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Role of Motivation to Change on Treatment Outcome in Individuals with Anorexia Nervosa

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THE ROLE OF MOTIVATION TO CHANGE ON TREATMENT OUTCOME IN INDIVIDUALS WITH ANOREXIA NERVOSA

by Darlene Davis Link

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Psychology
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Abstract

The Role of Motivation to Change on Treatment Outcome in Individuals with Anorexia Nervosa

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The present study investigated motivation to change as a factor in the treatment of Anorexia Nervosa. This study was conducted at The Renfrew Center with 44 adults diagnosed with Anorexia Nervosa who were entering their inpatient program. The participants were evaluated at intake and discharge on variables of motivation to change, eating disordered symptom severity, weight change, and compliance with treatment. As predicted, results revealed significant negative correlations between the patient’s level of readiness to change at admission and perfectionism, distrust of others and their severity of anorexic symptoms at discharge. In addition, the results confirmed that the patient’s level of readiness to change at admission could predict the patient’s severity of anorexic symptoms at discharge. However, there was no significant relationship found between readiness to change and weight during treatment. Additionally, level of readiness to change at admission was examined by comparing patient’s with a previous hospitalization and patients on their first hospitalization, finding no significant difference. Implications for treatment of patient’s with anorexia nervosa, suggestions for future research and limitations of this study are discussed.
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Eating disorders are growing at a very rapid rate in this country. Many young women are struggling with an eating disorder and mental health professionals still find these individuals difficult to treat. Many reasons for this difficulty have been identified, including denial, involuntary treatment, comfort with symptoms and lack of readiness to change (Kaplan & Garfinkel, 1999). Many young women that present in treatment are there because of medical necessity or because someone else is forcing them to do so. Therefore, one question that should be asked is how ready are these individuals to change?

Purpose of the Study

From around the 1960’s to the present, the rate of dieting behavior in adolescent girls has risen approximately 30%, corresponding with a move toward more slender fashion models (Rosen, Tacky, & Howell, 1990). In addition to this dramatic change in dieting behavior, the incidence of eating disorders has increased. The prevalence rate of anorexia nervosa (AN) among females in late adolescence and early adulthood is approximately 0.5%-1.0%. Anorexia occurs in females in more than 90% of the cases. The mean age of onset is 17 years of age, and the onset is usually associated with a stressful life event (American Psychological Association, 1994). The course of anorexia varies, depending upon the individual and the severity of her illness. Hospitalization is often needed to restore weight and to repair effects of malnutrition. Of the individuals
hospitalized, the long-term mortality rate is over 10% and if death occurs, it is usually associated with starvation, suicide, or electrolyte imbalance (APA, 1994).

Only a minimal number of researchers have attempted to link readiness to change with eating disorders, therefore, further research is essential. In various other psychiatric disorders and behavioral modification problems such as addictions, weight control, and smoking cessation, readiness to change has been found to influence, significantly, the rate of relapse of individuals (DiClemente, 1999; Hilburger & Lam, 1999; Koraleski & Larson, 1997). It has been suggested that there is a great need for an investigation into the influence of readiness to change on eating disorders (Treasure, Katzman, Schmidt, Troop, Todd & de Silva, 1998).

Patients with eating disorders have had a long reputation for being very difficult to treat. There are many factors that have been identified as contributions to these difficulties such as the nature of the symptoms, issues of trust, failure to respond to ambulatory treatment, and comorbidity (Kaplan & Garfinkel, 1999). Therefore, because of the difficulty of treatment and the high rate of relapse, it is evident that motivation to change should be studied with an eating disordered population. With this information, treatment professionals could assess an individual’s level of readiness to change and adapt the treatment to meet that person where she is and reduce the chance of dropout. In an attempt to develop further our understanding of eating disorders, the present study attempts to investigate the relationship of readiness to change on AN.
Motivation refers to the causes, considerations, reasons, and intentions that move individuals to perform certain behaviors (DiClemente, 1999). The concept of motivation to change is derived from the Transtheoretical Model of Change developed by Prochaska and DiClemente (1992). The model has three dimensions of change: stages of change, processes of change, and level of change.

Stages of change.

The stages of change outline attitudes, intentions and behaviors that are relevant to an individual’s status in the process of change. Each stage represents a period of time involving the completion of certain tasks (Turnbull, 2000). The stage of change in which a client is identified can be a predictor of the prognosis of therapy because it has been speculated that individuals in earlier stages of change have a greater likelihood of premature termination (Smith, Subich, & Kalodner, 1995).

The first stage is the precontemplation stage in which individuals show no intention to change. Individuals in the precontemplative stage often deny the existence of a problem and are often in therapy because of some type of coercion. Several reasons have been hypothesized to explain an individual’s reasons for staying in this stage, including reluctance due to lack of knowledge, rebellion due to an investment in the
behavior, resignation in which change is seen as not possible, and rationalization in which there exists no real problem (Turnbull, 2000). Therapists dealing with clients in this stage may need to help the patient move to the next level of change.

The second stage is the contemplation stage, in which individuals acknowledge that they have problems and are thinking about working on them, but have not yet acted. Individuals in this stage possess a fear of change along with a fear of staying the same. Therapists working with these clients must be cautious not to push clients too hard. The clients must go through the process of considering not only the reasons for change, but also the benefits to them (Turnbull, 2000).

The third stage is the preparation stage, which includes some attempts to change behavior. This stage is short lived and moves either quickly into action or backward to contemplation. This stage is apparent due to decreased questioning about and resistance to the problem, increased questions about change, more self-motivational statements, and anticipation of life after change. Clients in this stage must believe that they have the autonomy to effect change (Turnbull, 2000).

The fourth stage is the action stage in which individuals are actively engaged in overcoming the problem behavior. It is important for clients in this stage to be aware of the cognitive, behavioral, emotional and environmental obstacles that may inhibit their change processes. And, finally, in the fifth stage, people in the maintenance stage work to prevent slipping back into their problems. In this stage, change has taken place and a new behavior is being established. This is an active stage of continuous change to prevent relapse (Turnbull, 2000).
Processes of change.

The processes of change describe the “how” of change which includes types of activity experiences by an individual in modifying affect, behavior, cognitions or relationships (Turnbull, 2000). Grouped in two broad categories, there are 10 processes of change outlined in the transtheoretical model of change. The first category of experiential processes of change that includes activities related to thinking and emoting change are outlined as follows (Herzon, Abrams, Emmons, Linnan, & Shadel, 1999).

Consciousness raising includes elevating the individual’s level of awareness of some problems. Self-reevaluation includes both the individual’s cognitive and affective reevaluation of the self, and environmental reevaluation involves the individual’s contemplating changes in response to consequences present in the environment. Social liberation occurs when environmental changes lead to more alternatives for the individual. And, dramatic relief is the evoking of blocked emotions by observing emotional scenes in the environment.

The second category of decisional balance refers to individuals weighing the benefits and the costs of their behaviors with regard to their decisions to engage or not engage and are described as follows (Herzon, Abrams, Emmons, Linnan, & Shadel, 1999). Self-liberation is the awareness and choosing of new alternatives by an individual. Counterconditioning involves changing responses to the environment, and stimulus control involves changing the environment to fit one’s responses. Contingency management involves changes in the individual that occur when there are changes in the environment. Helping relationship is a process that fosters change in both therapy and
the natural environment (Smith, Subich, & Kalodner, 1995). Different processes are helpful at different stages in change; however, the more processes used in psychotherapy the better (Turnbull, 2000).

_Levels of change._

The levels of change can be thought of as the “what” of change. It has been suggested that the therapist and client should agree on the level at which the problem exists and the point at which intervention should be initiated. Interventions should start at the lowest level because change is more rapid at this point, and it often represents the reason why the client entered therapy. The levels include the following: symptoms; maladaptive cognitions; current interpersonal conflicts; family/system conflicts; and intrapersonal conflicts (Turnbull, 2000).

_Related Research_

_Characteristics and symptomatology of anorexia nervosa._

Anorexia nervosa, an eating disorder characterized by an intense fear of gaining weight, drives an individual toward extreme methods of weight loss, despite that person’s being very thin. According to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders [DSM-IV; American Psychiatric Association (APA), 1994], the criteria necessary for a diagnosis of AN consist of the refusal to maintain normal body weight combined with an intense fear of gaining weight or becoming fat, even though
underweight. Individuals with AN experience disturbed perceptions of their body weight and shape, base their self-evaluations on these disturbed perceptions, and exhibit denial of the seriousness of their low body weight. Amenorrhea, the loss of the menstrual cycle, is an additional diagnostic criterion for females. AN can be either the binge-eating/purging type, in which the person regularly engages in binge-eating and/or purging behavior; or the restricting type, in which the binge-eating/purging behavior is absent (APA, 1994).

The damaging consequences of extreme weight loss and malnutrition include depressive symptoms such as depressed mood, irritability, insomnia, social withdrawal, and diminished interest in sex. Due to a preoccupation with food, some individuals will engage in recipe collecting, food hoarding, and/or preparation of large meals for others (APA, 1994). There are many biological disturbances that accompany anorexia, which can be detrimental to the health of the individual. Constipation, abdominal pain, sensitivity to cold, lethargy, and excess energy may be encountered (APA, 1994). Delayed gastric emptying is common in individuals with anorexia and may contribute to gastric irritability, bloating and rapid satiety in the treatment stage (Yates, 1990). In extreme cases, individuals may suffer from hypotension, hypothermia, dryness of skin and thinning of hair. Death can result usually from starvation, suicide, or electrolyte imbalance (APA, 1994).

Several personality characteristics have been distinctly identified in individuals with AN. In a study of individuals hospitalized for anorexia, Kleifield, Sunday, Hurt and Halmi (1994) found these individuals to be more reflective, more orderly and more obsessionnal. Using the Minnesota Multiphasic Personality Inventory (MMPI),
individuals with anorexia scored low on impulsivity and danger seeking and high on traditionalism, indicating evidence of self-control, caution and conscientiousness. Also, individuals with anorexia were rated more emotionally inhibited and reported a more realistic rather than a more imaginative frame of mind (Casper, Hedeker, & McClough, 1992). Evidence of these characteristics often can be identified early in life in individuals who go on to develop the disorder. Vitousek and Manke (1994) found that individuals with anorexia, restricting type, were children who conformed to rules and were constricted in their behavior before adolescence and before the onset of anorexia.

