements such as self-control, being very thin, and striving for perfection (Benefits), and using anorexia nervosa as a means for avoiding aversive emotions, challenges, and responsibilities (Avoidance Coping). The DB demonstrated good internal consistency and test-retest stability. In study 2, 80 women with anorexia nervosa completed the DB, along with other measures of readiness for change, as well as measures unrelated to readiness. Support was found for both convergent and divergent validity. Finally, in study 3, 80 women with anorexia nervosa completed the DB, and a measure of anticipated difficulty completing symptom-challenging recovery activities. In addition, participants attempted to complete three recovery activities in the week following initial assessment. Criterion validity was not well supported, most likely because the concurrent and predictive validity measures focused on behavior change, when non-behavioral measures may have been more appropriate. Overall, the results suggest that the DB for anorexia nervosa is a measure of awareness or insight about the functions of this disorder. The theoretical and clinical implications of this research are reviewed and directions for future investigations are proposed.

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Introduction

Individuals who struggle with anorexia nervosa have been characterized as highly ambivalent about treatment and recovery. At some level, these individuals recognize the risks, costs, and harm of the disorder, but at the same time, they experience a strong attachment to their symptoms (e.g., they take pride in their ability to restrict their food intake and lose weight). This conflict between the pros and cons of anorexia nervosa, and between intentions to change versus desire to stay the same, are salient features of therapy. The therapist's handling of ambivalence influences the therapeutic alliance and the client's openness to recovery (Engel & Wilms, 1986; Hamberg, Herzog, Brotman, & Stasior, 1989; Sallas, 1985; Treasure & Ward, 1997; Vitousek, Watson, & Wilson, 1998). A growing number of researchers suggest that this ambivalence must be targeted early on, before attempting to engage the client in action-oriented treatment programs that focus on immediate symptom reduction (e.g., Treasure & Ward, 1997). However, in order to appropriately address client ambivalence about change, this construct must be accurately evaluated.

A number of researchers suggest that motivation and readiness for change is influenced, at least in part, by thoughtful evaluation of the positive and negative consequences of risk behaviors compared to healthy alternatives. Although therapists working with eating disorders have used decisional balance exercises to clarify reasons for and against recovery (e.g., Pike, Loeb, & Vitousek, 1996), currently there is no empirically validated measure to evaluate the decisional balance construct. Clear, specific descriptions that delineate the central themes motivating and inhibiting the process of recovery are needed. The focus of this thesis will be the development of a decisional balance measure that reflects motivation and readiness for change in anorexia nervosa.

This thesis begins by describing current conceptualizations of anorexia nervosa. Treatment strategies and outcome studies are then reviewed. The theme of treatment resistance is explored and a framework for conceptualizing motivation and readiness for change, namely the "transtheoretical model of change," will then be described. A review of empirical work examining this model follows. Clinical applications of the transtheoretical model in anorexia nervosa are explored, shortcomings of existing measures of readiness for change are identified, and a decisional balance measure is described. Finally, the research questions addressed in this thesis are presented, and the research design is outlined.

Definition of Anorexia Nervosa

The definition of anorexia nervosa includes two components: a physiological/behavioral component and a cognitive/psychological component. The physiological/behavioral component includes a refusal to maintain body weight within a normal range and amenorrhea. According to the DSM-IV (American Psychiatric Association [APA], 1994), the weight loss criterion is met if weight is less than 85% of that which is considered normal for the individual's age and height. Amenorrhea, usually a consequence of weight loss, is defined as the absence of at least three consecutive menstrual cycles. The cognitive component of anorexia nervosa includes an intense fear of gaining weight or becoming fat and one or more of the following: 1) excessive influence of body shape and weight on self-evaluation, 2) a disturbance in the way in which one's body weight or shape is experienced, such as feeling fat despite being very thin, and/or 3) the denial of the seriousness of current low body weight. Epidemiological studies have determined that the point prevalence of anorexia nervosa in North America is 0.2% in females (Hsu, 1990).

A number of studies have documented differences between anorexic women who experience symptoms of bulimia and women who are exclusively dietary restricters (see Garner

& Fairburn, 1989). Accordingly, DSM-IV (APA, 1994) distinguishes two subtypes of anorexia nervosa: restricting type and binge-eating/purging type. The restricting type refers to an episode of anorexia nervosa characterized uniquely by fasting behavior and possibly excessive exercise. The binge-eating/purging type involves regular binge-eating or purging behavior within an episode of anorexia nervosa. Binge-eating is characterized by eating an objectively large amount of food in a relatively short period of time (i.e., within two hours), accompanied by a feeling of loss of control (i.e., the individual can not resist eating, or once they start eating, they believe that they can not stop). Purging is defined as self-induced vomiting or misuse of laxatives, diuretics, or enemas.

Treatment Outcome

The treatment of anorexia nervosa is multifaceted and typically includes a combination of nutritional, pharmacological, and psychotherapeutic strategies. There is little agreement on specific approaches to treatment, but most clinicians advocate weight restoration as the first step toward recovery. Once weight is restored, there is no specific method of treatment that is universally accepted and practiced. Various psychotherapeutic methods have been advocated, including cognitive-behavioral therapy, psychodynamic therapy, interpersonal therapy, narrative therapy, structural and strategic family therapy, feminist therapy, art therapy, and many more. However, due to insufficient evidence on the efficacy of these interventions, there is not enough information to guide clinicians toward one common line of treatment.

A limited data base exists regarding the efficacy of treatments for anorexia nervosa. There have been many case reports and follow-up studies of anorexia nervosa since the early 1950's, but there are few controlled trials comparing different treatment approaches (Garner, Vitousek, & Pike, 1996; Pike, 1998b; Pike et al., 1996). Unfortunately, even the few studies that

do exist contain methodological limitations, thus making it difficult to interpret the findings, compare samples, and generalize to the larger population of individuals with anorexia nervosa. The most important methodological issues that complicate attempts to summarize findings include the following:

First, since samples vary greatly as to whether they include inpatients, outpatients, treatment-seeking individuals, or individuals who are ambivalent about recovery, findings from one study may not be consistent with another. Second, studying the effect of specific treatments on the outcome of anorexia nervosa is extremely complicated given that most individuals participate in a number of different interventions, including nutritional counseling, pharmacotherapy, family therapy and individual therapy; it is extremely difficult, if not impossible, to evaluate any one of these interventions on its own. Third, the criteria employed to describe overall outcome vary across studies and the definition of recovery is often inadequately operationalized. Most studies use weight gain and normalization of menstruation as an indicator of outcome, with little attention to the psychological and behavioral features of anorexia nervosa. As a result, individuals are classified as recovered when they are more accurately described as only partially recovered. Since in the absence of psychological change, weight gain achieved during treatment is often followed by subsequent weight loss (Strober, Freeman, & Morrell, 1997), this classification scheme is misleading and may overestimate recovery rates. Fourth, the length of follow-up for controlled treatment studies is relatively short, typically ranging from just one to two years. Long-term follow-up studies indicate that anorexia nervosa runs a protracted course, and therefore individuals need to be assessed over the course of 10 to 15 years to fully capture the impact of treatment on this disorder. However, since most of the well-designed treatment studies are relatively recent (Pike, 1998b; Treasure et al., 1995); long-term follow-up

data are not yet available. Finally, the problem with dropout is extremely important in the study of treatment of anorexia nervosa. Although rarely documented, it is quite likely that some individuals are offered treatment, but drop out even before the sessions have begun. Others may come for a few sessions, but remain ambivalent about recovery, and eventually abandon treatment. These individuals do not make up a random sample but rather represent those with a poorer outcome (Theander, 1985). Accordingly, when data from noncompleters are not included in outcome analyses, as typically is the case, the findings may appear more favorable than is justified.

Given these methodological issues, the existing data must be considered within the particular constraints under which they were collected. Overall, the outcome literature reveals that psychotherapy, including cognitive-behavioral therapy, behavioral therapy, family therapy, or a combination thereof, brings more favorable outcomes than no treatment. However, the majority of subjects are not clinically recovered at the end of a one year follow-up. Although weight is often restored within a healthy range, psychological aspects of the disorder persist (Channon, DeSilva, Hemsley,& Perkins, 1989; Hall & Crisp, 1987; Crisp et al., 1991). This is not surprising as anorexia nervosa runs a protracted course (Strober et al., 1997). Indeed, long-term follow-up periods, with short-term interim assessments, are needed to provide a fuller picture of treatment effects.

Long-term treatment outcome studies have been undertaken at several centers, and many of these studies have included follow-up data at 10 or more years post-treatment (e.g., Deter & Herzog, 1994; Eckert, Halmi, Marchi, Grove, & Crosby, 1995; Hsu, 1991; Strober et al., 1997; Sullivan, Bulik, Fear, & Pickering, 1998; Theander, 1985). Although outcome criteria vary enormously across studies, most report that approximately 50 to 75% of clients achieve a good to

intermediate outcome, whereas approximately 15 to 25% of clients are chronically symptomatic. When weight restoration alone is considered, somewhere between 40 and 60% of individuals have a good outcome. Restoration of menstruation is highly correlated with weight normalization, however the range is much broader, ranging from 25 to 97% restored. When eating behavior is considered in the evaluation of outcome, recovery rates take a drop. Estimates of excessive dietary restraint range from 25 to 75%, and concerns about shape and weight and the fear of gaining weight are documented to be a problem for a large portion of individuals (e.g., Casper & Jabine, 1996; Pike et al., 1996; Strober et al., 1997). Despite treatment, binge eating and vomiting are also common among individuals with anorexia nervosa (Strober et al, 1997; Sullivan et al., 1998). Follow-up studies have reported that 14 to 64% have problems with binge eating and 10 to 30% have problems with vomiting. Of note, the switch from the restricting subtype of anorexia to the binge/purge subtype is about twice as common as the opposite (Pike, 1998b). Finally, comorbid psychopathology has been reported in a large portion of individuals with anorexia nervosa, the more common of which are anxiety disorders (i.e., social phobia and obsessive-compulsive disorder) and depression. (Pike, 1998b).

One notable exception to this general pattern of findings is the study by Strober et al. that reported 76% recovery from both physiological and psychological symptoms of anorexia nervosa at 10 to 15 years follow-up. Of note, the average time to partial recovery (i.e., physical health restored) was 52 months (~ 4 years, 3 months) and to full recovery (i.e., physical and psychological health restored) was 79 months (~ 6 years, 7 months). It is unclear why these individuals fared so much better than those from other studies. One explanation is that this group represented younger patients who benefited from early and intensive treatment. In addition, the majority of the sample continued to receive treatment after hospital discharge. To what extent

Strober et al.'s particular treatment program accounted for these favorable results is unknown. This is an area for future research.

Regarding predictors of outcome, the results are somewhat mixed although a few trends seem to be emerging. Associations between poorer outcome and lower minimum body weight, binge eating, vomiting, later age of onset, longer duration of disorder or prior treatment failure have been documented (see Deter & Herzog, 1994; Herzog, Keller, & Lavori, 1988; Hsu, 1991; Rosenvinge & Mouland, 1990). However, Strober et al. suggest that assessment of predictor variables in these earlier studies may have been confounded by effects, or correlates, of chronicity. On the other hand, the results derived from Strober et al.'s methodologically rigorous prospective study indicate that disturbance in family relationships was related to increased time to recovery, and poor social relating and compulsive drive to exercise were related to poorer outcome. Indeed, excessive exercise and/or poor psychosocial functioning were found to predict poorer outcome by others as well (e.g., Casper & Jabine, 1994; Gillberg, Rastam, & Gillberg, 1994; Rastam, Gillberg, & Gillberg, 1996; Rosenvinge & Mouland, 1990). Thus, it appears that in addition to frank eating disorder symptomatolgy, future interventions with particularly challenging cases of anorexia nervosa should focus more intensively on interpersonal problems and the function of exercise (e.g., means to reduce stress, escape problems, enhance self-esteem).

In sum, the treatment outcome literature for anorexia nervosa is replete with methodological flaws, however long-term follow-up studies point to a few prevailing patterns. First, the course of anorexia nervosa is protracted and roughly half of those who are treated for anorexia nervosa have a benign outcome in that weight and regular menstruation is restored. However, when the psychological features of the syndrome are considered, the rate of recovery drops dramatically. Some studies report more favorable findings, (e.g., Strober et al., 1997);

however, this may be due to developmental factors, such as age of clients, and the quality and duration of treatment.

Treatment Resistance

Some of the difficulties in treating anorexia nervosa may stem from particular challenges that are unique to the disorder. One of the client variables frequently invoked to account for poor outcome is the egosyntonic nature of symptoms (Garfinkel & Garner, 1982; Garner & Bemis, 1982; Treasure & Ward, 1997; Vitousek et al., 1998; Wilson & Fairburn, 1993). That is, many individuals with anorexia nervosa do not experience their symptoms as intrusive or unwelcome. In fact, being very thin and capable of abstaining from eating may have potent positive reinforcement value, such as providing a sense of control and a means of feeling special (Vitousek et al., 1998). Moreover, since anorexic behaviors often develop in response to adverse experiences associated with developmental transitions and distressing life events, asking clients to stop these behaviors is like asking them to relinquish their best coping mechanisms (Kliefield, Wagner, & Halmi, 1996). The intensity with which clients cling to their symptoms is epitomized in comments such as "My doctor suggested eating a mandarin, or a bit of broth., but it's not that easy.....I mean....that's like asking me to slit my wrists" (anonymous, personal communication, November 19, 1998). If a client's sense of self is based entirely on her success at abstaining food and losing weight, then it would make sense that she would not want to recover or at best would be profoundly ambivalent. Perhaps, if clinicians could adequately address this attachment to symptoms and ambivalence about change before suggesting action-oriented change strategies, resistance to change, time to recovery and frequency of relapse may be significantly reduced.

Family members, friends, and health professionals who witness disinterest or ambivalence about change naturally feel anxious and drawn to confronting individuals with

anorexia nervosa about the seriousness of their condition. However, confrontation has been shown to predict increased resistance, and may result in harmful and adverse outcomes (Miller & Sanchez, 1994). This has been shown to be the case among therapists for whom efforts to teach and confront parents with child management problems were shown to produce an immediate increase in noncompliance (Patterson & Forgatch, 1985). In contrast, in the same study, therapist behaviors of support and facilitation were associated with immediate decreases in noncompliant client behavior. This pattern of interaction between therapist and client has also been reported in the treatment of substance abuse (Miller, Benefield, & Tonigan, 1993). Among problem drinkers, therapist directive confrontational styles have been shown to produce significantly more resistance, which in turn have predicted poor outcome at one year follow-up. Taken together, these findings suggest that motivation, or lack thereof, may arise at least in part from an interpersonal process between the client and individuals who want the client to change.

Although no controlled studies have been conducted to assess the impact of therapist style on treatment resistance in anorexia nervosa, the anecdotal literature is consistent with the above-mentioned findings. For instance, Sallas (1985) points out that power and control issues are prevalent in anorexia nervosa and, if not effectively dealt with, they can inhibit or halt progress in therapy. These issues are reflected primarily through resistance to changing primary symptom behaviors of restrictive eating, bingeing, and purging, as well as compulsive behaviors such as abuse of exercise, laxatives, diuretics, alcohol, and drugs. In order to "win the war without having to do the battle" (p.1), Sallas advises therapists to develop a collaborative working alliance with clients and avoid competitive or authoritarian relationships. Consistent with this stance, Hsu (1986) recommends acknowledging the significance of striving for thinness and control, while at the same time addressing the negative and potentially dangerous effects of this

endeavor, such as resultant depression, malnutrition, fatigue, insomnia, restlessness, social isolation and constant preoccupation with food and exercise. Coming from a somewhat different angle, Sagardoy and colleagues (Sagardoy, Ashton, Mateos, Perez, & Carrasco, 1989) suggest promoting self-confidence and self-efficacy in the client, as well as the practice of patience and tolerance when clients distort information or when their progress is delayed (Sagardoy et al., 1989). Ultimately, it appears that successful interventions may be those that balance the timing of action-oriented interventions (e.g., increasing caloric intake; modifying exercise regimes), with attention to client readiness for change and the interpersonal dynamics that play out in therapy.

Based on these observations and recommendations, it seems that resistance to treatment among individuals with anorexia nervosa may stem from a mismatch between patients' readiness for treatment and the typical action-oriented nature of treatment programs, which focus on immediate symptom reduction (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, & Rossi, 1991; Garner et al., 1996; Treasure & Ward, 1997; Vitousek, DeViva, Slay, & Manke, 1996; Vitousek, et al., 1998; Ward, Troop, Todd, & Treasure, 1996). Current treatment programs may therefore be attempting to bring about change in individuals who are not yet ready for change, and consequently fail to address significant barriers to recovery. This mismatch between treatment focus and client readiness can lead to deterioration of well-intentioned treatments into frustrating struggles between therapists and clients over food and weight.

Thus, treatment of anorexia nervosa may require addressing ambivalence about recovery and mismatches between client readiness and intervention. In order to do this, individuals who are not ready for action-oriented treatment need to be identified, and interventions that address their needs must be developed. The study described in this thesis applies current advances in

readiness for change from the general eating disorder literature as well as other treatment-resistant populations, such as substance abuse, to anorexia nervosa.

Transtheoretical model of change

A framework for conceptualizing motivation and readiness for change in treatment-resistant individuals is provided in the "transtheoretical model of change" (Prochaska, 1979; Prochaska & DiClemente, 1985; Prochaska, DiClemente, & Norcross, 1992). The model proposes that individuals vary in the degree to which they are "prepared" for change. Although initially developed for smokers (DiClemente & Prochaska, 1982), this model has subsequently been applied alcohol abuse (DiClemente & Hughes, 1990), weight control (Prochaska, Norcross, Fowler, Follick, & Abrams, 1992), and a variety of other problems (Prochaska, Velicer, et al., 1994). Preliminary reports suggest that the model has meaningful applications to the eating disorders (Blake, Turnbull, & Treasure, 1997; Stanton, Rebert, & Zinn, 1986; Treasure & Ward, 1997; Ward et al., 1996).

In this model, behavior modification is described as occurring along two interrelated dimensions: stages and processes of change (Prochaska & DiClemente, 1992). Stage refers to an individual's readiness status at a particular moment in time, or in other words, the individual's current interest in working on change. Process refers to what an individual is doing, in terms of cognitive and behavioral activities, to modify problems and bring about change (DiClemente & Prochaska,1985; Prochaska, Velicer, DiClemente, & Fava, 1988). Transitions between the stages are considered to be a function of other important dimensions of health behavior change, such as decision-making (i.e., weighing the pros and cons of change) and self-efficacy (i.e., confidence in one's ability to change across problem situations). While the transtheoretical model of change focuses primarily on stages and processes of change, the model also recognizes that

psychological, environmental, cultural, socio-economic, physiological, biochemical, and even genetic variables specific to the problem in question may also influence health behavior change.

Stages of Change. According to the transtheoretical model of change, five stages of change exist: precontemplation, contemplation, preparation, action, and maintenance (DiClemente & Prochaska, 1982; Prochaska, DiClemente & Norcross, 1992). The following are brief descriptions of these five stages.

Precontemplation is the stage in which there is no intention to change behavior in the near future. Individuals can be in precontemplation for a variety of reasons. They may be unaware or not fully aware of their problem. Even though family, friends, classmates, or fellow employees may be well aware that precontemplators have problems, precontemplators may be surprised about others' concern or they may be defensive about their current behavior and resistant to outside pressures to change. Alternatively, precontemplators may be demoralized about their ability to change, or they may just not want to think about change (Prochaska, Redding, Harlow, Rossi & Velicer, 1994).

If precontemplators present for psychotherapy, they are likely to do so under pressure from others. Steps towards change are taken because the pressure is on, but once the pressure is off, they quickly return to their old patterns (Prochaska, DiClemente & Norcross, 1992). Because of this, individuals in this stage need information and feedback to raise their awareness of problem behaviors and to entertain the possibility of change (Miller & Rollnick, 1991). A suggested starting point is to identify the benefits and costs of the problem to the individual (Vitousek et al., 1998).

Contemplation refers to the stage in which individuals are aware of their problem and are seriously thinking about making a change, but have not yet made a commitment to take action

(Prochaska, DiClemente, & Norcross, 1992). Contemplators are much more open to feedback and information about their problem and how to change than are precontemplators. Nevertheless, they struggle with the weighting of reasons for concern and justification for lack of concern. As well, they tend to worry more about the effort, energy, and losses associated with change rather than the gains (Miller & Rollnick, 1991). Not surprisingly, people can stay stuck in this stage for long periods of time. For instance, in a study of self-changers, 200 smokers in the contemplation stage were followed for two years, and the modal response was to remain in this stage for the entire time (DiClemente & Prochaska, 1985; Prochaska & DiClemente, 1984). Interventions designed to help contemplators move to action should focus on two elements: tipping the balance in favor of change and convincing the individual that he or she is capable of making the change. Helping the client to focus on the costs of the risk behavior and the potential gains of change, as well as offering balanced feedback, rather than persuasion, are likely to be useful here (Miller & Rollnick, 1991).

Preparation refers to the stage in which the balance tips, and for a period of time individuals have the intention of changing and have made some effort to do so recently, but have not yet reached criteria for effective action (Prochaska, DiClemente & Norcross, 1992). This stage can be thought of as a window of opportunity that opens for a period of time. If the individual enters into the action stage, then the change process continues; if not, then the individual slips back into contemplation (Miller & Rollnick, 1991). Therapists working with clients at this stage of change must be careful in selecting an intervention that is acceptable, accessible, appropriate, and effective (Miller & Rollnick, 1991). Since motivation is influenced by past experiences with change attempts, those individuals who have made unsuccessful attempts to change in the past will need encouragement to go through the cycle again. Some

investigators call this stage determination or decision making (Prochaska, DiClemente & Norcross, 1992; Rollnick, Heather, Gold, & Hall, 1992).

Action is the stage in which individuals actively modify their behavior, experiences, or environment in order to overcome their problems (Prochaska, DiClemente & Norcross, 1992). Modifications to the problem made in the action stage tend to be the most visible and receive the greatest external recognition: for example, quitting smoking or engaging in regular exercise for up to 6 months. However, individuals often erroneously equate action with change. As such, they overlook the requisite work that precedes action, and the efforts necessary to maintain changes. For someone at this stage, action-oriented strategies for behavior change are relevant, whereas at earlier stages they may not have been (Miller & Rollnick, 1991).

Maintenance is the stage in which individuals work to prevent relapse and consolidate gains attained during the action phase (Prochaska, DiClemente, & Norcross, 1992). The skills and strategies required to sustain the changes may be quite different from those required to bring about change in the first place. As such, maintenance is not regarded as a static stage, but rather a continuation of the change process. For some problems and for certain individuals, maintenance can be considered to last a lifetime.

Initially, Prochaska and colleagues (Prochaska, DiClemente, & Norcross, 1992) conceptualized change as a linear progression through the stages; individuals were thought to progress from one stage to the next until maintenance was achieved. However, given that relapse has been found to be the rule rather than the exception in behavior change (e.g., Schachter, 1982), the original model was modified (Prochaska, DiClemente, & Norcross, 1992). The new model, the "spiral model" of stages of change, suggests that individuals can move from precontemplation to contemplation to preparation and action, and then to maintenance, but that

most people will relapse and return to an earlier stage. According to the model, relapsers do not revolve endlessly in circles and they do not regress all the way back to where they began. Rather, each time relapsers recycle through the stages, they bring with them the lessons learned from previous mistakes and this enables them to try something different each time (DiClemente et al., 1991).

Support for the spiral model has been found in the smoking cessation literature. Prochaska and colleagues (Prochaska, Velicer, Guadagnoli, & Rossi, 1991) followed 1000 self-changers for two years and found that it took approximately three to four cycles through the stages before an individual was free from smoking. Moreover, only 5% of contemplators progressed to maintenance without regression. In a more recent study, Martin, Velicer, and Fava (1996) followed a sample of 545 smokers over the course of two years and found that in a six-month time period movement through the stages was not always linear. In particular, these authors found that forward and backward movement exists, although the probability of forward movement tended to be greater than backward movement. As well, some smokers shifted two stages during the course of six months; however, the probability of moving to adjacent stages was greater than the probability of two-stage progressions.

Stages of Change - Measurement. Stage of change in substance abuse has been assessed using two self-report instruments that assess stage of change as a continuous or a discrete categorical dimension, respectively (DiClemente et al., 1991). The continuous measure of stages of change, the Stages of Change Questionnaire (McConnaughy, DiClemente, Prochaska, & Velicer, 1989; McConnaughy, Prochaska, & Velicer, 1983), is a generic questionnaire that refers to a "problem" rather than a specific disorder. As such, it can be used to study change in diverse populations. This measure yields separate scales for precontemplation, contemplation, action,

and maintenance. The highest subscale score determines an individual's stage of change, with the exception of the preparation stage, which is defined by high scores on both contemplation and action stages. A profile of scores across the various stages of change can also be obtained from this measure (DiClemente et al., 1991).

The discrete categorical measure assesses stage of change from a series of mutually exclusive questions that focus on duration of behavior change. Precontemplators indicate that they do not seriously intend to change the problem behavior within the next six months. Contemplators state that they are seriously considering changing the problem behavior in the next six months. Individuals who are in the preparation stage intend to take action in the next month, and have unsuccessfully taken action in the past year. Individuals are classified in the action stage if they have successfully altered the problem behavior for a period from one day to six months, where success means reaching a particular criterion such as abstinence from alcohol. Being able to remain free of the problem behavior and being able to consistently engage in new incompatible behavior for more than six months are the criteria for the maintenance stage.

With respect to smoking cessation, the stages of change taxonomy has received widespread empirical support (see Prochaska, DiClemente, & Norcross, 1992). Interestingly, distinct subtypes have been found within each stage, one of which corresponds with the existing stage definition. In addition, there seems to be a subtype that approaches the subsequent stage, and one that leans toward the previous stage (Velicer, Hughes, Fava, Prochaska, & DiClemente, 1995). These results suggest that even within a particular stage, individuals vary in their presentation but that they are likely to gradually progress from one stage onto the next.

Stages of change have been examined in anorexia nervosa and bulimia nervosa using the continuous measure, the Stages of Change Questionnaire (adapted from McConnaughy et al.,

1989), as well as the discrete categorical measure that allocates subjects to a stage based on four questions and an algorithm. In order to assess the psychometric properties of these two measures, a team of researchers at the London Institute of Psychiatry collected stages of change data from 400 eating disorder patients (anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified). Preliminary analyses on 90 women with bulimia nervosa suggest that the discrete categorical measure is too blunt. Using this measure, 80% of women with bulimia nervosa were allocated to the action stage. However, on the continuous measure, 80% of these women were assigned to the contemplation stage. That is, 80% of the individuals who answered "yes" to the action question on the discrete measure, had higher contemplation than action scores on the continuous measure (Troop, personal communication, October 14, 1997) . If this finding generalizes to anorexia nervosa, the implications for tracking stages of change research in this population are profound. Indeed, it will be important for researchers to collaborate and decide upon one measure of stages of change, and to use it consistently.

In addition to using an agreed upon stage of change measure, it is also important to select a measure that is valid. Readiness for change in the eating disorders is not a static state; rather motivational shifts, ambivalence and vacillations between taking action and clinging to symptoms are common (Garner et al., 1996). In addition, while clients may be ready to change certain aspects of their eating disorder, for instance decreasing fasting or laxative abuse, they may not be ready to work on other symptoms, such as eating satiety (e.g., butter) or decreasing exercise. Thus, global measures of stage of change may cloud the "true" picture of client readiness for change. Responding to these issues, Geller and Drab (1999) developed the Readiness and Motivation Interview (Geller & Drab, 1999), a semi-structured assessment tool that elicits information on individuals' experience of, and attachment to their eating disorder

symptoms. In contrast to more commonly used global measures of stage of change (e.g., Stages of Change Questionnaire), the Readiness and Motivation Interview provides detailed symptom-specific information about stage of change. That is, the Readiness and Motivation Interview generates different stage of change scores for restriction, cognitive symptoms, bingeing and compensatory behaviors. The Readiness and Motivation Interview has been shown to be a reliable and valid measure of readiness for change, with good convergent and divergent validity (Geller, Cockell, & Drab, 1999). In addition, in contrast to the Stages of Change Questionnaire which has shown an inconsistent relationship with behavioral outcome (Levy, Lucks & Pike, 1998; Pike, 1998a; Treasure et al., 1999), Readiness and Motivation Interview scores have been found to predict anticipated difficulty of behavioral change, actual behavioral change, and commitment to action-oriented treatment (Geller et al., 1999).

In sum, there are a number of different methods of assessing stages of change in anorexia nervosa. The continuous (i.e., Stages of Change Questionnaire) and discrete self-report measures assess stages of change with reference to one general problem, whereas the interview measure provides symptom-specific information about stage of change. At this stage, empirical studies comparing these different assessment tools are needed. In the meantime, however, it may be useful to use several methods of assessing stages of change. Results using different methods of assessment could be compared within the same study, as well as across studies conducted by other research teams.

Processes of Change. Whereas stages of change describe where an individual is at in terms of the motivational "wheel of change", processes of change describe the cognitive, emotional, and behavioral activities that individuals engage in to bring about change (Prochaska et al., 1988). Processes encompass a number of techniques, methods, and interventions that are

traditionally associated with a cross-section of different therapeutic orientations. The change processes were first identified theoretically in a comparative analysis of 18 major systems of psychotherapy (Prochaska, 1979). Numerous principal component analyses on the process of change items, conducted with various response formats and diverse samples, identified the following 10 basic processes (Prochaska & Velicer, 1997). **Consciousness raising** involves increased awareness about the causes, consequences, and solutions/cures of a particular problem behavior. Interventions that can increase awareness include feedback, education, confrontation, and interpretation. **Dramatic relief** involves experiencing and expressing feelings about one's problems followed by reduced affect if appropriate action is taken. Role playing, grieving, personal testimonies, and media campaigns are examples of techniques that initiate dramatic relief. **Self-reevaluation** involves assessing how one feels and thinks about oneself with and without a particular problem, such as one's image as an alcoholic or a non-drinker. Value clarification, healthy role models, and imagery (e.g., image of self without the problem) are techniques that can alter perceptions of sense of self. **Social liberation** requires an increase in social opportunities or alternatives for problem behaviors, especially for people who are relatively deprived or oppressed. For instance, advocacy, empowerment procedures, and appropriate policies can be used to encourage health promotion for marginalized individuals such as homosexuals, the poor, and immigrants. These procedures can also be used to help all people change, as in the case of smoke-free zones, salad bars in cafeterias, and easy access to condoms and other contraceptives. **Environmental re-evaluation** combines both affective and cognitive assessments of how a personal problem affects one's social and physical environment. It can also include the awareness that one can serve as a positive or negative role model for others. Empathy training, educational material, and family interventions can lead to these assessments.

