Transdiagnostic treatment for eating disorders

Jong, M. de

Chapter 1

Introduction

General introduction

Mrs. M

Mrs. M is a 40-year-old married woman with a son of 18 years old. She has an eating disorder for more than 20 years and never received treatment before. In her childhood there were a lot of unmet emotional needs and a history of being bullied in primary school. She developed severe self-esteem problems, an intense anxiety of being judged and a dysfunctional level of perfectionism. From the age of 12 she became dissatisfied with her weight (which was in the normal range) and body shape and from the age of 16 she began to skip meals and lost weight. Her focus and attention on shape and weight intensified and her eating pattern became more and more restrictive. At the age of 19 she had a body mass index (BMI; weight/height^2) of 14. At the age of 20 she met her present husband and started to eat more regular and gained weight, however after a while she developed binges and because of a great fear of gaining more weight she began to compensate by vomiting and taking laxatives. In the past years, periods of restrictive eating had alternated with periods of binge eating and compensation behavior. Her preoccupation with shape and weight increased resulting in a diversity of eating disorder related behaviors (i.e. continuously checking her weight on the scale, checking her shape in mirrors, dietary rules and weighing her food). These behaviors took her several hours a day. As a result, she lost her job as a successful lawyer. When her son went to live on his own, she became more isolated. At the time of referral, a severe bulimia nervosa was diagnosed with comorbid a social anxiety disorder. Her weight was within the normal range. Mrs. M expressed the need to stop the binges and improve her self-esteem.

Eating disorders

Eating disorders are mental disorders in which people experience severe disturbances in their eating behaviors and related thoughts and emotions. People with eating disorders typically become pre-occupied with food and their body weight. Eating disorders are responsible for significant elevated mortality rates (Arcelus et al., 2011) and loss of quality of life (Jenkins et al., 2011).

In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders DSM5 (American Psychiatric Association, 2013) three specific eating disorders are specified: anorexia nervosa, bulimia nervosa and binge eating disorder. A large percentage of people with eating disorders, in both clinical and community samples, do not meet the full DSM-5 diagnostic criteria for

these disorders and are diagnosed with 'otherwise specified feeding or eating disorder' (Keel et al., 2011; Machado, Goncalves, & Hoek, 2013; Smink, van Hoeken, & Hoek, 2013).

Onset of anorexia nervosa is often in early to mid-adolescence. In bulimia nervosa and binge eating disorder onset is more commonly in later adolescence and young adulthood (Stice, Marti, & Rohde, 2013). Among women the lifetime prevalence for anorexia nervosa is 1-4%, 1-2% for bulimia nervosa, 1-4% for binge eating disorder and 2-3% for sub-threshold eating disorders/otherwise specified feeding or eating disorder (Keski-Rahkonen & Mustelin, 2016; Smink et al., 2013). Most patients with anorexia nervosa and bulimia nervosa are female (Bulik et al., 2006; Hudson et al., 2007; Kessler et al., 2013). Among men 0.3-0.7% report eating disorders like anorexia nervosa and bulimia nervosa (Keski-Rahkonen & Mustelin, 2016). The lifetime prevalence for binge eating disorder among men is 2% (Hudson et al., 2007). Although most patients with eating disorders are young women, it is important to be aware that eating disorder psychopathology can arise at any age, and in both females and males (Hay et al., 2014).

Of all patients diagnosed with an eating disorder, 70% also meet the diagnostic criteria of another DSM disorder, e.g. anxiety disorders (>50%), mood disorders (>40%), self-harm (>20%), and substance use (>10%) are common (Keski-Rahkonen & Mustelin, 2016).

The aetiology of eating disorders is regarded as multifactorial and complex (Collier & Treasure, 2004). Risk factors include biological factors (e.g. genetic factors, serotonin function), socio-cultural factors (e.g. cultural attitudes to weight and shape) and psychological factors (e.g. personality traits like self-esteem and perfectionism).