In addition to distinct personality characteristics for individuals with AN, March and Stanley (1995) found specific ways that these individuals assess themselves and others. They defined four dimensions that explain the existential world of individuals with anorexia. In individuals with anorexia, the perception of self in relation to society is rather negative, but the internal view of self is basically positive. Secondly, the view of the self in the world of other people is an idealized one that identifies the self in relation to significant others, both positively and negatively. These different dimensions can be confusing because the anorexic woman may be very much aware of the negative characteristics that society expects her to display, but these do not mix with the characteristics that she considers central to her sense of self.

*Resistance to change in individuals with anorexia nervosa.*

Patients with eating disorders have a reputation indicating that they are not only difficult to treat but also resistant to treatment. Iwinski and Shiner (2001) deemed
resistance as normal and predictable in the treatment of eating disorders for a number of reasons. First, many clients are ambivalent about treatment in which the goals are opposed to their major goal of thinness. Second, there is often an unequal amount of concern about the eating disorder between the referral agent, such as parent, friend, etc., and the individual being referred. Third, many of these patients have a fluctuating level of concern for themselves in respect to their eating disorder; this leads to varied levels of interest in treatment. And, finally, those people who surround the patient often present with an unrealistic and inaccurate expectation of rapid improvement in symptomatic behavior (Iwinski & Shiner, 2001).

Resistance can surface in many forms including secrecy, non-compliance and cessation of treatment (Iwinski & Shiner, 2001). Steinhausen, Seidel, and Metzke (2000) suggest several factors that contribute to the questionable outcome in treatment for individuals with eating disorders. These factors include a treatment mismatch, personal factors within the patient, support or distress from the social environment, life events and disorder specific variables (Steinhausen, Seidel, & Metzke, 2000). An example of treatment mismatch may be in treatment programs that attempt to bring about change in individuals who are not yet ready to change. This mismatch facilitates a battle between the therapist and the client over food and weight (Geller & Drab, 1999). However, the one central characteristic of AN making the issue of resistance so complex, is the valued nature of some of the symptoms of eating disorders that often leads to ambivalence about change (Mahon, 2000).

Consistently, Vitousek and Watson (1998) suggest that anorexic patients' denial and resistance is due to their attempts to preserve their egosyntonic symptomatology.
The anorexic patients' behaviors of food restriction and exercise are consistent with their goals of thinness and self-control. Therefore, treatment is considered the exact opposite of the already effective solution. It is conceivable that there would be some ambivalence about gaining weight at all the stages of change; however, the strength of this ambivalence can greatly vary (Vitousek & Watson, 1998).

Kaplan and Garfinkel (1999) go on to identify the difficulties in treating eating disordered patients and suggest that these patients tend to seek treatment only after they have been ill for many years. This relates to the denial of an illness in patients with anorexia; it relates to the shame and secretiveness around their symptoms for individuals with bulimia. Once in treatment, these patients are reluctant to give up the symptoms that have developed meaning and purpose for them (Kaplan & Garfinkel, 1999).

Another issue in the treatment of eating disordered patients is their tendency to have difficulty in trusting therapists. This difficulty often stems from their previous relationships, which may have been intrusive, controlling or abusive. The decision to trust a stranger may leave the patient vulnerable, with feelings of loss of control (Kaplan & Garfinkel, 1999).

Finally, there are many reasons that individuals with AN may be resistant to change; however, the major concern is the risk of high treatment drop out rates. The term drop out, which is defined as a regular treatment relationship which ends by the patient’s unilateral decision (Mahon, 2000). By consensus, reports of regular treatment cite high rates of dropout, around 20 percent, within five sessions. This estimate of dropout rates rose to around 50 percent over the first year of treatment for patients with an eating disorder (Mahon, 2000). It is suggested that individuals who perceive their eating
disorders to be worse and those at the extremes of severity may be more likely to drop out of treatment (Mahon, 2000).

Relapse.

AN and bulimia nervosa (BN) are frequently associated with chronicity. Herzog, et al. (1999) reported that 40% of anorexic patients relapse after full recovery. Therefore, researchers have been focusing on ways to improve treatment and to decrease relapse. Relapse is an event that terminates the action or maintenance phase prompting a cyclical movement back through the initial stages of precontemplation, or contemplation (DiClemente, Prochaska, Fairburst, Velicer, Velasquez, & Rossi, 1991). It may be characterized by weight loss below the normal range, which is associated with a recurrence of the other core symptoms of AN; these include amenorrhea, body image distortion, eating and weight control abnormalities. These characteristics occur after a recovery which is characterized by a disappearance of these core symptoms and by weight maintenance in the normal range for at least one year (Eckert, Halmi, Marchi, Grove, & Crosby, 1995).

Treatment programs may attempt to bring about change in individuals who are not ready to change. This mismatch between the clients' readiness to change and the therapists' attempts to intervene could develop into a battle of weight and food (Geller & Drab, 1999). In an evaluation of general outcomes, Richards, et al. (2000) proposed that favorable prognostic factors are early age of onset, histrionic personality traits, conflict-free child-parent relationships, and short interval between onset of symptoms and the
beginning of treatment. In addition, they also suggested unfavorable prognostic factors such as vomiting, bulimia, profound weight loss, chronicity, and a history of premorbid development or clinical abnormalities (Eckert, Halmi, Marchi, Grove, & Crosby, 1995; Richards, 2000).

It has been suggested that most patients relapse within the first 6 months after the completion of treatment. Some factors that have been linked to relapse are stressful or difficult situations, anxiety, depression, loneliness, anger, relationship problems and their desires to punish themselves (Woodside, Kohn, & Kerr, 1998). In addition, several possible triggers have been indicated in relapse: weight gain, inability to cope with their feelings, failure of something important, a change in their social support system, significant life changes and financial difficulties (Woodside, Kohn, & Kerr, 1998).

Motivation to change.

Motivation to change, a state of readiness or eagerness to change, may fluctuate from one time or situation to another (Annis, Schober, & Kelly, 1996). There are two main components that encompass readiness to change. The first part is the recognition of the importance of a problem, and the second is the belief in one’s ability, confidence (belief in one’s ability to master change) or self-efficacy. The importance of the problem involves the necessity and reason for change, which relates to an individual’s values and the expected outcomes of change (Treasure & Schmidt, 2001). This concept of readiness to change is vital to the psychotherapy process. Hilburger and Lam (1999) cite evidence which indicates that by identifying the stage of change at the beginning of therapy, the
therapist may be able to predict, with 93% accuracy, which clients would drop out, which ones would terminate quickly but appropriately, and which ones would continue in treatment.

In various psychiatric disorders and behavioral modification problems such as addictions, weight control, and smoking cessation, readiness to change has been found to influence significantly the rate of relapse and the treatment success of individuals (DiClemente, 1999; Hilburger & Lam, 1999; Koraleski & Larson, 1997). These studies have suggested that readiness to change can be a major factor in the success of treatment and decrease of drop out rates. Smith, Subich, and Kalodner (1995) conducted a study on readiness to change in relation to premature termination. They found a significant number of clients in the precontemplation stage who terminated therapy early, as opposed to the clients in the action and maintenance stages who completed therapy.

A major factor in the treatment of smoking cessation has been found to be readiness to change. DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, and Rossi (1991) reported that 3 times as many contemplators and 7 times as many preparation stage smokers made a 24-hour attempt to quit when compared with precontemplators. Consistently, Perz, DiClemente, and Carbonari (1996) supported this research in stating that an individual’s ability to quit smoking and to remain abstinent was directly related to readiness to change.

In addition to the smoking research, Koraleski and Larson (1997) investigated the Transtheoretical Model in treatment with adult patients who experienced childhood sexual abuse. They found that patients in the action stage demonstrated significantly greater use of behavioral processes of change than did patients in the contemplation
stage. Along with these other problem areas, it is suggested that motivation to change plays a vital role in the treatment success of substance abusers (DiClemente, 1999).

It has been clearly demonstrated that readiness to change is a significant factor in treatment for many different problem areas. As with other disorders, eating disordered patients have a reputation for high relapse rates, early treatment termination and poor treatment success. Therefore, it is important to investigate if readiness to change may be a factor in the treatment of these individuals. There has been very little research in this area; however, the need to examine this area is supported by Treasure, Katzman, et al., (1999). In this study, they found that patients in the action stage showed greater improvement in symptoms of binge eating that did patients in the contemplation stage. This phenomenon must be investigated further to understand the interaction that may occur, as well as the means to use this information to improve treatment of eating disorders.

Motivation to change related to problem behaviors.

Research has provided strong support for the reliability and validity of the constructs of the Transtheoretical Model in its application to problem behaviors (Hewes & Janikowski, 1998; Koraleski & Larson, 1997; Prochaska, Velicer, Rossi, Goldstein, Marcus, Rakowski, Fiore, Harlow, Redding, Rosenbloom, & Rossi, 1994). Prochaska, et al. (1994) investigated the use of the Transtheoretical Model across 12 problem behaviors. They reported that for all 12 problem behaviors, the negative aspects of changing the problem behaviors outweighed the positive aspects for subjects who were in
the precontemplation stage. However, the opposite was true for subjects in the action stage (Prochaska, et al., 1994).

One problem behavior that has been particularly targeted in the research on motivation to change is smoking cessation. Smoking cessation treatments tend to exhibit a high rate of relapse, which dictates a need for investigation. Perz, DiClemente and Carbonari (1996) conducted a study looking at success in smoking cessation treatment and stage-specific activity, according to the specific stage of change. They investigated participants’ progress from the precontemplation stage to the action stage and the manner in which the treatment focus affected their success. Their results concluded that the timing of treatment focus, coinciding with the stage of change influenced success in quitting smoking. Consistently, participants who failed to move through the stages of change tended to use experiential processes in treatment rather than a transition to behavioral processes (Perz, DiClemente, & Carbonari, 1996).

Herzog, Abrams, Emmons, Linnan, and Shadel (1999) attempted to replicate the above study. However, they did not find conclusive results indicating that treatment processes were predictive of success through the stages of change. They speculated several reasons for these inconclusive results, such as infrequent data collection and inadequate measures of motivation to change.

In a further investigation into smoking cessation and the motivation to change, DiClemente, Prochaska, Fairhurst, Velasquez, and Rossi (1991) conducted a study on smoking cessation outcome and processes of change in participants in the precontemplation and contemplation stages. They looked at these participants at one month and found that three times as many contemplators and seven times as many
preparation stage smokers made a 24 hour attempt to quit when compared with precontemplators. Smoking cessation at one month doubled from precontemplators to contemplators and continued to improve at six months (DiClemente, Prochaska, Fairhurst, Velasquez, & Rossi, 1991).

