

# REVIEW

## Holistically addressing motivation and maladaptive traits in anorexia nervosa: Impact on prognosis and treatment outcomes

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### Abstract

Anorexia Nervosa (AN) is a serious psychiatric disorder, characterized by restriction of energy intake, low body weight, intense fear of weight gain, and a disturbance in body weight self-perception. Severe and Enduring AN (SE-AN) is a long-lasting (typically 5-7 or more years and marked by several unsuccessful treatment attempts) form of AN. Traditional treatments, centering on weight restoration and core eating pathology, may be part of the reason rates of treatment dropout are high and long-term outcomes are poor, particularly in SE-AN. For SE-AN patients, who have a past marked by failed traditional treatment attempts, multidimensional treatments, addressing motivation to change and maladaptive traits, may improve a range of patient outcomes outside of eating-related symptoms, such as quality of life and interpersonal functioning. The objective of this narrative review is to briefly examine motivation-related factors (e.g., hope and readiness to change), experiential avoidance, perfectionism, and obsessive-compulsiveness, and the impact of treatment approaches incorporating these individual characteristics on various patient outcomes. In conclusion, a holistic, multidimensional, person-centred recovery approach that accounts for (a) illness severity/chronicity, (b) individual traits, and (c) motivational factors (with a secondary focus on weight gain/eating pathology), could improve quality of life outcomes, particularly in SE-AN. Additionally, integrating patient perspectives, insights, and values into developing/testing novel person-centred interventions is paramount in order to holistically address the underlying biopsychosocial causes and perpetuating factors of AN, and to better understand the trajectory of chronicity.

### Introduction

Anorexia Nervosa (AN) is a serious psychiatric disorder. It is characterized by restriction of energy intake leading to a significantly lower body weight, intense fear of weight gain, disturbance in body-weight self-perception, and/or efforts to avoid weight gain even if significantly underweight<sup>1</sup>. Although the lifetime prevalence of AN is low (approximately 1%)<sup>2</sup>, it has a worse prognosis and higher mortality rate than other eating, mood, and anxiety disorders<sup>3</sup>. Severe and enduring anorexia nervosa (SE-AN) is a long-lasting form of AN (typically 5-7 or more years and marked by several failed treatment attempts)<sup>4,5</sup>. Traditional treatments, such as those entailing inpatient or outpatient treatment of AN focused on normalized eating and weight gain, are generally not effective for SE-AN<sup>5,6</sup>. This may be because lack of acceptability is a primary contributor to a lack of treatment response in SE-AN patients. In SE-AN, treatment approaches may be more effective when treatment outcomes other than weight gain are the primary focus: particularly improving quality of life, reducing medical comorbidities, increasing hope and empowerment and purpose, reducing isolation and depression, and improving general functioning (e.g., helping patients secure employment and access to housing)<sup>7-9</sup>.

SE-AN has been conceptualized as the last stage in the severity spectrum of AN, wherein patients

begin at the high-risk stage, move to prodrome, then to full syndrome, and lastly to SE-AN<sup>10</sup>. Predictors of chronicity and progression to SE-AN are late age of AN onset, long duration of illness, a history of psychiatric hospitalizations, severely low BMI (below 16kg/m<sup>2</sup> based on DSM-V criteria), extreme ambivalence/lack of motivation to change, psychiatric/physical comorbidities, a history of purging, substance abuse, maladaptive personality traits (e.g., obsessive-compulsive features), an ego-syntonic attachment to maintaining a low weight, and poor premorbid psychosocial functioning<sup>8,11-14</sup>.