The way in which eating disorders are classified in the DSM-5 supports the view that there are a number of distinct conditions clearly differentiated from each other, each requiring its own treatment protocol. However, patients with anorexia nervosa, bulimia nervosa, binge eating disorder and otherwise specified feeding or eating disorder have many features in common. Moreover, diagnoses are often unstable, with clinical features changing over time and switching for example from anorexia nervosa to bulimia nervosa, which is illustrated by the case description of Mrs. M. Accordingly, Fairburn et al. suggest that transdiagnostic mechanisms play a role in the persistence of eating disorders (Fairburn, Cooper, & Shafran, 2003). If this is the case,

treatments that are capable of addressing these mechanisms should be effective for all eating disorders. This transdiagnostic view is important in the outline of this thesis.

Psychological treatments for adults

The major guidelines for the treatment of eating disorders recommend, based on research, cognitive behavior therapy (among which cognitive behavior therapy enhanced; CBT-E) as the psychological treatment of first choice, especially for bulimia nervosa and binge eating disorder (Hay et al., 2014; Hilbert, Hoek, & Schmidt, 2017; National Institute for Health and Care Excellence (NICE), 2017; Netwerk Kwaliteitsontwikkeling GGz, 2017; Yager et al., 2014). There is also, albeit more limited, empirical evidence base for the effectiveness of interpersonal psychotherapy and dialectical behavior therapy in both bulimia nervosa and binge eating disorder.

For anorexia nervosa, the effectiveness of psychological treatments is less pronounced. Therapist-led manualized based psychological treatments, such as CBT-E, specialist supportive clinical management (SSCM) and the Maudsley model of anorexia nervosa treatment for adults (MANTRA) have the most promising effects, and as such should be the treatments of first choice. Most guidelines recommend outpatient or day patient treatments and only hospital admission when there are severe medical and/or psychological risks (Hay et al., 2014; Hilbert et al., 2017).

Especially for bulimia nervosa and binge eating disorder, there is clear evidence of the effectiveness of cognitive behavior therapy, however it is not being used as widely in clinical practice as guidelines recommend. Waller et al. reported poor adherence among CBT eating disorder clinicians with no single core CBT technique being routinely used by 50% of the sample (Waller, Stringer, & Meyer, 2012). Although in a replication study among Dutch therapists 83.2% of clinicians reported the use of a CBT treatment manual for eating disorders, the application of the specific CBT techniques was also below the level one would expect if following protocols (Mulkens et al., 2018). Different reasons for this non-adherence have been investigated. Particularly in CBT clinicians who were anxious, older, or more experienced in working with patients with eating disorders, delivery of CBT techniques was lower than protocols would suggest (Waller et al., 2012). Furthermore, while research showed that the therapeutic alliance does not drive change in behaviors in eating disorder therapies (Graves et al., 2017), non-delivery of CBT for eating disorders has been associated with clinicians' beliefs about the power and

importance of the therapeutic alliance in achieving good therapy outcome (Mulkens et al., 2018). Finally, clinicians often claim that existing evidence-based protocols do not apply to their patient group (Tobin et al., 2007). It could be hypothesized that, in the eating disorder field, this is partly due to the mismatch between the large percentage of patients with eating disorders who do not meet the full DSM-5 criteria for an eating disorder (subsequently classified as otherwise specified feeding or eating disorder) and the diagnosis specific protocols. Although it is clear that the regular eating disorder therapy in clinical practice varies and that therapists often do not adhere to evidence-based protocols, there are no empirical data about the exact content, effectiveness and efficiency of the regular eating disorder therapy.