Another major area of research in the motivation to change area is that of success in abstinence from alcohol. The concept of motivation or readiness for change as applied to substance abuse describes the fact that all patients are in denial, and that with certain treatment interviewing, they will break through the denial and become motivated for change. It has been suggested that these treatments should be confrontational in nature, and must fit with the patient’s individual readiness to change (Isenhart, 1991). Isenhart (1991) conducted a study looking at alcohol dependent individuals on a one year follow up and suggested that pretreatment readiness for change may predict level of involvement in recovery activities.

Hewes and Janikowski (1998) suggested several factors that may be linked to clients’ lack of motivation to change drinking behavior. First, they suggested that there is the denial; therefore, confronting and breaking through the denial is a necessary treatment component. Secondly, clients often enter treatment because of external pressures (i.e., court, families, etc.), which may inhibit the clients’ motivation to change. And, finally, the clients’ limited choice of treatment may impact treatment outcome (Hewes & Janikowski, 1998). The hypothesis is that higher motivation at intake would be associated with a decrease in quantity of drinking days. However, they found that regardless of the readiness for change in the beginning of treatment, the participants concluded with the same treatment outcome. It was speculated that this lack of significance could be due to
number of subjects, poor readiness to change measures and therapist variables (Hewes & Janikowski, 1998).

On the contrary, Carbonari and DiClemente (2000) conducted a study exploring treatment outcome for alcohol abusers in relation to their stage of change during presentation in treatment. They found that the readiness to change measure was the strongest predictor of drinking behavior in the one year follow up and continued to predict drinking behavior three years after the completion of treatment. They also suggested that those participants who continued to remain abstinent more strongly endorsed action (Carbonari & DiClemente, 2000).

In addition to the major areas of smoking cessation and alcohol abstinence, motivation to change has been applied to exercise behavior. In an investigation of the role of stages of change and the maintenance of exercise behavior, Cardinal (1997) suggested that the participants’ baseline stage was a significant predictor of stage of exercise improvement. Here participants had an easier time moving from the contemplation stage to the preparation than to the action stage. Therefore, it is easier for individuals to decide to exercise than to begin to exercise (Cardinal, 1997).

Koraleski and Larson (1997) took the motivation to change research further when they applied it to adult survivors of childhood sexual abuse. They suggested that participants in the action stage used more behavioral processes of change than the participants in the contemplation stage (Koraleski & Larson, 1997). Therefore, this study is another supportive piece of research for the use of the transtheoretical model of change with further populations.
Motivation to change in eating disorders.

Individuals with eating disorders have been known to be difficult to treat because of their high dropout rate and their lack of engagement in treatment. In addition, many individuals with eating disorders enter into treatment under external pressures, not unlike individuals with alcohol dependency. Because of the external pressures, these patients may not be ready for treatment and present with a great deal of resistance. For example, one study reported that 72% of patients with AN indicated that they had denied there was anything wrong in the early part of their disorder (Vitousek, Watson & Wilson, 1998). In addition, 18% of these patients maintained that they never felt the need to change. Further, the restricting anorexics were the least likely to change symptomatic behaviors (Vitousek, Watson & Wilson, 1998). Furthermore, treatment is typically aimed at people who are in the action stage. Therefore, the Transtheorectial Model predicts treatment failure because the treatment does not specifically match the patient’s stage of change (Feld, Woodside, Kaplan, Olmsted & Carter, 2001). Based on these characteristics of eating disorders and the research on motivation to change involving other behavior problems, it has been suggested that motivation to change may be a significant factor in the treatment of eating disorders.

In support of this suggestion, Treasure, Katzman, Schmidt, Troop, Todd, and de Silva (1999) conducted a study on the treatment of BN, the motivation to change and outcome in treatment. They found that only one of the 9 patients in the action stage
dropped out during the first four weeks of treatment as compared to 22 of 82 patients in
the contemplation stage. They also reported that there was a significant difference in
levels of improvement between those in the contemplation stage versus those in the
action stage (Treasure, Katzman, Schmidt, Troop, Todd & de Silva, 1999).

Consistently, Geller, Cockell and Drab (2001) investigated the use of the
Readiness and Motivation Interview with individuals with eating disorders. They found
that readiness could differ across symptoms domains. For instance, participants
expressed a higher readiness to change the unpleasant symptoms, such as bingeing, but a
lower readiness to change the more comforting and egosyntonic behaviors of caloric
restriction and exercise. Therefore, patients’ readiness to change should not be judged
simply on one symptom (Geller, Cockell, & Drab, 2001). In other research, the stage of
change failed to predict clinical outcome (Levy, Lucks, & Pike, 1998; Pike, 1998). This
may be due possibly to the measures used to assess readiness to change; many measures
assess only single-symptom problems, rather than the multiple symptoms of eating
disorders. Given this information, this study used an assessment tool specifically
designed for the complex nature of AN.

This assessment tool entitled Anorexia Nervosa Stages of Change Questionnaire
(ANSOCQ; Rieger, Touyz, et al., 2000) has established significant associations with the
eating disorder symptomatology as measured by The Eating Disorder Inventory. Rieger,
Touyz, et al. (2000) reported that the ANSOCQ was significantly correlated with eating
disorder symptomatology including Drive for Thinness (r = -.72, p = .000), Body
Dissatisfaction (r = -.66, p = .000), Ineffectiveness (r = -.44, p = .000), Interpersonal
Distrust (r = -.40, p = .000), Interoceptive Awareness (r = -.26, p = .000), Asceticism (r =
- .47, p = .000), and Social Insecurity (r = -.53, P = .000). Many mechanisms underlie the association between readiness to change and anorexic psychopathology. For instance, Drive for Thinness and Asceticism are aspects of egosyntonic anorexic symptomatology and Ineffectiveness reflects issues with self-efficacy (Rieger, Touyz, et al., 2000). These relationships between readiness to change and specific eating disorders symptomatology should be further investigated.

*Eating disorders course and outcome.*

Throughout this study, many factors have been presented that interfere with treatment for eating disorders such as resistance, relapse, motivation to change, etc. The research on this topic of motivation to change has a purpose to understand the complex issues in the treatment of eating disorders and improve the present outcome of these treatments. Therefore, researchers have set out to evaluate the outcome of present treatment for eating disorders.

Fichter and Qualflieg (1999) conducted a study on the course and outcome of treatment of AN over a 6-year period. They tracked a substantial improvement during therapy, slight decline during the first 2 years after therapy and further improvement in years 2-6. At the 6-year outcome, 34% demonstrated a good outcome, 39% an intermediate outcome, 21% a poor outcome, and 6% were deceased. They also studied possible prognostic factors and found that at a 2-year outcome there were two significant prognostic factors. First, patients with early onset AN had a less favorable outcome, as did patients with low body weight. At a 6-year outcome, they found patients with binge
attacks, patients with another mental illness, and patients with low body weight had a less favorable outcome (Fichter & Qualflieg, 1999).

To study further the complex nature of treating eating disorders, Sullivan, Bulik, Fear, and Pickering (1998) looked at the outcome of AN over a 12-year period. They found that 10% of the participants continued to meet the criteria for AN after 12 years; however, even those who did not meet criteria still exhibited relatively low body weight and cognitive features characteristic of AN, including perfectionism and cognitive restraint.

Also, Herzog, Schellberg, and Deter (1997) decided to look at the long-term course of anorexia and recovery. They reported that 50% of the patients did not recover sooner than 6 years after the first treatment. They also suggested that restricting-type AN patients with low serum creatinine levels (indicators of renal function, liquid balance, and muscle mass) were predictors of earlier recovery. Purging patients with additional social disturbances had a significantly lower chance of recovering (Herzog, Schellberg, & Deter, 1997).

Eckert, Halmi, Marchi, Grove, and Crosby (1995) found less favorable results than those previous researchers in an outcome study of AN. In this 10-year outcome study, they found that 25% of participants had recovered from anorexia nervosa at the 10-year follow up. However, 45% had significant weight or menstrual disturbances in addition to other anorexic pathology; 7% were deceased. During these 10 years, 32% of the participants had to be re-hospitalized for treatment of anorexia. They also suggested that anorexics who recover from their illness more quickly have an earlier age onset of
illness and are less likely to display bulimic behavior (Eckert, Halmi, Marchi, Grove, & Crosby, 1995).

Contrary to most of the research, Strober, Freeman and Morrell (1997) in conducting a study of the long-term course of AN, found an overall recovery rate of 72%. They found two variables related to a chronic outcome, including a compulsive drive to exercise at the time of discharge and a history of poor social relations preceding the onset of their illness. In addition, they found that 29% of the participants relapsed following discharge prior to achieving clinical recovery (Strober, Freeman, & Morrell, 1997). Steinhausen, Seidel, Metzke, and Winkler (2000) supported this research with favorable outcome data reporting that 80% of patients recovered from AN.

This body of research presents a variety of findings after investigating the outcome rates for AN over a long period of time. In an effort to identify the factors that may contribute to the poor prognosis of AN, an investigation was conducted on the prognostic value of the EDI over a 5-10 year period (Bizeul, Sadowsky, & Rigaud, 2001). They found that the total EDI score, the perfectionism subscale and the interpersonal distrust subscale were significantly related to illness severity and could predict a long-term severe outcome in AN (Bizeul, Sadowsky, & Rigaud, 2001). Therefore, these specific characteristics of AN will be looked at in relation to motivation to change in addition to the total symptom severity.

Overall, the success rates of treatment for this population vary; however, the research generally shows a poor success rate. This research indicates a high rate of relapse over the course of time and a limited number of individuals achieve full recovery from anorexia. These outcomes suggest that further research is needed to address
prognostic indicators, including ways to enhance treatment in order to prevent such high rates of relapse.

Implications of motivation to change on treatment.

Because of the significance found between the Transtheoretical Model of Change and other psychiatric problems, researchers have attempted to apply these concepts to the therapy process. It is believed that intervention needs to be targeted either at increasing the patients’ concern about the problem or motivating the patients to, at least, contemplate active change (O’Hare, 1996). However, individuals with eating disorders are known to be difficult to treat, being resistant to change in therapy. For many young individuals with eating disorders, this resistance can be due to the involuntary nature of the admissions to treatment. These patients admitted to treatment involuntarily, either by commitment or by force of their parents, are often lower in weight and require a significantly longer hospitalization to attain a healthy weight (Watson, Bowers, & Anderson (2000). Therefore, it is important that researchers and clinicians begin to look to the clients’ readiness to change in order to tailor their treatments to match the patients’ needs, thus facilitating motivation.