The current review will critically examine various prognostic characteristics of AN and how multidimensional treatments accounting for these factors could influence a range of treatment outcomes. Herein, I propose that among patients who have failed traditional treatments, multidimensional person-centred treatment approaches accounting for motivational factors and maladaptive traits, in addition to weight restoration (which will help to ensure that the patient can engage in the cognitive processes involved in multidimensional therapies, such as decisional balance)<sup>8</sup>, may improve long-term outcomes. Firstly, the role of motivation to change will be evaluated in relation to chronicity and treatment outcomes, in addition to interventions that emphasize motivational enhancement. Secondly, there will be an analysis of the

traits of (a) experiential avoidance, (b) perfectionism, and (c) obsessive-compulsiveness, and their role in chronicity and treatment effectiveness. Various treatment approaches that account for these traits will be reviewed. Although these traits may be secondary to starvation in some patients, in SE-AN patients these traits are often premorbid and enduring, contributing to its chronicity.

Holistic treatment approaches targeting a wide range of individual differences including premorbid maladaptive traits (and associated interpersonal and global functioning deficits) and motivational factors may be particularly clinically relevant for SE-AN, given the high levels of disability, resistance to traditional treatments, and low motivation associated with this form of AN<sup>5,11</sup>. Furthermore, integrating patient perspectives, insights, and values into developing and refining novel treatment approaches is paramount in order to holistically address the underlying biopsychosocial causes and perpetuating factors of AN. In addition, it will help generate a better understanding of the trajectory of chronicity. More qualitative research involving patient feedback on these novel treatment approaches could be a means to accomplish this.

### Motivation-Related Factors and Patient Outcomes

Low motivation to change in AN may reflect the

reinforcing nature of eating disorder symptoms, such as the anxiolytic effects of restriction, binge-purging, and excessive exercise. Together, these serve as a means of escape from distressing internal experiences, such as emotions, thoughts, and memories (i.e., experiential avoidance)<sup>15</sup>. Although experiential avoidance is typically a pre-existing trait in AN, once the illness develops it serves to reinforce the cycle of weight loss, brain malnutrition, social avoidance, loss of connections, and obsessions/compulsions relating to food and weight control (Figure 1)<sup>6</sup>.

Experiential acceptance, on the other hand, is associated with increased motivation to change eating disorder behaviors, leading to greater improvements in eating disorder pathology<sup>15</sup>. Experiential acceptance can be enhanced through certain treatment approaches such as Acceptance and Commitment Therapy (ACT)<sup>15</sup>. The core skills of ACT are to foster acceptance of negative emotions and thoughts, and commitment to engaging in behaviors consistent with one's overarching life values during times of internal distress, instead of engaging in eating disordered behaviors as a means of avoidance<sup>16</sup>. Experiential acceptance can make patients more intrinsically motivated to develop healthy coping strategies in line with their personal values, and to deal with premorbid negative affect<sup>15</sup>. Approaches enhancing motivation have also been shown to improve SE-AN patient outcomes; including