CBT-E

CBT-E is a specific form of cognitive behavior therapy suitable for the full range of eating disorder diagnoses (Fairburn, 2008). It is based on a transdiagnostic theory of the maintenance of eating disorders, which assumes that most of the mechanisms involved in the persistence of eating disorders are common to all eating disorders, rather than being specific for each diagnostic group separately. According to this theory, a dysfunctional evaluation of self-worth, overly based on shape and weight, is the core psychopathology of all eating disorders (Fairburn et al., 2003). CBT-E focusses on strategies and procedures to modify this over-evaluation of shape and weight. This is known as the 'focused' version of CBT-E (CBT-Ef). The treatment protocol can be extended with interventions targeting additional maintaining mechanisms that are expected to obstruct change and improvement (low self-esteem, clinical perfectionism, and interpersonal problems). This extended protocol is known as the 'broad' version of CBT-E (CBT-Eb). For both versions of CBT-E, two variants of intensity have been developed involving either 20 sessions in 20 weeks for patients who are not significantly underweight (BMI >17.5), or 40 sessions in 40 weeks for patients who are significantly underweight (BMI ≤17.5). For otherwise specified feeding or eating disorders, CBT-E might have an advantage over other cognitive behavior therapy protocols because of its transdiagnostic reach.

The strategy underpinning CBT-E is to construct a transdiagnostic formulation of the processes that are maintaining the patient's psychopathology and to use this formulation to identify the features that need to be targeted in treatment. This formulation is constructed at the beginning of treatment, but will be revised, if needed, during therapy. In this way a tailor-made treatment is created.

Stage 1 (sessions 1–7) is an intensive initial stage, with appointments twice a week. The therapist and the patient together set up the formulation of the underlying maintaining factors, which will be used as a base for the remainder of the treatment. The aims of this stage are to engage the patient in treatment.

Stage 2 (sessions 8–9) are weekly appointments. This is a brief stage in which the therapist and patient take stock, review progress, identify any emerging barriers to change, modify the formulation and plan stage 3. This stage is important to identify problems with the therapy, to remove barriers and adjust treatment if needed. After stage 2 the treatment will become more personalized.

Stage 3 (sessions 10–17) is the main body of treatment. There are weekly appointments. The aim is to address the main mechanisms that are supposed to maintain the patient's eating disorder. How this is done precisely varies from patient to patient. The therapist can choose to pay attention to one or more defined maintaining factors. Often the over-evaluation of shape and weight is an important maintaining mechanism that will be addressed in this stage.

Stage 4 (sessions 18–20) is the final stage of treatment and the focus shifts to the future. The appointments are scheduled at two-week intervals. There are two aims: the first one is to ensure that the changes are maintained (over the subsequent 20 weeks until a review appointment is held), and the second one is to minimize the risk of relapse in the long term. A personalized maintenance plan is made.

After 20 weeks there is a review session. The most important aim in this session is to review what has been learned and achieved during treatment and what risk factors are to be taken into account when therapy has ended.

Mrs. M

The focused version of CBT-E (Fairburn, 2008) was indicated.

In the *first stage* of treatment engaging Mrs. M was an important goal. She was demoralized and had little hope that change was possible. Jointly creating the formulation (see Figure 1.1) at the start helped her to understand the processes that appeared to be maintaining her eating problem. The real time registrations, in session weighing and regular eating triggered anxiety and shame. However, the twice-weekly sessions, the growing realization of the interacting mechanisms of her eating disorder and her understanding about what needed to be changed to overcome her binges helped her to stay motivated. At the end of stage 1, as a result of the regular eating, the frequency of the binges and compensatory behavior decreased. This decline together with the experience that her weight did not increase, created hope that change was possible.

After stage 1 an evaluation took place (*stage 2*) during which the three most important factors that maintained her eating disorder and needed attention in *stage 3* were jointly determined;

1. The over-evaluation of shape and weight; that is, the judging of self-worth largely, or even exclusively, in terms of shape and weight and the ability to control them. In stage three she learned to decrease the shape checking behaviors (i.e. frequently mirror use, wearing tight clothes, comparing her shape with others, measuring her leg size) and increase the importance of other domains in her life for self-evaluation. She was encouraged to focus on enjoyable activities. She initiated social activities with her son and husband, contacted friends and started creative activities, dancing and reading.