The Transtheoretical Model of change suggests that the counselor should engage in a variety of procedures depending on the readiness for change in the client (Annis, Schober, & Kelly, 1996; Hodgins, Ungar, el-Guebaly, & Armstrong, 1997). Therapists should use different types of interventions with individuals at different stages of change. For instance, individuals in the contemplation or preparation stage should be engaging in
experiential processes of change in therapy. Experiential processes of change can be defined as cognitive and emotional activity that should lead to attitude changes and develop the beginnings of possible future behavior change (Perz, DiClemente, & Carbonari, 1996). This stage in therapy can be fostered by presenting helpful information, providing accurate feedback, and establishing and maintaining a trusting relationship (Koraleski & Larson, 1997). O’Hare (1996) offered further strategies for treating individuals in the precontemplation stage; these include avoiding an overemphasis on irrelevant self-disclosure, anticipating obstacles to treatment compliance, using behavior contracting, involving significant others when possible, and actively enhancing motivation.

However, individuals past the preparation stage of change should move into behavioral processes of change including behavioral changes (Perz, DiClemente, & Carbonari, 1996). It is important to recognize these stages of change and the appropriate stage of therapy to apply to each individual because if the treatment that is not compatible could produce failure in therapy (Koraleski & Larson, 1997). The therapist may be able to engage the client in the proper interventions by teaching, modeling, practicing, and reinforcing behavioral techniques.

Annis, Schober and Kelly (1996) began their treatment assessment with motivational interviewing, defined as an approach designed to help clients build commitment in order to reach a decision to change. They suggest that the counselor assume responsibility for motivating the client, using strategies to enhance the likelihood that the client will become engaged in change. This procedure is very important for clients who are in the contemplation stage of change where skillful questioning and
exploring client concerns can frequently move clients toward a resolution to change. Until these individuals move toward change, interventions aimed at treatment planning or initiating change is liable to cause resistance. However, for clients already at the preparation, action, or maintenance stage, feedback from the motivational interview can serve to reinforce commitment for change (Annis, Schober, & Kelly, 1996).

Treasure and Schmidt (2001) reviewed the impact of motivational interviewing on treatment for eating disorders. They suggested that motivational interviewing has been as successful or more rapidly successful as traditional treatments in the therapy for eating disorders. Similarly, Iwinski and Shiner (2001) reported that a client who lacks trust in the therapist and has varying motivation for change presents a challenge in therapy. They outlined a treatment protocol to enhance motivation and cooperation to decrease attrition.

Motivational interviewing has been integrated with the transtheoretical model of change to develop motivational enhancement therapy (MET). The goal of MET is to determine the stage of the client and then to assist with the movements through the stages to reach the ultimate goal of sustained change (Feld, Woodside, Kaplan, Olmsted, & Carter, 2001). MET was investigated to determine its success with eating disorders and was found to influence participants' positive motivation to change. It was reported that participants viewed their behavior as more of a problem after participating in the MET intervention (Feld, Woodside, Kaplan, Olmsted, & Carter, 2001).

In addition, Treasure, Katzman, et al., (1999) conducted a study comparing motivation enhancement therapy with cognitive behavioral therapy for the treatment of BN. However, they did not find a significant difference between treatment protocols, but did find a significant difference between improvements of symptoms across different
stages of change. Therefore, it is vital to identify the impact of readiness to change of treatment success in order to provide more effective treatment protocols to these patients.

In further exploration, Rieger, Touyz, et al. (2000) investigated the relationship among stages of readiness to change and specific aspects of eating disorder symptomatology. Further validation of their significant relationships among these variables could provide information on the specific trait of AN that are implicated in an individual's level of readiness to change. In obtaining this information, practitioners could focus on those specific aspects of AN in treatment in order to facilitate the individual's progression in their readiness to change.

_Treatment._

One goal of eating disorder research is to reveal information that will be useful in developing appropriate treatment strategies. Similar to the multidimensional theory of etiology for eating disorders, treatment should consist of a combination of strategies. There are numerous approaches to the treatment of AN and BN. With the understanding that the therapist should try to meet the patient where she is in level of readiness, Wilson, Vitousek, and Loeb (2000) investigated a stepped care treatment for eating disorders. In this approach, treatment is provided sequentially according to need, beginning with the lowest, simplest and least expensive. They reported that lower levels of stepped care models are inapplicable for AN because of the demand for specialized expertise in the care of malnourished patients. In addition, individuals with anorexia tend to become easily discouraged by treatment failure and could not endure continued increase in
treatment intensity. Therefore, for patients with anorexia the need for inpatient versus outpatient treatment would depend on the severity of the disorder, patients’ weight, and the resources available (Wilson, Vitousek, & Loeb, 2000).

One treatment approach that is central to eating disorders is the feminist approach, which must deal with negative body image (Fallon, Katzman, & Wooley, 1994). It is suggested that the disordered eating symptoms cannot be healed without first addressing the disordered relationship between the self and the body. The concept of disembodiment, a numbness and disconnection with the physical body, is critical to this approach. This disconnection with feelings and sensations allows the eating disorder to perpetuate. The feminist approach suggests several key treatment objectives. The first suggestion involves relieving isolation through use of a group format. Next is the importance of heightening awareness of body issues. This begins with exercises in sensory awareness revealing size distortions, indicating where emotions are held in the body, and showing how body tension patterns reflect and affect experience. The next goal of treatment is exploring the roots of body issues, which involves uncovering attitudes that have been internalized in the course of development. Another key treatment aspect is exploring blockages and resistance to change. The final stage, re-embodiment, includes integrating mind and body through movement (Fallon, Katzman, & Wooley, 1994).

Family-based therapy maintains the idea that family interaction may cause and/or be related to the severity of symptomatology in eating disordered individuals. Therefore, efforts to promote appropriate family relationships and to improve communication are believed to reduce symptoms. In the treatment of eating disorders, it has been recognized
that there is more hostility, chaos and isolation but less nurturance and empathy in families of an eating disorder patient (Diamond, Serrano, Dickey, & Sonis, 1996).

Family therapy, in comparison with individual therapy, is often a more optimal choice for treating eating disorders by focusing on the apparent problems within the family. Through the study of 26 families, Kroger, Drinkman, Herzog and Petzold (1991) supported family therapy as the desired form of treatment for eating disorders. They suggested that the behavior of individuals with eating disorders and their relationships with others are essentially derived from their subjective views of their relationships with their families. Also, Diamond, Serrano, Dickey and Sonis (1996) reviewed literature that supported the effectiveness of family therapy for adolescent individuals with eating disorders.

Given the effectiveness of family therapy for eating disorders, it is useful to examine the types of interventions used in this form of treatment. The parents do not realize that the child with the eating disorder dominates the family, but often this is true. In family therapy, the parents are taught to play their appropriate roles as parents and decision makers in conjunction with realizing that the child has been dominating the family (Kroger et al., 1991). Waller, Slade and Calam (1990) suggest that family therapy involving individuals with eating disorders should focus on helping the family to set and express appropriate levels of concern for each other. They found that strict behavior control and lack of problem solving ability on the part of the parents are strong predictors for the development of eating disorders. Therefore, these families need to develop clear, workable rules and boundaries not only for behavior but also for dealing with problems. Evans and Street (1995) suggested that many individuals with eating disorders have
grown up in families that experienced a high degree of conflict and enmeshment, restricting the individuals from separating toward independence. Consequently, family therapy must focus on creating a more favorable environment that allows the individual to move towards autonomy. Attention must be given to the interaction between the parents and the children, rather than treating each of them as a separate entity (Hodes & Le Grange, 1993).

To investigate further the efficacy of family therapy with AN, Wallin, Kronovall and Majewski (2000) studied the efficacy of Body Awareness Therapy versus family therapy. Body Awareness Therapy (BAT) consists of education about the body and its functions, of exercises that emphasize the boundaries of the body, and of methods for dealing with body image disturbances. They did not find any differences in the success of therapy between the two groups. However, the patients in the Body Awareness Therapy had improved their eating attitudes and lessened their drive for thinness as compared with the patients who had just received family therapy. This is an important finding because improvements of body image have been shown to help prevent relapse (Wallin, Kronovall, & Majewski, 2000).

Often it has been suggested that individual therapy is needed along with or instead of family therapy (Diamond, Serrano, Dickey, & Sonis, 1996; Kroger, Drinkman, Herzog, & Petzold, 1991). Although some principles are similar in the individual treatment of AN and BN, there are differences. Individuals with bulimia are more likely to seek treatment; however, they are often easily frustrated because of their expectation of immediate results. The need for hospitalization is less likely for individuals with bulimia than individuals with anorexia. Treatment of individuals with bulimia should begin with
behavioral control of eating; however treatment of individuals with anorexia should begin with weight gain. The eating behaviors of all individuals with eating disorders are extreme, and in order to begin treatment these behaviors must be under control. The next step in the individual treatment of both bulimia and anorexia is modification of dysfunctional perceptions. In this phase of treatment, the therapist works with the patient in identifying and replacing the dysfunctional thoughts that drive their disorder. The final step is developing new, healthier behaviors, including the maintenance of change (Yates, 1990).

Cognitive-Behavioral therapy (CBT), a specific form of individual therapy, includes the modification of abnormal attitudes about the personal significance of body shape and weight; it also involves the replacement of dysfunctional dietary restraint with healthier patterns. CBT, a common method of treatment for individuals with eating disorders, is successful in the treatment of bulimia. The mean percentage of reduction in binge eating for individuals with bulimia after CBT ranges from 73-93%; for purging behaviors the range is from 77-97% (Wilson & Fairburn, 1993). However, CBT is less often used with anorexia because patients actively resist changes in their attitudes toward shape and weight. It is very difficult to replace current eating and exercise patterns with normal behaviors. In consideration of this explanation, CBT needs further investigation for the treatment of anorexia (Wilson & Fairburn, 1993).

To investigate CBT for AN further, Leung, Waller, and Thomas (1999) studied the use of Group CBT with these patients. They found that this treatment was not effective for individuals with AN. They suggested that this might be due to the difficulty
of engaging these patients in therapy as well as the difficulty in forming a strong therapeutic alliance in a group format (Leung, Waller, & Thomas, 1999).