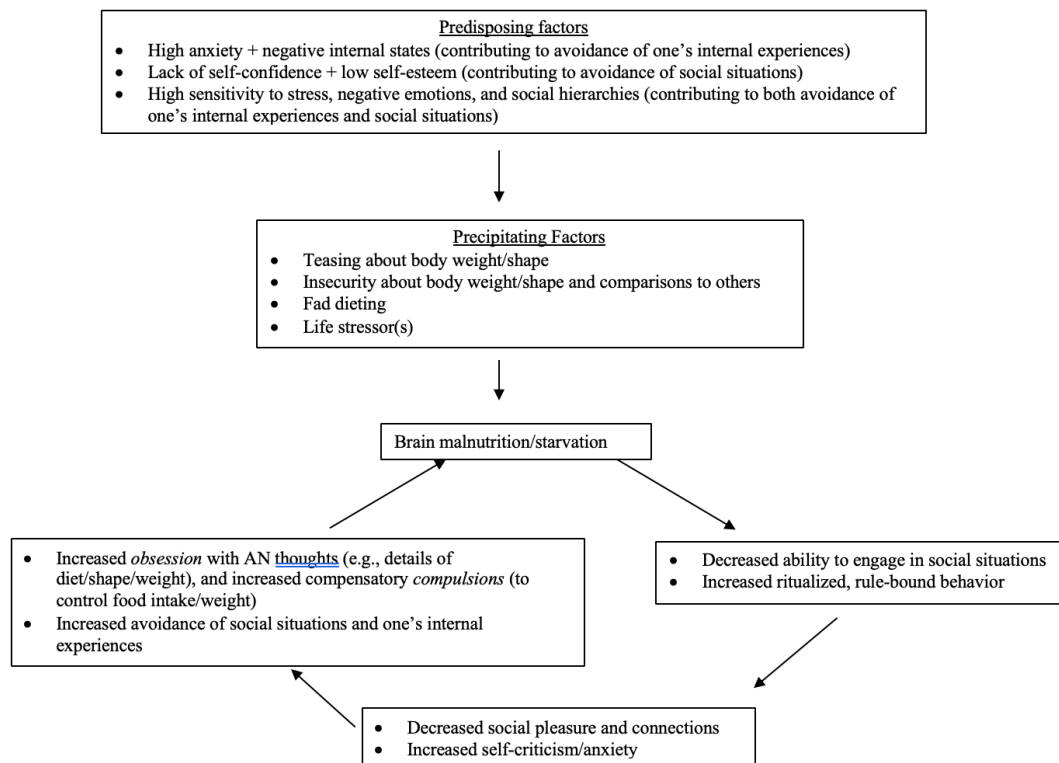


Figure 1. A modified model of experiential and social avoidance in Anorexia Nervosa and how it precedes as well as perpetuates the illness. Adapted from Treasure & Schmidt (2013)<sup>30</sup>.

core eating pathology and social functioning<sup>17</sup>.

Given that hopelessness and low motivation are components of depression, targeting depressive symptoms early in the course of AN may prevent the onset and perpetuation of SE-AN. Arkell and Robinson (2008)<sup>21</sup> found that SE-AN patients were severely depressed, and that depression scores were strongly correlated with poor quality of life outcomes, including self-care and social contact. Furthermore, quality of life-related outcomes in SE-AN have been found to be as poor as in patients with other chronic mental illnesses, including schizophrenia and severe major depressive disorder<sup>9</sup>. Future research should further investigate the clinical utility of targeting depression in SE-AN and identify which treatment approach is optimal to target the severe and disabling levels of depression in this population. Although depression may often occur secondary to nutritional deprivation, it is often also a premorbid trait of SE-AN, and its role in chronicity warrants further investigation<sup>21</sup>.

### *Online Support Groups/Forums*

Use of recovery-oriented online support groups (or forums) could reduce the depression and isolation that often accompanies AN, particularly when it is chronic, thereby improving quality of life<sup>21,22</sup>. Recovery-oriented forums increase motivation by helping patients to understand the benefits of recovery and increasing their levels of empowerment<sup>22</sup>. Empowerment is critical in AN patients, because they are a population who tend to have low perceived self-efficacy. In addition to hearing others' experiences of recovery, patients can be empowered to engage in treatment differently – and more successfully – due to factors in their lives that change with age, such as maturity, increased insight into their illness, and medical complications. Overall, online support groups are low-cost and easily accessible, meaning they could reduce the burden of AN on health services and positively influence outcomes such as quality of life and motivation to change, which are especially relevant for SE-AN patients<sup>17</sup>.

### *Peer Support/Mentoring*

Peer mentoring is a form of psychosocial support that occurs between someone who has lived experience with mental illness recovery, and a mentee who is newer to the experience of mental illness and recovery. Peer mentoring can improve a mentee's motivation to change; a preliminary, cross-sectional, peer mentoring study for eating disorders found that mentees reported improvements in several quality of life domains, including education and vocation, family and close relationships, future outlook, and overall psychological, emotional, and physical wellbeing<sup>23</sup>. A

smaller feasibility study reported that peer mentoring appears to be an acceptable and feasible adjunct to traditional outpatient treatment for AN; qualitative results showed it helped to instill hope in mentees and increase or sustain their motivation to change<sup>24</sup>. Future research could further investigate the acceptability and effectiveness of peer mentoring in improving a range of long-term outcomes, including motivation, functioning, and other quality of life-related outcomes that are particularly poor in SE-AN patients<sup>21</sup>.