The **helping relationships** subscale assesses the degree to which an individual experiences care, openness, trust, acceptance, and support for healthy behavior change. Rapport building, therapeutic alliance, and calls to counselors, family members, or close friends are sources of social support. **Counterconditioning** requires substituting healthier behaviors for the problem behaviors. For instance, relaxation can counter stress, assertion can counter peer pressure and calling a friend can counter binge eating. **Reinforcement management** provides rewards for making changes. Contingency contracts, overt and covert reinforcements, positive self-statements, and group recognition are techniques for increasing reinforcement and the probability of repeated healthier responses. **Stimulus control** removes triggers for unhealthy habits and adds prompts for healthier alternatives. Avoidance and self-help groups can provide stimuli that support change and reduce risk for relapse. Examples of stimulus control include planning to park 5-minutes from the office in order to encourage more exercise, and avoiding stepping on a scale in order to reduce preoccupation with weight. Finally, **self liberation** is the belief that one can change and the commitment to act on that belief. New Year's resolutions, public statements, and multiple choices (e.g., quitting cold turkey, nicotine fading, or nicotine replacement) can enhance self-liberation.

While most of the research has focused on the 10 separate processes, Prochaska and Velicer (1997) have also examined how these processes hang together and two factors have been consistently found. One factor has been labeled cognitive/affective processes; this includes more internal processes such as consciousness raising, dramatic relief, self-reevaluation, social liberation, and environmental reevaluation. The second factor has been coined behavioral processes; this includes more overt activities such as counterconditioning, helping relationships, reinforcement management, stimulus control, and self liberation.

The transtheoretical model predicts that certain processes are relevant to each stage of change (DiClemente et al., 1991). Typically, precontemplators, as the most avoidant group, are believed to use the least number of processes. Contemplators are seriously thinking about change, and so cognitive/affective processes such as consciousness raising and self-reevaluation are likely to be prominent among individuals in this stage of change. Behavioral processes, such as stimulus control and counterconditioning are expected to be used by individuals in the action stage of change. However, it is possible that with some behaviors, fewer change processes may be used. For instance, with an infrequent behavior like yearly mammograms, fewer processes may be required to progress to long-term maintenance (Rakowski, Dube, & Goldstein, 1996).

Processes of Change - Measurement. The Processes of Change Questionnaire (Prochaska et al., 1988) has been widely used to measure the cognitive and behavioral recovery activities described above. Although originally developed to assess smoking cessation, a modified version has recently been adapted for individuals with anorexia nervosa (Ward et al., 1996). This version of the Processes of Change Questionnaire assesses eight of the ten original processes, the two omitted processes being environmental reevaluation and social liberation.

Empirical Support for the Transtheoretical Model of Change

In applying the transtheoretical model of change to clinical samples, a consistent pattern of specific processes mapping onto specific stages has been demonstrated. In smoking (Fava, Velicer, & Prochaska, 1995; Prochaska & DiClemente, 1983) and weight loss populations (Prochaska, Norcorss et al., 1992) individuals in the precontemplation stage used the change processes significantly less than people in any of the other stages. Precontemplators processed significantly less information about their problems, devoted less effort to reevaluating themselves, and experienced fewer emotional reactions to negative aspects of their problems. As

well, they shared less information with others about their problems, and they did little to overcome their problems. In therapy, these individuals would be the most resistant to change. Compared to individuals in other stages of change, contemplators were the most open to consciousness raising techniques, such as making observations, confrontations, and interpretations, as well as self-education. In addition, they were much more likely to engage in experiences that raise emotions and lower negative affect (i.e., dramatic relief). Finally, self-reevaluation was highly endorsed by those in the contemplation stage, and the more central the problems were to self-identity, the more they made attempts to redefine their sense of self. Moving into the preparation stage, individuals began to take small steps toward action and tended to use counterconditioning and stimulus control to reduce symptomatic behaviors. During the action stage, people endorsed higher levels of self-liberation; that is, they began to feel capable of change and interested in committing to a program of change. They used counterconditioning and stimulus control to challenge stimuli that trigger relapse, and they relied on close others to support healthy behavior change. Continued use of counterconditioning and stimulus control were also common during the maintenance stage.

When processes of change were assessed over time, the pattern of results support the transtheoretical model of change. Results from DiClemente and his colleagues (DiClemente et al., 1991) showed that movement from precontemplation to contemplation and movement through the contemplation stage occurs with increased use of cognitive, affective, and evaluative processes. Some of these processes continued in the preparation stage; however, individuals who progressed from preparation into action and then maintenance relied heavily on behaviorally based processes. This is clinically meaningful, as knowledge about which processes are

important at particular stages of change can direct therapists to appropriate treatment interventions.

Several lines of research have shown pretreatment stages and processes of change to be excellent predictors of treatment outcome, significantly improving upon previous multidimensional prediction models (Prochaska & DiClemente, 1992; Prochaska, DiClemente, & Norcross, 1992; Prochaska, Norcross, et al., 1992). For instance, in one study, change processes accounted for at least 50% more of attendance and outcome variance than did other variables (Prochaska, Norcross, Fowler, et al., 1992). In another study, stage of change predicted engagement in action-oriented change strategies, such as reading a self-help manual (DiClemente et al., 1991). These findings suggest that assessing readiness and motivation for change are useful in determining which individuals are likely to respond to treatment.

Recently, the relationships between stages and processes of change identified in substance abuse were examined in an eating disorder sample (Ward et al., 1996). Thirty-five inpatients with severe eating disorders (22 with anorexia nervosa-restrictive subtype, 11 with anorexia nervosa - purging subtype, and 2 with bulimia nervosa) completed two questionnaires, one assessing stages of change and the other assessing processes of change. Results indicated that precontemplators endorsed the fewest processes, contemplators emphasized consciousness raising and self-reevaluation, and those taking action used counterconditioning and stimulus control. Applying the same methodology, these results were replicated in a less severe outpatient sample of women with eating disorders (51 with anorexia nervosa and 58 with bulimia nervosa) (Blake et al., 1997). However, different from the inpatient sample, outpatients who were taking action on changing symptoms endorsed high levels of self-liberation. In both of these studies, the relationship between processes of change and maintenance was not assessed. Taken together,

these findings resemble those seen in smokers (Prochaska & DiClemente, 1983), and thus suggest that the transtheoretical model of change may have significant applications to the eating disorders.

In sum, the transtheoretical model of change provides a useful framework for conceptualizing motivation and readiness for change in anorexia nervosa. However, some limitations to the use of this model for eating disorders are worth mentioning. First, although allocation to a single stage of change is relatively straightforward in substance abuse, where the goal is abstinence, the situation is more complicated in anorexia nervosa. There is no clear consensus in the field on one clearly defined behavioral criterion for recovery from anorexia nervosa (see Orimoto & Vitousek, 1992). The action stage for this problem would likely include a combination of several physiological, behavioral and cognitive criteria, such as: increasing food intake, ceasing or at least reducing compensatory behaviors such as exercise, laxative use and self-induced vomiting, challenging fears of gaining weight and feelings of fatness, and exploring new ways to conceptualize the self rather than focusing exclusively on weight and shape. Second, clients may not be neatly placed into one particular stage. They may move backwards and forwards between stages over short periods of time. Alternatively, their stage may vary based on which particular symptom is being assessed (e.g., motivation to cease vomiting versus motivation to gain weight). In addition, within the same day they may be completely conflicted between taking action toward recovery and clinging to anorexic behaviors. Indeed, some clients describe being involved in a battle between the voice of health and the voice of anorexia; the moment they take a step toward recovery, their anxiety draws them back to their anorexic lifestyle which is destructive, albeit safe. Finally, although stages and process provide general information about behavior change, specific information about barriers to change are not

identified. Responding to these shortcomings, eating disorder researchers are beginning to build on the transtheoretical model in order to develop sensitive assessment tools and to provide a richer picture of the recovery process (see Treasure & Ward, 1997; Vitousek, et al., 1996).

Concerns about Change

While stages and processes of change address an individual's level of readiness and consequent actions, actual barriers to change are not identified in the transtheoretical model. However, it has been noted by a number of researchers that asking exploratory questions with respect to client motivation is likely to be useful in addressing treatment resistance (Szmuckler & Tantam, 1984; Vitousek et al., 1996; Vitousek et al., 1998). In the Concerns about Change Scale (Vitousek et al., 1996), individuals are asked what makes it difficult for them to overcome their problem. The original Concerns about Change Scale was made up of eight subscales that address various barriers to recovery; these subscales include: the belief that one is unable to change, the belief that one is unworthy of change, fear of risks, fear of sexuality/maturity, fear of interpersonal loss, fear of personal loss, the problem provides a sense of identity, and failure to recognize irrationality of symptoms. An expanded version of the Concerns about Change Scale, the Concerns about Change Scale-Revised (Vitousek et al., 1996), provides modifications to the original measure. Some subscales were retained without additions or deletions, others were modified with the addition of new items, or the elimination of items that performed badly on item analyses, and two subscales were split because they seemed to subsume different contents (i.e., fear of sexuality/maturity was split into fear of sexuality and fear of maturity, and fear of personal loss was split into fear of loss of accomplishment and fear of hedonic loss). In addition to modifications, new item clusters were added, including: fear of the process of change, fear of peer group loss, disinhibition (i.e., the belief that the problem allows the individual to do or say

things he or she would otherwise have difficulty expressing), avoidance of responsibility (i.e., the belief that the problem allows the individual to avoid responsibilities that would have to be confronted after recovery), coping with negative affect, goal attainment, and deep underlying flaw (i.e., the belief that the problem reflects some deep personal inadequacy, so that the alleviation of symptoms would be ineffective in resolving the "real" issues of concern). Table 1 provides examples of items for each of these subscales.

Insert Table 1 about here

Although in its infancy, preliminary work using the Concerns about Change Scale (Vitousek et al.,1996) revealed that individuals with anorexia nervosa report many more concerns about change than bulimics, agoraphobics and social phobics. As well, individuals with anorexia nervosa consistently obtained the highest scores on four of the subscales which may be particularly pertinent to this disorder; namely, fear of personal loss, fear of interpersonal loss, fear of loss of identity, and failure to recognize irrationality of symptoms. Further work using the Concerns about Change Scale - Revised generated different profiles for individuals who have eating disorders compared to individuals with substance abuse disorders. This measure also revealed differences between eating disorder subtypes. Individuals with anorexia nervosa report significantly higher scores than individuals with bulimia nervosa on 11 subscales, and significantly higher scores than individuals with "eating disorders not otherwise specified" on 14 subscales. Differences were especially striking on subscales that have to do with the positive valuing of anorexic symptoms; namely, fear of loss of accomplishment, fear of loss of identity, goal attainment, and failure to recognize the irrationality of symptoms. Together, these results

offer preliminary support for the validity of the Concerns about Change Scale - Revised, and suggest that individuals with anorexia nervosa value their symptoms and believe that they would lose a great deal if they gave them up.

Although the Concerns about Change Scale – Revised holds promise as an index of motivation and readiness for change, there are a number of limitations which deserve mention. First, this scale is not grounded in a long-standing theory of change, such as the transtheoretical model of change. This is significant as absence of strong theoretical underpinnings often means that there is less theoretically related research in the literature, and also less opportunity to interpret results within a larger context of findings. Second, the Concerns about Change Scale – Revised is a new measure with limited psychometric support. The scale is very long, cumbersome to complete, and difficult to interpret as the factor structure has not been empirically evaluated. Additional research is thus required before results from this scale can be confidently discussed. Third, although the Concerns about Change Scale-Revised provides important information about underlying barriers to change, it is not a disorder-specific measure, and therefore does not provide fine-grained coverage of the specific issues most commonly experienced by clients with anorexia nervosa. Finally, this scale assesses one side of the ambivalence equation, that being an evaluation of barriers to change; however, it does not assess reasons in favor of change. As such, the degree to which individuals feel torn regarding their decision to change or stay the same is not fully captured in this measure.

Decisional Balance

As noted earlier, a central feature of anorexia nervosa is the egosyntonic nature of symptoms. Client beliefs about eating, shape, and weight may be personally valued or culturally shared in their social world, such that challenges to their validity are unavailable or irrelevant

(Vitousek et al., 1998). As such, focusing on the function rather than the validity or correctness of beliefs may be more useful. One application of "functionality" is a review of advantages and disadvantages of a belief or behavior. This strategy has been widely recommended in the assessment and treatment of eating disorders (e.g., Garner & Bemis, 1982; Killick & Allen, 1997;Vitousek & Orimoto, 1993; Vitousek et al., 1998). For instance, Pike et al. (1996) suggest allocating time with the client at the beginning of treatment to develop a detailed list of advantages and disadvantages of anorexia nervosa. To aid in clarifying motivation and resistance to change, Wilson and Pike (1993) suggest using a Decisional Analysis Form. This form can help clarify the conflicting thoughts and feelings clients may have regarding their eating disorder. The influence of this exercise on decision to participate in treatment is believed to be independent of the extent to which this list is either complete or correct (Vitousek et al., 1998).

Despite clinical suggestions to explore the positive and negative aspects of anorexia nervosa with clients as a means of determining readiness for change, there is little empirical work supporting this conceptualization and intervention. One of the main reasons for the dearth of work in this area is the absence of psychometrically rigorous measures. In fact, the only empirical study (Blake et al., 1997) that has assessed the pros and cons of anorexia nervosa used a decisional balance measure that was adapted from Rossi, Rossi, Velicer and Prochaska's (1995) decisional balance for weight *loss*. This adapted measure was not factor analyzed, and no psychometric data were provided to support its use. Moreover, many of the items were conceptually weak (e.g., "I would feel sexier if I gained weight", and "I would be less self-conscious if I gained weight"). Given these serious limitations, the decisional balance data reported by Blake et al. (1997) are contestable.

Although there is little empirical work investigating the decisional balance in eating disorders, this construct has been assessed in several other populations, including smoking cessation (Velicer, DiClemente, Prochaska, & Brandenburg, 1985), cocaine use (Rosenbloom, 1992), weight control (O'Connell & Velicer, 1988), dietary modifications (Rossi, 1994), the practice of safe sex (Redding, Rossi, Velicer, & Prochaska, 1989), condom use (Prochaska & Redding, 1994), sunscreen use (Rossi & Blais, 1994), adoption of regular exercise programs (Marcus, Rakowski, & Rossi, 1992), mammography screening (Rakowski, Dube, Marcus, Prochaska, Velicer, & Abrams, 1992), and physicians' preventive practices with smokers (Marcus & Eaton, 1994). The decisional balance measures used in these studies were based primarily on Janis and Mann's (1977) decision-making model, but also incorporated the concepts of barriers and facilitators from the health beliefs model (Becker & Rosenstock, 1984), as well as the concept of social and behavioral norms from the theory of reasoned action (Fishbein & Ajzen, 1980).

Janis and Mann's decisional balance model is a schema for representing the cognitive and motivational aspects of human decision-making. This model was designed for application to important decisions made at the personal and organizational level. The main assumption of the Janis and Mann model is that decision making is the result of carefully considering and comparing instrumental and personal/value-based (e.g., self-esteem, social approval) gains and losses for the self and for others. This decisional balance schema generated only a limited number of empirical investigations, all employing an interview. Nevertheless, the general finding was that individuals who completed this interview prior to decision making experienced less post-decisional regret and were more objective about their decisions than controls (Mann, 1972).

Based on this conceptualization, Velicer et al. (1985) constructed a decisional balance measure to study the decision making process for smoking cessation. Over 700 individuals responded, on 5-point rating scales, to items reflective of Janis and Mann's eight types of consequences (i.e., utilitarian gains and losses for self; utilitarian gains and losses for others; self-approval or self-disapproval; and approval or disapproval from others.). Principal component analyses identified two components that were labeled the "pros of smoking" and the "cons of smoking". The pro scale contained items representing the pleasure, tension reduction, self-image, and habit factors identified as the basic reasons for cigarette use, and the con scale consisted of items representing health, example, aesthetics and mastery considerations associated with motives for quitting. Thus, rather than eight factors that need to be balanced when making decisions, as posited by Janis and Mann, there were only two - the advantages and disadvantages of the behavior in question. The pro and con scales were found to be relatively independent factors, such that someone could be high on one and low on the other, high on both factors or low on both factors (Prochaska, Redding et al., 1994).

The decisional balance construct has received widespread support for smokers. For instance, Velicer et al. (1985) found that the pro and con scales reliably differentiated smokers in different stages of change. Precontemplators were out of balance with the pros of smoking dominating. For contemplators and relapsers, the pro and con scores were nearly in balance. For the recent quitters (action stage) and long-term quitters (maintenance stage), the scores again were out of balance, with the cons of smoking dominating. Similar findings were observed in a representative sample of 4,144 smokers (Fava, Velicer, & Prochaska, 1995). In this study, smokers in the preparation stage, followed by contemplators, had the highest con scores. As

well, individuals in these two stages displayed a crossover of attitudes in which the cons of smoking become more salient than the pros of smoking.

In addition to differentiating smokers in different stages of change, Velicer et al. (1985) found that the decisional balance measure predicted movement at 6-month follow-up for two stage groups (Velicer et al., 1985). The decisional balance predicted movement for precontemplators to any other group. It also predicted movement for the contemplators. A pro score higher than a con score suggested movement from contemplator back to precontemplator. A pro score equal to a con score suggested no movement or movement to the relapse group. A pro score lower than a con score suggested movement to the action group. These results suggset that the decisional balance construct is well suited to assessing, describing, and predicting behavior change among smokers.

Further support for the decisional balance is documented in an integrative study investigating the generalization of the transtheoretical model across 12 health risk behaviors (Prochaska, Velicer, et al., 1994). Predictable patterns of advantages and disadvantages across stages of change were found (see Figure 1 for an example). Individuals in the precontemplation stage reported more positive than negative aspects of the health risk behavior (e.g., smoking). However, the negative aspects of the health risk behavior were higher for individuals in the contemplation stage than for those in the precontemplation stage. This suggests that progress from precontemplation to contemplation involves an increase in perceived disadvantages of the health risk behavior. There were no systematic differences between precontemplation and contemplation for the positive aspects of the health risk behavior; however, progress from contemplation to action was marked by a lowering of the advantages of the health risk behavior.

As well, for people in the action stage, the disadvantages of the health risk behavior outweighed the advantages.

Inset Figure 1 about here

These findings have implications for progress through the stages. To progress from precontemplation to contemplation, the cost of the health risk behavior must increase, and to progress from contemplation to action, the benefits of the health risk behavior must decrease. Thus, for change to occur, the costs of the health risk behavior should be targeted first, and the benefits should be addressed after progress to the contemplation stage has been secured (Herrick, Stone, & Mettler, 1997; Prochaska & Velicer, 1997).

These findings were further substantiated in a recent study assessing two principles for progressing from precontemplation to action stages of change (Prochaska, 1994). The "strong" principle states that progression from precontemplation to action is a function of approximately 1 1 standard deviation increase in the disadvantages of a risk behavior. The "weak" principle states that progression from precontemplation to action is a function of approximately ½ standard deviation decrease in the advantages of a risk behavior. Both principles received strong support in a sample of 1,466 smokers (Prochaska, 1994). In an eating disorder sample, Blake et al. (1997) found support for the strong principle of change, but not the weak principle. However, as mentioned above, since the decisional balance measure used in this study was psychometrically weak, these results may not be valid.

In sum, a number of measures have been developed to assess readiness and motivation for change in other populations, and there is a growing body of research on readiness and motivation

for change in the eating disorders. The Stages and Processes of Change Questionnaires provide general information about motivational status and the cognitive and behavioral activities that individuals are using to work towards change, respectively. However, these measures are not specific to anorexia nervosa, nor do they provide detailed information about why clients feel torn and become stuck. The Concerns about Change Scale - Revised provides more detailed information about what is preventing individuals from long-term change. However, this scale is not grounded in a long-standing theory of change, the psychometric properties of this measure have not been adequately established, the scale is not specific to anorexia nervosa, and it does not provide information about the *balance* of gains and losses that are anticipated when change occurs. The decisional balance construct provides detailed information about motivating and inhibiting factors that impact on readiness for change. This construct is grounded in the transtheoretical model of change, which is a long-standing theory of change. Decisional balance measures have been developed and validated in both addictive and non-addictive populations, but not in the eating disorders.

In the three studies that follow, research was conducted to confirm that individual differences in readiness and motivation for change, as assessed by the decisional balance (DB) for anorexia nervosa, do indeed exist and that these differences can be assessed in a reliable and valid manner. Study 1 describes the development of the DB for anorexia nervosa and applies factor analytic techniques to examine the underlying structure of this new measure. In addition, Study 1 assesses internal consistency and test-retest reliability. The aim of Study 2 was to investigate convergent and divergent validity, and the goal of Study 3 was to examine criterion validity.

Study 1: Development of the Decisional Balance for Anorexia Nervosa

The initial steps in developing a measure of a psychological construct involve explication of the construct in question, rational generation of a large pool of items, and selection of the best items (Jackson, 1971). Thus, the first purpose of Study 1 was to develop a reliable set of items, derived from psychological theory, tapping positive and negative aspects of anorexia nervosa.

A second purpose was to examine the underlying structure of the Decisional Balance (DB), using factor-analytic techniques. Since the DB was designed to assess positive and negative aspects of anorexia nervosa, it was hypothesized that two primary factors would emerge. However, exploratory analyses were conducted to examine the possibility of alternate but more suitable ways to conceptualize the decisional balance construct in this population.

A third purpose was to assess internal consistency of this new measure. Internal consistency provides an index of the degree to which test items are consistent, which is a prerequisite of validity. However, high internal consistency can be antithetical to validity when the variable being measured is broad (Kline, 1986). That is, if items are highly correlated, but they do not assess all aspects of a broad construct, internal consistency may indeed be high, but the test items will not necessarily be valid. Since the DB items cover a broad range of domains (e.g, health concerns, self-esteem concerns, social concerns, etc.) it was hypothesized that internal consistency would be moderate, but not excessively high.

Finally, in order to determine reproducibility of the DB over time, test-retest reliability was also examined. Since an individual's readiness for change was expected to fluctuate, the stability of the DB scores was examined over just one week. It was hypothesized that DB scores at two time points would be significantly and highly correlated.

Method

Participants

Two hundred and forty-six women at various stages of treatment for anorexia nervosa were recruited from inpatient and outpatient eating disorder programs in a Canadian metropolitan hospital, a British metropolitan hospital, and a private residential program in the United States. In order to maximize variability in decisional balance scores, participants were selectively recruited to represent various phases of the recovery process. Some individuals had never received treatment and were being assessed for the first time, others had been assessed in the past, may or may not have engaged in treatment, and were being reassessed, others were involved with either inpatient or outpatient treatment, and still others had received treatment in the past and may or may not have pursued additional treatment in the community. Diagnostic, demographic, and DB data were compared across the three samples before pooling the data. The samples are described in detail below.

Canadian Group. One hundred and eight women were recruited from consecutive new referrals at an eating disorder clinic in a Canadian metropolitan hospital. Participation was voluntary and the women were free to withdraw at any time. Participants who did not want to volunteer their time, or who were unable to concentrate for extended periods, were excluded from the study. The Eating Disorder Examination (EDE; Cooper & Fairburn, 1987) was used to classify participants according to DSM-IV eating disorder diagnosis. Twenty-eight individuals were excluded because they did not have a current, past, or subthreshold diagnosis of anorexia nervosa.

Of the 80 participants included in the study, 17 (21.2%) were rated as anorexia nervosa binge/purge subtype, 31 (38.8%) were rated as anorexia nervosa restricting subtype, 25 (31.2%)

were rated as subthreshold anorexia nervosa with a past diagnosis of anorexia nervosa, and 7 (8.8%) had a past diagnosis of anorexia nervosa but did not meet subthreshold criteria any more. Note that subthreshold anorexia nervosa was assigned when three of the four DSM-IV criteria for anorexia nervosa were present over the course of three consecutive months. All participants were outpatients at the time of assessment, but 6 (7.5%) had recently been hospitalized for eating disorder treatment, which suggests that their physical health was seriously compromised. Fifty-five (68.8%) of the participants had received some form of eating disorder treatment prior to participating in this study. Demographic data, including age, age of onset, duration of eating disorder, BMI and socioeconomic status, are presented in Table 2.

Insert Table 2 about here

American Group. Sixty women were recruited from a private residential eating disorder clinic in the United States. The DB was completed by women who were identified by the clinic medical charts to meet full or subthreshold DSM-IV criteria for anorexia nervosa. The Health Information Questionnaire (Geller, 1996) was used to classify participants according to DSM-IV eating disorder diagnosis. Twenty (33.3%) were rated as anorexia nervosa binge/purge subtype, 18 (30.0%) were rated as anorexia nervosa restricting subtype, 22 (36.7%) were rated as subthreshold anorexia nervosa. All participants were inpatients at the time of assessment. Fifty (83.3%) of the participants had received some form of eating disorder treatment prior to participating in this study. Demographic data are presented in Table 2.

British Group. One hundred and six women with current or past anorexia nervosa were recruited from an eating disorder volunteer data base in England. This data base was made up of

women who had a current or past diagnosis of anorexia nervosa and wanted to participate in research. Advertisements were published in an eating disorder association newsletter, as well as in magazines and newspapers. The DB was completed by women in the data base who reported a BMI less than 17.5 (which is similar to below 85% expected body weight criterion stipulated in DSM-IV), amenorrhea (i.e., absence of menstrual cycle for three consecutive months), and had recently received a diagnosis of anorexia nervosa. The questionnaire was also completed by women who met these criteria in the past, but no longer met all of them, and described themselves as "recovering" or "a lot better than I was, but still struggling at times". Typically, these women reported having regained their periods or regained enough weight to take them out of the anorexic range but still said they were having difficulties. Based on these criteria, 38 (35.8%) were rated as anorexia nervosa binge/purge subtype, 40 (37.7%) were rated as anorexia nervosa restricting subtype, 24 (22.6%) were rated as subthreshold anorexia nervosa, and 4 (3.8%) did not provide enough information to estimate a diagnosis. Fifty-three (50.0%) of the participants were receiving inpatient or outpatient treatment for their eating disorder prior to participating in this study. Demographic data are presented in Table 2.

Measures (see Appendix A for copies of measures)

Decisional Balance (DB). As recommended by Jackson (1971), an initial pool of 75 items capturing the broad domains of positive and negative aspects of anorexia nervosa was developed by the first author and 6 eating disorder specialists (1 psychiatrist, 2 psychologists, 2 dietitians, and 1 senior nurse clinician) who had an average of 9 years (SD = 4.3) experience working with anorexic clients. This item pool was corrected for clarity, duplicates were deleted, and some items were rephrased. These refinements resulted in a 60-item self-report measure, consisting of 30 pro items (e.g., Anorexia is my way of being perfect, Anorexia is part of what

makes me unique and special) and 30 con items (e.g., I have trouble concentrating as a result of anorexia, Because of anorexia, I have lost a sense of who I am). Items reflecting positive aspects of anorexia nervosa were grouped into themes of self-esteem enhancement, self-control, confidence, and uniqueness. By contrast, items tapping negative features of anorexia nervosa were loosely organized into themes of social impairment, psychological impairment, and health concerns. Items were written such that statements could be rated on a 5-point Likert scale from 1 (not at all true) to 5 (completely true). Interestingly, these themes are very similar to themes reported in a recently published qualitative study examining letters addressed to "Anorexia my friend" and another to "Anorexia my foe" (Serpell, Treasure, Teasdale, & Sullivan, 1999).

Eating Disorder Examination (EDE). The EDE (Cooper & Fairburn, 1987) is a standardized investigator-based interview that elicits information concerning regular eating habits, as well as attitudes, feelings, and behaviors associated with eating, shape, and weight. The EDE permits operationalized eating disorder diagnoses based on DSM-IV. Diagnoses are based on items that measure clinical symptoms of eating disorders, assessed over the past three months. These symptoms include: fear of weight gain, feelings of fatness, restraint over eating, maintenance of low weight, menstruation, importance of shape, importance of weight, objective bulimic episodes, dietary restriction outside bulimic episodes, self-induced vomiting, laxative misuse, diuretic misuse, and excessive exercise. Symptoms are considered clinically significant if they are occurring more than 50% of the time for the past three months, or if they are rated 4, 5 or 6 on a severity scale that ranges from 0 to 6 for the past three months. The EDE has been shown to be internally consistent, with alpha coefficients ranging from .68 to .90 in a clinical sample (Cooper, Cooper, & Fairburn, 1989), and tests of its convergent (Rosen, Vara, Wendt, & Leitenberg, 1990) and divergent validity (Cooper et al., 1989) support its use. For example, the

EDE has been found to discriminate well between patients with an eating disorder and individuals concerned about eating, shape, and weight, but who do not have an eating disorder (Wilson & Smith, 1989). Only the diagnostic items of this interview were administered in this study to establish current, subthreshold and past diagnoses of anorexia nervosa. A subthreshold diagnosis of anorexia nervosa was assigned when three of the four DSM-IV criteria were met, and a past diagnosis of anorexia nervosa was determined using a retrospective checklist of the diagnostic items.

Health Information Questionnaire. The Health Information Questionnaire (Geller, 1996) was used to provide diagnostic information and severity of eating disorder symptomatology in the American sample. The Health Information Questionnaire is based on DSM-IV eating disorder criteria, and other eating disorder surveys developed for similar purposes (Greenfeld, Quinlan, Harding, Glass, & Bliss, 1987; Kagan & Squires, 1983; Whitaker et al., 1989). Weight history, menstrual history, fear of gaining weight, worries about eating habits, presence of binge eating, perceived lack of control over eating, frequency of crash dieting and frequency of six compensatory behaviors, including excessive exercise, fasting, use of diet pills, diuretics, vomiting, and laxatives are assessed. Total disturbed eating score, calculated as the sum of all of the items, range between 0 and 69. This measure has good internal consistency ($\alpha = .85$), and tests of its concurrent and divergent validity support its use (Geller, 1996).