To look further at treatment combinations, Wilson, et al. (1999) compared cognitive-behavioral therapy (CBT), supportive psychotherapy (SPT) plus antidepressant medication or a placebo, or a medication-alone treatment in individuals with bulimia nervosa. They reported that CBT was superior to SPT. However, the best treatment was a combination of CBT and antidepressant medication (Wilson, et. al., 1999). Serfaty, Turkington, Heap, Ledsham and Jolley (1999) also conducted a study comparing CBT and dietary counseling for the treatment of AN. They found that CBT was significantly more effective than dietary counseling in promoting engagement and facilitating recovery.

*The present study - research questions.*

1. Does an individual’s level of readiness to change correlate with his/her symptom severity?
2. Does an individual’s level of readiness to change predict his/her treatment outcome?
3. Is an individual’s level of readiness to change associated with his/her severity of specific aspects of AN?
4. Is an individual’s level of readiness to change associated with his/her weight change during treatment?
5. Is an individual’s level of readiness to change associated with his/her compliance in treatment?

6. Is the number of hospitalizations for his/her eating disorder associated with his/her level of readiness to change?

The present study - specific hypotheses.

1. There will be a significant negative correlation between level of readiness to change at intake and severity of eating disordered symptoms at discharge in individuals with AN.

2. The level of readiness to change will predict change in severity of symptoms by comparing intake and discharge.

3. There will be a significant negative correlation between level of readiness to change at intake and the severity of several specific characteristics of AN at discharge defined by the subscales of The Eating Disorder Inventory.

4. There will be a significant positive correlation between level of readiness to change and weight gain during treatment.

5. Individuals with AN having a higher level of readiness to change will be more likely to have been compliant with treatment than individuals with AN having a lower level of readiness to change.

6. Individuals who have been previously hospitalized for AN will be admitted with a higher level of readiness to change than individuals with AN admitted to their first hospitalization.
Chapter II

Methodology

Participants

Setting.

Participants were 44 females ages 18 and older, who were recruited from The Renfrew Center of Philadelphia and Florida, a residential treatment facility for eating disorders, treating individuals with the primary diagnoses of AN, BN, or eating disorder not otherwise specified (EDNOS). A variety of co-morbid psychiatric conditions, primarily depressive and anxiety disorders, are present within the population as well. The facility has a capacity of 40 beds and is accredited by Joint Committee on Accreditation of Healthcare Organizations (JCAHO). The minimum age considered for admission is 14-years; however, there is no maximum age. The average length of stay for patients at The Renfrew Center is 24 days, although, the average length of stay for patients with AN is 30 days. Because of the population that The Renfrew Center serves, all participants will be females. Although socio-economic status is not directly assessed, it is likely that participants are from middle and upper class families since the facility is limited to patients who have private insurance or have money to pay for treatment.

Inclusion criteria.

At the time of investigation, these female participants were entering hospitalization for AN. The participants for this investigation met criteria for the DSM-IV diagnosis of AN (APA, 1994). The determination of diagnosis was evaluated by a
board-certified psychiatrist and corroborated by the results of the EDI-2 (Garner, 1991). The EDI-2 is based on the DSM-IV criteria for AN. In addition, patients who are hospitalized for the first time \( (N = 17) \) and patients returning after previous hospitalizations \( (n = 27) \) were included for comparison.

*Exclusion criteria.*

All patients with a diagnosis of Bulimia Nervosa or Eating Disorder NOS were excluded from this study in order to include only patients with AN. Patients who needed to be transferred to another mental health facility for a more intensive level of treatment were excluded from this study. In addition, any patient who was transferred to another facility because of medical needs was also excluded from this study. Also, any patient under the age of 18 was excluded.

*Measures*

*Demographics sheet.*

A demographic data sheet was used to collect information regarding participant identification information such as age, ethnicity, marital status and education level (Appendix A). The assistant research director extracted this information from a more extensive intake form. Additionally, the variables such as number of prior hospitalizations, type of discharge, and psychiatric comorbidity were collected. Age of onset was determined via self-report at intake. Also, admission weight, discharge
weight and height was extracted from the chart by the assistant research director to ensure accuracy. The duration of illness was determined by the investigator as a function of current age in months minus age of onset. This data sheet was utilized to record length of hospitalization at discharge. The length of stay was measured in days, starting with the day of arrival to The Renfrew Center through the day of discharge.

*Anorexia nervosa stages of change questionnaire.*

Anorexia Nervosa Stages of Change Questionnaire [ANSOCQ] (Rieger, Touyz, et al, 2000) is a 20-item self-report questionnaire was used to assess an individual’s stage of readiness to change regarding his/her eating disorder (Appendix B). The questionnaire is based on the Transtheoretical Model and covers the aspects of AN, including body shape and weight, eating behaviors, weight control strategies, emotional difficulties, social difficulties, and treatment. The ANSOCQ (Rieger, Touyz, et al., 2000) demonstrated good internal consistency (.90) and test-retest reliability (0.89). Also, significant relationships with other instruments assessing readiness to change were demonstrated to establish convergent validity and the ANSOCQ (Rieger, Touyz, et. al., 2000) was found to be a significant predictor of weight gain. In addition, further support for concurrent validity was evident in significant associations between ANSOCQ scores at the end of treatment and several subscales on the EDI-2 at discharge (Rieger, Touyz, et. al., 2000).

Each item contained five statements representing the stages of Pre-Contemplation, Contemplation, Preparation, Action, and Maintenance. Statements were scored 1 (for the pre-contemplation statement) to 5 (for the maintenance statement). The 20-item scores
were then added to obtain a total scale score. In addition, there were cutoff scores to denote each stage of change.

Eating disorder inventory – 2.

Eating Disorder Inventory – 2 [EDI-2] (Garner, 1991) is a 91-item self-report questionnaire that was used to assess psychological and behavioral traits of Anorexia Nervosa and Bulimia Nervosa. The 11 subscales looked at the following aspects: (1) drive for thinness; (2) bulimia; (3) body dissatisfaction; (4) ineffectiveness; (5) perfectionism; (6) interpersonal distrust; (7) interpersonal awareness; (8) maturity fears; (9) asceticism, (10) impulse regulation; and (11) social insecurity (Garner, Olmsted & Polivy, 1983).

The drive for thinness subscale indicated excessive concern with dieting, preoccupation with weight and entrenchment in an extreme pursuit of thinness (Garner, Olmstead, & Polivy, 1983). The bulimia subscale indicated the tendency toward episodes of uncontrollable bingeing which may be followed by the impulse to engage in self-induced vomiting. The body dissatisfaction subscale described the belief that specific parts of the body associated with shape change or increased fatness at puberty are too large. The ineffectiveness subscale assessed feelings of general inadequacy, insecurity, of worthlessness, including the feeling of not being in control of one’s life. The perfectionism subscale indicated excessive personal expectations for superior achievement. The interpersonal distrust subscale reflected a sense of alienation and a general reluctance to form close relationships; this has been identified as important in the
development and maintenance of AN. The interoceptive awareness subscale assessed one’s lack of confidence in recognizing and accurately identifying emotions and sensations of hunger or satiety. Finally, the maturity fears subscale measures a person’s wish to retreat to the security of the preadolescent years because of the overwhelming demands of adulthood (Garner, Olmstead, & Polivy, 1983). These subscales have coefficients of internal consistency above .80 and reliabilities range from .82 to .92 (Schaefer, Maclellan, Yaholntsky, & Stover, 1998).

Participants indicated whether each item applied to them on a 6-point rating scale, ranging from "always" to "never". It was scored with the most extreme anorexic response (always or never depending on the keyed direction) earning a score of 3; the immediately adjacent response 2, the next response a 1 and the three choices opposite to the most anorexic response receiving no score. The EDI-2 has high concurrent validity when assessed against other accepted eating disorder measures. In addition, the EDI-2 has demonstrated predictive validity with a high EDI-2 global score being indicative of an unfavorable outcome. In particular, it was found that the EDI-2 total score, the perfectionism and interpersonal distrust subscale scores could be predictive of the long-term outcome (Bizeul, Sadowsky, & Rigaud, 2001). In addition, the EDI-2 demonstrated test-retest reliability of .79 to .95 after one week and .76 across a one year time period (Crowther, Lilly, Crawford, & Shepherd, 1992).
Weight measures.

Body Mass Index scores were computed on the following formula: $\text{BMI} = \frac{\text{Weight in pounds}}{\text{height in inches}} \times \text{height in inches} \times 703$. The BMI categories are as follows: Underweight $< 18.5$; Normal weight $18.5 - 24.9$; Overweight $25 - 25.9$; and obesity $30$ or greater.

Compliance measures.

In this study, compliance measured premature patient termination of treatment. A patient was considered compliant if she was discharged with agreement of her primary therapist. A patient was considered non-compliant if she left treatment against medical advice (AMA) or against therapist advice and dropped out of treatment. The discharge status was recorded at time of discharge by the examiner.

Procedure

This study was approved by the Internal Review Board at The Renfrew Center and Philadelphia College of Osteopathic Medicine. The assistant research director at The Renfrew Center, credentialed with a Master’s degree in Psychology, prepared the questionnaire packets. All examiners were blind to the hypotheses of this study. In addition, participants were permitted to drop out of the study at any time.
Intake.

The intake portion of this study was conducted in two parts. First, all participants were administered the ANSOCQ (Rieger, Touyz, et al., 2000) at their admission session by a counselor at the Renfrew Center credentialed with either a bachelors or masters degree in Psychology. These counselors followed the procedure below, as it is outlined in the Procedure Manual for Individual Administration (Appendix C) developed by the investigator. It was critical to administer this at the first admission session because of the possibility that motivation scores could be greatly affected by time. At this admission session, participants were asked to complete the informed consent form (Appendix D).

Secondly, all participants were administered the EDI-2 (Garner, 1991) on the first Saturday after their admission; this was done in a group setting, along with other measures given by The Renfrew Center. This group session was approximately 60 minutes in length. A counselor at the Renfrew Center, credentialed with either a bachelors or masters degree in Psychology administered the questionnaires to the participants. These counselors followed the procedure below as it is outlined in the Procedure Manual for Group Administration (Appendix E) developed by the investigator. Admissions at The Renfrew Center were scheduled throughout the week; therefore, the time between admission and participants' completion of the EDI-2 (Garner, 1991) varied. The EDI-2 (Garner, 1991) was administered at the regularly scheduled group time.
because of the length of the questionnaire, and the difficulty participants may have had at intake due to a compromised mental and physical condition.