### *Maudsley Anorexia Nervosa Treatment for Adults (MANTRA)*

Low self-esteem, self-efficacy and hopelessness have been found to be associated with a worse prognosis in AN<sup>7,25</sup>. Maudsley Anorexia Nervosa Treatment for Adults (MANTRA) is an intervention that uses a Cognitive Behavioural Therapy (CBT) and motivational interviewing framework, designed to help individuals reduce ambivalence about change and examine the benefits and consequences of AN from a multidimensional perspective<sup>25</sup>. MANTRA focuses on a set of identified psychosocial predisposing and maintaining factors for AN, including cognitive style, rigidity, perfectionism, obsessiveness, experiential avoidance, and poor social functioning; its aim is to improve these psychosocial factors in order for patients to be more motivated to institute nutritional changes (in contrast to traditional treatments focusing primarily on eating and weight gain)<sup>25, 26</sup>. MANTRA is delivered in individualized modules targeting various patient-specific characteristics (e.g., social and emotional difficulties, patient strengths and supports, and maladaptive traits) that play a role in the development and maintenance of AN. It has been found to significantly improve motivation to change, psychosocial functioning, general psychopathology, and eating disorder pathology when tested in heterogeneous AN populations that ranged in severity<sup>25,27</sup>.

Components of MANTRA include perpetuating factors and predisposing/premorbid factors<sup>25</sup>. The perpetuating factors are depicted in a 'vicious flower' diagram formulation: (1) social and emotional difficulties, (2) pro-anorexia beliefs that lead to AN being valued as an identity, (3) thinking style, and (4) impact of others on the maintenance of AN<sup>30</sup>. Early life events or challenges (e.g., teasing about body weight/shape, overcontrolling parents, fad dieting), maladaptive traits (e.g., obsessiveness, perfectionism), supports (e.g., family, friends, pets), and strengths (e.g., determination, persistence) are the four targeted predisposing/premorbid factors that contribute to the onset of AN<sup>30</sup>.

**Specialized Supportive Clinical Management (SSCM)**

A randomized controlled trial (RCT) by Schmidt and colleagues (2015)<sup>28</sup> compared MANTRA to Specialized Supportive Clinical Management (SSCM) in a heterogeneous AN population with cases ranging from mild to severe<sup>28</sup>. SSCM was used as an active comparison treatment, combining aspects of supportive psychotherapy (praise, reassurance, and advice) with clinical management (i.e., education, care, and support). SSCM incorporates assessment, physical and symptom monitoring, psychoeducation, and nutritional education and recommendations.<sup>28</sup>

SSCM has also been tested specifically in SE-AN patients and has been shown to improve a range of outcomes, including quality of life, weight, depression, and motivation to change<sup>17, 29</sup>. The benefit of SSCM for SE-AN is that the goals for each week are set by the patient, encouraging the development of a therapeutic alliance and promoting patient engagement with treatment. The sessions are weekly and individualized, aiming to increase patients' motivation to make changes to optimize their physical wellbeing and quality of life. Improving quality of life can further motivate patients to adhere to treatment and address core eating disorder symptoms<sup>17,29</sup>. In a study comparing the effectiveness of SSCM and CBT for AN, both of these therapies were found to significantly help SE-AN patients, with no major differences observed once the therapies were completed<sup>17</sup>. However, patients who are older, more severely depressed, and have more severe AN symptoms may benefit more from CBT than SSCM<sup>29</sup>. Schmidt and colleagues (2015)<sup>28</sup> found that both MANTRA and SSCM groups improved significantly in BMI, eating disorder symptomatology, depressive symptoms, anxiety symptoms, and psychosocial functioning 12 months after treatment<sup>28</sup>. However, a higher proportion of MANTRA patients completed treatment and attended more treatment sessions overall than the SSCM patients<sup>28</sup>. MANTRA patients also rated their treatment as more acceptable and were more satisfied with it than the SSCM patients<sup>26,28</sup>.