General Information Sheet for the Canadian and American Samples. In this form (designed for this study), participants provide their date of birth, height, weight, age at eating disorder onset, highest past weight, lowest adult weight, desired weight, eating disorder treatment history, and both occupational and educational status of financial providers (mother, father, and/or self). Occupation and education were used to determine socioeconomic status

(Hollingshead, 1975). Height and weight were used to calculate body mass index (BMI), as well as percentage body weight for height based on the Metropolitan Life Charts. The remaining variables were used for descriptive purposes, and to explore possible correlates of the DB.

General Information Sheet, British Sample. In this form, participants provide their date of birth, height, weight, age at eating disorder onset, and eating disorder treatment history. Height and weight were used to calculate BMI, as well as percentage body weight for height based on the Metropolitan Life Charts. As well, a number of diagnostic questions, adapted from the EDE, were included to ascertain approximate eating disorder diagnostic status, past and present.

Procedure

Canadian Group. Women who had been referred by their general practitioner for an eating disorder assessment were contacted by the clinic secretary to set a date for three appointments, namely a medical assessment, a psychological assessment, and a research assessment. During this phone call, the purpose and procedure of the research assessment were described briefly, and the voluntary nature of involvement was made explicit (see Appendix B for initial phone contact protocol). The clinic secretary provided the research assistant with the names and tentative appointment times of women who had provided consent to be contacted regarding the research assessment. The research assistant then contacted these potential participants by phone to provide additional information about the study and to answer questions and address concerns.

Upon arrival at the clinic, participants were greeted by the research assistant and directed to a private office. The purpose of the study and procedures were described again in more detail, limits to confidentiality were explained, and the voluntary nature of participation was emphasized. Participants were left on their own to complete a packet of questionnaires, one of

which was the DB. Following completion of the questionnaires, participants completed the Eating Disorder Examination diagnostic questions. Another packet of questionnaires was then administered, but these questionnaires were not relevant to Study 1 and therefore will not be described here (see Study 2 for more details).

American Group. A consent form, the DB and the Health Information Questionnaire were included in the admission packet that all clients received as a part of the standard intake procedure at a private residential eating disorder clinic in the United States. The consent form described the study, emphasized that participation was voluntary and explained that a decision not to participate would not impact treatment in any way. Completed questionnaires were returned in sealed envelopes to the nursing station and were collected by the clinic research assistant. Clients were asked to complete the DB a second time, one week later. Again, completed questionnaires were returned to the nursing station, and then collected by the research assistant the following day.

British Group. Women who responded to advertisements seeking women with current or past eating disorders volunteered to participate in this study. A consent form, and packet of questionnaires including the DB, were sent to participants by mail and pre-paid postage envelopes were provided to return the questionnaires upon completion.

Results

Preliminary Analyses

In order to determine whether or not the DB data could be pooled across the three samples, a number of preliminary analyses were performed. First, qualitative similarities and differences between participants from the three sites were considered. Program guidelines for the three sites indicated that clients typically accessed eating disorder treatment through national

health services. Generally, a family physician assessed the client and then referred her to a local or national specialist unit at her discretion. Criteria for treatment, including prioritization of severe eating disorders needing urgent medical attention, appeared to be comparable across the three sites. Since the American participants were recruited from a private inpatient residence, analyses were conducted to determine if they had a higher socioeconomic status. The results indicated that the Canadian and American samples did not differ on this variable, t (107) = 1.16, $p>.05$. Socioeconomic status data were not collected for the British sample, therefore comparability on this variable remains unknown. The main difference between the samples was the method of recruitment. The Canadian participants were recruited from consecutive referrals at an outpatient assessment clinic, the American participants were recruited from consecutive referrals at an inpatient residential home, and the British participants were recruited from the community. Given these differences, additional analyses were conducted to determine whether or not the data from these three samples could justifiably be pooled.

In order to detect whether the three samples were comparable on age, BMI, age of eating disorder onset, and duration of eating disorder, a series of analyses of variance (ANOVA) were conducted. Significant differences were not detected for age of eating disorder onset, F (2,235) = .76, $p>.05$. However, significant differences were detected for age (F (2,240) = 8.73, $p<.001$), BMI (F (2,227) = 7.18, $p<.001$), and duration of disorder (F (2,232) = 7.14, $p<.001$). Follow-up Tukey's HSD comparisons indicated that British participants were older and lower in BMI than the Canadian participants, who did not differ from the American participants. Regarding duration of disorder, Canadian participants reported a shorter duration of disorder than American and British participants, who were not different from one another.

In order to examine the potential influence of these differences on DB scores, correlational matrices were inspected. Since the three samples were different in size, a correlation cut-off of 0.30 was used to compare the magnitude of correlations across sites. This cut-off tended to meet significance at $p<.01$ in each of the three samples. Correlations between age and DB items for each of the three samples revealed very few correlations above 0.30 in a correlation matrix of 60 coefficients (4, 1, and 3 in the Canadian, American and British samples, respectively). Similarly, only a few correlations above 0.30 were detected between BMI and each of the 60 DB items in each of the three samples (0, 1, and 5 in the Canadian, American, and British samples). With regard to duration of disorder, a similar pattern of correlations was observed (6, 3, and 1 correlations above 0.30 for the Canadian, American, and British samples, respectively). As such, although the British sample was older and lower in BMI than the other two samples, age and BMI did not appear to influence the DB items in a way that contraindicates pooling the data. Similarly, although duration of disorder was shorter in the Canadian sample than the other two samples, duration of disorder did not appear to pose a serious threat to comparability of the data.

In order to determine if the diagnostic breakdown (i.e., anorexia nervosa - binge/purge, anorexia nervosa - restrictive, subthreshold anorexia nervosa) was comparable across the three groups, a Chi Square was computed. The 7 participants in the Canadian sample who did not meet full or subthreshold criteria for anorexia nervosa (but did meet criteria in the past) were not included in this analysis because the other sites did not include this as one of the diagnostic categories. The Chi Square was not significant, χ^2 (4) = 6.82, $p>.05$., suggesting that participants in the three samples were diagnostically similar.

Once demographic similarity was established, inspection of the data proceeded to the DB item level. For each item, the mean, standard deviation, range, skewness and kurtosis were inspected and compared across the three samples. In order to compare mean item scores, a series of ANOVAs were computed. Significant differences were detected between the three samples on 4 items when alpha was set at .01. Follow-up Tukey's HSD indicated that the Canadian sample reported significantly higher scores than the British sample on items 3 and 34. The British sample scored higher than the Canadian sample on item 39, and higher than the American sample on item 57. The average difference between items was 0.60 ($\underline{SD}$ = 0.21) points. Next, an ANOVA was computed to compare standard deviations across the three samples and no significant differences were detected, $\underline{F}$ (2, 177) = 1.36, $\underline{p}$>.05. The range of responses was examined for each of the 60 items, and again no differences were detected across the three samples. Finally, in an effort to compare the distribution of scores for each of the 60 items across the three samples, indices of skewness and kurtosis were examined. Distributions that were positively or negatively skewed, or revealed normal or nonnormal kurtosis ($\underline{p}$<.01), were identified and then compared across the three samples. Using this strategy, the pattern of skewed and non-skewed scores overlapped 82% between the Canadian and American samples, 83% between the Canadian and British samples, and 80% between the American and British samples. The pattern of normal and nonnormal kurtosis overlapped 85% between the Canadian and American samples, 58% between the Canadian and British samples, and 50% between the American and London samples. With the exception of kurtosis, these analyses suggest that the descriptive statistics for the three samples are quite similar. Overall, there appears to be substantive support for the decision to pool the DB items across the three samples.

Exploratory Factor Analysis

According to the transtheoretical model of change (Prochaska, DiClemente, & Norcross, 1992, Prochaska, Velicer et al., 1994, Prochaska & Velicer, 1997), the decisional balance would be best explained with a two factor solution; namely, a pro factor which captures positive consequences about a given behavior/disorder, and a con factor which captures negative consequences about the same behavior/disorder. This factor structure has been empirically supported in addictive and non-addictive populations (Prochaska, Velicer et al., 1994); however it has not been tested in the eating disorders. In order to verify whether the two factor solution was appropriate for the DB for anorexia nervosa, an exploratory factor analysis was conducted.

Number of factors: In order to determine the number of factors to rotate, Eigenvalues greater than one, proportion of variance, and Scree plots were inspected. Applying the Eigenvalues greater than one criterion to the DB data, fourteen factors emerged. This statistic was used to provide an upper end estimate because this rule tends to give large estimates of the number of factors (Harmon, 1976), particularly when the number of items entered into the factor analysis is large, as was the case in this study. With this in mind, percent of variance accounted for by each factor was examined. The first five factors accounted for 20.2%, 12.3%, 6.0%, 4.1%, and 3.7% of the variance, respectively. Factors six through fourteen accounted for only 2.7% to 1.7% of the variance, respectively, and therefore were considered trivial. In order to hone in on the most meaningful factor solutions, the Scree plot (see Figure 2), which graphs Eigenvalues of the unrotated factors, was examined. At some point, the Scree plot becomes fairly straight and approaches a horizontal. There is a rule that suggests all factors on the horizontal account for error, so they should not be rotated (Cattell, 1966). In other words, the suggestion is to rotate

only the number of factors that occur before the line becomes a horizontal. Applying this guideline, the Scree plot suggested a three to five factor solution.

Insert Figure 2 about here

Extraction: Since the purpose of this factor analysis was to seek conceptual understanding of readiness and motivation for change, as opposed to summarizing the results of the items, the common factor analysis model was applied. Since it was important that each item be given equal weight in the factor analysis, as opposed to letting items with higher communalities have more influence on the solution, an unweighted solution (i.e., unweighted least squares) was selected.

Rotation: Since the DB was designed to assess positive and negative consequences of anorexia nervosa, and subscales were believed to be sub-components of this construct, it made sense that these subscales might be correlated. For this reason, an oblique solution was most appropriate. Based on hyperplane counts, number of complex variables, and number of salient loadings, delta was set at 0.

Factor loadings: The sixty DB items were used in a series of factor analyses with unweighted least squares extraction and oblique rotation (delta = 0). The three, four, and five factor solutions were examined. Items were assigned to factors when they had salient loadings on one factor and were not complex. This approach produces matrices that are clean and simple in structure, and subscales that measure only one construct each.

The three factor solution accounted for 38.5% of the variance (see Table 3). Eliminating items that had factor loadings less than .25 (i.e., items 8, 19 and 34) or that loaded above .25 on

more than one factor (i.e., items 20, 31, 36, 39, 41, 46, 52, 56, and 60) resulted in a set of 14 items loading greater than .32 on factor 1, 16 items loading greater than .30 on factor 2, and 18 items loading above .31 on factor 3. All of the items on factor 1 and 2 were pro items, except for items 2, 4, 48 and 50. All of the items on factor 3 were con items.

Insert Table 3 about here

The four factor solution accounted for 42.6% of the variance. Eliminating items that had factor loadings less than .25 (i.e., item 19) or that loaded above .25 on more than one factor (i.e., items 29, 31, 34, 36, 41, 44, 46, 48, 50, and 52) resulted in a set of 12 items loading greater than .29 on factor 1, 18 items loading greater than .30 on factor 2, 14 items loading greater than .30 on factor 3, and four items loading greater than .28 on factor 4. Items on factor 1 and 3 were pro items, except for items 2 and 4, and items on factor 2 and 4 were con items, except for item 53. Since loadings on factor 4 were relatively low ($\underline{M}$ = .35, $\underline{SD}$ = .06) compared to loadings on other factors (mean loading were above .54 for factor 1, 2, and 3 in the 3 and 4 factor solutions), and the items did not hang together thematically, the four factor model did not appear to provide a good fit for the data.

The five factor solution accounted for 46.3% of the variance. Eliminating items that had factor loadings less than .25 (i.e., item 8) or that loaded above .25 on more than one factor (i.e., items 23, 29, 31, 32, 33, 39, 41, 42, 44, 46, 50, 52, and 56) resulted in a set of eight items loading greater than .52 on factor 1, 16 items loading greater than .31 on factor 2, 14 items loading greater than .29 on factor 3, eight items loading greater than .32 on factor 4, and one item (i.e., item 21) loading exclusively onto factor 5. All of the items loading onto factors 1, 3, and 5 were

pro items and all of the items loading onto factors 2 and 4 were con items, except for items 20 and 53. Since only one item loaded exclusively onto factor 5, it seemed reasonable to conclude that the five factor model did not provide a good fit for the data.

These preliminary analyses suggested that the three factor solution provided the best fit for the DB for anorexia nervosa. This solution was inconsistent with the transtheoretical model of change, which predicts a two factor solution. It is also different from the two factor solution that has been supported in substance abuse populations. Nevertheless, this three factor solution, which is neatly comprised of one con factor, and two pro factors, appeared to be the most interpretable solution.

Reduction of items: A number of criteria were established to reduce the number of items to retain on each of the three factors. Items were eliminated if they loaded less than .25 on any factor (i.e., items 8, 19 and 34), or above .25 on more than one factor (i.e., items 20, 31, 36, 39, 41, 46, 52, 56, and 60). Items were also eliminated if the item mean was greater than 4.5 or less than 1.5, or if the standard deviation was less than 1.00 (i.e., items 13, 15, and 17) because such items would have little discriminating power. Finally, item content was considered, and items that were thematically different (e.g, pro item that loads onto a factor comprised of mostly con items) were dropped from the measure (i.e., items 2, 4, 48, 50).

The remaining 41 items were used in a second factor analysis with unweighted least squares extraction and oblique rotation (delta = 0), specifying a three factor solution. This model accounted for 44.1% of the variance (see Table 4). Eliminating complex items (i.e., items 3, 23, 29, 44, and 53) resulted in a set of 11 items loading above .39 on factor 1, 17 items loading above .36 on factor 2, and eight items loading above .54 on factor 3. Items on factors 1 and 3 were pro items and items on factor 2 were con items.

Insert Table 4 about here

The items remaining on each subscale were then inspected to determine if they represented a single coherent construct. If the content of an item did not appear to belong with the content of the majority of the subscale, it was eliminated. Using this strategy, items 21 and 57 were eliminated from factor 1, and item 40 was eliminated from factor 2. Item 45 was also eliminated from factor 1 because the wording was similar to item 43, but perhaps inappropriate for older respondents. Finally, items 28 and 33 were dropped because they had weak loadings relative to the other items that loaded onto their respective factors. A third factor analysis with unweighted least squares extraction and oblique rotation (delta = 0), specifying a three factor solution, was conducted on the remaining 30 items. This model accounted for 49.2% of the variance and resulted in a set of 15 items loading above .41 on factor 1, eight items loading above .50 on factor 2, and seven items loading above .55 on factor 3.

Interpretation of factors: Each factor was examined to determine if a coherent construct could be seen to underlie the factor. The items, with salient loadings, are displayed in Table 5. The first factor comprised 15 items that assess negative affective, intrapersonal and interpersonal consequences of anorexia nervosa. Examples of specific items include: "It bothers me that my weight controls my mood", "I hate the fact that anorexia controls my life", and "It bothers me that anorexia keeps me from socializing". This factor was labeled **Burdens.** The second factor comprised eight items that identify anorexia nervosa as a vehicle for self-control, feeling accomplished, and enhancing self-esteem. Examples of specific items include: "Anorexia gives me self-control", "Anorexia helps me obtain an immediate goal", "Being thinner than others

makes me feel good about myself". This factor was labeled **Benefits.** The third factor included seven items reflecting the way that anorexia nervosa allows individuals to avoid negative emotions, anticipated responsibilities, and the challenges of adult life. Examples of specific items include: "Anorexia is my way of avoiding deeper, more serious problems", and "Because of anorexia, I don't have to deal with intimate adult relationships". This factor was labeled **Avoidance Coping.**

Insert Table 5 about here

Reliability

Summations of items comprising each of the factors were used to derive subscale scores. The means, standard deviations, and coefficients alpha for the subscales are presented in Table 6 and subscale intercorrelations are shown in Table 7. Of note, the subscale means were not significantly different across the Canadian, American, and British samples. As well, the pattern of subscale intercorrelations was very similar across these three samples. These two observations support the decision to pool results across the three samples for factor analytic purposes.

Insert Tables 6 and 7 about here

In order to evaluate test-retest reliability of the DB, correlations were computed for the three DB subscales over two time periods (M = 8.0 days, SD = 3.2) in the American sample. The values for the Burdens, Benefits, and Avoidance Coping subscales were, r = .64, p<.001, r =

.71, $p<.001$, and $r = .70$, $p<.001$, respectively. These data provide further support for the stability of this instrument.

Discussion

This study was conducted to develop and provide initial validation of a decisional balance measure of motivation and readiness for change in anorexia nervosa. In general, the findings demonstrate that individual differences in DB scores exist and can be measured in a reliable and valid fashion. A series of factor analyses indicated that there are three factors underlying the item set; these factors were labeled Burdens, Benefits, and Avoidance Coping. These dimensions are similar to the pro and con dimensions outlined in addictive (e.g., smoking, alcohol abuse) and non-addictive (e.g., condom use, mammography screening) behavior research (Prochaska, Velicer et al., 1994), except that in anorexia nervosa the pro items loaded onto two separate factors. The finding that positive and negative consequences of anorexia nervosa can be distinguished within a construct that reflects overall motivation and readiness for change is consistent with commentaries about individuals with anorexia nervosa being caught in a battle between the glories of thinness and self-control and the defeat of fatigue, depression, and social isolation (Sallas, 1985; Vitousek et al., 1998).

Factor Analysis

The three factor solution found in the current study occurs in contrast to the two factor model of the decisional balance that has been strongly supported across 12 problem behaviors (Prochaska, Velicer et al., 1994). In other populations, the decisional balance measure compares the salience of problem behaviors with motives for change. For instance, the pro scale for smoking status contains items representing the pleasure, tension reduction, self-image, and habit factors identified as the basic reasons for cigarette use. The con scale items, on the other hand,

represent the health, example, aesthetics, and mastery considerations associated with motives for quitting. Likewise, the pro scale items for exercise contain items representing the self-esteem, confidence, increased energy, and improved interpersonal relationship considerations associated with incentives for engaging in a regular exercise program. By contrast, the con scale items reflect the exhaustion, breathlessness, discomfort, bad weather, and time constraint considerations identified as reasons for avoidance of exercise. One exception to the two factor solution occurs in a decisional balance for dietary fat reduction where a case could be made for a four factor solution (Rossi, 1994).

In the current study of readiness for change in anorexia nervosa, the pattern of DB results is somewhat different. Similar to other populations, the DB for anorexia nervosa contains a con scale with items reflecting the health concerns, negative feelings, personal frustrations and struggles, and poor interpersonal relationships associated with motives to seek treatment and recovery. However, the DB for anorexia nervosa is unique because there are two distinct pro factors. The Benefits items represent self-control, self-esteem enhancement, perfectionism and accomplishment needs, which in the short term are indeed satisfied by an anorexic lifestyle. By contrast, the Avoidance Coping items capture various ways in which individuals use anorexia nervosa to avoid working through negative feelings and dealing with responsibilities or challenges (e.g., making plans for the future, dealing with intimate relationships). The emergence of two distinct pro factors suggests that clients with anorexia nervosa perceive a difference between achieving goals and avoiding aversive experiences and affect, but both are highly valued and consequently difficult to give up.

Although these results are in keeping with the transtheoretical model of change, they are also supported by other theories, constructs, and empirical observations. For instance, the

physical considerations listed in the Burdens items are consistent with indisputable medical evidence that virtually every system of the body can be adversely affected by anorexia nervosa (e.g., Goldbloom & Kennedy, 1995). Similarly, the emotional considerations listed in this subscale resonate with findings from the Keys et al. (1950) starvation study where reducing dietary intake by 50% for 6 months brought a group of bright and emotionally stable men to become lethargic, irritable, quarrelsome, emotionally volatile, and obsessed with thoughts of food. Negative emotionality (Casper, 1990; Casper, Hedeker, & McClough, 1992; Hoffman & Halmi, 1993), guilt and shame (Sanftner, Barlow, Marschall, & Tangney, 1995), social isolation (Casper, Hedeker, & McClough, 1992; Crisp, Hsu, & Stonehill, 1979), and obsessional features (Rastam, 1992), all of which are captured in the Burdens subscale, are also widely documented to precede or occur concurrent to anorexia nervosa.

The items listed in the Benefits subscale resonate with theoretical models of anorexia nervosa and the literature on resistance to change and egosyntonicity. For instance, most of the items support etiologic and maintenance models premising that extreme concerns about shape and weight, need for control, low self-esteem, and perfectionism, are the core features of anorexia nervosa (e.g., Fairburn, Shafran, & Cooper, 1999; Garner, 1986; Goldner, Cockell, & Srikameswaran, in press; Slade, 1982; Wolff & Serpell, 1998). They are also in keeping with the motivation literature that views anorexic symptoms to be highly valued in the lives of sufferers. That is, having a very small shape and a very low weight is important to individuals with anorexia nervosa because this provides a means of being perfect, establishing control, and feeling special. As such, it makes sense that sufferers do not want to let go of symptoms, or at best feel profoundly ambivalent about recovery (Vitousek et al., 1998).

Finally, the avoidant coping style, restricted expressivity, and maturity fears presented in the Avoidance Coping subscale are well documented in the eating disorder literature. Individuals with anorexia nervosa are characterized as constricted, conforming and obsessional (Vitousek & Manke, 1994) and in the DSM-IV categorical personality nosology, many would likely meet criteria for Cluster C (anxious-fearful) diagnoses, including obsessive-compulsive personality disorder, avoidant personality disorder, dependent personality disorder and passive-aggressive personality disorder (Goldner, Srikameswaran, Schroeder, Livesley, & Birmingham, 1999; Herzog, Keller, Lavori, Kenny, & Stacks, 1992; Skodol, Oldham, Hyler, Kellman et al., 1993). Consistent with this profile, individuals with anorexia nervosa tend to avoid expressing negative thoughts and feelings, particularly when they conflict with those of others, and to give priority to other people's feelings rather than their own (Geller, Cockell, & Goldner, in press). Given this suppression of affect, it is not surprising that they tend to detach from others (Williams & Manaster, 1990) and are less likely than individuals without anorexia nervosa to be in romantic relationships or to engage in sexual activities (Morgan, Wiederman, & Pryor, 1995). In the context of these styles and tendencies, it makes sense that anorexia nervosa is highly valued by sufferers. Ruminating about food and weight, strategizing to reduce dietary intake and engaging in frenetic exercise or other methods of weight control, enables individuals to avoid those aspects of life that are perceived to be emotionally and interpersonally threatening, and this is negatively reinforcing (i.e., removing an undesired stimulus) (Garner et al., 1996).

In sum, the content of these subscales represent concerns and perceived benefits that have been previously described in the literature to be associated with incentives for recovery and barriers to change, respectively. Although the factors are distinct (they load differently in the factor analysis) they are moderately correlated (around .30). The Burdens subscale is correlated

with the Avoidance Coping subscale, but not the Benefits subscale, and the two pro subscales are correlated with one another. This suggests that individuals who report using anorexia to protect them from threatening feelings and events are more likely to identify bad things about this disorder, and by contrast, those who do not report using anorexia as an avoidant coping style tend not to see anorexia as aversive. It is possible that what is being captured is the degree to which individuals have insight into their problems, or perhaps the extent to which they feel comfortable admitting the complex role that anorexia plays in their lives. Indeed, as mentioned previously, since many anorexic symptoms are egosyntonic in nature (Vitousek et al., 1998), any exploration of their function may be aversive and thus avoided until the individual is sufficiently ready to embark upon a program of change. The fact that the two pro scales are intercorrelated suggests that they share some common underlying theme, such as "good things about anorexia nervosa".

Generalizability

The pattern of findings observed in this pooled sample of women with anorexia nervosa was replicated when the Canadian, American and British samples were examined independently. Comparisons across sites revealed similar subscale scores on all three DB dimensions. The three samples also produced similar subscale inter-correlation matrices. These findings support the decision to pool data across sites and suggests that results derived from the DB generalize cross-culturally.

Reliability

Finally, the DB was found to be internally consistent and reasonably stable over one week. Since test-retest reliability was examined in the American sample of women who were inpatients in a private eating disorder clinic, it is advisable that the test-retest reliability be replicated in a non-treated sample.

Overall, the findings of this first study suggest that it is possible to distinguish three relatively independent dimensions of readiness and motivation for change in anorexia nervosa. Moreover, using items within each of the factors as summed subscales demonstrates that the measures are internally consistent and stable. Study 2 will extend the psychometric examination of the DB by examining construct validity.

Study 2: Construct Validation of the Decisional Balance for Anorexia Nervosa

Although Study 1 provided initial support for a decisional balance conceptualization of motivation for change in anorexia nervosa, the degree of convergence between the DB and other measures of theoretically related constructs also needed to be determined. Thus, the aim of Study 2 was to examine the relationship between the DB and other measures of the change process, including the Readiness and Motivation Interview, as well as the Stages of Change Questionnaire, Processes of Change Questionnaire, and Concerns about Change Scale-Revised.

The transtheoretical model proposes that individuals vary in the degree to which they are prepared to change. Individuals in the action stage actively modify their behavior, experiences, or environment in order to overcome their problems. By contrast, precontemplators show no intention to change their behavior in the near future. Contemplators are seriously thinking about change, but they have not made a firm commitment to the process. Although a link between stages of change and the decisional balance has been found in other populations (Prochaska, Velicer, et al., 1994), this relationship has not been empirically tested in anorexia nervosa. In Study 2, these links were examined in two ways. First, subjects were classified into discrete stages of change, and the pattern of Burdens, Benefits, and Avoidance Coping scores were compared across these stages. In other populations, support has been found for the strong and weak principles of change as there has been an increase of at least 1 standard deviation in the negative consequences of a risk behavior and a decrease of at least ½ standard deviation in the positive consequences of a risk behavior as individuals move from precontemplation to action, respectively (Prochaska, 1994). In the eating disorders, preliminary support for the strong, but not the weak, principle was observed by Blake et al.; however the psychometric integrity of the

decisional balance measure used in the Blake et al. study is questionable, therefore replication with a better decisional balance measure is needed.

In addition to comparing DB scores between stages of change, correlations between DB scores and both Readiness and Motivation Interview and Stages of Change Questionnaire scores were examined. It was hypothesized that Burdens scores would be negatively correlated with precontemplation and positively correlated with contemplation and action scores. It was also hypothesized that the Benefits and Avoidance Coping scores would be positively associated with precontemplation and negatively associated with contemplation and action scores.

Next, relationships between the DB and Processes of Change Questionnaire scores were examined. Links between these two constructs have not been established empirically, however they can be inferred from the transtheoretical model. That is, since individuals tend to use very few processes of change during the precontemplation stage, but increasingly more processes of change as they move into the contemplation and action stages of change, it was expected that Benefits and Avoidance Coping scores would be negatively correlated, and Burdens scores would be positively correlated, with Processes of Change Questionnaire scores.

Finally, relationships between the DB and Concerns about Change-Revised scores were examined. Although no empirical work exists, there appears to be a strong theoretical link between the perceived barriers to change and recognition of positive and negative aspects of a problem. Regarding anorexia nervosa, it seems likely that the more an individual endorses positive aspects of the disorder, the more (s)he will identify barriers to change. Likewise, the more (s)he endorses negative aspects of anorexia nervosa, the less (s)he will identify barriers to change. Thus, in this study, it was hypothesized that Concerns about Change-Revised scores

would be positively correlated with Benefits and Avoidance Coping scores and negatively correlated with Burdens scores.

In addition to established measures of readiness for change in anorexia nervosa, crude global ratings of readiness for change were used to examine convergent validity of the DB. Global ratings of readiness for treatment and readiness for recovery were made by intake clinicians, by Readiness and Motivation Interview assessors, and by the clients themselves. Significant correlations between DB scores and global ratings by intake clinicians and RMI assessors were expected to provide evidence that individual differences in readiness for change are observable by others. It was hypothesized that RMI assessor ratings and clinician ratings of readiness for change would be positively associated with Burdens scores and negatively associated with Benefits and Avoidance Coping scores. The same pattern of findings was anticipated from participants' self-ratings.

Not only should decisional balance scores correlate with theoretically related variables, but they should also not correlate with dissimilar, unrelated ones. Divergent validity was established in three ways. First, the relationship between the DB and a socially desirable response style was examined. Since the DB was designed to assess an individual's own understanding and experience of the positive and negative aspects of anorexia nervosa, independent from what is thought to be socially-desirable, it was hypothesized that DB scores would not be significantly correlated with a measure of impression management, namely, the impression management scale of the Balanced Inventory of Desirable Responding. Second, relationships between the DB scores and demographic variables, namely, age and socioeconomic status were examined. It was hypothesized that DB scores would not be related to either of these variables. Finally, relationships between the DB scores and body mass index (BMI), eating

disorder symptoms, and general psychiatric symptoms were investigated. Since there is no empirical evidence to suggest that weight or eating disorder symptom severity is related to motivation for recovery, it was expected that DB scores would not be related to BMI or the Eating Disorder Inventory symptom severity scores. Given that the relationship between the decisional balance construct and general psychiatric symptoms has not been previously researched, specific hypotheses were not made about the relationship between the DB scores and the Brief Symptom Inventory scores.

Method

Participants

The participants in Study 2 were the 80 women making up the Canadian sample in Study 1.

Measures (see Appendix C for copies of measures)

Decisional Balance (DB). The DB is a 30-item self-report questionnaire designed to assess positive and negative consequences of anorexia nervosa. This measure was initially modeled on decisional balance measures used to assess the pros and cons of health risk behaviors. Unlike traditional decisional balance measures, in which two factor (pro-con) solutions have been determined (e.g., Prochaska, Velicer et al., 1994; Velicer et al., 1985), factor analytic techniques suggested a three factor solution for this DB. The Burdens subscale, comprised of 15 items, represents general negative consequences of the disorder. The Benefits subscale, comprised of 8 items, captures valued consequences such as self-control, being very thin, and striving for perfection. The Avoidance Coping subscale, comprised of 7 items, reflects the use of anorexia nervosa as a means to avoid aversive emotions, challenges, and responsibilities. Respondents make five-point ratings of the degree to which they believe

statements are personally relevant, and mean scores are computed for each of the three subscales. Analyses with the DB have shown that the three factors are intercorrelated; moderate correlations were found between the Avoidance Coping and Burdens subscales, and between the Benefits and Avoidance Coping subscales, but there was no significant correlation between the Benefits and Burdens subscales. This measure possesses good reliability, with coefficient alphas of .88 for all three subscales, and test-retest correlations over one week ranging between .64 and .71.