The admission packets included instructions for completion; in addition, the examiner was available for questions. If any of the participants had questions regarding the measures for this study, the examiner gave the patient the option to complete the questionnaire, indicating her question for the investigator once the questionnaire was collected. The patient was then also given the opportunity to discuss any concerns or further questions with a counselor after the individual or group admission session. In addition, the investigator was available for contact if the participants wished to discuss their questions or concerns.

The assistant research director at the Renfrew Center extracted the measures for this study from the packets, but they did not become part of the patients' treatment files. In addition, the assistant research director coded the measures with an arbitrary number; therefore, there was no link between the measures and the patients. This number was used to ensure confidentiality. No names or other identifier were placed on the questionnaires. In addition, the assistant research director recorded, on the demographics questionnaire, the patient's height and weight that were taken on a calibrated scale at the time of intake.

**Discharge.**

As patients were scheduled for discharge, they completed the discharge packets on the Sunday preceding their discharge. The participants were given the ANSOCQ and the EDI -2 for inclusion in the discharge packet. The instruments were collected in the
same manner as outlined in the intake section for the group administration. In the event that a patient was unexpectedly discharged and was unable to attend this group administration, the assistant research director attempted to collect these measures individually before discharge. The examiner completed the demographics questionnaire from information in the patient chart. Body weight was also obtained as indicated in the previous description, and the measures were coded with the same arbitrary code used for the intake measures. At the completion of this study, the assistant research director destroyed the master list of codes. Throughout this study, the measures used for the purpose of this study could not be connected with the participants' identity. Once the data were collected, the questionnaires were blindly scored by the assistant research director and cross-checked by the investigator.
Chapter III

Results

Forty-four female Caucasian patients completed the intake and discharge questionnaires as participants of this study. There were several patients who did not complete the discharge questionnaires; therefore, they were excluded from the study. The mean length of stay at The Renfrew Center for the participants in this study was 28.4 days (range 12-50 days; SD = 9.27) and the mean age of onset of their eating disorder was 16 years of age (range 5-39 years; SD = 5.77). This section will illustrate the statistical results of this study in order of the hypothesis proposed.

Demographics

Tables 1-4 illustrate the demographics of the sample. The mean age of the sample was 29.04 years (SD = 12.29; range = 18-55). Participants had a mean weight at admission of 93.80 lbs (SD = 11.75), a mean weight at discharge of 105.29 lbs (SD = 12.20) and a mean height of 64.09 inches (SD = 2.52). The participants demonstrated a significant amount of weight gain from admission to discharge, $t(43) = .87, p = .00$. The mean BMI at admission was 16.1 (SD = 1.43; range = 13.0-18.6) and the mean BMI at discharge was 18.0 (SD = 1.28; range = 15.7-20.6). There was a significant difference between the participants’ BMI scores at admission and at discharge, $t(43) = .71, p = .00$ (See Table 5). This revealed that the patient’s BMI scores significantly increased from admission to discharge.
The EDI-2 scores were evaluated on admission ($M = 108.07, SD = 50.15$) and on discharge ($M = 82.18, SD = 51.22$) for comparison. A t-test revealed a significant decrease in the severity of the participants’ disordered eating over the course of treatment, $t(43) = .71, p = .00$. This demonstrated that the severity of the patients’ symptoms of anorexia nervosa decreased between admission and discharge from treatment. The ANSOCQ scores were evaluated on admission ($M = 52.29, SD = 14.35$) and discharge ($M = 65.6, SD = 17.86$) for comparison. Results revealed a significant difference in the participants’ level of readiness to change over the course of treatment, $t(43) = .61, p = .00$. This suggested that the patient’s level of readiness to change had increased or had become more ready to change after treatment.

**Readiness to Change and Severity of Anorexia Nervosa**

A one tailed Pearson product moment correlation comparing readiness to change at admission and severity of eating disordered symptoms at discharge revealed a significant negative correlation, $r = -.53, p = .00$. Therefore, as patients got more ready to change, the severity of their eating disorder improved or they reported less symptomatology. Further analysis was conducted comparing readiness to change and specific characteristics of Anorexia Nervosa (i.e., Perfectionism and Interpersonal Distrust) as defined by subscales of the EDI-2. A significant negative correlation between readiness to change at admission to treatment and Perfectionism at discharge was found, $r = -.51, p = .00$. This means that as a patient got more ready to change, the degree of perfectionism they exhibited decreased. In addition, a one tailed Pearson
product moment correlation revealed a significant negative correlation between readiness to change at admission to treatment and Interpersonal Distrust at discharge, 
\[ r = -.46, p < .01. \] This revealed that as a patient got more ready to change, their distrust of others decreased.

A regression analyses revealed that level of readiness to change at intake was significantly able to predict severity of symptoms of disordered eating at discharge, \( F (1, 39) = 7.78, p < .01. \) This suggested that the evaluation of a patient’s level of readiness to change at admission to treatment could predict the continued severity of symptoms of disordered eating that they would display. The severity of symptoms of disordered eating was computed by calculating the difference between the EDI-2 total score at admission and the EDI-2 total score at discharge using residual gain scores. To compute the residual gain scores, first, the predicted posttest score was calculated by: a) taking the correlation between the pretest and posttest and multiplying this value by the ratio of the standard deviation of the posttest with the standard deviation of the pretest; b) multiplying this quantity by the quantity resulting from taking the pretest score for each person minus the mean of the pretest scores and squaring this entire quantity; and c) adding this quantity to the mean of the posttest. The residualized gain score was calculated by taking a participant’s actual posttest score and subtracting from it the predicted posttest score.
Readiness to Change and Weight

A one tailed Pearson product moment correlation was conducted to compare readiness to change at admission to treatment with weight gain over the course of treatment; no significant correlation was found. Therefore, the patient’s level of readiness to change at admission did not significantly affect their weight gain throughout treatment. In this analysis, weight gain was computed by transforming the difference between weight measures at admission and weight measures at discharge into residual gain scores computed as described previously.

Readiness to Change and Compliance

A comparison between level of readiness to change and compliance in treatment could not be computed since all of the participants in this study were compliant with treatment. The individuals in treatment who were not compliant were excluded from the study because they did not complete the discharge measures.
An independent samples t-test was conducted to compare readiness to change at admission to treatment and the previous inpatient treatment history. That is, a comparison was made between patients who were in their first hospitalization and those who had been hospitalized before for eating disordered problems. The level of readiness to change at admission of patients who had been previously hospitalized \((N = 27)\) was compared with the level of readiness to change of patients who had not been previously hospitalized \((N = 17)\) and it was not significant. Therefore, patients who were previously hospitalized did not enter this treatment admission with a higher level of readiness to change than patients who were admitted for the first time.
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<td>Divorced</td>
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<td>Student</td>
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<tr>
<td>Unemployed</td>
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</tr>
<tr>
<td>Skilled Manual Labor</td>
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<tr>
<td>Non-manual Skilled Labor</td>
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<td>Professional</td>
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Table 3

Patient’s Mother’s Occupation

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<tr>
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<tr>
<td>Skilled Non-manual Labor</td>
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Table 4

Patient’s Father’s Occupation

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Table 5

Means and Standard Deviations of Body Mass Index and Weight Measures

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<td></td>
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<td>SD</td>
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<td>BMI</td>
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<td>Weight</td>
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Chapter IV

Discussion

This study examined the role of the motivation to change on treatment outcome in individuals with anorexia nervosa. In various other psychiatric disorders and behavioral modification problems such as addictions, weight control, and smoking cessation, readiness to change has been found to influence significantly the rate of relapse of individuals (DiClemente, 1999; Hilburger & Lam, 1999; Koraleski & Larson, 1997). Only a minimal number of researchers have attempted to link readiness to change with eating disorders, therefore further research is essential. Because of the difficulty of treatment (Kaplan & Garfinkel, 1999) and the high rate of relapse, it is evident that motivation to change should be studied with an eating disordered population.

The first hypothesis proposed in the present study stated that the individuals with anorexia nervosa who enter treatment with a higher level of readiness to change will achieve a greater reduction in the severity of their eating disorders at discharge. The results revealed a significant negative correlation between level of readiness to change and severity of anorexia nervosa. This suggests that patients who begin treatment with a greater readiness to change make more progress in treatment. This finding is supported by Treasure, Katzman, Schmidt, Troop, Todd, and de Silva (1999) who found that only one of the 9 patients in the action stage dropped out during the first 4 weeks of treatment as compared with 22 of 82 patients in the contemplation stage. They also reported that there was a significant difference in levels of improvement between those in the contemplation stage versus those in the action stage (Treasure, Katzman, Schmidt, Troop, Todd & de Silva, 1999).
The second hypothesis proposed that patients’ level of readiness to change at admission will predict change in severity of symptoms at discharge. This hypothesis was supported, as patients’ readiness to change at admission was able to predict their success in treatment. In other research, stage of change failed to predict clinical outcome (Levy, Lucks, & Pike, 1998; Pike, 1998). This may be due possibly to the measures used to assess readiness to change, because many measures assess only single-symptom problems rather than the multiple symptoms of eating disorders. For example, Geller, Cockell and Drab (2001) found that readiness could differ across symptom domains; therefore, a patient’s readiness to change should not be judged simply on one symptom. Given this information, this study used the ANSOCQ, an assessment tool specifically designed for the complex nature of AN, which was able to successfully measure and predict treatment success based on motivation to change.

Anorexia nervosa is frequently associated with chronicity. Herzog et al. (1999) reported that 40% of anorexic patients relapse after full recovery. Treatment programs often apply the same treatment to each patient regardless of her readiness to change. This attempt to change a patient who is not ready to change may develop a mismatch between the therapist and the client’s readiness, producing a battle of weight and food (Geller & Drab, 1999). Therefore, treatment programs can greatly improve the present treatment strategies by incorporating an evaluation of readiness to change, tailoring treatment based on the patient’s readiness level. These new treatment strategies could potentially reduce the high relapse rate in anorexia nervosa.

The third hypothesis in the present study proposed that there would be a significant negative correlation between level of readiness to change and the severity of
several specific characteristics of AN defined by the subscales of The Eating Disorder Inventory-2 (Garner, 1991). This means that the patients admitted for treatment at The Renfrew Center with a higher level of readiness to change would be discharged with a significant decrease in their perfectionism and distrust of others. The results confirmed this hypothesis.