**Summary**

Overall, holistic, multidimensional person-centred treatment approaches involving motivational enhancement (e.g., MANTRA, SSCM, peer support, and online support groups/forums) may be particularly helpful in improving quality of life-related outcomes and functioning in patients with AN, particularly those who have failed traditional weight management or symptom-focused treatments<sup>7</sup>. Motivation for change is a central construct contributing to positive outcomes in AN<sup>20</sup>, therefore the aforementioned interventions warrant further investigation in large-scale,

well-designed studies<sup>10</sup>.

**Maladaptive Traits and Patient Outcomes**  
**Experiential (Emotional) Avoidance**

Experiential avoidance is a persistent unwillingness to experience thoughts, feelings, or other internal sensations. In AN patients, this characteristic is especially prominent in the avoidance of emotions, because eating disorder symptoms can be used to cope with negative affect through avoidance and distraction<sup>30</sup>. Experiential avoidance is a negative prognostic and perpetuating factor of AN<sup>15</sup>. There appears to be a particular avoidance of emotions triggered by social encounters (and consequently an avoidance of social encounters themselves), which has also been found to precede the onset of the disease<sup>30</sup>. Social avoidance may be due to increased emotional sensitivity to social hierarchies and judgements/teasing from others about shape, weight, or eating, as well as increased sensitivity to stress, negative emotions, lack of confidence, or low self-esteem (Figure 1)<sup>30,31</sup>. Once the brain becomes malnourished, neurobiological changes occur that result in social situations becoming less rewarding and more overwhelming, likely because thoughts about food dominate brain function and many social situations revolve around eating. Overall, this perpetuates avoidance and isolation, and leaves the individual with more time to obsess over controlling their weight and food intake as well as engaging in AN behavior. This obsession in turn facilitates further avoidance, malnourishment, and progression to the severe and enduring stage of AN once the behaviors become deeply engrained habits (Figure 1)<sup>6</sup>.

**Acceptance and Commitment Therapy (ACT)**

In order to target experientially and socially avoidant traits in AN, one particularly relevant holistic treatment approach is Acceptance and Commitment Therapy (ACT)<sup>32</sup>. Instead of focusing on weight gain, ACT focuses on reducing attempts to control or alter internal experiences and encourages the acceptance of emotions instead of emotional avoidance<sup>16</sup>. According to ACT theory, prioritizing avoidance of intense thoughts and feelings decreases one's ability to work towards a life that is in line with their values<sup>16</sup>. The ultimate goal is for patients to be able to live a life in line with their personal values, which could include family relations, friendships, social life, employment, education, personal growth and development, or recreation and leisure<sup>32</sup>.

A case series that assessed outcomes in a 17-week ACT treatment approach of patients with chronic and severe AN (who had attempted various treatments previously) found that all patients completed the entire

protocol, significantly improving in various domains including quality of life, pursuit of valued life goals, eating disorder symptoms, and global mental health. This is particularly relevant given that all participants had severe psychiatric comorbidities<sup>33</sup>. In a pilot study comparing the efficacy of an ACT group treatment to Treatment-As-Usual (TAU) in a residential treatment program consisting of patients with primarily mild to moderate AN, ACT patients showed greater improvements in eating pathology, increases in cognitive flexibility, and reduced rates of readmission in the 6-month period after discharge compared to the TAU condition<sup>16</sup>.

Espel and colleagues (2015)<sup>50</sup> found that the more a patient is able to engage in acceptance of distressing internal experiences during treatment, the more their motivation to reduce their eating disordered behaviors increases (given that they are more willing to tolerate negative emotions without using their eating disorder as maladaptive coping), thus improving their outcome. This finding implies that patients who have a particularly low motivation, high experiential avoidance, and have failed traditional treatments may benefit more from approaches fostering experiential acceptance, such as ACT, compared to traditional treatments. However, large-scale, well-designed studies with longer follow-up need to be done using ACT, especially for

SE-AN patients. Treatments focusing on experiential acceptance may be perceived as less threatening by SE-AN patients because weight gain is not the primary focus.