Stages of Change Questionnaire. (McConnaughy et al, 1983). This 32-item questionnaire was derived from the substance abuse literature and is based on the transtheoretical model of change. Modifications were made to make the measure applicable for individuals with eating disorders. Individuals rate, on 5-point rating scales, the extent to which they agree with statements about their readiness to make changes to a problem. The scales include: precontemplation (i.e., client denies the problem or does not want to change), contemplation (i.e., client is seriously thinking about change), action (i.e., client is actively involved in making changes), and maintenance (i.e., client is actively involved in maintaining changes and preventing relapse). Scores on each scale range from 8 to 40, and the highest score indicates the individual's dominant stage. The psychometric properties of this tool are well established in the substance abuse literature (McConnaughy, Prochaska, & Velicer, 1983) and they are respectable in the eating disorders (Geller et al., 1999).

Readiness and Motivation Interview (Geller & Drab, 1999). The Readiness and Motivation Interview is a semi-structured interview that elicits information on individuals' experience of, and attachment to their eating disorder symptoms. Eating disorder symptoms are grouped into four categories: restriction, cognitive symptoms, bingeing, and compensatory strategies. For each symptom, the Readiness and Motivation Interview assesses the extent to

which an individual is not wanting to change (precontemplation), is seriously thinking about change (contemplation), and/or is actively working on change (action/maintenance). Ratings are also made regarding the degree to which change, when occurring, is for internal versus external reasons. Global scores are also calculated as the mean of the stage of change ratings across all symptoms.

The Readiness and Motivation Interview provides a standard format for asking the motivational/readiness questions, such that the interviewer expresses curiosity and interest in the client's ambivalence about symptom change. All ratings range from 1 to 5, corresponding to the individual as 0, 25, 50, 75, or 100% in each of the three stages of change, respectively. In contrast to the Stages of Change Questionnaire in which the stage scores are not mutually exclusive, in the Readiness and Motivation Interview the three ratings add up to 100%. The internality rating captures the locus of control for each symptom in which action is occurring. A rating of 1 corresponds to complete externality (all efforts to change are aimed at meeting other people's desires for improvement, or 0% of change efforts are for the self), and a rating of 5 corresponds to complete internality (100% of change efforts are for the self). Geller et al. (1999) provide data supporting the reliability and validity of this interview. Inter-rater agreement was above 95% and coefficient alphas ranged between .65 and .84. As well, Readiness and Motivation Interview scores correlated significantly with other readiness for change measures in the anticipated directions. Finally, the Readiness and Motivation Interview possesses good criterion validity; it is predictive of anticipated difficulty completing recovery activities, completion of recovery activiites and commitment to action-oriented treatment.

In the current study, the Readiness and Motivation Interview complemented stage of change scores derived from the Stages of Change Questionnaire. Precontemplation,

contemplation and action/maintenance scores were used to assign participants to discrete stages of change, and they were also used in correlational analyses. Since internality ratings were not relevant to the current hypotheses, they were not reported or discussed.

Processes of Change Questionnaire. (PCQ; Ward et al., 1996). Also developed from the substance use literature (Prochaska et al., 1988), but modified for use with the eating disorders, the Processes of Change Questionnaire is a 47-item scale designed to assesses cognitive, affective and behavioral processes associated with change. Participants score on 5-point rating scales the extent to which they are currently engaging in a number of activities that make up the following eight scales: consciousness raising, self-reevaluation, dramatic relief, couterconditioning, helping relationships, reinforcement management, stimulus control, and self-liberation. A "not applicable" option is attached to purging questions which, if endorsed, then are not scored. This instrument has demonstrated good reliability, with coefficient alphas for each of the eight modified subscales ranging from .75 to .96. Tests of concurrent validity support its use. For instance, in a sample of 35 anorexic in-patients, processes of change subscales mapped onto the stages of change as would be predicted by the transtheoretical model (Ward et al., 1996).

Concerns about Change Scale - Revised. (Vitousek et al., 1996). This newly-developed 112 item questionnaire, which can be applied to a wide range of psychological problems, assesses the extent to which individuals experience a number of different barriers to recovery. Participants indicate on 5-point rating scales the extent to which they identify with statements of concern about recovery. Although the Concerns about Change Scale - Revised has 17 rationally derived subscales, in this research, only the total score, or the sum of all perceived barriers to

recovery was used. The Concerns about Change Scale - Revised has demonstrated good reliability, with alpha coefficients ranging from .80 to .91 (Vitousek et al., 1996).

Global Rating Forms. Designed for this study, intake clinicians, Readiness and Motivation Interview assessors, and participants themselves provided two ratings of motivation and readiness for change. The first rating reflected the extent to which the client wanted *treatment* for his/her eating disorder. The second rating was a perception of the extent to which the client wanted to *recover* from his/her eating disorder. Both ratings were made on a 7-point Likert scale ranging from (1) definitely do(es) not want treatment/to recover to (7) definitely want(s) treatment/to recover. Intake clinicians made ratings at the end of a 90 minute psychosocial assessment, Readiness and Motivation Interview assessors made ratings after administering the Readiness and Motivation Interview, and clients made ratings before completing the questionnaire and interview materials.

Eating Disorders Inventory - 2 (EDI-2; Garner, 1991). This is a 91-item self-report questionnaire designed to measure attitudes, personality features, and eating disorder symptoms thought to be relevant to anorexia nervosa and bulimia nervosa. Subjects are asked to rate each item on a 6-point scale ranging from "never" to "always". A factor analysis in a non-clinical sample revealed that three of the scales (Drive for Thinness, Bulimia, and Body Dissatisfaction) loaded onto the same factor and appeared to tap a general concern with shape, weight, and eating. This factor was recommended as a screening measure of eating disorder symptoms (Welch, Hall, & Walkey, 1988). Accordingly, in this study, the sum of the Drive for Thinness, Body Dissatisfaction, and Bulimia subscales was used to measure severity of eating disorder symptomatology. Scores on this composite scale range from 0 to 69. Extensive psychometric support for this instrument is available in the EDI-2 manual.

Brief Symptom Inventory (BSI: Derogatis, 1993). The BSI is a 53-item inventory of psychiatric symptoms. Respondents indicate the extent to which they are distressed by various problems on 5-point rating scales. The BSI yields nine primary symptom scale scores, including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism and three global indices of distress, one of which is the Global Severity Index. The Global Severity Index, which is the average of the nine symptom scale scores, was used in this study as an index of general psychiatric symptomatology. The development, reliability and validity of the BSI are described in the manual.

Balanced Inventory of Desirable Responding (Paulus, 1994). This is a 40-item measure of the tendency to respond in a socially desirable way. There are two subscales, with 20 items each. One subscale, self-deceptive enhancement, reflects cognitive overconfidence. This subscale correlates with high extraversion and low neuroticism of the NEO-FFI (Costa & McRae, 1989), suggesting that this style is common among energetic individuals who have a positive orientation to life. The other subscale, impression management, reflects exaggerated social conventionality. This subscale correlates with agreeableness and conscientiousness of the NEO-FFI (Costa & McRae, 1989), suggesting that this style is common among socially conventional and cautious individuals[1]. There are two ways to score items, either continuous or dichotomous (assigning points only for *extremely* desirable responses), but dichotomous scoring is recommended, and therefore was used in this study. This measure has good internal consistency (.65 to .75 for self-deception enhancement and .75 to .80 for impression management), test-retest reliability (.69 for self-deception enhancement and .77 for impression management), and well-established construct validity. Since extraversion and overconfidence were not deemed to be

[1] Extraversion, Neuroticism, Agreeableness, & Conscientiousness are NEO-FFI subscales (Costa & McRae, 1989)

relevant constructs of interest, but conscientiousness and agreeableness were, only the impression management items were administered to assess divergent validity of the decisional balance.

Procedure

As described in Study 1, initial phone contact with participants was made by the research assistant, prior to their scheduled clinic intake assessment. The research assistant described the purpose and nature of the project, answered questions, and addressed concerns about participation. The voluntary nature of the study was made explicit, and appointments were scheduled at the participants' convenience.

Before completing the study materials, participants received verbal and written descriptions of the study, and provided written informed consent. In an effort to minimize the tendency to respond in a socially desirable way, participants were assured that information shared in the research assessment would not be communicated with members of the clinic team. As such, the research assessment would not affect treatment recommendations or care in any way.

Participants completed a packet of questionnaires that included a demographic sheet, a Global Rating Form, the Decisional Balance, the Stages of Change Questionnaire, and the Concerns about Change Scale - Revised. After completing these measures, participants completed the Readiness and Motivation Interview, and after administering this interview, assessors completed a Global Rating Form. Participants then completed a second packet of questionnaires, including the Processes of Change Questionnaire, the EDI-2, the BSI, and the impression management items from the Balance Inventory of Desirable Responding.

As mentioned in Study 1, in addition to the research assessment, participants completed a psychosocial assessment with one of the clinic intake assessors. At the end of this 90-minute interview, intake assessors completed a Global Rating Form, and returned it to the research

office. Of note, due to logistical problems and forgetfulness of clinicians, 21 Global Rating Forms were not completed for participants, resulting in a total of 69 completed forms.

Results

Preliminary analyses

Stage of change assignment. In order to test hypotheses concerning DB scores across stages of change, participants were assigned to discrete stages of change. Highest stage of change scores on the Stages of Change Questionnaire and Readiness and Motivation Interview were used to make this assignment. If two or more stage of change scores tied for highest score, or if the highest score on one measure was different from the highest score on the other, the following rules were applied. Rule 1: If the Stages of Change Questionnaire and Readiness and Motivation Interview highest scores were different, the less advanced stage of change was assigned (to be conservative). Rule 2: If contemplation and maintenance were tied for the highest score on the Stages of Change Questionnaire and action was the highest score on the Readiness and Motivation Interview, the action stage was assigned (as action is the stage in between contemplation and maintenance, and also the interview requires evidence of behavior change to assign participants to the action stage, but the questionnaire does not). Rule 3: If contemplation was the highest score on the Stages of Change Questionnaire, and precontemplation and action were tied for the highest score on the Readiness and Motivation Interview, then contemplation was assigned (as contemplation can be thought of as that state where an individual is sometimes taking action and other times not wanting to change). Of note, since the Readiness and Motivation Interview does not generate unique scores for the maintenance stage, and since both the Readiness and Motivation Interview and the Stages of Change Questionnaire do not generate unique scores for the preparation stage, participants were

not assigned to either of these stages of change. Applying these decision-making rules, 31 participants were found to be in the precontemplation stage, 32 were in the contemplation stage, and 17 were in the action stage.

Convergent Validity

Stages of change. Following the guidelines described above, participants were allocated to the stage of change that best represented the degree to which they were ready to recover from anorexia nervosa. A multivariate analysis of variance (MANOVA) was conducted to determine whether the DB subscale scores were different for individuals at different stages of change. The MANOVA was significant, $F(6, 150) = 4.36$, $p < .001$. Follow-up ANOVAs were significant for Burdens, $F(2, 77) = 5.47$, $p = .006$, and Avoidance Coping, $F(2, 77) = 8.33$, $p = .001$, respectively, but not Benefits, $F(2, 77) = .663$, $p = .52$. Tukey's HSD revealed that individuals in the precontemplation stage reported significantly lower Burdens and Avoidance Coping scores than individuals in the contemplation and action stages of change. The means and standard deviations for the three DB subscale scores across stages of change are reported in Table 8.

Insert table 8 about here

There was no "crossing over" of the positive and negative consequences of anorexia nervosa in the contemplation stage of change, as has been shown in other populations. Rather, Burdens and Benefits scores were relatively the same at precontemplation, but then the former increased substantially and the later stayed the same across the remaining stages of change. The Avoidance Coping scores began much lower than the Burdens and Benefits scores, but then increased significantly across the stages. It is interesting to note that most of the change in scores

occurred between the precontemplation and contemplation, and not between contemplation and action stages of change. These patterns are illustrated in figure 3.

Insert figure 3 about here

In addition to analyses involving discrete stages of change, correlations were computed between DB scores and continuous stages of change scores. These correlations are displayed in Table 9. Of note, since a large set of correlation coefficients were inspected, the modified Bonferroni test proposed by Larzelere and Mulaik (1977) was applied to control family wise error. Three "families" of correlations were established between DB and Stages of Change, Readiness and Motivation Interview, and Processes of Change scores, respectively. As predicted, Burdens scores were significantly negatively associated with precontemplation and significantly positively associated with contemplation on both the Stages of Change Questionnaire and Readiness and Motivation Interview. In other words, it appears that as individuals move from precontemplation into contemplation stage of change, they tend to endorse more negative consequences of anorexia nervosa. Counter to predictions, Benefits scores were not correlated with any of the stages of change scores. Also different from predictions, Avoidance Coping scores were negatively correlated with precontemplation on both the Stages of Change Questionnaire and the Readiness and Motivation Interview. Although the direction of these correlations was different from the stated hypotheses, these findings are consistent with those observed in the between group analyses.

Insert Table 9 about here

Other Measures of Readiness. Correlations with the Processes of Change Questionnaire scores provided additional information about the validity of the DB subscales (see Table 9). Consistent with predictions, Burdens scores were significantly positively correlated with the three *cognitive/affective* processes of change, namely consciousness raising, self-reevaluation, and dramatic relief. Interestingly, the Burdens scores were not significantly correlated with *behavioral* processes of change. This distinction between significant correlations with cognitive, but not behavioral processes of change suggests that the Burdens subscale is a measure of cognitive readiness, but not behavioral readiness for change. An unexpected finding was that the Benefits and Avoidance Coping scores were not significantly correlated with Processes of Change Questionnaire scores.

Correlations between the DB pro scores and the Concerns about Change Scale - Revised score were consistent with predictions. The Benefits and Avoidance Coping scores were significantly positively correlated with Concerns about Change Scale - Revised total scores, thus providing support for the view that the pro subscales assess valued aspects of anorexia nervosa, or in other words, things that would be difficult to give up. However, in contrast to expectations, significant correlations were not found between Burdens and Concerns about Change - Revised total scores.

Global Ratings of Readiness. In addition to established measures of readiness for change in anorexia nervosa, the relationship between DB scores and crude global ratings of readiness for treatment and recovery were examined. Table 10 shows correlations between DB scores and

global ratings made by intake clinicians, Readiness and Motivation Interview assessors, and clients themselves. Again, the modified Bonferroni test proposed by Larzelere and Mulaik (1977) was applied to control family wise error. Clinician ratings of readiness for treatment and recovery were not significantly associated with DB scores. However, Readiness and Motivation Interview assessor ratings were significantly positively correlated with Burdens scores. Two other Readiness and Motivation Interview assessor correlations were above .30 (i.e., ratings of readiness for recovery and Burdens and between ratings of readiness for treatment and Avoidance Coping), suggesting that with a larger sample, and hence more power, these relationships would most likely have been significant. Of note, correlations above .31 were significant for Client Global Ratings, where n=78. Interestingly, client ratings of readiness for treatment and recovery were significantly correlated with Burdens and Benefits scores in the anticipated directions. Readiness for both treatment and recovery were positively related to Burdens scores and negatively related to Benefits scores. That is, clients who indicated that they were highly motivated for treatment and recovery identified more negative and fewer positive consequences of anorexia.

Insert table 10 about here

Divergent validity

Analyses involving constructs that were considered unrelated to readiness and motivation for change also provided support for the validity of the DB subscales. As shown in Table 11, DB scores were not significantly related to impression management or socioeconomic status. Avoidance Coping scores were significantly positively related to age, but the Burdens and

Benefits scores were not. This suggests that older individuals are more apt to identify ways in which anorexia nervosa is used to avoid dealing with fears and challenges.

Insert table 11 about here

With regard to the relationship between readiness for change and symptomatology, a number of interesting findings were detected. The DB subscale scores were not significantly correlated with BMI. In addition two DB subscale scores, namely, Burdens and Avoidance Coping, were not significantly correlated with the EDI-2 composite scores. These findings support the hypothesis that readiness for change is not influenced by weight or eating disorder symptom severity. However, Benefits scores were significantly correlated with the EDI-2 composite score. That is, the tendency to identify valued aspects of anorexia nervosa was related to increased symptom severity. An inspection of the EDI symptom severity subscales revealed that the Drive for Thinness and Body Dissatisfaction subscales, but not the Bulimia subscale, accounted for this positive and significant relationship. Regarding general psychiatric symptomatology, it was found that Avoidance Coping, but not Burdens and Benefits, scores were significantly correlated with the BSI Global Severity Index. That is, the tendency to identify ways in which anorexia nervosa is used to avoid dealing with negative emotions, responsibilities and challenges was related to increased levels of emotional distress. An inspection of the BSI subscales revealed that Avoidance Coping scores were significantly positively related to all of the BSI subscales (e.g., obsessive-compulsive, depression, phobic anxiety), except the hostility subscale.

Discussion

The purpose of this study was to validate the DB for anorexia nervosa. Although some predictions made by the transtheoretical model of change were supported, a number of important differences emerged. Regarding convergent validity, the pattern of relationships observed between DB scores and stages of change, processes of change, and concerns about change, were partially consistent with predictions. For instance, consistent with predictions, Burdens scores increased substantially across stages of change. However, although it was predicted that Benefits scores would decrease across stages of change, they did not change substantially. In addition, Avoidance Coping scores were expected to decrease across stages of change, but they actually increased significantly. Regarding other measures of readiness and motivation or change, as predicted, the Burdens scores were correlated with processes of change scores, but counter to predictions, the two pro scores were not. The opposite pattern of results was found when concerns about change scores were evaluated; as predicted, Benefits and Avoidance Coping scores were correlated with the concerns about change total scores, but counter to predictions, Burdens scores were not. Regarding divergent validity, most of the predictions were supported, and the exceptions raised interesting questions about the decisional balance construct applied to anorexia nervosa. These findings will be further discussed below.

Convergent Validity

Stages of Change. Findings from this study indicated that the pattern of relationships between DB scores and stages of change were only partially consistent with the transtheoretical model of change. As expected, contemplators and individuals taking action reported significantly higher Burdens scores than precontemplators. This difference of approximately .80 standard deviation provides some support, albeit somewhat modest, for the strong principle of

change that predicts 1 standard deviation increase in con scores as individuals move from precontemplation to action (Prochaska, 1994). Also consistent with predictions, correlational data indicated that Burdens scores were negatively associated with precontemplation and positively associated with contemplation, suggesting again that movement from precontemplation into contemplation is marked by a tendency to identify an increasing number of negative consequences to anorexia nervosa.

Regarding Benefits scores, support was not found for the weak principle of change that predicts ½ standard deviation decrease in pro scores as individuals move from precontemplation to action. As well, correlational data did not reveal significant relationships between the Benefits and stages of change scores. These findings are consistent with Blake et al. who also did not find support for the weak principle of change, albeit with a decisional balance measure that has questionable validity. Overall, it appears that using anorexia nervosa to feel in control, to enhance self-esteem, and to satisfy motivations for achievement and perfection remain relatively unchanged across stages of change. This lack of change may be due to the fact that learning new ways to satisfy motivations for achievement, control, and perfectionism occur secondary to restoration of normal weight and healthy eating habits. That is, even though individuals with anorexia nervosa may take action towards recovery, their desire for a small shape and low weight may persist for a long time, perhaps until either their ideas and expectations change (e.g., they challenge their own perfectionism and the importance of shape and weight), or they learn new ways to satisfy these motivations (e.g., through school or work).

Unlike the Benefits scores, Avoidance Coping scores were significantly lower for precontemplators than contemplators and individuals taking action. This difference of approximately 1 standard deviation suggests that as individuals progress from not wanting to

change to seriously thinking about change, and then taking action, they become increasingly aware of the ways they are using anorexia nervosa to avoid dealing with other problems. Correlational data detected a negative relationship between Avoidance Coping and precontemplation scores, suggesting again that precontemplation is marked by low levels of awareness that anorexia nervosa is a coping strategy used to avoid unpleasant emotions and undesirable aspects of adult life.

Overall, the relationships between the DB and stages of change scores indicated that compared to individuals who do not want to change, individuals who are seriously thinking about change are more cognizant of the negative consequences of anorexia nervosa, and are also more aware of the ways that anorexia nervosa helps them to avoid dealing with underlying concerns and problems. In other words, these results suggest that individuals with anorexia nervosa become increasingly ready for change as a function of recognizing negative aspects of the disorder, but also by gaining insight into the ways they use anorexia nervosa to avoid dealing with other difficulties. These findings are consistent with Greenfeld, Anyan, Hobart, and Quinlan (1991) who found that insight and ability to acknowledge illness were related to positive outcome from anorexia nervosa. The readiness process does not seem to be affected by the degree to which individuals view anorexia nervosa as a means of feeling in control, enhancing self-esteem and satisfying motivations for perfection and achievements. In addition, there does not appear to be a "crossing over" of positive with negative consequences of the disorder during the contemplation stage, as has been found in other populations (e.g., Prochaska, Velicer, et al., 1994).

Other Readiness Measures. A number of interesting findings emerged from correlational data between the DB and other measures of readiness for change. The finding that Burdens

scores were significantly related to cognitive processes of change (i.e., consciousness raising, self-reevaluation, dramatic relief) suggests that close examination of one's thoughts and feelings is required in order for clients to become aware of the negative consequences of anorexia nervosa. Since Benefits scores remained relatively unchanged across stages of change, it is not surprising that the cognitive processes of change were not related to this subscale. However, the lack of relationship between Avoidance Coping and processes of change scores is less clear, particularly since Avoidance Coping scores followed a pattern that is similar to the Burdens scores across stages of change (i.e., they increase from precontemplation to contemplation), and Burdens scores were significantly correlated with processes of change. However, close inspection of the Processes of Change Questionnaire items revealed that consciousness raising, self-reevaluation and dramatic relief items focused primarily on becoming aware of the *costs* of anorexia nervosa rather than the *benefits*. That is, the items evaluate the degree to which clients engage in cognitive activities aimed at identifying negative consequences of anorexia nervosa. As such, it makes sense that DB pro scores were not highly correlated with these Processes of Change Questionnaire scores. By contrast, the Concerns about Change Scale - Revised assesses the degree to which clients are aware of the *positive* features or valued aspects of the disorder. Accordingly, a different pattern of findings was observed between the DB and these scores; both pro scores were positively related to the Concerns about Change Scale - Revised total score, but the Burdens scores were not. Ultimately, these findings provide support for the differences between Burdens scores, on the one hand, and Benefits and Avoidance Coping scores, on the other.

Global Ratings of Readiness. Regarding global ratings of readiness for treatment and recovery, consistent with expectations, clients who indicated that they were more prepared for

treatment and recovery identified many negative consequences and few positive consequences of anorexia nervosa. By contrast, ratings made by clinicians conducting general psychiatric assessments were not related to readiness for change as measured by the DB. However, individuals trained to communicate deep curiosity and ask specific questions about eating disorder recovery behavior with no negative consequences to treatment availability, namely Readiness and Motivation Interview assessors, were able to estimate readiness status as assessed by the DB. Thus, it seems that both the type of questions asked, as well as the context in which they are presented, affect the degree to which health care professionals can evaluate motivation for change. An interesting difference between client and evaluator ratings was the influence of positive consequences of anorexia nervosa on readiness for change that exists among the former, but not the later. Thus, it appears that clients and trained evaluators are influenced by different pieces of information when they evaluate motivation and readiness for change. Which individual is more accurate in predicting actual change behavior remains to be determined.

Divergent Validity

The finding that DB scores were not related to socially desirable responding, socioeconomic status, and BMI provides support for divergent validity. The BMI finding is particularly interesting as it suggests that motivation and readiness for change, as assessed by the DB, is not influenced by level of emaciation.

A number of unanticipated findings were also observed. First, a positive relationship was detected between Avoidance Coping scores and age. One interpretation of this finding is that older clients may have had their eating disorder for a longer period of time, which may have resulted in a deeper understanding of how anorexia nervosa has helped them to avoid dealing with things like, painful emotions, intimate relationship, and making decision. Alternatively,

they may have had more therapy. Follow-up analyses revealed no significant age differences between individuals who had received treatment compared to those who had not, t (78)=1.13, p = .26. Nevertheless, a relationship was detected between previous treatment and DB scores; individuals who reported previous treatment reported significantly higher Burdens and Avoidance Coping scores than individuals who had not received previous treatment (t = 3.35, p = .001 and t = 2.10, p = .039, respectively), suggesting yet again that insight into illness (perhaps gained by way of treatment) may be central to readiness for change. Clearly, additional information is required to understand this relationship more fully.

Second, Benefits scores were positively and significantly related to eating disorder symptom severity. This suggests that as anorexic symptoms worsen, individuals become more and more attached to their symptoms. More specifically, as individuals with anorexia nervosa become increasingly dissatisfied with their bodies and increasingly driven to achieve a thin shape, they place more and more emphasis on anorexia nervosa as a means to self-control, feeling accomplished, and enhancing self-esteem. Although this finding was not expected, it is consistent with the literature describing anorexic symptoms as "egosyntonic" in nature (e.g., Vitousek et al., 1998). Moreover, the fact that eating disorder symptom severity was related to Benefits, but not Burdens or Avoidance Coping scores, provides support for discriminant validity.

One final unanticipated finding was the positive relationship between Avoidance Coping scores and emotional distress. Two interpretations of this finding exist. One is that as individuals with eating disorders become increasingly anxious and depressed, they begin to identify ways in which they have used anorexia nervosa to avoid dealing with negative feelings, as well as to avoid the responsibilities and challenges of adult life. This may occur because as

their distress level increases, this avoidance coping strategy no longer works, and therefore they reach a point where they begin to examine themselves more closely. This process may occur independently, or as a result of reaching out to others (e.g., friends, family, health care professionals) for help. Another possibility is that as individuals become increasingly aware of how they have been using anorexia nervosa to avoid dealing with negative aspects of their lives, they may become increasingly distressed. Although avoiding negative emotions and other difficulties of life may provide short term relief, these individuals may begin to realize that the long term costs of this coping style are profound (e.g., social isolation, lack of intimacy, loss of identity, emotional numbing). This realization then may lead to increasing levels of distress. Other explanations for this relationship may also exist. The main point, however, is that individuals who realize and acknowledge that anorexia nervosa is an avoidance coping strategy seem to experience higher levels of distress. Since Avoidance Coping scores increase across stages of change, it can be inferred that an increase in distress may need to occur in order for clients to commit to a program of recovery. That is, high levels of distress may actually be a positive and constructive phase of change, which may be overcome with professional support. Interestingly, negative correlations between Readiness and Motivation Interview action and BSI Global Severity Index scores suggest that individuals who are engaged in action-oriented change behaviors experience low levels of distress (Geller et al., 1999). Thus, it may be that movement from precontemplation into contemplation is marked by increasing awareness of avoidance coping and co-occuring distress, and then movement into action is marked by a lowering of distress and problem-focused coping. Problem-focused coping may include learning how to deal with eating disorder specific problems, such as obtaining meal support to consume healthy meals,

and developing new strategies to deal with other problems, such as journaling to explore one's feelings and assertiveness training to give and receive negative feedback.

In sum, the results from Study 2 supported some of the predictions made by the transtheoretical model of change, but a number of important differences also emerged. Although there was no point at which Burdens scores "crossed over" with Benefits and Avoidance Coping scores, as has been the case in other populations, Burdens scores were significantly higher for individuals in the contemplation and action stages of change, compared to those in the precontemplation stage. In addition, different from the transtheoretical model of change, Benefits scores did not change across stages of change and Avoidance Coping scores increased substantially. Regarding other measures of motivation and readiness for change, Burdens scores were correlated with cognitive processes of change and Benefits and Avoidance Coping scores were correlated with barriers to change, both in the anticipated directions. Regarding divergent validity, most of the predictions were supported, and the exceptions raised interesting hypotheses for future research.

Study 3: Criterion Validity of the Decisional Balance

According to the transtheoretical model of change, individuals are more likely to engage in behavior change when the costs of their health risk behavior begin to outweigh the benefits. With this in mind, the DB for anorexia nervosa was developed to assist clinicians in matching clients with interventions that correspond to their level of readiness for change, for instance action-oriented treatment for clients who identify many negative and relatively few positive consequences of anorexia nervosa, and motivational enhancement therapy for those who identify many positive and few negative consequences. These relationships have been supported in smoking studies (Velicer et al., 1985), but they have yet to be examined in anorexia nervosa studies. Thus, the purpose of Study 3 was to determine whether relationships between the DB and behavior change that have been observed in other populations extend to anorexia nervosa. Evidence of such relationships would provide support for criterion validity.

Due to limitations of time which are inherent in a dissertation, it was not practical to design a longitudinal study that assessed the DB's ability to predict who is ready for action-oriented treatment interventions and who is not. However, it was possible to conduct an analogue study. Thus, in order to examine criterion validity, a treatment analogue was used.

The methodology used to examine readiness for treatment in this study was innovative and accounted for the individual differences that exist in terms of recovery challenges (e.g., for some women, attempts to reduce exercise would be extremely anxiety provoking and challenging; however, for others, particularly those who do not exercise to compensate for eating, this would not be a difficult task). The women who participated in this study rated the degree to which they anticipated a series of recovery activities to be difficult. The list of recovery activities represented nutritional and psychological goals that are typically set when participating in action-

oriented intervention programs, such as cognitive-behavior therapy. These ratings provided an Anticipated Difficulty of Recovery Activities score. Participants were then encouraged to attempt three of the recovery activities during the following week, one that they rated as easy, one that they rated as moderately difficult, and one that they rated as extremely difficult. Participants were called one week after the initial assessment to determine whether they had reached the assigned goals.

This methodology, that generated a set of recovery activity goals that were different behaviorally, but similar in terms of degree of anticipated difficulty, permitted evaluation of concurrent and predictive validity. With regard to concurrent validity, it was hypothesized that Benefits and Avoidance Coping scores would be higher, and Burdens scores would be lower, for individuals who had higher Anticipated Difficulty of Recovery Activities scores. With regard to predictive validity, it was hypothesized that Benefits and Avoidance Coping scores would be lower, and Burdens scores would be higher, for individuals who were able to complete the recovery activities during the week following initial assessment.

Method

Participants

The participants were the 80 women making up the Canadian sample in Study 1 and Study 2.

Measures (see Appendix D for copies of measures)

Decisional Balance (DB). This is the same DB measure used in Study 2.