Bizeul, Sadowsky, & Rigaud (2001) supported this correlation with their conclusion that the total EDI score, the perfectionism subscale and the interpersonal distrust subscale were significantly related to illness severity and could predict a long-term severe outcome in AN (Bizeul, Sadowsky, & Rigaud, 2001). In addition, Halmi, Sunday, Strober, Kaplan, et al. (2000) reported that perfectionism is a prominent characteristic of the personality background of individuals with AN. Therefore, patients’ motivation to change at admission is definitively a key factor in the success of treatment, reducing the severity of anorexia in multidimensional areas.

The fourth hypotheses suggesting that there would be a significant positive correlation between level of readiness to change and weight gain was not supported. This present study has found significant relationships between readiness to change and severity of eating disordered symptoms. Therefore, this finding suggests that weight gain may not be a good indicator of treatment success. Many mental health professionals use weight gain as the measure of improvement in patients with anorexia nervosa. However, anorexia nervosa is a complex disorder with many different facets of symptomatology. Therefore, weight gain during treatment may not be sign of permanent improvement as evidenced by a history of high relapse rates in individuals with anorexia nervosa. Instead, it may be a temporary result of the treatment environment. For instance, patients
in inpatient programs are closely monitored to ensure weight gain, whether they want to or not. These results suggest that the treatment of the underlying issues of the eating disorder should be the focus of treatment and the weight gain may follow improvement in these underlying issues.

In support of the present study, Fassino, Abbate Daga, Amianto, Leombruni (2001) reported that BMI is not always a reliable nor is it a stable index of psychopathological improvement. They conducted a study on the outcome predictors in anorectic patients after 6 months of multimodal treatment. They found that the only significant difference between the improved group and the not-improved group on BMI was at admission. However, BMI did not represent a factor in the difference between these groups after treatment (Fassino, Abbate Daga, Amianto, Leombruni, 2001).

In addition, Stice (2002) concurred with the present study that body mass was not a good indicator of treatment success. He reported that body mass may play an important role in promoting the risk factors for eating pathology but a lesser one in fostering or maintaining eating disturbances. He also found that the relationship between body mass and eating pathology was trivial but significant. Therefore, body mass may be a factor in the treatment of eating pathology, but many more factors are involved for permanent improvement (Stice, 2002).

The last hypothesis was not supported; this hypothesis suggested that patients who had been hospitalized previously would present at admission with a higher level of readiness to change than patients being admitted for their first hospitalization. Therefore, there was no significant difference in the readiness to change of the patients on their first hospitalization and that of patients who had been previously hospitalized. These results
support the present study concerning the importance of readiness to change in treatment as well as modifying the treatment process to address patients’ readiness to change. If patients who have been in treatment before do not entering the present hospitalization with a higher level of readiness to change then their previous treatments did not permanently improve their readiness to change.

Herzog et al. (1999) reported that 40% of anorexic patients relapse after full recovery. Therefore, the present treatment strategies are lacking in their ability to sustain the gains made in treatment. This study has shown that as the patients’ readiness to change improved, the severity of their eating disorder decreased. Therefore, incorporating readiness to change in treatment approaches may be a vital focus in treatment.

*Implications on Treatment*

Since the present study and supporting research suggests that patients in a more advanced level of readiness to change exhibit more progress in treatment, how does this benefit patients who present at treatment with a lower level of readiness to change? Traditionally, treatment for anorexia nervosa is aimed at people who are in the action stage. In therapy, it is believed that therapeutic intervention needs to be targeted at either increasing their concern about the problem or in motivating the patient to, at least, contemplate active change for treatment success (O’Hare, 1996). However, the mental health community has been treating patients with anorexia nervosa with the same programs, regardless of their level of readiness to change and have thus continued to
struggle with high relapse rates. It is, therefore, important that researchers and clinicians begin to look to clients' readiness to change and to learn how to tailor their treatment to match the patients' emotional, physical and mental states in order to facilitate motivation.

The present study validates the fact that readiness to change is a vital factor in the treatment of anorexia nervosa. It has been found that as the patients' level of readiness to change increases, their severity of symptoms at discharge decreases. In addition, the results revealed that if patients' level of readiness to change is evaluated at admission then the severity of their eating disorders could be predicted at the end of treatment. Therefore, treatment should be tailored for those individuals for whom poor outcome is predicted.

In support of this recommendation, The Transtheoretical Model of change suggests that the counselor should engage in a different set of procedures depending on the readiness for change of the client (Annis, Schober, & Kelly, 1996; Hodgins, Ungar, el-Guebaly, & Armstrong, 1997). Therapists should use different types of interventions with individuals at different stages of change. For instance, individuals in the contemplation or preparation stage should be engaging in experiential processes of change in therapy. However, individuals past the preparation stage of change should move into behavioral processes of change, including behavioral changes (Perz, DiClemente, & Carbonari, 1996). It is important to recognize these stages of change as well as the appropriate method of therapy to apply to each individual; the treatment that is not compatible with patient readiness could produce failure in therapy (Koraleski & Larson, 1997). The therapist may be able to engage the client in the proper interventions by teaching, modeling, practicing, and reinforcing behavioral techniques.
Further research is needed to investigate the proper treatment strategies for patients at different stages of change, including methods necessary to increase patients’ stages of change. Consistently, Treasure and Schmidt (2001) reviewed the impact of motivational interviewing on treatment for eating disorders. They suggested that motivational interviewing has been as successful if not more rapidly successful in the treatment of eating disorders. In addition, Feld, Woodside, Kaplan, Olmsted and Carter (2001) evaluated motivational enhancement therapy to determine its success with eating disorders and were found to positively influence participants’ motivation to change. It was reported that participants viewed their behavior as more of a problem after participating in the MET interventions (Feld, Woodside, Kaplan, Olmsted, & Carter, 2001).

Limitations of this study

One possible limitation of this study is the inconsistency in length of stay across patients, based on patient need. Not all patients are able to participate in the same time limited program due to various reasons. Each patient begins the same treatment program; however, the patients have to leave at different times and all do not get the same amount of treatment.

A second limitation is that this study does not allow for follow up. This constraint restricts the present research to evaluating treatment success at discharge from treatment. Therefore, this study was not able to monitor the patients’ progress longitudinally in order to determine if the patient’s reduction in symptoms was maintained.
Another limitation is that The Renfrew Center treats individuals with private insurance or with the ability to pay privately. Therefore, this study could generalize only to those populations. In addition, the EDI-2 (Garner, 1991) was given to the participants as a group on the weekend following their admission. It would be ideal to give this measure at the day of admission; however, because of the physical and mental condition of these individuals at admission, this measure could be too difficult for them to complete. The admissions are scattered throughout week; therefore, the time between intake and completion of the EDI-2 (Garner, 1991) varied. This limitation must be kept in mind due to the varying amounts of time among patients between their admission and the completion of the EDI-2 (Garner, 1991).

In addition, because of this procedure for administering the discharge packets, there were some patients who were discharged unexpectedly. These patients were not able to attend the group administration to complete the measures. In this case, the assistant research director attempted to give the patient an opportunity to complete the measures on an individual administration basis. In the event that the patient was still unable or unwilling to complete the measures, then that participant was excluded from the study. Therefore, the only patients who were able to participate in this study were those who were considered compliant with treatment. Since many patients had to be excluded from the study because they did not complete the discharge questionnaires, the sample size was smaller than ideal.
Conclusions

The study presented in this dissertation explored the influence of motivation to change on the treatment outcome of individuals with anorexia nervosa both through a review of literature and through completing research to ascertain the nature of this relationship. Despite the limitations presented previously, there were several important findings that resulted from this study.

Results suggested that as patients’ readiness to change increases then the severity of their anorectic symptomatology decreases. In addition, it was also found that as patients’ level of readiness to change increases, their distrust of others and their perfectionism decreases. The results also suggested that an evaluation of patients’ level of readiness to change at treatment admission could predict their treatment outcome or the severity of their anorectic symptomatology at discharge. However, this study also suggested that there was not a relationship between patients’ readiness to change and their weight gain in treatment. These results may provide valuable contributions toward the understanding, maintenance and treatment of anorexia nervosa.

Further research should take a longitudinal approach to determine whether the positive effects that increasing readiness to change has on treatment outcome can be sustained long term. Additional research should investigate the influence of a readiness to change on treatment outcome for anorexia nervosa of other socioeconomic and cultural populations. It would also be beneficial to replicate this study in a setting in which there is more control over patients’ length of stay; the replication would also include the process of administering the research questionnaires. In addition, further research is
needed to investigate specific treatment interventions that would be appropriate for each level of readiness to change as well as other treatment interventions to increase a patient's readiness to change.
References


Engagement and outcome in the treatment of bulimia nervosa: First phase of a sequential design comparing motivation enhancement therapy and cognitive behavioral therapy. *Behavior Research and Therapy, 37*(5), 405-418.


Appendix A
Demographic Sheet

Patient #: ______________________
Age: ______________________
Ethnicity: ______________________
Admission Weight: ______________________
Height: ______________________
Discharge Weight: ______________________
Length of Stay: ______________________
# of prior hospitalizations: ______________________
marital status: ______________________
education level: ______________________
type of discharge: ______________________
age of onset: ______________________
comorbid diagnoses: ______________________
Compliant: yes no
Appendix B

Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ)

Date: ________________

DIRECTIONS: Each of the items below is made up of five statements. For each item, please read the five statements carefully. Then select the statement which best describes your current attitude or behavior (not how you have been in the past or how you would like to be). If you have any problems, please ask for assistance. Please fill in the date before beginning.

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

2. The following statements refer to body weight:
   - As far as I am concerned, I do not need to weight at least ____ lbs. (insert your minimal normal weight).
   - In some ways I think that I might be better off if I weighted at least ____ lbs.
   - I have decided that I will attempt to reach at least ____ lbs.
   - At the moment I am putting in a lot of effort to reach at least ____ lbs.
   - I am working to maintain a weight of at least ____ lbs.
3. The following statements refer to parts of your body which may particularly concern you in terms of weight gain (such as hips, thighs, stomach or buttocks):

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

4. The following statements refer to your appearance:

- I do not want to be a normal weight because I would be less satisfied with my appearance at a weight of at least ____ lbs (insert your minimal normal weight).
- I have occasionally thought about being a normal weight because in some ways I would be more satisfied with my appearance at a weight of at least ____ lbs.
- I have decided to reach a normal weight because I would be more satisfied with my appearance at a weight of at least ____ lbs.
- I am presently trying to reach a normal weight because I will be more satisfied with my appearance at a weight of at least ____ lbs.
- I am working to maintain a normal weight because I am more satisfied with my appearance at a weight of at least ____ lbs.