### **Perfectionism**

In AN, perfectionism is a major variable associated with treatment resistance and chronicity which can be targeted using CBT approaches<sup>8,35</sup>.

### **Enhanced Cognitive-Behavioral Therapy (CBT-E)**

Enhanced cognitive-behavioural therapy (CBT-E) is a form of CBT that can be used for AN patients who do not respond to the initial eight weeks of standard CBT<sup>45</sup>. For AN patients, CBT-E has four phases lasting approximately 40 weeks in total<sup>49</sup>. Phases 1 and 2 focus on engaging the patient and increasing their motivation to change, as well as providing assisted meals for inpatients to help normalize eating habits (Figure 2)<sup>49</sup>. Phases 1 and 2 also involve psychoeducation on the acute and chronic effects of being underweight as well as helping patients understand how malnourishment perpetuates eating-disordered thoughts<sup>49</sup>. Phase 3 focuses on addressing eating disorder-related pathology such as body image distortion, fear of weight gain, dietary restraint, and mood intolerance (Figure 2)<sup>49</sup>. Phase 4 involves identifying potential relapse triggers,

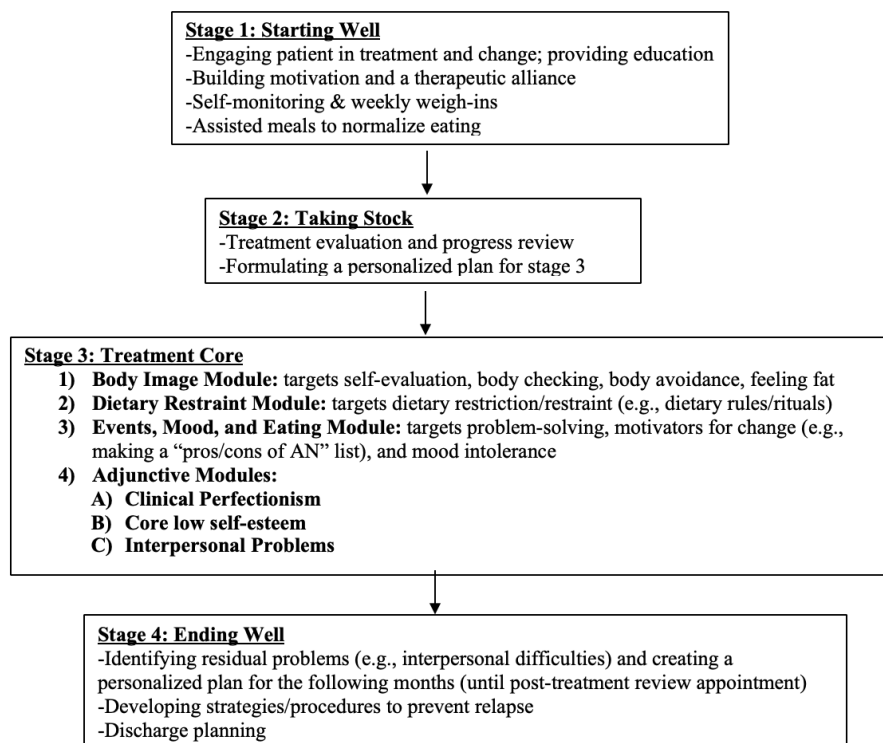


Figure 2. Enhanced Cognitive Behavioral Therapy (CBT-E) plan for inpatients<sup>49</sup>.

through proactive problem solving, and creating personalized strategies to prevent or correct potential setbacks (Figure 2)<sup>49</sup>.