Anticipated Difficulty of Recovery Activities. Participants were provided with a list of 27 recovery activities and were asked to rate, on 10-point scales (ranging from "not at all difficult" to "extremely difficult"), how difficult they anticipated it would be for them to engage

in each recovery activity. The activities involved behavioral tasks representing different symptom domains (i.e., dietary restriction, cognitive symptoms, and strategies to compensate for eating). Examples of recovery activities included: eating one extra meal each day, weighing oneself only once during the week, reducing exercise by 50%, and delaying vomiting by 5 minutes. For recovery activities that were not relevant for all participants (e.g., decreasing vomiting or use of laxatives), the option of "not applicable" was provided. Anticipated Difficulty of Recovery Activities scores were computed as the mean of all applicable anticipated difficulty ratings. These mean scores ranged from 0 to 10.

Completion of Recovery Activities. Clients were asked to attempt three of the recovery activities during the week following their assessment, one rated somewhat difficult (rating of 3 out of 10), one rated moderately difficult (rating of 6 out of 10), and one rated extremely difficult (rating of 9 out of 10). A priori decisions were made regarding recovery activity selection in an effort to ensure consistency across participants. Specifically, whenever possible, different types of activities (e.g., decrease exercise, increase dietary intake) were assigned for the easy, moderate and difficult goals. As well, if more than one activity was rated 3, 6, or 9, participants were instructed to select whichever goal they preferred. If there were no items rated a 3, 6, or 9, activities were adjusted so that they would reflect these difficulty ratings. For instance, if eating one starch was rated 4 out of 10, and there were no other items rated 3 out of 10, then the goal would be adjusted to a portion of starch that the client rated as 3 out of 10, for example ¾ portion of starch.

Participants were encouraged to complete the three recovery goals and were informed that they would be contacted by a research assistant one week later to inquire about their progress (see Appendix E for call back protocol). They were reminded that the focus of the research was to

understand the clients' experience of working on action-oriented goals, and that there were no expectations with regard to task completion. Clients reported their outcome in the follow-up phone call. Recovery activities were scored as 0 (not completed), 1 (partially completed) or 2 (fully completed), yielding total Completion of Recovery Activities scores ranging from 0 to 6.

Of note, two of the women who participated in this study were assessed immediately prior to beginning the clinic day treatment program, which requires strict adherence to a meal plan, and cessation of bingeing and compensatory behaviors. Since many of the behavioral activities assigned overlap with program requirements, participation in treatment was considered a confound to performance on the recovery activities. As a result, participants who were about to enter treatment were not assigned the recovery activities. In addition, 7 women did not return phone messages left by the research assistant. Thus, completion of recovery activity data were obtained for only 71 of the 80 participants.

Procedure

The procedure described in Study 2 extends to Study 3, however there were a few additional components. After completing the questionnaire measures, the research assistant reviewed the Anticipated Difficulty of Recovery Activities rating sheet and then assigned three recovery activity goals; one rated as easy, one rated as moderately difficult, and one rated as extremely difficult, respectively. The research assistant asked participants to attempt these goals in the following week. A telephone appointment was scheduled approximately 7 days later to review attempts to reach each of these goals.

In the follow-up telephone call, participants were again reminded that the goal of the research was to learn about their experience, and to understand which barriers, if any, came up in attempting the recovery activities. Each task was read aloud by the researcher, and participants

were asked to describe whether they were able to complete the task entirely, partially, or not at all. Participants were then debriefed, and thanked for their participation.

Results

Concurrent Validity

Inconsistent with predictions, correlations between the DB scores and Anticipated Difficulty of Recovery Activities scores were not significant; the correlations were $r = -.15$, $p = .20$ for Burdens, $r = .19$, $p = .09$ for Benefits, and $r = .14$, $p = .20$ for Avoidance Coping.

Predictive Validity

In order to assess predictive validity, Completion of Recovery Activities scores were used to assign participants to one of three categories: completed recovery activities (score of 5 or 6), partially completed recovery activities (score of 2, 3 or 4), and did not complete recovery activities (score of 0 or 1). A series of ANOVAs were conducted to determine whether the Burdens, Benefits, and Avoidance Coping scores were different for individuals who completed, partially completed, or did not complete the recovery activities. The ANOVA for Burdens was significant, $F(2,67) = 3.95$, $p = .02$, and Tukey's HSD revealed that individuals who did not complete the recovery activities reported significantly lower Burdens scores than individuals who completed and partially completed these tasks. The means and standard deviations for the three DB subscales across levels of recovery activity completion are reported in Table 12.

In order to remove potential range restriction problems, exploratory analyses were conducted. Histograms, as well as tests for skewness indicated that the distribution of scores were in the normal range. In addition, a series of ANOVAs were conducted using differently weighted scores (e.g., did not complete, partially completed, and fully completed recovery

activities were rated 0, 1, and 2, for easy activities, 0, 2, and 4, for moderately difficult activities, and 0, 3, and 6, for very difficult activities, respectively), but nothing new emerged in the results.

It is possible that the criterion measures designed for this study were not adequately sensitive in discriminating participants in terms of readiness for change. In order to address this hypothesis, correlations between Anticipated Difficulty of Recovery Activities and Stages of Change, Processes of Change and Readiness and Motivation Interview scores were computed. Significant correlations were found between Anticipated Difficulty of Recovery Activities and Stages of Change precontemplation, $r = .27$, $p = .02$, and contemplation, $r = -.24$, $p = .03$, Processes of Change counterconditioning, $r = -.38$, $p = .001$, as well as Readiness and Motivation Interview precontemplation, $r = .32$, $p = .005$, and action, $r = -.44$, $p<.001$. Next, a series of ANOVAs were conducted to compare participants who completed, partially completed, or did not complete the recovery activities on Stages of Change, Processes of Change, and Readiness and Motivation Interview scores. Significant differences were detected for Processes of Change consciousness raising, $F (2, 62) = 4.19$, $p = .02$, self-liberation, $F (2, 62) = 5.50$, $p = .006$, stimulus control, $F (2, 62) = 6.81$, $p = .002$, and reinforcement management, $F (2, 62) = 4.12$, $p = .02$, and Readiness and Motivation Interview precontemplation, $F (2, 67) = 7.80$, $p = .001$, and action $F (2, 67) = 5.43$, $p = .007$. What is striking about these findings is that, with only a few exceptions, significant findings tended to be detected for readiness measures that had a behavioral focus. This observation suggests that the criterion measures used in this study do assess individual differences of readiness for change, however, these measures focus primarily on behavioral readiness as opposed to cognitive readiness for change.

Discussion

Study 3 provided some support, but not strong support for criterion validity of the DB. However, the findings did generate meaningful information for future research.

Concurrent Validity

With regard to concurrent validity, the data did not support predictions that individuals who anticipated more difficulty to complete recovery activities would report lower Burdens scores and higher Benefits and Avoidance Coping scores. These findings suggest that identification of positive and negative consequences of anorexia nervosa, as well as awareness of avoidance coping, does not affect the anticipated challenge of recovery behaviors. In other words, intellectual understanding or insight alone does not seem to affect the amount of anxiety that individuals experience regarding anticipated behavioral changes.

Predictive Validity

With regard to predictive validity, individuals who completed or partially completed the recovery activities identified more negative consequences to anorexia nervosa than individuals who did not complete these activities. Thus, it seems that individuals with anorexia nervosa may be better able to complete recovery activities when they have a clear idea of the numerous costs of the disorder. This may occur because recognition of negative consequences of anorexia nervosa may generate distress for the individual, and this in turn may lead to strong efforts to change. This extends the pattern of findings observed in Study 2 where the transition from not wanting to change (i.e., precontemplation) to seriously thinking about change (i.e., contemplation) was characterized by increasing awareness of the costs of anorexia nervosa (and not by change in perceived benefits).

The current findings suggest that it is important to explore a variety of factors that contribute to readiness for change in anorexia nervosa. At the outset, it may be useful to define readiness for change in two parts: cognitive readiness on the one hand, and behavioral readiness on the other. Cognitive readiness could be thought of as awareness of reasons for and against change, as well as the desire or intention to change. Behavioral readiness could be thought of as actual ability to change. In order for change to occur, both types of readiness may need to be in place. The results from Study 3 suggest that readiness measures that have a behavioral focus are more likely to be related to anticipated difficulty and actual completion of recovery activities. What remains unknown is the extent to which the DB is related to other criterion measures. Perhaps, if the DB was assessed in terms of criterion measures with a cognitive focus, the results may have been stronger. Alternatively, it may be that DB scores need to be combined with other readiness scores to make the best prediction about who is not just wanting to change, but is also actually capable of change. Of course, the current study does not answer these questions and additional research is needed to directly examine these hypotheses.

General Discussion

This study began with a review of the treatment outcome literature in anorexia nervosa and a discussion of the ambivalence that clients tend to experience toward recovery. Speculations were made about treatment resistance and poor outcome being the result of mismatches between insufficient readiness for change and action-oriented interventions. The transtheoretical model of change was presented as a framework to examine readiness and motivation for change constructs. Although this model, which focuses on stages and processes of change, as well as decision-making and self-efficacy, has received considerable empirical support in substance abuse populations (e.g., DiClemente et al., 1991; Prochaska & DiClemente, 1983; Prochaska, DiClemente & Norcross, 1992; Velicer et al., 1995), investigations in the eating disorders are just beginning. Measures of stages and processes of change have been adapted for the eating disorders (e.g., Blake et al., 1997; Geller & Drab, 1999; Geller et al., 1999); however, prior to this research, similar adaptations had not been made for a decisional balance measure. The purpose of this research was to develop a decisional balance measure specific to anorexia nervosa. In the present discussion, the psychometric properties of the DB are summarized, including a discussion of the findings in broader theoretical and clinical contexts. Limitations of this research are noted and directions for further research are addressed.

Measure Development

This study began by generating a pool of items based on decision making theories, such as Janis and Mann's (1977) decision-making model, other decisional balance measures, and interviews with eating disorder specialists. Two hundred and forty-six women with anorexia nervosa completed the decisional balance measure, and factor analyses yielded a three factor solution. This solution shares some characteristics with the two factor solutions observed in

smoking (Velicer et al., 1985) and other health risk behavior studies (e.g., Prochaska, Velicer et al., 1994), but there are also important differences. Similar to other populations, the DB for anorexia nervosa produced one factor representing general negative consequences of the disorder; this factor was labeled Burdens. However, different from other populations, the DB produced not one, but two pro factors. One pro factor represented valued achievements such as self-control, being very thin, and striving for perfection, and was labeled Benefits, whereas the other pro factor reflected the use of anorexia nervosa as a means for avoiding aversive emotions, challenges, and responsibilities, and was labeled Avoidance Coping. The Avoidance Coping factor may actually be better thought of as neither a pro factor nor a con factor, but a combination of the two; in some ways there are benefits to avoiding, particularly in the short term, but in other ways there are drawbacks, especially in the long term.

Psychometric Properties of the Decisional Balance

Reliability. This study determined that the DB scores were internally consistent and stable over one week.

Convergent Validity. Convergent validity was supported in a number of ways. Compared to individuals who were not wanting to change, individuals who were contemplating change or taking action were more aware of the negative consequences of anorexia nervosa, and had more insight about the ways that they were using anorexia nervosa to avoid dealing with negative emotions, responsibilities and challenges. In other words, these results suggest that individuals with anorexia nervosa become increasingly ready for change as a function of recognizing the costs of anorexia nervosa and gaining insight regarding avoidance coping. Interestingly, these shifts appear to occur between precontemplation and contemplation stages, and then remain stable between contemplation and action. The readiness process did not seem to be affected by

the degree to which individuals view anorexia nervosa as a means of feeling in control and satisfying motivations for perfection and achievements. These values tended to remain stable across stages of change, quite likely because they represent predominant referents for inferring personal value and self-worth, which are highly resistant to change. The stability of these values have implications for broader patterns of DB findings; since the Benefits scores did not decrease across stages of change, they did not "cross over" with the Burdens scores, as has been the pattern in other health risk behavior studies (Prochaska, Velicer, et al., 1994)

Nevertheless, consistent with the literature, other measures of the change process were related to the DB scores. For instance, the results suggested that awareness raising, self-reevaluation and emotional expressions, assessed by the Processes of Change Questionnaire were associated with awareness of negative consequences of anorexia nervosa, but not valued functions of the disorder. By contrast, barriers to change, assessed by the Concerns about Change Scale - Revised, were associated with valued aspects of anorexia nervosa and avoidance coping, but not with negative consequences of the disorder. These relationships were not surprising given that the Processes of Change Questionnaire items focused on negative aspects of anorexia nervosa, but the Concerns about Change Scale - Revised items focused more on valued aspects of the disorder.

Divergent Validity. In support of divergent validity, the DB scores were unrelated to socially desirable responding and socioeconomic status. The DB was also unrelated to BMI, suggesting that readiness for change does not alter as a function of severity of emaciation. However, a number of unexpected findings were detected, one involving participant demographics, and two involving measures of symptom severity. Regarding demographics, Avoidance Coping scores were correlated with age. While the meaning of this relationship is

unclear, it is possible that age is related to insight directly, or as a byproduct of previous treatment. In order to test these hypotheses, future research should examine relationships between DB scores and insight, and between DB scores and previous treatment. It is important to note that the current study did assess links between age and *presence* of previous treatment, but significant findings were not detected, thus future research should look at *duration* or perhaps *intensity* (e.g., once per week vs. residential program) of previous treatment specifically.

Regarding symptom severity, it was found that Benefits scores were significantly and positively related to eating disorder symptom severity. This relationship suggests that relying on anorexia nervosa as a means to self-control, feeling accomplished, and enhancing self-esteem increases as symptoms worsen. By contrast, Avoidance Coping was positively related to psychiatric symptom severity. This relationship suggests that gaining insight into the ways that anorexia nervosa is a way of avoiding other problems (e.g., negative emotions, sexual relationships) is associated with increasing levels of distress. The clinical implications of this finding will be discussed in the following section. Of note, the fact that only one of the DB subscales was related to eating disorder symptom severity, and likewise only one DB subscale was related to psychiatric symptom severity suggests that the DB subscales do indeed tap different aspects of readiness for change.

Criterion Validity. Tests of criterion validity raised more questions than answers. None of the DB scores were related to anticipated difficulty at completing recovery activities and only the Burdens scores were related to actual completion of recovery activities. These findings suggest that insight and awareness about the positive and negative functions of anorexia nervosa do not affect the degree to which individuals predict they will struggle with recovery. Likewise, although awareness of the drawbacks of anorexia nervosa does provide an incentive to make

concrete behavioral changes, identification of the positive aspects of anorexia nervosa neither impedes nor facilitates actual behavior change. These findings do not suggest that insight and awareness are unimportant to the process of recovery, but rather that intellectual understanding alone may not be a good marker of readiness for behavioral change. Perhaps, in addition to intellectual understanding, self-efficacy, distress tolerance, and social and/or professional support are needed, in order for behavioral change to occur.

Clinical Implications

Assessment: The DB for anorexia nervosa was designed to assess the degree to which clients are ready to embark upon a program of recovery. Although currently there is no single agreed upon way to assess readiness status, according to the transtheoretical model of change, individuals are more likely to take action to modify health risk behaviors (e.g., smoking, anorexia nervosa) when they identify more negative than positive consequences of their behavior. Findings from this research suggest that this model is not completely accurate for anorexia nervosa. Similar to previous research, the current study found that clients were more likely to take action toward recovery when they identified an increasing number of negative consequences of anorexia nervosa. However, a finding that is particular to anorexia nervosa is the relationship between readiness for change and awareness of the ways in which anorexia nervosa is used to avoid dealing with other more serious problems; individuals who were more aware of this pattern appeared to be more ready for change.

In addition to identifying indices of readiness for change, the results from this study also identified indices that are not likely to predict readiness for change. First, Benefits scores remained relatively unchanged across stages of change, suggesting that the extent to which clients value a thin shape and low weight, and the degree to which they strive for perfection and

self-control, has little to do with readiness for change. This findings is in line with Strober et al.'s (1997) observation that time to full recovery from anorexia nervosa, which includes not just weight gain and normalization of menstrual cycle, but also absence of all psychological symptoms (e.g., fear of weight gain, shape- and weight-based self-esteem), is slow paced, taking on average 6 years to achieve. The implication for clinicians is to not be swayed by clients' attachment to symptoms or fears about recovery when assessing readiness for change. Instead, clinicians would be wise to validate clients' valuing of symptoms and to even suggest to clients that the positive aspects of anorexia nervosa are not likely to change in the near future. Focusing on clients' recognition of negative aspects of anorexia nervosa, as well as their awareness of using the disorder to avoid working on other problems, is likely to provide a better estimate of readiness for change. Second, severity of eating disorder symptoms, which includes both physical (i.e., low BMI) and psychological (i.e., high drive for thinness), were not related to the DB subscales that seem to be the best markers of readiness status (i.e., Burdens and Avoidance Coping). This finding sheds light on the predicament that clinicians often experience between respecting a client's disinterest in change and responding to their own discomfort and fears about *not* providing treatment to clients who are physically and psychologically compromised.

Indeed, readiness for change is not well explained by cognitive processes alone. Although awareness raising, insight, and balancing reasons for and against change may increase the likelihood that a client *wants* to relinquish anorexic behaviors, absence of strong relationships between the DB scores and behavioral outcome measures suggests that these cognitive activities do not inform us about who is *capable* of change. Capability for change may rest on certain skills being in place, such as distress tolerance, self-efficacy, and interpersonal effectiveness. Thus, when assessing readiness for change, in addition to evaluating the DB scores, clinicians are

advised to explore the client's capacity to manage the distress and disorganization that accompanies change, as well as self-efficacy. Another marker of capacity for change may be interpersonal skills, particularly as they impact on the therapeutic alliance. Although under-researched, this last point is critical given the egosyntonic nature of anorexic symptoms and the trust that clients need to establish with therapists in order to weather the feelings of guilt and anxiety that accompany weight gain and decreasing behaviors used to compensate for eating (e.g., fasting, excessive exercise, vomiting). Although these are merely suggestions, if empirically supported by future research, they would greatly improve *clinicians'* ability to estimate readiness for change, which based on the current findings, appears to be quite poor.

Treatment: In developing the DB for anorexia nervosa, indices of readiness for change were identified, as were areas to focus interventions. This is important to the advancement of our understanding of anorexia nervosa, an extremely complex disorder, and it is also extremely exciting. Regarding our understanding of the disorder, anorexia nervosa has been conceptualized as a way for highly perfectionistic individuals to cope with negative experiences, developmental transitions, and distressing life events (Kleifield et al., 1996; Slade, 1982). Instead of learning how to cope with these difficulties, individuals with anorexia nervosa become preoccupied with thoughts about food, shape and weight, and strategies to restrict intake or compensate for eating. At their worst, these individuals become incapable of thinking about anything else and their general functioning (e.g., studying, working, socializing) becomes seriously compromised.

The results from this research show that individuals who are ready for change are more aware of the negative consequences of anorexia nervosa, and they have more insight into the ways in which they have used anorexia nervosa to avoid dealing with other problems. Any strategies that increase this awareness and insight are likely to help clients prepare to commit to a

program of recovery. For instance, clients may benefit from interventions designed to explore higher values (e.g., performance at work and school, relationship with friends, family, romantic partners, etc.) and assess the extent to which anorexia nervosa limits satisfaction in these areas of life. Ultimately, the aim is to bring clients to a point where their thoughts and behaviors are inconsistent with their higher values and the way they would like to be. This dissonance is likely to be distressing, which in turn may lead to help-seeking and commitment to treatment. Once a firm decision has been made to work on recovery, action-oriented interventions aimed at weight gain and decreasing behaviors used to compensate for eating are more likely to be useful.

Limitations

Some limitations of the current work should be acknowledged. First, like most self-report measures, the DB is a quick, easy to complete measure that is sensitive to cognitive processes such as self-examination and insight. However, like other self-report measures, the DB has a number of potential limitations. For instance, the DB is subject to bias, such as social desirability. That is, individuals completing this measure may have been responding in ways that they believed others would want them to respond. However, since DB scores were not related to impression management, it is unlikely that this response style poses a serious threat to the validity of the DB. In addition, the DB is subject to reactivity; that is, individuals completing the DB may have responded differently because they knew that they were being assessed. There are no hard and fast ways to avoid this problem, but many efforts were made by the research assistants to create an environment that would increase the likelihood of honest responses. For instance, the research assistants explained that the results of the study would have clinical implications and that accurate reporting was encouraged; they reviewed confidentiality several times and told participants that their responses would have no impact on the services they

received. As well, they expressed understanding regarding ambivalence about recovery and encouraged participants to acknowledge any positive functions about anorexia nervosa. Another related limitation was the potential for misinterpreting the meaning of statements on the DB. In an effort to reduce this potential problem, DB items were written at the grade 7 or 8 level (Flesch, 1951) and participants were encouraged to consult the research assistant if the DB items were unclear. Related to this, pilot testing of the measure involved one-on-one sessions with anorexic clients to examine their understanding of the DB items, and items identified as unclear were rewritten.

A second potential limitation relates to the fact that research on the transtheoretical model of change has operationalized the stages of change in a number of different ways. Because of this, there is little consistency in how stages of change are measured and results may vary depending on the chosen methodology. Indeed, it will be difficult to compare DB findings across studies if different methods of determining stage of change are used. In this study, the Stages of Change Questionnaire and the Readiness and Motivation Interview were both used to determine stage of change. In order to assess the degree to which findings from this methodology generalize to other methodologies, DB scores were reanalyzed using the Stages of Change Questionnaire scores alone, and again using the Readiness and Motivation Interview symptom scores (i.e., restriction, cognitive symptoms, compensatory strategies, bingeing), to assign participants to stage of change. Regarding the Stages of Change Questionnaire, assignments were made according to highest stage score, and since no participants scored highest on action alone, to maximize variability, when ties for the highest score occurred between contemplation and action, the action stage was assigned. Using these decision-making rules, 26 participants were assigned to action, 51 clients were assigned to contemplation, and 2 participants were assigned to

precontemplation. Given the small sample of pure precontemplators, DB score comparisons seemed inappropriate.

Regarding Readiness and Motivation Interview symptom scores, assignments based on restriction scores produced a pattern of DB results that paralleled the findings reported in this study. Assignments based on cognitive and compensatory behavior scores produced patterns of DB results that were only partially consistent with the current findings. In both cases, Burdens scores increased between precontemplation and action, but significant differences were not detected for Avoidance Coping scores across stages of change. In addition, Benefits scores significantly decreased between precontemplation and action when cognitive scores were referenced. Since only 29 of the 80 participants reported bingeing, assignments based on bingeing scores were not examined. These findings indicate that no matter how you cut the sample, Burdens scores tend to increase from precontemplation to contemplation, but the pattern of results for pro scores vary depending on the symptom in question. What is reassuring about the methodology used in this study is that the results observed were consistent with those that emerged when the restriction scores were used to allocate participants to stage of change, and restricting dietary intake is one of the core features of anorexia nervosa. In addition, although *significant* differences were not detected in all cases for the Avoidance Coping scores, the *pattern* of lower scores in precontemplation and higher scores in contemplation and action was consistent across the different methods of stage of change assignment. The fact that Benefits scores decreased for participants who were actively working on reducing cognitive symptoms of anorexia nervosa suggests that shifts on this factor do occur when challenging core beliefs becomes the focus of recovery.

A third limitation of this study was the potential lack of sensitivity and suitability of the

criterion measures. One explanation for absence of more significant relationships is restricted variability in scores; the Completion of Recovery Activities scores had a restricted range, spanning just 6 data points. However, when the analyses in Study 3 were re-run using a weighting system that increased the range of Completion of Recovery Activity scores, new findings did not emerge in the results. Another issue is that the criterion measures may not have been well suited to the DB. Regarding the later issue, exploratory analyses revealed that readiness for change scores with a behavioral focus did correlate significantly with Anticipated Difficulty of Recovery Activities scores and did distinguish subjects who were classified into different groups based on Completion of Recovery Activities scores. These findings suggest that the criterion measures used in this study were biased in favor of measures that tap *behavioral* readiness for change and not those that tap cognitive readiness for change, such as the DB.

Finally, it is possible that biological factors may have influenced DB scores. That is, cognitive impairment that results from malnutrition may have limited participants' ability to identify the negative aspects of their eating disorder, as well as gain insight into the ways that anorexia nervosa is highly valued. However, nonsignificant correlations between BMI and DB scores suggests that biology, or low weight specifically, does not affect DB scores. Moreover, an ANOVA comparing BMI across stages of change suggests that BMI scores did not distinguish precontemplators from contemplators, and that in fact they were constitutionally very similar. By contrast, BMI scores were significantly higher for individuals actively involved in recovery compared to contemplators, but this makes sense as these individuals were more likely to be focused on gaining weight.

Future Research

This research lays the groundwork for future studies on readiness and motivation for change in anorexia nervosa. One focus will be research involving different criterion validity measures than the ones used in the current study. This research would provide a means of determining whether the DB provides useful information about the recovery process and improves accuracy of assessment and treatment decisions. When evaluating response to treatment, it is important to note that even though clients may not reduce anorexic behaviors per se, they may be working very hard at recovery. As such, it may be misleading if criterion measures focus exclusively on weight gain, percentage adherence to meal plans, and decreased compensatory behaviors. Rather, indices of commitment to treatment, such as attendance, engagement, and dropout, as well as improvement in other areas of functioning, such as distress tolerance, interpersonal effectiveness, and emotional regulation, may be worth assessing as criterion measures. For instance, it would be interesting to investigate whether the low Avoidance Coping and Burdens scores that are characteristic of precontemplators would predict drop out from action-oriented interventions as would be expected by the transtheoretical model of change. Here, the rationale would be that learning how to change may be inappropriate if the "why" of change hasn't been addressed first. Since the current study was cross-sectional in nature, longitudinal studies tracking DB scores as clients progress through treatment would supply valuable information regarding the relationship between DB scores and recovery. Finally, future work might also explore whether completing the DB and receiving clinical feedback about its meaning facilitates decision making about recovery, decreases ambivalence or regret about decisions to engage in treatment, and immunizes clients against the negative aspects of recovery.

This phenomenon has been supported in other decision-making contexts (Mann, 1972), but not in decision-making about treatment for anorexia nervosa.

In summary, the results from the present study extend past observations about readiness for change to anorexia nervosa, but they also highlight ways in which anorexia nervosa is unique. Although previous research in other treatment-resistant populations have shown two factor solutions for the decisional balance, namely, pro and con factors, in this study, three factors were determined, namely, Burdens, Benefits and Avoidance Coping. The DB for anorexia nervosa was found to possess good internal consistency and test-retest reliability, as well as convergent and divergent validity. Criterion validity was not well supported, however this may be due to the focus of criterion measures on behavior change, where a focus on cognitive change may have been more appropriate. Nevertheless, future research with different criterion validity measures should be conducted before concluding that the DB is not related to behavioral change. Finally, many questions were raised regarding the process of change in anorexia nervosa. How clients move from cognitive readiness for change to actual behavioral change and relinquishment of anorexic symptoms is still a mystery and a topic for future research. It is hoped that subsequent studies will build on the foundations established here, and thereby contribute to the body of knowledge concerning readiness for change for this very complex disorder.

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Table 1.

Sample Items for Concerns About Change Subscales

Subscale	Sample item
1. Unable to change	Deep down, I just don't think it's possible for me to change
2. Unworthy of change	I think I need this problem to punish myself
3. Fear of risks	I may be exposed to more real dangers if I change
4. Fear of Sexuality	My problem reduces sexual conflicts
5. Fear of Maturity	In many ways this problem simplifies the difficulties of adult life
6. Fear of Interpersonal Loss	Some people may stop taking care of me if I change
7. Fear of Personal Loss-Hedonic	I may feel less intense or alive if I change
8. Fear of Personal Loss-Accomplishment	I may lose everything I have accomplished if I change
9. Sense of Identity	This problem is part of what makes me unique and special
10. Failure to Recognize Irrationality	It is just a questions of individual preference for me to be the way I am right now
11. Fear of process of change	Attempting to change will disrupt my life
12. Fear of Peer Group Loss	My friends wouldn't accept me if I change
13. Problem Provides Disinhibition	I wouldn't be able to express how I feel if I change
14. Avoidance of Responsibility	I'd have no excuse for my failures if I change
15. Means of Coping with Negative Affect	Without this problem, I wouldn't have any other ways of coping with stress
16. Problem Facilitates Goal Attainment	This problem helps me obtain an immediate goal
17. Problem Reflects Deep Underlying Flaw	Changing this problem won't help solve the deeper problems I have within me.

Table 2.

Demographic Data for the Canadian, American, and British Samples.

	Age (yrs)		Age of onset (yrs)		Duration (yrs)		BMI (kg/m^2)		SES	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Canadian	25.3 [b]	8.5	17.0	4.7	8.3 [a]	8.3	17.3 [b]	2.3	1.92	1.0
American	28.7 [b]	10.5	16.5	7.7	12.2 [b]	10.3	16.8 [b]	2.2	1.72	0.8
British	31.2 [a]	9.8	17.6	7.2	13.4 [b]	8.8	15.9 [a]	2.2		

Note: Data on socio-economic status were not available for the British sample. BMI=Body Mass Index, SES=Socio-economic status (rating made based on the Hollingshead (1975) rating system). Superscripts indicate significant between group differences, $p<.05$

Table 3

Oblique Rotated Pattern Matrix for Sixty Decisional Balance Items.