5. The following statements refer to your health:

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

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

• I do not exaggerate the importance of my body shape or weight in determining my happiness and success

• Sometimes I think that I exaggerate the importance of my body shape or weight in determining my happiness and success

• I have decided that I need to reduce the importance that I place on my body shape or weight in determining my happiness and success

• I often try to challenge the importance that I place on my body shape or weight in determining my happiness and success

• I have succeeded in reducing my tendency to place too much importance on my body shape or weight in determining my happiness and success and want it to stay this way.

7. The following statements refer to a fear of fatness:

• My fear of becoming fat is not excessive.

• I occasionally think that my fear of becoming fat is excessive.

• I have decided that I need to do something about the fear I have of becoming fat because it is controlling me.

• I know that my fear of becoming fat has caused problems and I am now trying to correct this.

• I have succeeded in reducing my fear of becoming far and want it to stay this way.

8. The following statements refer to weight loss:

• I would prefer to lose more weight.

• Sometimes I think that it might be time to stop losing weight.

• I have decided that it is time to stop losing weight.
• I am trying to stop losing weight.
• I have managed to stop losing weight and hope to stay this way.

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

10. The following statements refer to the rate of weight gain:
• There is no way I would be prepared to gain at least one pound a week.
• Sometimes I think I would be prepared to gain at least 1 pound a week.
• I have decided that in general it would be best for me to gain at least 1 pound a week.
• I am putting in a lot of effort to gain at least 1 pound a week.
• I am working to maintain my weight but would be prepared to gain at least 1 pound a week if necessary.

11. The following statements refer to certain shape and weight standards which you may have for evaluating your body (such as only being satisfied with your body when your stomach is flat or when you are below a certain weight):
• The standards I use to evaluate my body are not too strict.
• Sometimes I think that the standards I use to evaluate my body may be too strict.
• I have decided that the standards I use to evaluate my body are too strict and need to be changed.
• I am putting in a lot of effort to change the strict standards which I use to evaluate my body.

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

12. The following statements refer to certain foods which you may avoid eating (such as food high in calories or fat, red meat or dairy products):

• There are certain foods which I strictly avoid and would not even consider eating.

• There are certain foods which I try to avoid, although sometimes I think that it might be okay to eat them occasionally.

• I think that I am too strict in the foods which I allow myself to eat and have decided that I will attempt to eat foods which I usually avoid.

• I am putting in a lot of effort to regularly eat foods which I usually avoid.

• I used to avoid eating certain foods which I now eat regularly.

13. The following statements refer to daily food consumption:

• There is no need for me to eat 3 standard-size meals and a snack each day.

• Sometimes I think that I should eat 3 standard-size meals and a snack each day.

• I have decided that I need to eat 3 standard-size meals and a snack each day.

• I am putting in a lot of effort to eat 3 standard-size meals and a snack each day.

• I am working to maintain a current eating patterns which includes 3 standard-size meals and a snack each day.

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

• There is nothing wrong with the amount of time I spend thinking about food and my weight.

• The amount of time I spend thinking about food and my weight is a problem sometimes.
• I have decided that I need to use strategies to help me reduce the amount of time I spend thinking about food and my weight.

• I am using strategies to help me reduce the amount to time I spend thinking about food and my weight.

• I used to spend too much time thinking about food and my weight which I have managed to reduce and am working to keep it this way.

14. The following statements refer to certain eating behaviors (such as needing to eat food at a specific rate or time, moving food around on the plate, being unable to eat all food on a plate taking longer than others to eat meals, having difficulty eating with others, needing to chew food a certain number of times, or needing to stick to the same food plan each day):

• There is nothing that I need to change about the way I eat my meals.

• I sometimes think that I need to change aspects of the way I eat my meals.

• I have decided that I will try to change aspects of the way I eat my meals.

• I am putting in a lot of effort to change aspects of the way I eat my meals.

• I have succeeded in changing aspects of the way I eat my meals and want it to stay this way.

15. The following statements refer to feelings associated with eating (such as feeling guilty) and not eating (such as feeling in control):

• There is no need for me to change the feelings I associate with eating and not eating.

• I sometimes think that I need to change the feelings I associate with eating and not eating.

• I have decided that I will try to change the feelings I associate with eating and not eating.

• I am putting in a lot of effort to change the feelings I associate with eating and not eating.

• I have succeeded in changing the feelings I associate with eating and not eating and want it to stay this way.
16. The following statements refer to methods which you may use to control your weight (such as restricting your eating, exercising, vomiting, taking laxatives or other pills). You may select more than one statement for the different methods you use to control your weight. Please indicate which weight control method/s you are referring to in the blank space/s provided.

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

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

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

19. The following statements refer to certain characteristics (such as perfectionism, low self-esteem or feeling a need for control):

- I do not have any problems in the way I approach life which I need to work on.
- I sometimes think that I may have certain problems in the way I approach life which I need to work on.
• I have certain problems in the way I approach life which I have decided to work on.

• I am actively working on problem in the way I approach life.

• The problems in the way I approach life improved and I am trying to keep it this way.

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

• I do not have any problems in my relationships with others which I need to work on.

• I sometimes think that I may have certain problems in my relationships with others which I need to work on.

• I have certain problems in my relationships with others which I have decided to work on.

• I am actively working on problems in my relationships with others.

• The problems in my relationships with others have improved and I am trying to keep it this way.
Appendix C

Procedure Manual for Individual Administration

This manual will provide instructions for the administration of the Anorexia Nervosa Stages of Change Questionnaire and the informed consent form for the present study. Please follow these instructions carefully to ensure that the administration process is standardized. Please read through this manual before administering questionnaires to the participants. This study will include all patients that are admitted with a diagnosis of Anorexia Nervosa admitted to The Renfrew Center and who meet exclusionary and inclusionary criteria. The questionnaires for these individuals will be previously provided by Rachel Calogero-Wah, assistant research director. If you have any questions regarding the administration instructions for this study, please contact Rachel Calogero-Wah at the Renfrew Center or the investigator, Darlene Link at (610) 805-6744.

All patients with a diagnosis of Anorexia Nervosa will be given the informed consent form and the Anorexia Nervosa Stages of Change Questionnaire at the admission session. All participants must first complete the informed consent form. A brief explanation of the study will be included in this manual to use in explaining it to the patient. Participants may choose to drop out of the study at any time.

Please be sure that all participants date each of the measures. Instruct patients to read all the instructions carefully and ask any questions that they may have. If a patient has a question about the questionnaire, direct the patient back to the instructions and give the patient the option to complete the questionnaire. Then, give the patient the opportunity to discuss any concerns or further questions with a counselor after the admission. Please do not attempt to help the patient interpret any of the questions.
Please indicate the patient’s question on the measure after they have completed it and handed it in. If the patient needs or wants to discuss their questions or concerns regarding the measures further, please contact Darlene Link at (610) 805-6744. In this case, notify the patient that the investigator, Darlene Link, will be contacting them to discuss their concerns. After the patients have completed the questionnaire, please return them to Rachel Calogero in the research department at The Renfrew Center.
Appendix D

Renfrew Center Research Consent Form

Enclosed are several assessment measures that must be completed during the time provided. It is expected that it will take approximately 60 minutes to complete the questionnaires. We are asking you to complete these instruments to help your treatment team learn about you as an individual. It is essential to perform a thorough assessment before effective treatment can be undertaken. If any of the questions seem unusual, please remember that they are designed to assess a wide range of problems. There are no right or wrong answers so try to be completely honest in your responses. You have the right to view the results of any of these questionnaires at any time.

The Renfrew Center conducts ongoing research related to the causes and treatment of problems specific to women’s development. Periodically, studies are completed based on this research and may appear in scholarly journals. No identifying information of participants is ever published or even connected with the data. There are no anticipated risks involved in completing these questionnaires. If you decide not to give consent, this will in no way affect your treatment at Renfrew. Although it is necessary to complete this packet so information can be provided to your treatment team, your information will not be used for any further research purposes. You may also request that your data not be used at a later time if you desire. Allowing your data to be used for research purposes will benefit other women struggling with similar issues. Thank you for your time and your assistance.

If you have any questions please leave a message for Rachel Calogero-Wah or speak with a member of your treatment team.

“I have read the above and have been given the opportunity to discuss it and to ask questions. By checking the box below and signing this document I give my consent for my information to be used for research purposes, knowing that my identity will never be disclosed.”

☐ I agree that my responses to the questionnaires can be anonymously used for research purposes

_________________________          __________________________
Signature                     Witness

_________________________
Date                     __________________
Date
Appendix E
Procedure Manual for Group Administration

This manual will provide instructions for the administration of the Eating Disorder Inventory-2 for the present study. Please follow these instructions carefully to ensure that the administration process is standardized. Please read through this manual before administering questionnaire packets to the participants. This study will include all patients that are admitted with a diagnosis of Anorexia Nervosa admitted to The Renfrew Center and who meet exclusionary and inclusionary criteria. The packets for these individuals will be previously arranged by Rachel Calogero-Wah, assistant research director. If you have any questions regarding the administration instructions for this study, please contact Rachel Calogero-Wah at the Renfrew Center or the investigator, Darlene Link at (610) 805-6744.

All patients will be administered a packet in a group setting. Participants will have already completed informed consent for this study at their admission session. All participants with a diagnosis of Anorexia Nervosa should already have the Eating Disorders Inventory - 2 as an inclusion to the intake packet. Participants may choose to drop out of the study at any time.

Please be sure that all participants date each of the measures. Instruct patients to read all the instructions carefully and ask any questions that they may have. If a patient has a question, direct the patient back to the instructions and give the patient the option to complete the questionnaire. Then, give the patient the opportunity to discuss any concerns or further questions with a counselor after the group. Please do not attempt to help the patient interpret any of the questions. Please indicate the patient’s question on
the measure after they have completed it and handed it in. If the patient needs or wants to discuss their questions or concerns regarding the measures further, please contact Darlene Link at (610) 805-6744. In this case, notify the patient that the investigator, Darlene Link, will be contacting them to discuss their concerns.

After the patients have completed the packets, please return them to Rachel Calogero in the research department at The Renfrew Center.
the measure after they have completed it and handed it in. If the patient needs or wants to discuss their questions or concerns regarding the measures further, please contact Darlene Link at (610) 805-6744. In this case, notify the patient that the investigator, Darlene Link, will be contacting them to discuss their concerns.

After the patients have completed the packets, please return them to Rachel Calogero in the research department at The Renfrew Center.