There are two forms of CBT-E: a broad form (CBT-Eb) and a focused form (CBT-Ef). CBT-Ef focuses on eating disorder-related symptoms exclusively<sup>45</sup>. In CBT-Eb, the most broadly problematic perpetuating factor of AN is pinpointed and further explored in adjunctive modules (Figure 2)<sup>45</sup>. Perfectionism is one of the three optional modules that can be added – the other two being self-esteem and interpersonal difficulties. The perfectionism module of CBT-Eb involves the use of behavioral experiments to test preconceived notions about perfectionism, and the use of CBT strategies to correct black-and-white (i.e. dichotomous) thinking, unrealistic standards, self-criticism, and other maladaptive perfectionism symptoms<sup>45</sup>. In an RCT examining cases of SE-AN, Grave et al (2013)<sup>45</sup> compared CBT-Ef to CBT-Eb, finding a high completion rate (90%) and significant improvements in eating disorder symptoms as well as general psychopathology, maintained at 12-month follow up in both treatment groups<sup>45</sup>. Therefore, there were no differences between the two forms of CBT tested in this trial. However, Grave et al (2013)<sup>45</sup> did not specifically measure clinical perfectionism pre- and post-intervention, so it is undetermined whether the CBT-Eb perfectionism module conferred additional benefits, outside of affecting core ED symptomatology. Overall, more research is needed regarding the role of perfectionism in treatment resistance and chronicity, as well as which treatment approaches most effectively target this trait in order to improve quality of life-related outcomes and reduce the personal and social burden of AN.

### ***Obsessive-Compulsiveness***

Obsessive-compulsive personality features, including a preoccupation with rules or details, the compulsive need for structure, rigid behaviors, overcontrol, and inflexibility, are common among individuals with AN and lead to a variety of maladaptive behaviors<sup>39</sup>. Obsessive-compulsive features are associated with cognitive difficulties, treatment-resistance, and a longer illness course<sup>6</sup>. Obsessive Compulsive Personality Disorder (OCPD) is the most common comorbid psychiatric disorder in AN, present in approximately 1/3 of AN cases<sup>14</sup>.

Obsessive-compulsive traits often present before the onset of AN and appear to be highly heritable<sup>30</sup>. In an obsessive-compulsive individual, once they start dieting, which could happen due to a variety of precipitating environmental factors, such as a major life stressor, media influence, or teasing/bullying about

weight/shape, they can easily fall into rigid, habitual patterns surrounding food and weight<sup>30</sup>. Once the brain becomes malnourished, global processing and central coherence become weaker (i.e., there is a limited ability to see the overall picture due to excessive focus on details), and thoughts become even more obsessive, structured, rigid, and detail-oriented (particularly surrounding food routines), resulting in a vicious cycle<sup>30</sup>. In this cycle, the starvation state reinforces premonitory obsessiveness, rigidity, and the need for control; these obsessive-compulsive traits, in turn, magnify the severity of the eating disorder symptoms.<sup>30</sup>

### ***Radically Open Dialectical Behavioural Therapy (RO-DBT)***

An adaptation of traditional Dialectical Behavioural Therapy (DBT), known as Radically Open DBT (RO-DBT) is a treatment approach designed to treat disorders of overcontrol (including OCPD and AN). It consists of the four main modules of DBT (mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance) in addition to a radical openness module (whose underlying theme is that emotional wellbeing requires openness, flexibility, and social connections)<sup>37,39</sup>. Each module has its own behavioral targets: the core mindfulness module targets rigidity and compulsiveness<sup>39</sup>. The interpersonal module targets aloofness and social withdrawal, as well as the fear of vulnerability<sup>39</sup>. The emotion regulation module targets masking inner feelings, excessive social comparisons, and envy<sup>39</sup>. The distress tolerance module targets self-care and rigidity around structure and order<sup>39</sup>. Lastly, the radical openness module targets low openness, avoiding risk and novel situations, distrust, suspicion, disregarding feedback, lack of empathy, and deficient compassion<sup>39</sup>. RO-DBT may be particularly appropriate for SE-AN given that it does not specifically target weight gain or core eating pathology. Instead, it takes a more holistic approach, focusing on overall emotional wellbeing, connectedness, social functioning, and other quality of life-related outcomes<sup>38</sup>. Therefore, RO-DBT helps to reduce obsessive, rigid behaviors and related behavioral problems<sup>39</sup>. In RO-DBT, the ritualized and compulsive eating behaviors that accompany AN are framed as a maladaptive coping style that has been ameliorated over time<sup>39</sup>.