Item	Factor 1	Factor 2	Factor 3
1	.09	**-.54**	-.06
2	-.08	**.33**	.08
3	.21	**-.51**	-.05
4	.02	**-.30**	.06
5	-.11	**-.80**	-.10
6	.03	.04	**.58**
7	-.19	**-.87**	-.15
8	.24	-.08	.19
9	-.19	**-.83**	-.06
10	.09	-.03	**.43**
11	-.19	**-.83**	.04
12	-.08	-.41	**.59**
13	.16	**-.30**	.08
14	-.05	-.17	**.53**
15	.17	**-.31**	.03
16	-.07	-.15	**.44**
17	.10	**-.41**	.10
18	-.07	-.04	**.66**
19	.01	-.20	-.08
20	.26	-.03	.28
21	**.41**	-.18	-.05
22	-.14	.04	**.72**
23	.24	**-.30**	.03
24	-.09	-.21	**.62**
25	.12	**-.56**	.04
26	-.09	.13	**.50**
27	.05	**-.59**	.10
28	.18	.15	**.35**
29	.22	**-.50**	.04
30	-.11	.12	**.66**
31	.28	-.44	.01
32	-.03	.06	**.45**
33	**.38**	-.23	-.21
34	.17	-.22	.21
35	**.52**	-.14	.23
36	.23	-.20	.35
37	**.51**	-.17	.18
38	.06	.04	**.44**
39	.48	-.26	.12
40	.21	-.11	**.31**
41	.50	-.31	.09
42	.10	-.11	**.60**
43	**.69**	-.12	.03
44	.06	.23	**.60**

45	**.68**	-.04	-.08
46	.34	.07	.48
47	**.75**	.01	.05
48	**.47**	.05	.22
49	**.75**	-.04	.02
50	**.49**	.17	-.01
51	**.72**	.01	.07
52	.37	.09	.47
53	**.32**	-.16	-.24
54	-.10	.06	**.80**
55	**.73**	.08	.01
56	.26	.04	.62
57	**.46**	-.19	.02
58	.22	.03	**.69**
59	.15	**-.64**	-.05
60	.36	.09	.25

Table 4.

Oblique Rotated Pattern Matrix for Thirty-eight Decisional Balance Items.

Item	Factor 1	Factor 2	Factor 3
1	.13	-.04	**.53**
3	.24	-.02	**.49**
5	-.06	-.08	**.78**
6	.05	**.60**	-.05
7	-.14	-.12	**.85**
9	-.14	-.03	**.81**
10	.10	**.45**	-.02
11	-.14	.07	**.83**
12	-.06	**.62**	.03
14	.01	**.52**	.16
16	-.05	**.46**	.14
18	.03	**.64**	.02
21	**.42**	-.02	.15
22	-.10	**.72**	-.04
23	.28	.06	.27
24	-.04	**.65**	.20
25	.17	.08	**.55**
26	-.04	**.53**	-.14
27	.10	.14	**.58**
28	.19	**.36**	-.17
29	.25	.07	.46
30	-.09	**.64**	-.11
32	-.05	**.44**	.02
33	**.39**	-.18	.18
35	**.54**	.24	.08
37	**.55**	.21	.10
38	.07	**.46**	-.02
40	.19	.29	.10
42	.11	**.54**	.11
43	**.71**	.08	.06
44	.06	.56	-.25
45	**.71**	-.04	-.01
47	**.74**	.08	-.05
49	**.76**	.06	-.05
51	**.76**	-.05	-.11
53	.34	-.25	.12
54	-.06	**.78**	-.07
55	**.78**	.03	-.17
57	**.47**	.05	.15
58	.24	**.64**	-.05
59	.18	-.01	**.64**

Table 5.

Oblique Rotated Pattern Matrix for Thirty Decisional Balance Items, Broken Down into Three Subscales.

	Item	Factor 1	Factor 2	Factor 3
	Burdens			
6	It bothers me that anorexia keeps me from socializing	**.59**	.08	.08
10	It bothers me that anorexia prevents me from sharing my feelings with others	**.42**	.03	.15
12	I don't like it that anorexia keeps me from eating out with others	**.62**	.02	.07
14	I spend too much time thinking about food, eating and calories	**.52**	.15	.00
16	It bothers me that because of anorexia I can't prepare a meal or myself	**.48**	.12	.04
18	Because of anorexia, I feel guilty a lot of the time	**.62**	.00	.04
22	I am fed up with thinking about my weight and/or shape	**.74**	.07	.08
24	It bothers me that my weight controls my mood	**.65**	.19	.00
26	I worry about the effect anorexia is having on my health	**.53**	.14	.03
30	I am tired of being sick with anorexia	**.64**	.16	.05
32	It bothers me that anorexia leaves me with no energy	**.46**	.01	.03
38	I worry that because of anorexia I will not be able to have children	**.41**	.02	.07
42	Anorexia makes me moody	**.53**	.10	.11
54	I hate the fact that anorexia controls my life	**.78**	.11	.04
58	I have lost my freedom to anorexia	**.59**	.06	.23
	Benefits			
1	Anorexia gives me self-control	.06	**.50**	.12
5	Being a very low weight makes me feel confident	.08	**.79**	.03
7	Being a very low weight makes me feel good about myself	.12	**.87**	.12
9	Fitting into small sized clothes makes me feel good about myself	.00	**.83**	.13
11	Being thinner than others makes me feel good about myself	.09	**.82**	.12
25	Anorexia helps me obtain an immediate goal	.07	**.54**	.17
27	Anorexia is my way of being perfect	.11	**.54**	.13
59	Anorexia makes me feel accomplished	.00	**.63**	.15
	Avoidance Coping			
35	Anorexia is my way of avoiding deeper, more serious problems	.16	.09	**.60**
37	When I focus on eating shape and weight I do not have to deal with painful emotions	.13	.13	**.59**
43	Anorexia protects me from the difficulties of adult life	.02	.12	**.71**
47	Anorexia allows me to avoid making decisions	.02	.02	**.73**
49	As long as I am anorexic, I do not have to make definite plans for the future	.02	.03	**.75**
51	Because of anorexia, I can avoid my fears about sex and/or my sexuality	.10	.04	**.76**
55	Because of anorexia, I don't have to deal with intimate adult relationships	.02	.08	**.76**

Table 6.

Means, Standard Deviations, and Coefficient Alphas for the Decisional Balance Subscales.

	Mean	Standard Deviation	Alpha
Burdens	3.61	.80	.88
Benefits	3.30	.99	.88
Avoidance Coping	2.82	1.1	.88

Note: Decisional Balance items are rated on a 5-point Likert scale from 1 (not at all true) to 5 (completely true).

Table 7.

Decisional Balance Subscale Intercorrelations

	Burdens	Benefits	Avoidance Coping
Burdens	--		
Benefits	.01	--	
Avoidance Coping	.31**	.27**	--

**p<.001

Table 8.

Means and Standard Deviations for Decisional Balance Subscales by Stages of Change

	Burdens		Benefits		Avoidance Coping	
	M	SD	M	SD	M	SD
Stage of change						
Precontemplation (n=31)	3.34[1]	.70	3.41	.87	2.25[1]	.90
Contemplation (n=32)	3.83[2]	.55	3.17	.95	3.01[2]	1.05
Action (n=17)	3.91[2]	.87	3.15	.98	3.31[2]	1.04

Note: Decisional Balance items are rated on a 5-point Likert scale from 1 (not at all true) to 5 (completely true). Superscripts indicate significant differences between stages of change groups, $p<.01$

Table 9.

Convergent Validity: Correlations Between the Decisional Balance Subscales and Other Measures of Readiness for Change

	Burdens	Benefits	Avoidance Coping
Stages of Change			
Precontemplation	-.44*	.16	-.30*
Contemplation	.50*	-.11	.28
Action	.17	.08	.20
Readiness & Motivation Interview			
Precontemplation	-.46*	.16	-.40*
Contemplation	.35*	-.10	.23
Action	.18	-.12	.19
Processes of Change			
Consc. Raising	.38*	-.19	.26
Self-Reevaluation	.56*	.01	.22
Dramatic Relief	.46*	-.17	.16
Countercondition	.20	-.06	-.01
Helping Relations	-.03	-.01	-.15
Reinf Mgt.	.07	.00	.07
Stimulus Control	.23	.05	.22
Self-Liberation	.26	-.11	-.02
Concerns about Change			
Total score	.08	.53*	.50*

* Significant according to Larzelere & Mulaik's (1977) modified Bonferroni test, where $\alpha' = \alpha/(k-i+1)$

Table 10.

Convergent Validity: Correlations Between the Decisional Balance Subscales and Global Ratings of Readiness for Treatment and Recovery

	Burdens	Benefits	Avoidance Coping
Clinician Ratings (n=59)			
Treatment	.06	.03	.15
Recovery	-.04	.03	.09
RMI Assessor Ratings (n=47)			
Treatment	.42*	.01	.34
Recovery	.35	-.04	.25
Client Ratings (n=78)			
Treatment	.34*	-.31*	.28
Recovery	.34*	-.32*	.04

* significant according to Larzelere & Mulaik's (1977) modified Bonferroni test, where $\alpha' = \alpha/(k-i+1)$

Table 11.

Divergent Validity: Correlations Between the Decisional Balance Subscales and Impression Management, Socioeconomic Status (SES), Age, Body Mass Index (BMI), Eating Disorders Inventory (EDI) and Brief Symptom Inventory (BSI)

	Burdens	Benefits	Avoidance Coping
Impression Management	-.18	.01	.02
SES	.05	-.10	.07
Age	.06	-.11	.24*
BMI	-.02	.16	-.02
EDI-Composite Score	.18	.34**	.06
BSI-Global Severity Index	.13	.20	.39***

*p<.05, ** p<.01, ***p<.001

Table 12.

Means and Standard Deviations for Decisional Balance Subscales by Completion of Recovery Activities

	Burdens		Benefits		Avoidance Coping	
	M	SD	M	SD	M	SD
Completion of activities						
Complete (n=22)	3.87[2]	.81	3.13	1.02	2.76	1.01
Partially complete (n=42)	3.82[2]	.58	3.24	.91	2.80	.98
Not complete (n=6)	3.05[1]	.85	3.71	1.02	2.58	1.32

Note: Decisional Balance items are rated on a 5-point Likert scale from 1 (not at all true) to 5 (completely true). Superscripts indicate significant differences between stages of change groups, $p<.05$

Figure 1. Mean of pro and con scores across stages of change for smokers in standard score form.

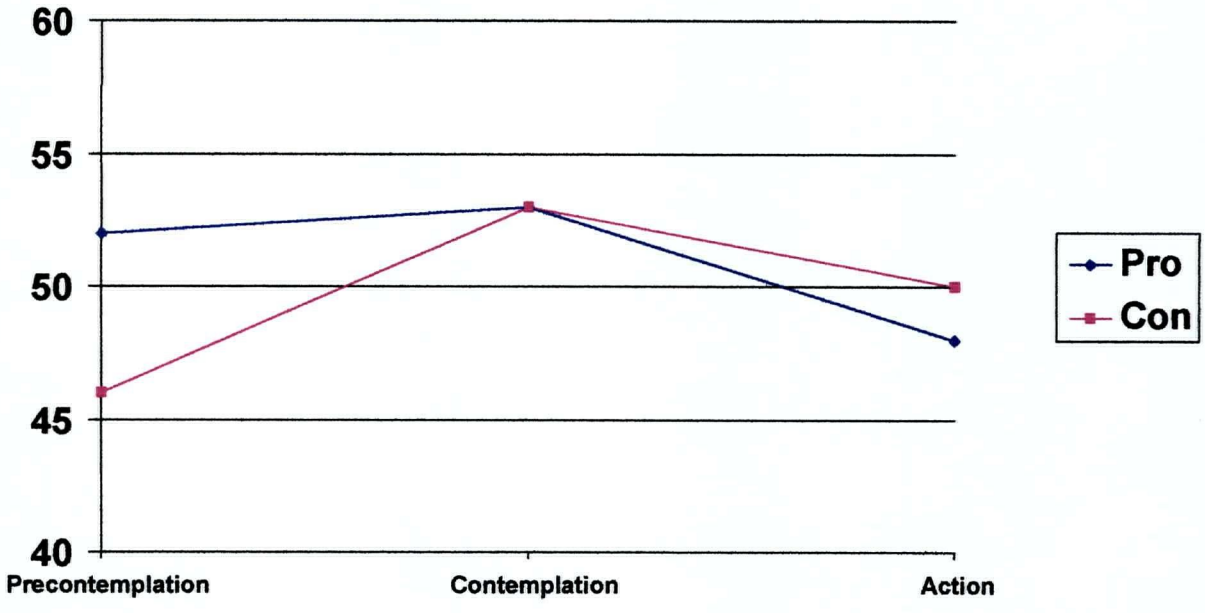


Figure 2. This scree plot, which graphs eigenvalues of the unrotated factors on the horizontal, demonstrates a three to five factor solution for the Decisional Balance data.

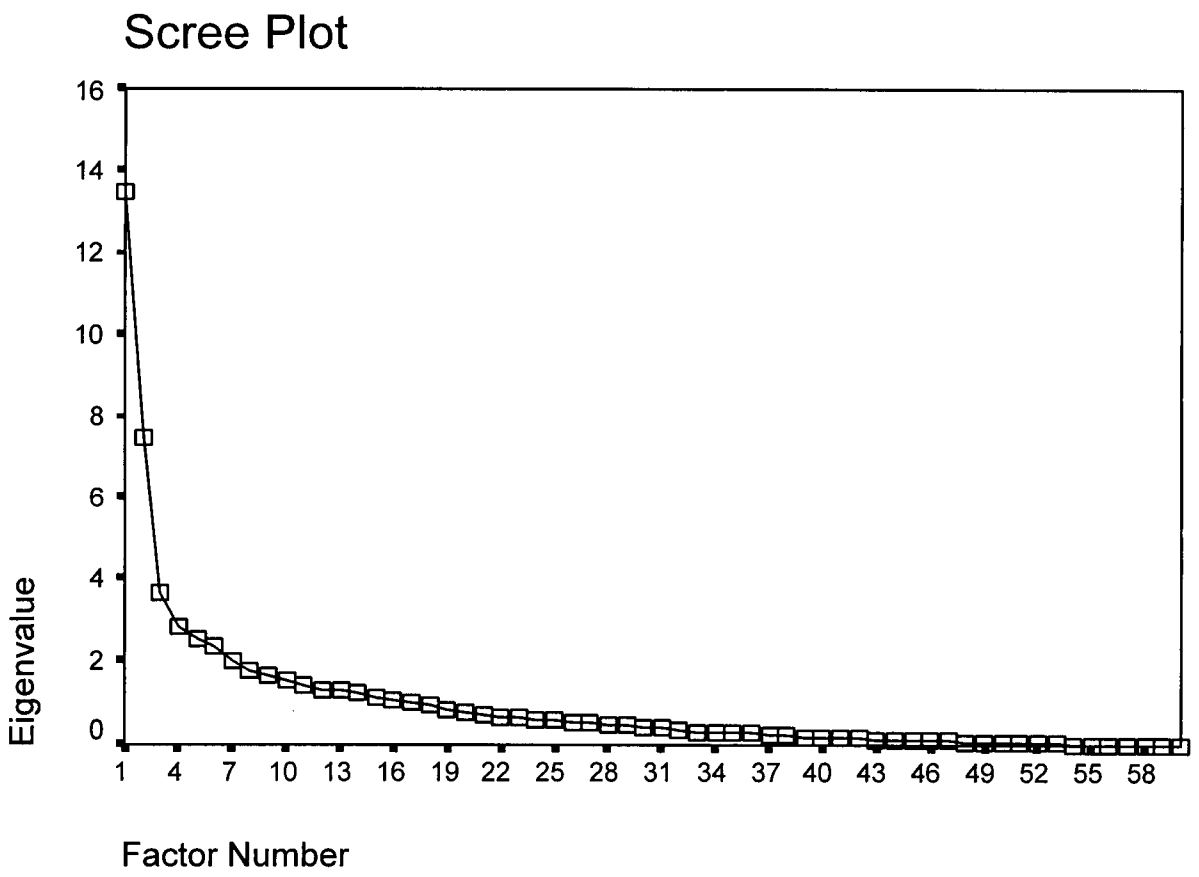
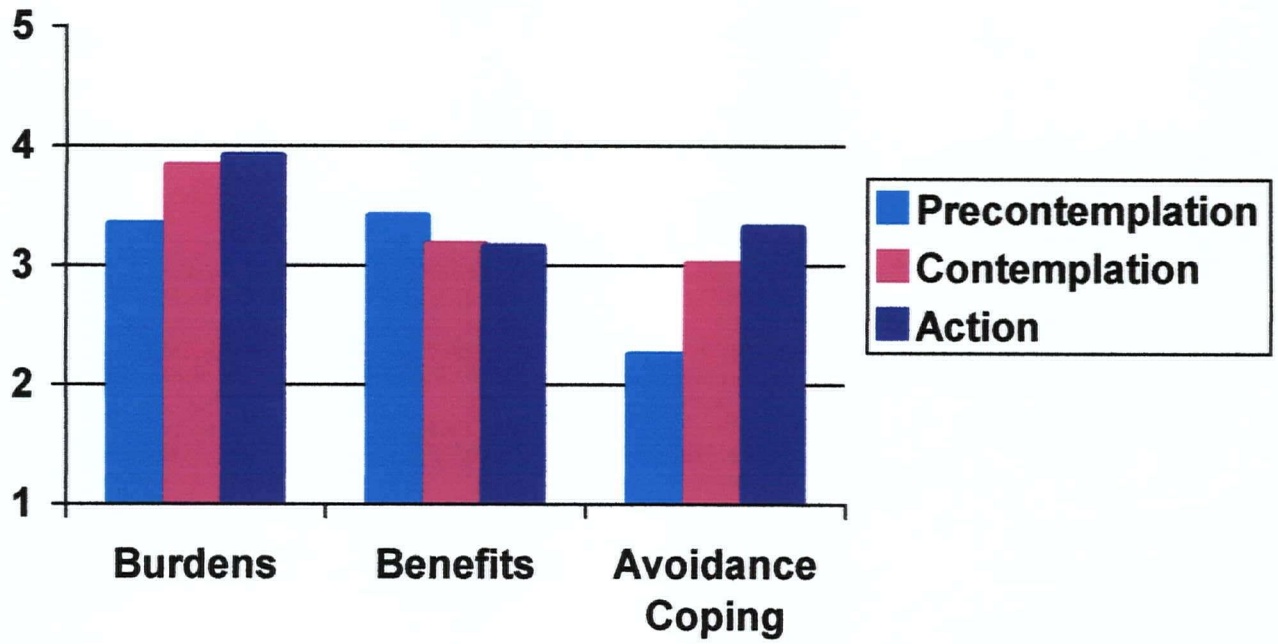


Figure 3. Mean Decisional Balance scores across stages of change.



APPENDIX A: STUDY 1 MEASURES

General Information Sheet

Age: _____ Date of Birth (dd/mm/yr): _____
Your height: _____ Your weight: _____
Age at eating disorder onset: _____
Highest past weight (excluding pregnancy):_____
Lowest adult weight:_____
What do you think your weight would be if you did not consciously try to control your weight?_____
How much would you like to weigh?_____

Have you received treatment for an eating disorder in the past? YES ☐ NO ☐
If so, please describe what type, and how much you received:_____
_____
_____

Please indicate the occupation of your mother and father (or other person that provides for you financially)
Mother: _____
Father: _____
Other: (please specify relationship)_____

What level of education did your mother and father (or other person that provides for you financially) complete? (check one):

Mother:
_____ less than seventh grade
_____ junior high school (grade 9)
_____ partial high school (grade 10 or 11)
_____ high school graduate
_____ partial college (at least one year) or specialized training (e.g., RN diploma, CEGEP)
_____ standard college or university graduation (e.g., B.A., B.Sc., B.Ed., M.D., L.L.B.)
_____ graduate professional training (e.g., M.A., Ph.D., M.Sc., M.B.A.)

Father:
_____ less than seventh grade
_____ junior high school (grade 9)
_____ partial high school (grade 10 or 11)
_____ high school graduate
_____ partial college (at least one year) or specialized training (e.g., RN diploma, CEGEP)
_____ standard college or university graduation (e.g., B.A., B.Sc., B.Ed., M.D., L.L.B.)
_____ graduate professional training (e.g., M.A., Ph.D., M.Sc., M.B.A.)

Other:
_____ less than seventh grade
_____ junior high school (grade 9)
_____ partial high school (grade 10 or 11)
_____ high school graduate
_____ partial college (at least one year) or specialized training (e.g., RN diploma, CEGEP)
_____ standard college or university graduation (e.g., B.A., B.Sc., B.Ed., M.D., L.L.B.)
_____ graduate professional training (e.g., M.A., Ph.D., M.Sc., M.B.A.)

"Treatment" means working on changing thoughts, feelings, and behaviours (e.g., establishing healthy eating and a normal body weight) associated with your eating disorder.
To what extent do you want treatment for your eating disorder?

Definitely do not want treatment			Sometimes I want treatment but sometimes I don't			Definitely want treatment
1	2	3	4	5	6	7

"Recovery" means being free of thoughts, feelings, and behaviours (e.g., maintaining healthy eating and body weight) associated with your eating disorder.
To what extent do you want to recover from your eating disorder?

Definitely do not want to recover			Sometimes I want to recover but sometimes I don't			Definitely want to recover
1	2	3	4	5	6	7

EDE Diagnostic Questions

Introduction

To begin with I would like to get a general picture of your eating habits over the last 4 weeks.

Have your eating habits varied much from day to day?
Have weekdays differed from weekends?
Have there been any days when you haven't eaten anything?

What about the previous 2 months?

Fear of Weight Gain (AN)

*** Over the past 4 weeks have you been afraid that you might gain weight or become fat?**

0 = No definite fear of weight gain on any day
1 = 1 to 5 days
2 = 6 to 12 days
3 = 13 to 15 days
4 = 16 to 22 days
5 = 23 to 27 days
6 = Definite fear of fatness or weight gain present every day *(without exception)*

Rate past 2 months

Feelings of Fatness (AN)

*** Over the past 4 weeks have you felt fat?**

0 = Has not felt fat on any day
1 = 1 to 5 days
2 = 6 to 12 days
3 = 13 to 15 days
4 = 16 to 22 days
5 = 23 to 27 days
6 = Has felt fat every day *(without exception)*

Rate past 2 months

Restraint Over Eating (AN)

*** Over the past 4 weeks have you consciously tried to restrict what you eat whether or not you have succeeded? (must be for reasons concerning shape and/or weight)**

0 = No attempt at restraint on any day
1 = 1 to 5 days
2 = 6 to 12 days
3 = 13 to 15 days
4 = 16 to 22 days
5 = 23 to 27 days
6 = Attempted to exercise restraint every day *(without exception)*

Maintained low weight (AN)

(Rate for clients who may be underweight)

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

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

*** Is this for reasons concerning shape or weight?**

0 = No attempts to lose weight or to avoid weight gain over past 3 months
1 = Attempts to lose weight or to avoid weight gain over past 3 months for reasons concerning shape or weight
2 = Attempts either to lose weight or to avoid weight gain over past 3 months for other reasons

Menstruation (AN)
*** Have you missed any menstrual periods over the past few months?**
*** How many periods have you had?**
*** Are you taking the pill? Pregnant? Hysterectomy?**
Are there any other reasons that you can think of, as to why you haven't got a period?

Record number of periods in the past 3 months.

Importance of Shape (AN/BN)
*** Over the past 4 weeks has your shape been important in influencing how you feel about (judge, think, evaluate) yourself as a person?**
If no: **Was it ever? Can you describe what it was like then? Is there still some connection for you?**
*** Different people name different things that influence how they feel about (judge, think and evaluate) themselves as a person, could you tell me some of the things that are important in influencing how you feel about yourself as a person?** If examples are needed: These could be things like, performance at work or school, being a good parent, a good friend, or good at a hobby.
Only ask if it is not clear whether shape is an aspect of self evaluation:
If, over the past 4 weeks your shape had changed in any way, would this have affected how you feel about yourself?
Is it important to your that your shape does not change?

0 - No importance (not even on the ladder)
1 - (at the very bottom of the ladder)
2 - Some importance (definitely an aspect of self-evaluation)
3 - (at least half way up the ladder)
4 - Moderate importance (definitely one of the main aspects)
5 - (at the very top but, still others at the bottom)
6 - Supreme importance (shape is the only thing on the ladder)

Rate past 2 months

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

USE PROMPTS FROM SHAPE QUESTION
0 - No importance (not even on the ladder)
1 - (at the very bottom of the ladder)
2 - Some importance (definitely an aspect of self-evaluation)
3 - (at least half way up the ladder)
4 - Moderate importance (definitely one of the main aspects)
5 - (at the very top but, still others at the bottom)
6 - Supreme importance (weight is the only thing on the ladder)
Rate past 2 months

Bulimic Episodes and Other Episodes of Overeating (AN/BN)

Distinctions among the 4 forms of episodic overeating are based on, **loss of control** and **consumption of an objectively large amount of food.** The end of an episode is defined as when there is an hour or more when the client is not eating.

	"Large"	Not "large" but viewed by client as excessive
"Loss of control"	***Objective Bulimic Episode***	***Subjective Bulimic Episode***
No "loss of control"	***Objective Overeating***	***Subjective Overeating***

*** I would like to ask you about any episodes of overeating that you may have had over the past 4 weeks.**
*** Different people mean different things by overeating. I would like you to describe any times when you felt that you have eaten too much in one go.**
*** Have there been any times when you have felt that you have eaten too much, but others might not agree?**

To assess the amount of food eaten:

Typically what have you eaten at these times?
What were others doing at the time?

To assess loss of control:

Did you have a sense of loss of control at the time?
Could you have stopped once you had started?
Could you have prevented the episode from occurring?

*** Are there any other types of overeating for you?**

For ***objective bulimic episodes***, rate the number of days and episodes over the past 2 months.
*** In the past 4 weeks on how many days did this type of overeating occur for you?**
*** How many times did this happen during one day?**

*** Were there ever 2 or more weeks that passed in the last 3 months when you didn't binge?**
If Yes: Record the longest continuous period (in weeks) free from objective bulimic episodes

Dietary Restriction Outside Bulimic Episodes (BN)

(Only ask if there have been objective bulimic episodes over the past 3 months)
*** Outside the times when you have lost control over eating, how much have you been restricting the amount you eat?**

***Typically, what have you eaten?**
Are you denying yourself certain foods?
*** Has this been to influence your shape or weight?**

This should be the average degree of dietary restriction:
0 - No extreme restriction outside of binge
1 - Extreme restriction outside of binge (less than 1200 calories)
2 - No eating outside of binge
Rate all 3 months.

Self Induced Vomiting (AN/BN)
*** Over the past 4 weeks have you made yourself sick as a means of controlling your shape or weight?**

If Yes:
*** In the past 4 weeks on how many days did you made yourself sick as a means of controlling your shape or weight?**
*** How many times did this happen during one day?**

Rate the number of days and episodes in the last 4 weeks.
Rate the number of episodes over the past 3 months.

Laxative Misuse (AN/BN)
*** Over the past 4 weeks have you taken laxatives as a means of controlling your shape or weight?**

Rate the number of days, episodes and the number of laxatives taken on each occasion.
Note the type of laxative taken.

Diuretic Misuse (AN/BN)
*** Over the past 4 weeks have you taken diuretics as a means of controlling your shape or weight?**

Rate the number of days, episodes and the number of diuretics taken on each occasion.
Note the type of diuretic taken.

Intense Exercising to Control Shape or Weight (BN)
*** Over the past 4 weeks have you exercised as a means of controlling your weight, altering your shape or amount of fat, or burning off calories?**
*** Typically, what form of exercise have you taken?**
Rate the number of days and average amount of time (in minutes) per day spent exercising.

PROMPTS FOR INTENSITY:

How do you feel if you can't exercise? (anxiety?)
Do you push yourself?
Do you feel that you need to exercise before you eat?
Could you eat if you didn't exercise?
Is it ritualistic? (must have an intense and compulsive quality to it)

Rate past 2 months

Abstinence From Extreme Weight-Control Behaviour (AN/BN)
(Only ask this if at least one compensatory behaviour has been rated as present, more than twice a week, for the past 3 months)
*** Have there been two or more weeks where you engaged in none of the following behaviours?** Fasting, self induced vomiting, laxative misuse, diuretic misuse, excessive exercise
If BMI is less than 17.5 then:
Denial of Seriousness (AN): In the past 3 months have you felt that being at your current weight presents any serious health risks?

IF CLIENT DOES NOT MEET CURRENT DIAGNOSIS FOR ANOREXIA NERVOSA THEN ASK THE FOLLOWING QUESTIONS TO DETERMINE IF THERE WAS EVER A PAST DIAGNOSIS **(AN):**

Weight Criteria

*** Was there ever a time when you weighed _____ pounds? If yes, when was that? _____**

For these last few questions, I'd like it if you could think back to that time in your life when you did weigh _____ pounds. Try to think of what you looked like, what sorts of things were going on in your life then, and how you may have been feeling.
So, I would like you to try to answer these questions as you would have during that time in you life when you weighed _____ pounds.

Fear of Weight Gain (AN)

*** During that time, were you afraid that you might gain weight or become fat?**
*** Did this persist for 3 months or more in a row?**
*** During those months, would you say that these feelings were present on more days than not? (Between 4 and 7 days per week)**

Feelings of Fatness

*** During that time, did you feel fat?**
*** Did this persist for 3 months or more in a row?**
*** During those months, would you say that these feelings were present on more days than not? (Between 4 and 7 days per week)**

Maintained Low Weight

*** During that time, were you trying to lose weight? (0, 1, or 2)**
*** Were you trying to lose weight for 3 or more months in a row?**

Menstruation

*** During that time, had you missed any menstrual periods? How many? The pill?**

Shape and Weight Concerns

*** During that time, did your shape influence how you thought about (judged) yourself as a person? What about your weight?**

0	1	2	3	4	5	6
not at all		slightly		moderately		markedly

Health Information Questionnaire - Eating Disorders (HIQ)
(For use at Intake and Follow-up only)

This questionnaire contains questions about your eating habits and symptoms. Unless indicated otherwise, answer in terms of how you have been getting along during the LAST THREE MONTHS. Your answers will help us to understand you situation. Please enter your answers on the line provided or circle the best answer when given a choice.

1. To the nearest inch or centimeter, what is your current height: inches _____ or centimeters _____

2. To the nearest pound or kilogram, what is your current weight: pounds _____ kilograms _____

2.1 From age 16 to the present, what has been your LOWEST weight ever: pounds _____ kilograms _____

2.2 From age 16 to the present, what has been your HIGHEST weight ever: pounds _____ kilograms _____

2.3 At what age did you FIRST notice significant eating problems? _____

2.4 What is the LONGEST CONTINUOUS period that you have had significant eating problems (in months)? _____

3. Have you LOST more than 10 pounds in the LAST YEAR?
If so, how many times has this happened in the LAST YEAR? _____

4. Have you GAINED more than 10 pounds in the LAST YEAR?
If so, how many times has this happened in the LAST YEAR? _____

5. Many people at some time feel afraid to eat because they think they will gain weight.
During the LAST 3 MONTHS, have you ever had this fear?
0 = Never
1 = Hardly Ever
2 = Sometimes
3 = Often
4 = Very often
5 = All the time

IF YOU ANSWERED "NEVER", PLEASE GO TO Question 9:

6. During the LAST 3 MONTHS, has feeling afraid to eat ever led you to refuse to eat even though you were hungry? Yes/No

7. During the LAST 3 MONTHS, has feeling afraid to eat ever led you to try to get rid of food you have just eaten? Yes/No

8. During the LAST 3 MONTHS, has feeling afraid to eat ever led you to pretend to others you have eaten? Yes/No

9. During the LAST 3 MONTHS, have you been worried about your eating habits?
   0 = NO, not at all worried
   1 = YES, slightly worried
   2 = YES, somewhat worried
   3 = YES, very worried

IF YOU ANSWERED "NO", PLEASE GO TO Question 18

10. During the LAST 3 MONTHS, have you worried that you don't eat enough? Yes/No

11. During the LAST 3 MONTHS, have you worried that you eat too much? Yes/No

12. During the LAST 3 MONTHS, have you worried that you get urges to stuff yourself? Yes/No

13. During the LAST 3 MONTHS, have you worried that you can't seem to stop eating once you get started? Yes/No

14. During the LAST 3 MONTHS, have you worried that you eat when you're upset? Yes/No

15. During the LAST 3 MONTHS, have you worried that you eat when you're not hungry? Yes/No

16. During the LAST 3 MONTHS, have you worried that you eat too much junk food? Yes/No

17. During the LAST 3 MONTHS, have you worried that you eat between meals? Yes/No

---

18. Do you ever experience episodes of eating a large amount of food in a relatively short amount of time (i.e., less than 2 hours?)
   0 = Never
   1 = Less than once a month in the LAST 3 MONTHS
   2 = About once a month in the LAST 3 MONTHS
   3 = About once a week in the LAST 3 MONTHS
   4 = Between 2 and 6 times per week in the LAST 3 MONTHS
   5 = About every day in the LAST 3 MONTHS
   6 = More than once every day in the LAST 3 MONTHS

19. In the LAST 3 MONTHS, have you ever felt that you CANNOT STOP EATING or CONTROL what or how much you are eating?
    0 = Never
    1 = Hardly ever
    2 = Sometimes
    3 = Often
    4 = Very often
    5 = All the time

20. Do you ever try to CONTROL YOUR WEIGHT by EXERCISING (i.e., exercising with the PRIMARY INTENTION of burning calories)?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once every day in the LAST 3 MONTHS

21. Do you ever try to LOSE WEIGHT by going on a "CRASH DIET" (i.e. eating at least some food but much less than you usually eat for at least a few days)?
    0 = Never
    1 = Once in the last year
    2 = More than once in the last year
    3 = Once in the last month
    4 = More than once in the last month

22. Do you ever try to CONTROL YOUR WEIGHT by FASTING (i.e., no solid foods for at least 24 hours)?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once ever day in the LAST 3 MONTHS

23. Do you ever try to CONTROL YOUR WEIGHT by using DIET PILLS and/or OTHER MEDICATION?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once ever day in the LAST 3 MONTHS

24. Do you ever try to CONTROL YOUR WEIGHT by using DIURETICS or WATER PILLS?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once ever day in the LAST 3 MONTHS

25. Do you ever try to CONTROL YOUR WEIGHT by VOMITING?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once ever day in the LAST 3 MONTHS

26. Do you ever try to CONTROL YOUR WEIGHT by using LAXATIVES?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once ever day in the LAST 3 MONTHS

27. Do you ever try to CONTROL YOUR WEIGHT by using ENEMAS?
    0 = Never
    1 = Less than once a month in the LAST 3 MONTHS
    2 = About once a month in the LAST 3 MONTHS
    3 = About once a week in the LAST 3 MONTHS
    4 = Between 2 and 6 times per week in the LAST 3 MONTHS
    5 = About every day in the LAST 3 MONTHS
    6 = More than once ever day in the LAST 3 MONTHS

28. In the LAST 3 MONTHS, have you had the experience of others telling you that you are thin or normal weight whereas you feel fat?
    0 = Never
    1 = Hardly ever
    2 = Sometimes
    3 = Often
    4 = Very Often
    5 = All the time

29. In the LAST 3 MONTHS, have you felt that being at your current weight presents any significant health risks?
    0 = No risk at all
    1 = Possibly some risk
    2 = Definite risk

30. In the LAST 3 MONTHS, to what extent has the way you feel about yourself, whether positively or negatively, been effected by your shape and weight?
    0 = Not at all
    1 = A little bit
    2 = Somewhat
    3 = To a very large extent
    4 = Almost entirely

31. Are your periods regular? Yes/No

32. Have you MISSED ANY PERIODS during the past year? Yes/No

33. If so, for how many months did your periods stop during the last year _____
    (maximum answer = 12)

34. When your periods stopped during the past year, was it due to a physical condition other than an eating disorder such as a physical illness, pregnancy, or change in use of a contraceptive pill?
    Yes/No

35. When your periods stopped during the past year was it at a time when you had lost weight?
    Yes/No

36. Have you ever received treatment for an eating disorder? Yes/No

THE BALANCE OF CHANGE

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

	Not at all true	A little true	Moderately true	Very true	Completely true
1. Anorexia gives me self-control					
2. It bothers me that people monitor what I eat					
3. Anorexia gives me comfort					
4. It's hard for me that people close to me disapprove of anorexia					
5. Being a very low weight makes me feel confident					
6. It bothers me that anorexia keeps me from socializing					
7. Being a very low weight makes me feel good about myself					
8. Anorexia has ruined my relationships with my family.					
9. Fitting into small sized clothes makes me feel good about myself					
10. It bothers me that anorexia prevents me from sharing my feelings with others					
11. Being thinner than others makes me feel good about myself					
12. I don't it like that anorexia keeps me from eating out with others					
13. I need anorexia to keep my family together					
14. I spend too much time thinking about food, eating and calories					
15. Being anorexic makes me feel accepted by my family					
16. It bothers me that because of anorexia I can't prepare a meal for myself					
17. Being anorexic makes me feel accepted by my friends					
18. Because of anorexia, I feel guilty a lot of the time					
19. Because of anorexia, I have more energy than I used to					

	Not at all true	A little true	Moderately true	Very true	Completely true
20. Anorexia disturbs my sleep					
21. I like it that people take care of my because of my anorexia					
22. I am fed up with thinking about my weight and/or shape					
23. I like it that people pay attention to me because of my anorexia					
24. It bothers me that my weight controls my mood					
25. Anorexia helps me obtain an immediate goal					
26. I worry about the effect anorexia is having on my health					
27. Anorexia is my way of being perfect					
28. I am afraid that I am going to die from anorexia					
29. Anorexia is an important part of my identity					
30. I am tired of being sick with anorexia					
31. Anorexia is part of what makes me unique and special					
32. It bothers me that anorexia leaves me with no energy					
33. I like it that anorexia keeps people at a distance					
34. Since becoming anorexic, my memory has been poor					
35. Anorexia is my way of avoiding deeper, more serious problems					
36. I have trouble concentrating as a result of anorexia					
37. When I focus on eating, shape and weight, I do not have to deal with painful emotions					
38. I worry that because of anorexia I will not be able to have children					
39. I need anorexia to communicate how I feel					
40. Anorexia has taken away my sense of humor					
41. Anorexia gives me some relief from unpleasant emotions					

	Not at all true	A little true	Moderately true	Very true	Completely true
42. Anorexia makes me moody					
43. Anorexia protects me from the difficulties of adult life					
44. Anorexia makes me feel bad about myself					
45. As long as I am anorexic, I will not have to grow up					
46. Because of anorexia, I have lost a sense of who I am					
47. Anorexia allows me to avoid making decisions					
48. Because of anorexia, I cannot function at work and/or school					
49. As long as I am anorexic, I don't have to make definite plans for the future					
50. Anorexia has prevented me from earning a steady income					
51. Because of anorexia, I can avoid my fears about sex and/or my sexuality					
52. Anorexia prevents me from enjoying activities I used to enjoy					
53. I am relieved that I do not have my periods					
54. I hate the fact that anorexia controls my life					
55. Because of anorexia, I don't have to deal with intimate adult relationships					
56. Anorexia is preventing me from getting on with my life					
57. I need anorexia to punish myself for things I have done wrong					
58. I have lost my freedom to anorexia					
59. Anorexia makes me feel accomplished					
60. Anorexia has ruined my friendships					

APPENDIX B: INSTRUCTIONS TO PARTICIPANTS

First step: Secretary Phone Contact.
SECRETARY SAYS TO CLIENT: In order to insure that the staff in the EDC are providing the best available treatment, research has become a part of the standard clinic protocol. Our current research looks at how ready you are for change and recovery from your eating disorder. We are interested in learning what you see as a problem, what you are ready to change and also what you are not ready to change. If you are interested in participating, a research assistant will contact you to tell you more about this part of the assessment and to answer any questions that you may have.

Second step: Research Assistant Phone Contact
Research assistant contacts clients to explain nature of study, answer questions, and set up interview time.

Third step: Interview with Client
GREET PARTICIPANT IN THE WAITING ROOM. Hi, my name is _____. I'm going to be working with you for the next two hours to walk you through the research assessment.

SEAT PARTICIPANT IN RESEARCH OFFICE. I know we spoke briefly on the phone about the research assessment, but before we begin I'd like to take a few minutes to remind you of the purpose of the study and to describe the things that we will be covering today.

St.Paul's Eating Disorder Clinic is committed to research that will help improve the services we provide to the community. At the moment, we are interested in learning about where people are at in terms of readiness and motivation for change when they first come to our clinic. We believe that the people who come to our clinic may be at many different places in terms of what they consider a problem and what they want to work on. Some people will be here because a friend or family member has asked them to come. Others will have come on their own accord. Some people know what they want to work on, while others aren't so sure. Some people are fully committed to recovery, but others feel a bit torn between wanting to change and not wanting to change. We believe that it is really important for us to know where you are at so that we can provide suitable treatment programs.

During the next two hours you will be completing some questionnaires and also meeting with me to talk about what where you are at in terms of overcoming your eating disorder. At the end, I will be giving you a few things to work on during the next week, and then I will be calling you to see how you went with these things.

It's really important for you to know that you participation is volunteer, and that you are free to withdraw your participation at any time.

Also, it is important for you to know that what you share with me today will be kept confidential. The only people that will know about your answers are the people who work in our research office - that's Dr. Josie Geller who is in charge of this study, as well as three research assistants and myself (Sarah Cockell).

We will be identifying your answers by code numbers and when we report our findings we will only talk about groups scores, and not about particular individual's.

Here is a consent form that describes what I have just told you. Could you please take a minute to read it and then I can answer any questions that you might have.

ANSWER QUESTIONS.

GET PARTICIPANT TO SIGN CONSENT FORM.

APPENDIX C: STUDY 2 MEASURES

STAGES OF CHANGE

Each statement below refers to how someone might approach a problem in their life. In this instance, please think about your problems with **EATING, SHAPE AND WEIGHT (e.g., thoughts and feelings about shape and weight, extreme dieting, bingeing and purging, and exercise as a means of controlling shape and weight).** In each case, make your choice in terms of how you feel right now, and not what you have felt in the past or would like to feel.

STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
1	2	3	4	5

	SD	D	U	A	SA
1. As far as I am concerned, I don't have any problems that need changing					
2. I think I might be ready for some self-improvement					
3. I am doing something about the problems that have been bothering me					
4. It might be worthwhile to work on my problem					
5. I'm not the problem one. It doesn't make sense for me to seek help					
6. It worries me that I might slip back on a problem that I've already changed, so I'm willing to continue working on my problem					
7. I am finally doing some work on my problem					
8. I've been thinking that I might want to change something about my problem					
9. I have been successful in working on my problem, but I'm not sure I can keep up the effort on my own					
10. At times my problem is difficult but I'm working on it					
11. Seeking help is pretty much a waste of time for me because the problem isn't to do with me					
12. I'm hoping to develop a better understanding of myself and my problem					
13. I suppose I have problems, but there's nothing that I really need to change					
14. I am really working hard to change my problem					
15. I have a problem and I really think I should work on it					
16. I'm not maintaining the changes I made to my problem as well as I hoped, and I'm seeking help to prevent a relapse					
17. Even though I'm not always successful in changing, I am at least working on my problem					
18. I thought once I had resolved my problem I would be free of it, but sometimes I still find myself struggling with it					
19. I wish I had more ideas on how to overcome my problem					
20. I have started working on my problem but I would like help					
21. Maybe treatment will help me with my problem					
22. I may need a boost right now to help me maintain the changes that I've made to my problem					
23. I may be partly responsible for my problem, but I don't really think I am					
24. I hope that someone will have some good advice for me with regard to my problem					

STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
1	2	3	4	5

	SD	D	U	A	SA
25. Anyone can talk about working on their problem; I'm actually doing something about it					
26. All this talk about psychology is boring. Why can't people just forget about their problems?					
27. I'm committed to preventing myself from having a relapse of my problem					
28. It's frustrating, I thought I had resolved my problem, but I feel I might be having a recurrence					
29. I have worries but so does the next person. Why spend time thinking about them?					
30. I am actively working on my problem					
31. I would rather cope with my problems than try to change them					
32. After all I have done to change my problem, every now and again it comes back to haunt me					

Readiness and Motivation Interview

Introduction

Orient client to specific time period: the last 3 months with a focus on the last 4 weeks. Do Not exclude times when in treatment. This interview is used to determine if the client currently meets diagnosis and to assess readiness for change. Readiness ratings are made on the basis of the last 2 weeks. If the client has been in hospital for less than 2 weeks, ask the readiness questions with reference to the 2 weeks prior to hospitalization. If the client has been in hospital for more than 2 weeks, go ahead and make the readiness ratings on the 2 weeks just prior to the interview, despite the fact that they have been in a controlled environment. Do the best that you can to tease out action activities that are initiated by the client, as compared to constraints/rules/contracts that have been set down by hospital staff.

To begin with I should like to get a general picture of your eating habits over the last 4 weeks.
Have your eating habits varied much from day to day?
Have weekdays differed from weekends?
Have there been any days when you haven't eaten anything?

What about the previous 2 months?

Fear of Weight Gain (AN)

*** Over the past 4 weeks have you been afraid that you might gain weight or become fat?**
0 = No definite fear of weight gain on any day
1 = 1 to 5 days
2 = 6 to 12 days
3 = 13 to 15 days
4 = 16 to 22 days
5 = 23 to 27 days
6 = Definite fear of fatness or weight gain present every day *(without exception)*

Rate past 2 months

If Symptom is NOT present:
*** Did you ever have a fear of weight gain or becoming fat?**
*** Are you currently working on NOT having a fear of weight gain?**
If Symptom IS present:
*** Do you experience your fear of weight gain or becoming fat as a problem?**
If No:
*** Did you ever experience this as a problem?**
(need to establish why it's not a problem)
*** People differ on how they answer these questions. Some people experience some of these symptoms as problems, and other symptoms not as problems. Can you help me understand why... isn't a problem for you?**
If Yes:
*** How is it a problem for you?**
(need to establish that they see it as a problem "in the right direction")
*** Have you tried to *change* your fear of gaining weight or your fear of becoming fat?**
PROMPTS FOR "TRYING":
If they say they have tried at all:
*** What kinds of things have you done to try to change ...?**

(need to assess how hard they have been trying, using sincere effort, and/or strategies that are accepted as being effective - they needn't necessarily be successful to receive a high action rating)
If Yes: **Is this happening for you now? How often/much (%)?**

PROMPTS FOR "NOT TRYING"

*** Is there any part of you that isn't *doing anything (trying)* to change?**
If Yes: **Is this happening for you now? How often/much (%)?**

If No to TRYING:
Some people make a distinction between *trying* to do something and *wanting* to do something. You've said that you didn't *try* to change your fear, but I'm wondering if you recently *wanted* to change your fear.

PROMPTS FOR "WANTING":

*** Some people want to change all the time, but sometimes feel more strongly about this than at other times. Does this apply to you at all?**
*** It's clear that you are wanting change and really would like to get better, I am wondering how much of you (%) is *seriously thinking* about making a change?**

If they say they want to change 100% of the time:

PROMPTS FOR "NOT TRYING"

*** Is there any part of you that *doesn't* want to change?**
If Yes: **Is this happening for you now? How often/much (%)?**

INTERNALITY RATING

*** Some people distinguish between doing things for themselves (internally), and doing things for some outside reason (externally). How much of the work you are doing on ... is for you?**

<u>Feelings of Fatness</u> (AN)

*** Over the past 4 weeks have you felt fat?**
0 = Has not felt fat on any day
1 = 1 to 5 days
2 = 6 to 12 days
3 = 13 to 15 days
4 = 16 to 22 days
5 = 23 to 27 days
6 = Has felt fat every day *(without exception)*
Rate past 2 months

*** Do you experience your feelings of fatness as a problem? How?**
*** Do you ever try to *change* your feelings of fatness?**
Do you ever *want* to change your feelings of fatness?
If yes: **Is this happening for you now? How often/much (%)?**

<u>Restraint Over Eating</u> (AN)

*** Over the past 4 weeks have you consciously tried to restrict what you eat whether or not you have succeeded? (must be for reasons concerning shape and/or weight)**

If Yes:

*** What do you do to restrict? (need to establish a baseline for motivational questions)**

0 = No attempt at restraint on any day
1 = 1 to 5 days
2 = 6 to 12 days
3 = 13 to 15 days
4 = 16 to 22 days
5 = 23 to 27 days
6 = Attempted to exercise restraint every day *(without exception)*

*** Do you experience your restriction over your eating as a problem? How?**
*** Do you ever try to *change* how much you restrict your eating?**
Do you ever *want* to change your eating restriction?
If yes: **Is this happening for you now? How often/much (%)?**

Maintained low weight (AN)
(Rate for clients who may be underweight)
*** Over the past 3 months have you been trying to lose weight?**
If no: **Have you been trying to make sure that you do not gain weight?**
*** Is this for reasons concerning shape or weight?**

0 = No attempts to lose weight or to avoid weight gain over past 3 months
1 = Attempts to lose weight or to avoid weight gain over past 3 months for reasons concerning shape or weight
2 = Attempts either to lose weight or to avoid weight gain over past 3 months for other reasons

For individuals who are underweight:
*** Do you experience your current weight to be a problem? How is it a problem for you?**
*** Do you ever try to work on your weight?**
If yes: *** Is this happening for you now? How much (%)?**
If no: *** Is there part of you that wants to work on your weight? How much (%)?**
*** Is there part of you that doesn't want to work on your weight?**
*** When you are actively working on your weight, how much of this is for you?**

For individuals who are normal weight:
*** Do you experience your current weight to be a problem? How is it a problem for you?**
*** Do you ever try to maintain your weight?**
If yes: *** Is this happening for you now? How much (%)?**
If no: *** Is there part of you that wants to maintain your weight? How much (%)?**
*** Is there part of you that doesn't want to work on your weight?**
*** When you are actively working on your weight, how much of this is for you?**

Intention regarding work on weight
You've mentioned that you are working on your weight ___ of the time. When you are doing this work, what is your intention?

1 = Individual is underweight and is trying to prevent weight loss
2 = Individual is underweight and is trying to gain weight
3 = Individual is normal weight and is trying to prevent weight loss

Menstruation (AN)

*** Have you missed any menstrual periods over the past few months?**
*** How many periods have you had?**
*** Are you taking the pill? Pregnant? Hysterectomy?**
Are there any other reasons that you can think of, as to why you haven't got a period?
Record number of periods in the past 3 months.
*** Do you experience your lack of periods as a problem? How?**
*** Do you ever try to do anything to get your periods back?**
Would you like to start menstruating again?
If yes: **Is this happening for you now? How often/much (%)?**

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

If no: **Was it ever? Can you describe what it was like then? Is there still some connection for you?**

*** Different people name different things that influence how they feel about (judge, think and evaluate) themselves as a person, could you tell me some of the things that are important in influencing how you feel about yourself as a person?** If examples are needed: These could be things like, performance at work or school, being a good parent, a good friend, or good at a hobby.
Only ask if it is not clear whether shape is an aspect of self evaluation:
If, over the past 4 weeks your shape had changed in any way, would this have affected how you feel about yourself?
Is it important to your that your shape does not change?

0 - No importance (not even on the ladder)
1 - (at the very bottom of the ladder)
2 - Some importance (definitely an aspect of self-evaluation)
3 - (at least half way up the ladder)
4 - Moderate importance (definitely one of the main aspects)
5 - (at the very top but, still others at the bottom)
6 - Supreme importance (shape is the only thing on the ladder)
Rate past 2 months

Importance of Weight (AN/BN)

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

USE PROMPTS FROM SHAPE QUESTION

0 - No importance (not even on the ladder)
1 - (at the very bottom of the ladder)
2 - Some importance (definitely an aspect of self-evaluation)
3 - (at least half way up the ladder)
4 - Moderate importance (definitely one of the main aspects)
5 - (at the very top but, still others at the bottom)
6 - Supreme importance (weight is the only thing on the ladder)

Rate past 2 months

*** Do you experience the importance shape and weight has in your life as a problem? How?**
*** Do you ever try to *change* the extent to which your shape or weight affects your feelings about yourself?**
Have you *wanted* to change?
Is this happening for you now? How often/much (%)?

Bulimic Episodes and Other Episodes of Overeating (AN/BN)

Distinctions among the 4 forms of episodic overeating are based on, **loss of control** and **consumption of an objectively large amount of food**. The end of an episode is defined as when there is an hour or more when the client is not eating.

	"Large"	Not "large" but viewed by client as excessive
"Loss of control"	***Objective Bulimic Episode***	***Subjective Bulimic Episode***
No "loss of control"	***Objective Overeating***	***Subjective Overeating***

*** I would like to ask you about any episodes of overeating that you may have had over the past 4 weeks.**

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

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

To assess the amount of food eaten:

Typically what have you eaten at these times?
What were others doing at the time?

To assess loss of control:

Did you have a sense of loss of control at the time?
Could you have stopped once you had started?
Could you have prevented the episode from occurring?

*** Are there any other types of overeating for you?**

For ***objective bulimic episodes***, rate the number of days and episodes over the past 2 months.

*** In the past 4 weeks on how many days did this type of overeating occur for you?**
*** How many times did this happen during one day?**

*** Do you experience the number of times that you binge as a problem?**
*** Have you tried to *change* the amount you binge?**
Have you *wanted* to change?
If yes: **Is this happening for you now? How often/much (%)?**

*** Were there ever 2 or more weeks that passed in the last 3 months when you didn't binge?**
If Yes: Record the longest continuous period (in weeks) free from objective bulimic episodes

Dietary Restriction Outside Bulimic Episodes (BN)

(Only ask if there have been objective bulimic episodes over the past 3 months)
*** Outside the times when you have lost control over eating, how much have you been restricting the amount you eat?**

***Typically, what have you eaten?**
Are you denying yourself certain foods?
*** Has this been to influence your shape or weight?**

This should be the average degree of dietary restriction:
0 - No extreme restriction outside of binge
1 - Extreme restriction outside of binge (less than 1200 calories)
2 - No eating outside of binge
Rate all 3 months.
If 1 or 2 then:
*** Do you experience your restriction over eating between bulimic episodes as a problem? How?**
*** Do you try to *change* your restriction over eating in between binge episodes?**
Have you *wanted* to change?
If yes: **Is this happening for you now? How often/much (%)?**

Self Induced Vomiting (AN/BN)

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

If Yes:
*** In the past 4 weeks on how many days did you made yourself sick as a means of controlling your shape or weight?**
*** How many times did this happen during one day?**

Rate the number of days and episodes in the last 4 weeks.
Rate the number of episodes over the past 3 months.

*** Do you experience your vomiting as a problem? How?**
*** Have you tried to *change* the amount you vomit?**
Have you *wanted* to change?
If yes: **Is this happening for you now? How often/much (%)?**

Laxative Misuse (AN/BN)

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

Rate the number of days, episodes and the number of laxatives taken on each occasion.
Note the type of laxative taken.

*** Do you experience your use of laxatives as a problem? How?**
*** Do you ever try to *change* your use of laxatives?**
Have you *wanted* to change?
If yes: **Is this happening for you now? How often/much (%)?**

Diuretic Misuse (AN/BN)

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

Rate the number of days, episodes and the number of diuretics taken on each occasion.
Note the type of diuretic taken.

*** Do you experience your use of diuretics as a problem? How?**
*** Have you tried to *change* your use of diuretics?**
Have you *wanted* to change?
If yes: **Is this happening for you now? How often/much (%)?**

Intense Exercising to Control Shape or Weight (BN)

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

*** Typically, what form of exercise have you taken?**
Rate the number of days and average amount of time (in minutes) per day spent exercising.

PROMPTS FOR INTENSITY:

How do you feel if you can't exercise? (anxiety?)
Do you push yourself?
Do you feel that you need to exercise before you eat?
Could you eat if you didn't exercise?
Is it ritualistic? (must have an intense and compulsive quality to it)

Rate past 2 months

*** Do you experience the amount that you exercise as a problem? How?**
*** Have you tried to *change* the amount you exercise?**
Have you *wanted* to change?
If yes: **Is this happening for you now? How often/much (%)?**

Abstinence From Extreme Weight-Control Behaviour (AN/BN)
(Only ask this if at least one compensatory behaviour has been rated as present, more than twice a week, for the past 3 months)

*** Have there been two or more weeks where you engaged in none of the following behaviours?**
Fasting, self induced vomiting, laxative misuse, diuretic misuse, excessive exercise

If BMI is less than 17.5 then: **Denial of Seriousness (AN)**

*** In the past 3 months have you felt that being at your current weight presents any serious health risks?**

IF CLIENT DOES NOT MEET CURRENT DIAGNOSIS FOR ANOREXIA NERVOSA THEN ASK THE FOLLOWING QUESTIONS TO DETERMINE IF THERE WAS EVER A PAST DIAGNOSIS **(AN):**

Weight Criteria

*** Was there ever a time when you weighed _____ pounds?**
*** When was that?**

For these last few questions, I'd like it if you could think back to that time in your life when you did weigh _____ pounds. Try to think of what you looked like, what sorts of things were going on in your life then, and how you may have been feeling.

So, I would like you to try to answer these questions as you would have during that time in you life when you weighed _____ pounds.

Fear of Weight Gain (AN)

*** During that time, were you afraid that you might gain weight or become fat?**
*** Did this persist for 3 months or more in a row?**
*** During those months, would you say that these feelings were present on more days than not? (Between 4 and 7 days per week)**

Feelings of Fatness

*** During that time, did you feel fat?**
*** Did this persist for 3 months or more in a row?**
*** During those months, would you say that these feelings were present on more days than not? (Between 4 and 7 days per week)**

Maintained Low Weight

*** During that time, were you trying to lose weight? (0, 1, or 2)**
*** Were you trying to lose weight for 3 or more months in a row?**

Menstruation

*** During that time, had you missed any menstrual periods? How many? The pill?**

Shape and Weight Concerns

*** During that time, did your shape influence how you thought about (judged) yourself as a person? What about your weight?**

0	1	2	3	4	5	6
not at all		slightly		moderately		markedly

RMI QUESTION CODES

PRECONTEMPLATION:
The individual is unaware or not fully aware of the problem, and/or has no intention of changing behaviour in the near future

Definition is not at all characteristic of this individual e.g., individual is aware of problem or would like to change problem	*Definition applies to this individual 25% of the time*	*Definition applies to this individual sometimes, but not other times e.g., sometimes individual acknowledges problem and wants to change, at other times denies problem exists or does not want to change*	*Definition applies to this individual 75% of the time*	*Definition applies to this individual completely e.g., individual consistently denies problem or does not want to change*
1	*2*	*3*	*4*	*5*

CONTEMPLATION:
The individual is aware of the problem and is seriously thinking about making a change, but has not yet committed to take action

Definition is not at all characteristic of this individual e.g., individual is either unaware of problem or is actively working to change problem	*Definition applies to this individual 25% of the time*	*Definition applies to this individual sometimes, but not other times e.g., has awareness of problem but not seriously thinking about changing the problem and no action has been taken*	*Definition applies to this individual between 75% and 100% of the time, but the individual has not made any moves toward action.*	*Definition applies to this individual completely e.g., individual is aware and is seriously thinking about making change, but has only inconsistently taken action*
1	*2*	*3*	*4*	*5*

ACTION/MAINTENANCE:
The individual actively modifies the behaviour, experiences, or environment in order to overcome the problem

Definition is not at all characteristic of this individual e.g., individual has done nothing to modify behaviour, experiences, or environment	*Definition applies to this individual 25% of the time*	*Definition applies to this individual sometimes, but not other times e.g., 50% of the time, individual is actively engaged in modifying behaviour, experiences, and environment*	*Definition applies to this individual 75% of the time*	*Definition applies to this individual completely e.g., 90% or more of the time, individual is actively engaged in modifying behaviour, experiences, and environment*
1	*2*	*3*	*4*	*5*

INTERNALITY: To what extent did you have choice in making changes? _____

I had no choice whatsoever e.g., committed to hospitalization, or extreme negative consequences for not changing	*25% of the choice was made by me, 75% was influenced by external consequences e.g., guidelines of Discovery*	*50% of the choice was made by me, 50% influenced by external consequences*	*75% of the choice was made by me, 25% influenced by external consequences*	*It was completely (100%) my choice to make changes*
1	*2*	*3*	*4*	*5*

Processes of Change - For Anorexia Nervosa

Please think about the descriptions below which may have applied to you in the last month and then tick how frequently the experience occurs.

If you don't vomit, take laxatives or over exercise please tick N/A (not applicable) for these questions.

N/A = 0 Not at all = 1 Slightly = 2 Moderately = 3 Greatly = 4 Extremely = 5

Experience	Frequency of Experience					
	0	1	2	3	4	5
1. Special people in my life accept me the same whether I give up my eating disorder or not.						
2. I tell myself I can choose to restrict my eating or not.						
3. I can be open with at least one special person about my experience with eating.						
4. Instead of letting the anorexic part of me take over, I distract myself.						
5. I tell myself I can chose whether or not to vomit, use laxatives or over exercise.						
6. I think about information from articles or ads concerning the benefits of shaking off an eating disorder.						
7. Instead of vomiting, using laxatives, or over exercising, I distract myself.						
8. I recall information people have personally given me on the benefits of shaking off an eating disorder.						
9. I think about what steps will be needed to get rid of my anorexia.						
10. It upsets me when I remember the health problems caused by not eating normally.						
11. I tell myself I could recover from my eating disorder if I wanted to.						
12. I recall information I have read or heard about the cost of having an eating disorder.						
13. Other people in my daily life try to make me feel good when I eat properly.						
14. I tell myself I could stop vomiting, using laxatives or over exercising if I wanted to.						
15. I remove things from around my home that remind me of my anorexia.						
16. I tell myself that if I try hard enough I can begin to eat normally.						
17. Warnings about the health hazards of eating disorders move me emotionally.						
18. I make commitments to try to overcome my eating disorder.						
19. I reward myself when I don't let the anorexic part take over.						