When administered to hospitalized patients with severe AN, RO-DBT was associated with large improvements in core eating pathology, weight, psychological distress, and quality of life, as well as high completion rates relative to other populations with chronic AN<sup>39</sup>. Future research should further examine the effectiveness of RO-DBT for reducing ob-

sessive-compulsive characteristics and other long-term outcomes in SE-AN, using a large-scale RCT design, as well as whether changes in overcontrol characteristics mediate changes in eating pathology.

## Conclusion

According to Steinhausen (2002)<sup>14</sup>, less than half of AN patients fully recover; approximately 35% achieve partial remission, and 20% remain chronically ill. In this paper, I have extended the work of Martinez and Craighead (2015)<sup>45</sup>, by proposing that traditional treatment approaches, focusing primarily on weight restoration and eating disorder-specific symptomatology, are part of the reason rates of treatment dropout are high and overall long-term outcomes are poor<sup>45</sup>. Current treatment approaches for AN have less than a 50% success rate, the lowest of all eating disorders<sup>36</sup>, and rates of disease progression into SE-AN are between 20 and 50%<sup>6</sup>. In these SE-AN patients who are treatment refractory, the literature explored herein supports the use of multidimensional treatment approaches, incorporating individual motivational factors and maladaptive traits, may improve a range of outcomes. Outcome measures in studies of SE-AN should prioritize quality of life-related outcomes, such as hope, physical wellbeing, social support systems, and interpersonal functioning<sup>5,7</sup>.

When it comes to SE-AN, this population is considered chronically affected by this psychiatric disorder. Therefore, primarily focusing on weight restoration is simply not effective, as it is something that these patients have already likely attempted many times. Encouraging these patients to engage more in their interpersonal lives may increase their quality of life, and be something that they would be more willing and open to trying, since it is not directly associated with weight gain. It could, however, indirectly lead to weight gain and reduce core eating pathology if these patients engage more in their social lives and try to build a life outside of their disease.

This review examined motivation-related factors, experiential avoidance, perfectionism, and obsessive-compulsiveness, and the benefits of targeting these individual characteristics on a range of treatment outcomes, with a focus on SE-AN. A holistic, multidimensional, individualized treatment approach that accounts for (a) illness severity and chronicity, (b) motivation, and (c) individual maladaptive traits, could improve AN outcomes. Rigorous evaluation of long-term outcomes is needed for the treatment approaches examined in this review, using large-scale, well-designed studies (i.e. RCTs). More research is urgently needed regarding the clinical utility of

multidimensional, individualized treatment approaches for late-stage AN (i.e., SE-AN) in particular, given the limited evidence available for management of patients in this severe/enduring stage of disease, and the high levels of associated disability<sup>7</sup>.

More qualitative research is needed, incorporating patient experiences, attitudes, and values pertaining to recovery, to determine how patients in various stages of illness or recovery perceive their illness trajectory and which factors enhance or hinder their motivation to change<sup>8</sup>. Qualitative interviews with patients displaying maladaptive traits regarding their treatment/recovery perspectives would add depth to quantitative outcome studies of the holistic, person-centred treatment approaches discussed in this review above. Thus, qualitative research would help to inform the delivery of more holistic, patient-centered, and well-tolerated treatments that incorporate personality and motivation-related factors, particularly for SE-AN. Adopting a holistic treatment approach that centralizes on these underlying psychological variables and decentralizes weight gain may help to improve quality of life-related outcomes (e.g., hope, purpose, and social relationships), and overall functioning in treatment-resistant patients<sup>7-9</sup>. While weight restoration is still necessary, it may be beneficial to achieve it indirectly through a focus on other risk and maintenance factors in order to avoid the resistance that may occur when a treatment approach focuses too directly on the eating pathology.

## Conflicts of Interest

The author declares that there are no conflicts of interest to report, financial or otherwise.

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