N/A = 0 Not at all = 1 Slightly = 2 Moderately = 3 Greatly = 4 Extremely = 5

Experience	Frequency of Experience					
	0	1	2	3	4	5
20. I can expect to be rewarded by others if I don't vomit, use laxatives or exercise.						
21. Dramatic portrayals of the evils of anorexia move me emotionally.						
22. I tell myself that if I try hard enough I can stop trying to control my weight.						
23. I keep things around me that remind me to shake off the anorexic part of me.						
24. I get upset when I think about my eating disorder.						
25. I remove things from around my home that remind me of vomiting, laxatives, or over exercising.						
26. I find that doing other things with my time is a good substitute for dwelling on my anorexic side.						
27. I think about what doctors/nurses/dieticians have told me I need to do to get rid of my eating disorder.						
28. When I am tempted to let the anorexia rule, I think about something else.						
29. I remove things from around me that remind me of eating disorders.						
30. I make commitments not to vomit, use laxatives or over exercise.						
31. I reward myself when I don't vomit, use laxatives or over exercise.						
32. I keep things around me that remind me not to vomit, use laxatives or over exercise.						
33. I get upset when I think about vomiting or using laxatives or over exercising.						
34. I find that doing other things with my time is a good substitute for vomiting or using laxatives or over exercising.						
35. When I am tempted to vomit, use laxatives or over exercise, I think about something else.						
36. I do something else instead of vomiting, using laxatives or over exercising when I need to relax.						
37. I remove things from around me that remind me of vomiting, using laxatives or over exercising.						
38. I react emotionally to warnings about anorexia.						
39. I am rewarded by others if I take steps to overcome the eating disorder.						
40. I reassess the fact that being content with myself includes changing my eating habits.						
41. I consciously struggle with the issue that having an eating disorder contradicts my view of myself as an effective person in control of my own life.						
42. My dependency on my eating disorder makes me feel disappointed in myself.						

N/A = 0 Not at all = 1 Slightly = 2 Moderately = 3 Greatly = 4 Extremely = 5

Experience	Frequency of Experience					
	0	1	2	3	4	5
43. I am rewarded by others if I don't vomit, use laxatives or over exercise.						
44. I have someone on whom I can count when I'm having problems with my eating.						
45. My dependency on vomiting, using laxatives or over exercising makes me feel disappointed in myself.						
46. I consciously struggle with the issue that vomiting, using laxatives or over exercising contradicts my view of myself as an effective person in control of my own life.						
47. I have someone who listens to me when I need to talk about my eating.						

ID # _____

Date _____

CONCERNS ABOUT CHANGE (R2)

Even after entering treatment for a problem, many people are aware of some issues that they think might make it difficult for them to overcome the problem. Some of the concerns that different clients have expressed about changing (that is, getting over the main problem that has brought them to treatment) are listed below.

Please indicate how much each statement applies to you, using the following scale in making your responses:

1	2	3	4	5
the statement does not reflect my concerns at all	the statement slightly reflects my concerns	the statement reflects my concerns to a moderate extent	the statement reflects my concerns to a considerable extent	the statement very strongly reflects my concerns

1. I think I need this problem to punish myself.	1 2 3 4 5
2. I may lose a sense of self-control if I change.	1 2 3 4 5
3. This problem is an important part of my identity.	1 2 3 4 5
4. In many ways, this problem simplifies the difficulties of adult life.	1 2 3 4 5
5. I don't want to change this part of my life.	1 2 3 4 5
6. I wouldn't be able to express how I feel if I change.	1 2 3 4 5
7. I'd have no excuse for my failures if I change.	1 2 3 4 5
8. It is not within my power to change.	1 2 3 4 5
9. I may go crazy if I try to change.	1 2 3 4 5
10. I'd have to give up all my friends if I change.	1 2 3 4 5
11. My problem shelters me from all the complications of being an adult.	1 2 3 4 5
12. I may be at greater risk of physical injury if I change.	1 2 3 4 5
13. It's just a question of individual preference for me to be the way I am right now.	1 2 3 4 5
14. I wouldn't have anything to help me forget my problems if I change.	1 2 3 4 5
15. I may have to deal with my sexuality if I change.	1 2 3 4 5
16. I may not have as much fun if I change.	1 2 3 4 5
17. I think I like to suffer.	1 2 3 4 5
18. I like being identified as someone with this problem.	1 2 3 4 5
19. This problem is just covering up a deeper, more serious problem.	1 2 3 4 5
20. The process of change would be too painful for me to bear.	1 2 3 4 5

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1	2	3	4	5
not at all	slightly	moderately	considerably	very strongly

21.	The real meaning of this problem is too terrible for me to face.	1	2	3	4	5
22.	Nothing can help me, so there's no point in trying.	1	2	3	4	5
23.	I'm not convinced that I really need to change.	1	2	3	4	5
24.	I'd have to start making definite plans for the future if I change.	1	2	3	4	5
25.	This problem gets me things I want.	1	2	3	4	5
26.	My problem reduces sexual conflicts.	1	2	3	4	5
27.	I don't have the skills I need to change.	1	2	3	4	5
28.	Life would be boring if I change.	1	2	3	4	5
29.	Without this problem, I wouldn't have any other ways of coping with stress.	1	2	3	4	5
30.	I may be exposed to more real dangers if I change.	1	2	3	4	5
31.	Attempting to change will make my life more difficult.	1	2	3	4	5
32.	I'd have a hard time talking to people if I change.	1	2	3	4	5
33.	If I change, the oppdsite sex may pay too much attention to me.	1	2	3	4	5
34.	I may lose a feeling of pride in myself if I change.	1	2	3	4	5
35.	I wouldn't have any outlet for my feelings if I change.	1	2	3	4	5
36.	I may feel less intense and alive if I change.	1	2	3	4	5
37.	I'm afraid that people will stop worrying about me if I change.	1	2	3	4	5
38.	If I get rid of this problem, my sickness would just get expressed in some other form.	1	2	3	4	5
39.	I may not have anything else to feel good about if I change.	1	2	3	4	5
40.	I think that this problem is a punishment for my mistakes.	1	2	3	4	5
41.	Change is just too risky for me.	1	2	3	4	5
42.	I may have to give up being a little girl/little boy if I change.	1	2	3	4	5
43.	My friends wouldn't accept me if I change.	1	2	3	4	5
44.	I'd have to take responsibility for my mistakes if I change.	1	2	3	4	5
45.	In spite of what other people think, I really don't see this issue as a major problem.	1	2	3	4	5
46.	This problem helps me obtain an immediate goal.	1	2	3	4	5
47.	I'd have nothing to take away the pain if I change.	1	2	3	4	5
48.	My problem gives me a way to deal with unpleasant situations.	1	2	3	4	5
49.	I may risk making a fool of myself if I change.	1	2	3	4	5
50.	I may lose some control over others if I change.	1	2	3	4	5

1	2	3	4	5
not at all	slightly	moderately	considerably	very strongly

51. Even though other people say that they want me to change, I'm not sure that they really do.	1 2 3 4 5
52. I may lose some self-respect if I change.	1 2 3 4 5
53. I wouldn't know how to define myself any more if I change.	1 2 3 4 5
54. This problem is useful to me now, and I can't worry about how it may affect me later.	1 2 3 4 5
55. I don't deserve to be different.	1 2 3 4 5
56. I may receive unwelcome sexual advances if I change.	1 2 3 4 5
57. I'd have to quit goofing off if I change.	1 2 3 4 5
58. Deep down, I just don't think it's possible for me to change.	1 2 3 4 5
59. If everyone would stop bothering me about this, I'd be fine.	1 2 3 4 5
60. I don't want to experience the suffering that would be involved in trying to change.	1 2 3 4 5
61. Attempting to change may make me feel worse than I do now.	1 2 3 4 5
62. Changing this symptom won't get to the root of my problem.	1 2 3 4 5
63. I may not be strong enough to change.	1 2 3 4 5
64. I may lose everything I have accomplished if I change.	1 2 3 4 5
65. This problem may cause difficulties for me in the future, but it helps me now.	1 2 3 4 5
66. If I change, I may become just like everyone else.	1 2 3 4 5
67. I'm scared to find out what's <u>really</u> wrong with me.	1 2 3 4 5
68. My problem helps me avoid intimate adult relationships	1 2 3 4 5
69. I wouldn't have anything in common with my friends if I change.	1 2 3 4 5
70. I may miss out on a lot of pleasure if I change.	1 2 3 4 5
71. My friends wouldn't have anything to do with me if I change.	1 2 3 4 5
72. The process of changing just requires too much effort.	1 2 3 4 5
73. I would be giving up something I've worked hard for if I change.	1 2 3 4 5
74. I believe that my attempts to change are doomed to failure.	1 2 3 4 5
75. I have no right to expect anything better.	1 2 3 4 5
76. I may get less attention from others if I change.	1 2 3 4 5
77. I would prefer to remain childlike.	1 2 3 4 5
78. I need this problem to accomplish an important objective.	1 2 3 4 5
79. I'm just too frightened of change.	1 2 3 4 5
80. I may lose someone I love if I change.	1 2 3 4 5

1	2	3	4	5
not at all	slightly	moderately	considerably	very strongly

81. My problem gives me some relief from unpleasant emotions.	1	2	3	4	5
82. I'd have to develop a new peer group if I change.	1	2	3	4	5
83. I wouldn't have any way of blowing off steam if I change.	1	2	3	4	5
84. Changing this problem won't help solve the deeper problems I have within me.	1	2	3	4	5
85. I'm not worthy of change.	1	2	3	4	5
86. I think that this "problem" is a reasonable and valid choice.	1	2	3	4	5
87. This problem is part of what makes me unique and special.	1	2	3	4	5
88. My problem allows me to hold on to some of the safety and security of childhood.	1	2	3	4	5
89. I'd have to face the fact that I haven't done much with my life if I change.	1	2	3	4	5
90. I couldn't say what's on my mind if I change.	1	2	3	4	5
91. I may lose control over my sexual impulses if I change.	1	2	3	4	5
92. Some people may stop taking care of me if I change.	1	2	3	4	5
93. The things I'd have to go through in order to change are too unpleasant.	1	2	3	4	5
94. My friends would give me a hard time if I change.	1	2	3	4	5
95. There would be no excitement in my life if I change.	1	2	3	4	5
96. Without this problem, I wouldn't be able to deal with all the pressures I have in my life.	1	2	3	4	5
97. I wouldn't have anything else to make me feel powerful if I change.	1	2	3	4	5
98. I may have to grow up if I change.	1	2	3	4	5
99. If I change, I will be giving up my chance to succeed in meeting my goals.	1	2	3	4	5
100. I'd have a hard time telling other people what I think if I change.	1	2	3	4	5
101. This problem is so much a part of me that I can't imagine myself any other way.	1	2	3	4	5
102. I'd really have to start taking responsibility for my life if I change.	1	2	3	4	5
103. I may feel less healthy and energetic if I change.	1	2	3	4	5
104. My behavior in the "problem" situation is rational and deliberate.	1	2	3	4	5
105. I want to get rid of my problem so badly that I'll try anything I can to get over it.	1	2	3	4	5
106. My problem gives me an excuse to get out of unpleasant situations that I'd really prefer to avoid anyway.	1	2	3	4	5
107. This problem is the means to an end that I want to achieve.	1	2	3	4	5
108. I wouldn't be able to relax if I change.	1	2	3	4	5
109. Attempting to change will disrupt my life.	1	2	3	4	5

1	2	3	4	5
not at all	slightly	moderately	considerably	very strongly

110. This whole issue is part of my identity. 1 2 3 4 5

111. In many ways, this problem really simplifies my life. 1 2 3 4 5

112. I was born this way, so there's no point in trying to fight it. 1 2 3 4 5

You may have some concerns about other issues that might make it difficult for you to overcome the problem for which you have entered treatment. If you have any additional concerns not covered in the questionnaire, please write them on the lines below, and rate them just as you rated the other items. Thank you very much.

113. _____ 1 2 3 4 5

_____

114. _____ 1 2 3 4 5

_____

115. _____ 1 2 3 4 5

_____

Eating Disorders Inventory (EDI-2)

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. Read each question and circle the number of the answer which applies best to you. Please answer each question very carefully. Thank you.

		Always	Usually	Often	Sometimes	Rarely	Never
1	I eat sweets and carbohydrates without feeling nervous	1	2	3	4	5	6
2	I think that my stomach is too big	1	2	3	4	5	6
3	I wish that I could return to the security of childhood	1	2	3	4	5	6
4	I eat when I am upset	1	2	3	4	5	6
5	I stuff myself with food	1	2	3	4	5	6
6	I wish that I could be younger	1	2	3	4	5	6
7	I think about dieting	1	2	3	4	5	6
8	I get frightened when my feelings are too strong	1	2	3	4	5	6
9	I think that my thighs are too large	1	2	3	4	5	6
10	I feel ineffective as a person	1	2	3	4	5	6
11	I feel extremely guilty after overeating	1	2	3	4	5	6
12	I think that my stomach is just about the right size	1	2	3	4	5	6
13	Only outstanding performance is good enough in my family	1	2	3	4	5	6
14	The happiest time in life is when you are a child	1	2	3	4	5	6
15	I am open about my feelings	1	2	3	4	5	6
16	I am terrified of gaining weight	1	2	3	4	5	6
17	I trust others	1	2	3	4	5	6
18	I feel alone in the world	1	2	3	4	5	6
19	I feel satisfied with the shape of my body	1	2	3	4	5	6
20	I feel generally in control of things in my life	1	2	3	4	5	6
21	I get confused about what emotion I am feeling	1	2	3	4	5	6
22	I would rather be an adult than a child	1	2	3	4	5	6
23	I can communicate with others easily	1	2	3	4	5	6
24	I wish I were someone else	1	2	3	4	5	6
25	I exaggerate or magnify the importance of weight	1	2	3	4	5	6
26	I can clearly identify what emotion I am feeling	1	2	3	4	5	6
27	I feel inadequate	1	2	3	4	5	6
28	I have gone on eating binges where I felt that I could not stop	1	2	3	4	5	6
29	As a child, I tried very hard to avoid disappointing my parents and teachers	1	2	3	4	5	6
30	I have close relationships	1	2	3	4	5	6
31	I like the shape of my buttocks	1	2	3	4	5	6
32	I am preoccupied with the desire to be thinner	1	2	3	4	5	6
33	I don't know what is going on inside me	1	2	3	4	5	6
34	I have trouble expressing my emotions to others	1	2	3	4	5	6
35	The demands of adulthood are too great	1	2	3	4	5	6
36	I hate being less than best at things	1	2	3	4	5	6
37	I feel secure about myself	1	2	3	4	5	6
38	I think about bingeing (overeating)	1	2	3	4	5	6
39	I feel happy I am not a child anymore	1	2	3	4	5	6
40	I get confused as to whether or not I am hungry	1	2	3	4	5	6
41	I have a low opinion of myself	1	2	3	4	5	6
42	I feel I can achieve my standards	1	2	3	4	5	6
43	My parents have expected excellence of me	1	2	3	4	5	6

		Always	Usually	Often	Sometimes	Rarely	Never
44	I worry that my feelings will get out of control	1	2	3	4	5	6
45	I think my hips are too large	1	2	3	4	5	6
46	I eat moderately in front of others and stuff myself when they are	1	2	3	4	5	6
47	I feel bloated after eating a normal meal	1	2	3	4	5	6
48	I feel that people are happiest when they are children	1	2	3	4	5	6
49	If I gain a pound, I worry that I will keep gaining	1	2	3	4	5	6
50	I feel that I am worthwhile person	1	2	3	4	5	6
51	When I am upset, I don't know if I am sad, frightened, or angry	1	2	3	4	5	6
52	I feel that I must do things perfectly, or not do them at all	1	2	3	4	5	6
53	I have the thought of trying to vomit in order to lose weight	1	2	3	4	5	6
54	I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close)	1	2	3	4	5	6
55	I think that my thighs are just the right size	1	2	3	4	5	6
56	I feel empty inside (emotionally)	1	2	3	4	5	6
57	I can talk about personal thoughts and feelings	1	2	3	4	5	6
58	The best years of your life are when you become an adult	1	2	3	4	5	6
59	I think my buttocks are too large	1	2	3	4	5	6
60	I have feelings that I can't quite identify	1	2	3	4	5	6
61	I eat or drink in secrecy	1	2	3	4	5	6
62	I think that my hips are just the right size	1	2	3	4	5	6
63	I have extremely high goals	1	2	3	4	5	6
64	When I am upset, I worry that I will start eating	1	2	3	4	5	6
65	People I really like end up disappointing me	1	2	3	4	5	6
66	I am ashamed of my human weaknesses	1	2	3	4	5	6
67	Other people would say that I am emotionally unstable	1	2	3	4	5	6
68	I would like to be in total control of my bodily urges	1	2	3	4	5	6
69	I feel relaxed in most group situations	1	2	3	4	5	6
70	I say things impulsively that I regret having said	1	2	3	4	5	6
71	I go out of my way to experience pleasure	1	2	3	4	5	6
72	I have to be careful of my tendency to abuse drugs	1	2	3	4	5	6
73	I am outgoing with most people	1	2	3	4	5	6
74	I feel trapped in relationships	1	2	3	4	5	6
75	Self-denial makes me feel stronger spiritually	1	2	3	4	5	6
76	People understand my real problems	1	2	3	4	5	6
77	I can't get strange thoughts out of my head	1	2	3	4	5	6
78	Eating for pleasure is a sign of moral weakness	1	2	3	4	5	6
79	I am prone to outbursts of anger or rage	1	2	3	4	5	6
80	I feel that people give me the credit I deserve	1	2	3	4	5	6
81	I have to be careful of my tendency to abuse alcohol	1	2	3	4	5	6
82	I believe that relaxing is simply a waste of time	1	2	3	4	5	6
83	Others would say that I get irritated easily	1	2	3	4	5	6
84	I feel like I am losing out everywhere	1	2	3	4	5	6
85	I experience marked mood shifts	1	2	3	4	5	6
86	I am embarrassed by my bodily urges	1	2	3	4	5	6
87	I would rather spend time by myself than with others	1	2	3	4	5	6
88	Suffering makes you a better person	1	2	3	4	5	6
89	I know that people love me	1	2	3	4	5	6
90	I feel like I must hurt myself or others	1	2	3	4	5	6
91	I feel that I really know who I am	1	2	3	4	5	6

Brief Symptom Inventory (BSI)

Below is a list of problems and complaints that people sometimes have. Read each one carefully, and select the answer that best describes HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST TWO WEEKS including today. Then circle that number. Thank you.

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1	Nervousness or shakiness inside	0	1	2	3	4
2	Faintness or dizziness	0	1	2	3	4
3	The idea that someone else can control your mind	0	1	2	3	4
4	Feeling others are to blame for most of your troubles	0	1	2	3	4
5	Trouble remembering things	0	1	2	3	4
6	Feeling easily annoyed or irritated	0	1	2	3	4
7	Pains in heart or chest	0	1	2	3	4
8	Feeling afraid in open spaces	0	1	2	3	4
9	Thoughts of ending your life	0	1	2	3	4
10	Feeling that most people cannot be trusted	0	1	2	3	4
11	Poor appetite	0	1	2	3	4
12	Suddenly scared for no reason	0	1	2	3	4
13	Temper outbursts that you cannot control	0	1	2	3	4
14	Feeling lonely even when you are with people	0	1	2	3	4
15	Feeling blocked in getting things done	0	1	2	3	4
16	Feeling lonely	0	1	2	3	4
17	Feeling blue	0	1	2	3	4
18	Feeling no interest in things	0	1	2	3	4
19	Feeling fearful	0	1	2	3	4
20	Your feelings being easily hurt	0	1	2	3	4
21	Feeling that people are unfriendly or dislike you	0	1	2	3	4
22	Feeling inferior to others	0	1	2	3	4
23	Nausea or upset stomach	0	1	2	3	4
24	Feeling that you are watched or talked about by others	0	1	2	3	4
25	Trouble falling asleep	0	1	2	3	4
26	Having to check and double check what you do	0	1	2	3	4
27	Difficulty making decisions	0	1	2	3	4
28	Feeling afraid to travel on buses, subways or trains	0	1	2	3	4
29	Trouble getting your breath	0	1	2	3	4
30	Hot and cold spells	0	1	2	3	4
31	Having to avoid certain things, places, or activities because they frighten you	0	1	2	3	4
32	Your mind goes blank	0	1	2	3	4
33	Numbness or tingling in parts of your body	0	1	2	3	4
34	The idea that you should be punished for your sins	0	1	2	3	4
35	Feeling hopeless about the future	0	1	2	3	4
36	Trouble concentrating	0	1	2	3	4
37	Feeling weak in parts of your body	0	1	2	3	4
38	Feeling tense or keyed up	0	1	2	3	4
39	Thoughts of death or dying	0	1	2	3	4

		Not at all	A little bit	Moderately	Quite a bit	Extremely
40	Having urges to beat, injure, or harm someone	0	1	2	3	4
41	Having urges to break or smash things	0	1	2	3	4
42	Feeling very self-conscious with others	0	1	2	3	4
43	Feeling uneasy in crowds	0	1	2	3	4
44	Never feeling close to another person	0	1	2	3	4
45	Spells of terror or panic	0	1	2	3	4
46	Getting into frequent arguments	0	1	2	3	4
47	Feeling nervous when you are left alone	0	1	2	3	4
48	Others not giving you proper credit for your achievements	0	1	2	3	4
49	Feeling so nervous you couldn't sit still	0	1	2	3	4
50	Feelings of worthlessness	0	1	2	3	4
51	Feeling people will take advantage of you if you let them	0	1	2	3	4
52	Feelings of guilt	0	1	2	3	4
53	The idea that something is wrong with your mind	0	1	2	3	4

BIDR

Using the scale below as a guide, write the number beside each statement to indicate how true it is for you.

1----------2----------3----------4----------5----------6----------7
not true somewhat very true

____ 1. I sometimes tell lies if I have to.

____ 2. I never cover up my mistakes.

____ 3. There have been occasions when I have taken advantage of someone.

____ 4. I never swear.

____ 5. I sometimes try to get even rather than forgive and forget.

____ 6. I always obey laws, even if I'm unlikely to get caught.

____ 7. I have said something bad about a friend behind his/her back.

____ 8. When I hear people talking privately, I avoid listening.

____ 9. I have received too much change from a salesperson without telling him or her.

____ 10. I always declare everything at customs.

____ 11. When I was young I sometimes stole things.

____ 12. I have never dropped litter on the street.

____ 13. I sometimes drive faster than the speed limit.

____ 14. I never read sexy books or magazines.

____ 15. I have done things that I don't tell other people about.

____ 16. I never take things that don't belong to me.

____ 17. I have taken sick-leave from work or school even though I wasn't really sick.

____ 18. I have never damaged a library book or store merchandise without reporting it.

____ 19. I have some pretty awful habits.

____ 20. I don't gossip about other people's business.

CLINICIAN IMPRESSIONS

Thank you for assisting in this research

Client Name:_____
Date of Assessment:_____
Client ID:_____

We are interested in clinicians' impressions of client readiness for treatment and recovery. Using client responses to the Psychosocial Assessment, please make the following two ratings:

AMBIVALENCE ABOUT TREATMENT, STAYING IN PROGRAM

"Treatment" refers to actively working on changing thoughts, feelings, and behaviours (e.g., establishing healthy eating and a normal body weight) associated with an eating disorder by beginning treatment or by staying in program.
To what extent does this client want treatment for her/his eating disorder?

Definitely does not want treatment			Vacillates between wanting and not wanting treatment			Definitely wants treatment
1	2	3	4	5	6	7

AMBIVALENCE ABOUT RECOVERY FROM EATING DISORDER
"Recovery" means being free of thoughts, feelings, and behaviours (e.g., maintaining healthy eating and body weight) that are associated with an eating disorder.
To what extent does this client want to recover from her/his eating disorder?

Definitely does not want to recover			Vacillates between wanting and not wanting to recover			Definitely wants to recover
1	2	3	4	5	6	7

IT IS EXTREMELY IMPORTANT THAT THIS FORM BE RETURNED TO SARAH COCKELL

RMI IMPRESSIONS

Client Name:_____
Date of Assessment:_____
Client ID:_____
Interviewer: _____

This is to be completed by the individual conducting the Research Assessment. On the basis of the RMI, please make the following two ratings:

AMBIVALENCE ABOUT TREATMENT, STAYING IN PROGRAM

"Treatment" refers to actively working on changing thoughts, feelings, and behaviours (e.g., establishing healthy eating and a normal body weight) associated with an eating disorder by beginning treatment or by staying in program.
To what extent does this client want treatment for her/his eating disorder?

Definitely does not want treatment			Vacillates between wanting and not wanting treatment			Definitely wants treatment
1	2	3	4	5	6	7

AMBIVALENCE ABOUT RECOVERY FROM EATING DISORDER

"Recovery" means being free of thoughts, feelings, and behaviours (e.g., maintaining healthy eating and body weight) that are associated with an eating disorder.
To what extent does this client want to recover from her/his eating disorder?

Definitely does not want to recover			Vacillates between wanting and not wanting to recover			Definitely wants to recover
1	2	3	4	5	6	7

APPENDIX D: STUDY 3 MEASURES

Recovery Activities

Here is a list of goals for recovery. Please indicate how difficult these goals would be for you. Ratings should be made on a scale from 1 (not at all difficult) to 10 (extremely difficult). Some items may not be applicable (e.g., you do not vomit, therefore delaying vomiting by 5 minutes would not be applicable). When an item is not applicable, please tick the N/A box.

	not at all difficult								extremely difficult		N/A
1. eat one mint	1	2	3	4	5	6	7	8	9	10	
2. drink one cup of water	1	2	3	4	5	6	7	8	9	10	
3. increase intake by 1/4 muffin	1	2	3	4	5	6	7	8	9	10	
4. increase intake by one fruit	1	2	3	4	5	6	7	8	9	10	
5. increase intake by one starch (e.g., one piece of bread, ½ cup of rice, 7 crackers)	1	2	3	4	5	6	7	8	9	10	
6. eat 1 tbsp of cream cheese or peanut butter	1	2	3	4	5	6	7	8	9	10	
7. increase intake by one meal (if you are currently eating less than three meals per day)	1	2	3	4	5	6	7	8	9	10	
8. delay vomiting by 5 minutes	1	2	3	4	5	6	7	8	9	10	☐
9. delay vomiting by 30 minutes	1	2	3	4	5	6	7	8	9	10	☐
10. cut down vomiting by 50%	1	2	3	4	5	6	7	8	9	10	☐
11. do not vomit for the entire week	1	2	3	4	5	6	7	8	9	10	☐
12. eat a meal in front of others once	1	2	3	4	5	6	7	8	9	10	
13. eat one meal in front of others every day for a week	1	2	3	4	5	6	7	8	9	10	
14. do not look in the mirror for one day	1	2	3	4	5	6	7	8	9	10	
15. journal feelings once	1	2	3	4	5	6	7	8	9	10	
16. journal feelings daily for one week	1	2	3	4	5	6	7	8	9	10	
17. journal food intake for one day	1	2	3	4	5	6	7	8	9	10	
18. journal food intake daily for one week	1	2	3	4	5	6	7	8	9	10	
19. decrease exercise by 25%	1	2	3	4	5	6	7	8	9	10	☐
20. decrease exercise by 50%	1	2	3	4	5	6	7	8	9	10	☐
21. do not exercise for entire week	1	2	3	4	5	6	7	8	9	10	☐
22. weigh self only once during the week	1	2	3	4	5	6	7	8	9	10	
23. decrease laxatives by one	1	2	3	4	5	6	7	8	9	10	☐
24. decrease laxatives by 25%	1	2	3	4	5	6	7	8	9	10	☐
25. decrease laxatives by 50%	1	2	3	4	5	6	7	8	9	10	☐
26. do not take laxatives for entire week	1	2	3	4	5	6	7	8	9	10	☐
27. watch t.v. for 5 minutes	1	2	3	4	5	6	7	8	9	10	
28. spend an hour with a friend	1	2	3	4	5	6	7	8	9	10	
29. use a distraction one time (e.g., cross word, listen to music, call friend) to stop self from purging or exercise	1	2	3	4	5	6	7	8	9	10	
30. use distractions on a daily basis (e.g., cross word, listen to music, call friend) to stop self from purging or exercise	1	2	3	4	5	6	7	8	9	10	

APPENDIX E: CALL BACK PROTOCOL

Hello, my name is Sarah Cockell, may I please speak with (name).

Hi (name), I'm calling to find out how you went with the three goals I assigned to you last week when we met at St.Paul's.

Before I ask you about how you went with the goals, I want to remind you that the emphasis of this call is not on evaluation, but rather on what was your experience with the goals, given where you are at in terms of readiness for change. Some people won't be able to complete any of the goals. Some people complete all of them. And other people complete part of the goals, but not all of them.

Your first goal was (read out easy goal). How did you go with this goal? DOCUMENT WHAT THE PARTICIPANT DID. THEN ASK....What made this goal difficult? What made it easy? Can you think how it might have been made easier? Or more difficult?

Your second goal was (read out moderately difficult goal). How did you go with this goal? DOCUMENT WHAT THE PARTICIPANT DID. THEN ASK....What made this goal difficult? What made it easy? Can you think how it might have been made easier? Or more difficult?

Your third goal was (read out very difficult goal). How did you go with this goal? DOCUMENT WHAT THE PARTICIPANT DID. THEN ASK....What made this goal difficult? What made it easy? Can you think how it might have been made easier? Or more difficult?

Do you have any questions?

Thank you very much for helping me with this study. I have enjoyed working with you, and have learned a lot from your experience. Your time and effort will have a direct impact on how we develop the treatment programs at St.Paul's Eating Disorder Clinic.