2. The event-related changes in her eating pattern were addressed by learning problem solving strategies and more functional ways to regulate her emotions. Binge eating, for example, mainly took place in the evening when she felt lonely and bored. She learned to identify this problem, considering as many solutions as possible, thinking of the pros and cons of each solution, choose the best solution and act on it. As a result she initiated more social activities in the evening (a walk on the beach, going to the theatre or cinema and following dance classes).

3. Dietary restraint and dietary rules were identified in stage 1 (for example; not eating apple pie because of the fear of gaining weight) and tackled in stage 3 by breaking the rules in question (eat a piece of apple pie without compensating behaviors) in order to explore the consequences of doing so (weight remained stable). As a result, more functional cognitions were created ("I can eat a piece of apple pie without gaining weight").

At the end of stage 3 the binges and compensatory behavior were absent. However, although reduced, dietary rules and concerns about shape and weight were still present. In *stage 4* a maintenance plan was made. The most important goal of this plan was to identify with Mrs. M a limited number of activities that she should engage in the next 20 weeks. She was stimulated to behave in line with the ways identified during treatment to obtain the full benefits of treatment.

After 20 weeks a *review session* was planned. Mrs. M reported no binges and compensatory behavior, a regular eating pattern and a stable weight. She picked up her work as a lawyer again and her social network was increased. This progress had an enhancing effect on her self-confidence. Although she still was not satisfied with her shape and weight, it no longer determined most of her self-esteem.

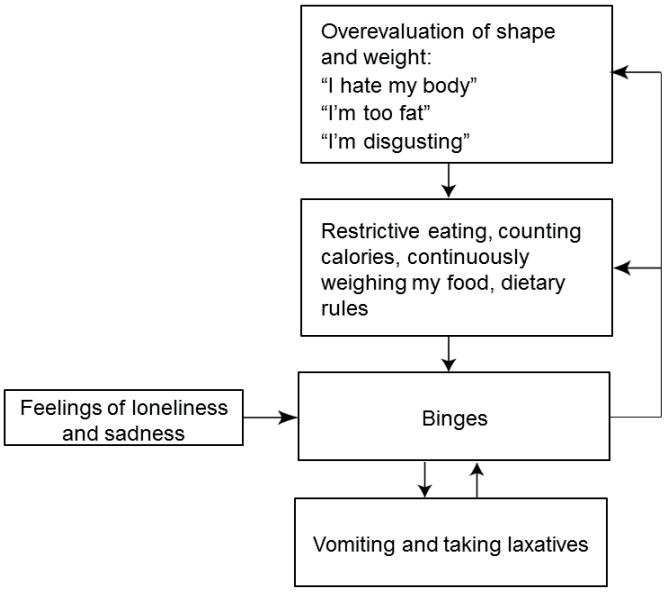

Figure 1.1. Transdiagnostic formulation Mrs. M according to the focused version of CBT-E

Reflection

Due to the severity of the eating disorder, negative self-esteem and the co-morbid social anxiety disorder, two questions were part of the therapist's consideration during the therapy process;

1. Was her negative self-esteem an important maintaining factor of the eating disorder (indication for the broad version of CBT-E)?

2. Would 20 sessions be enough to tackle this complex eating disorder psychopathology?

In the first stage of treatment detailed information was collected from the registrations to investigate if the proposed transdiagnostic model (Figure 1.1) accurately explained the ongoing processes of her eating disorder. CBT-E assumes that not all clinical features need to be addressed in treatment. The psychopathology of an eating disorder is compared to the analogy of a house of cards. If one wants to bring down the house, the key structural cards need to be identified and removed, and then the house will fall down. Furthermore, a principle that underpins CBT-E is that it is better to do a few things well rather than many things badly ("less is more"). Therapist and patient agreed that, not self-esteem but the over-evaluation of shape and weight was the most important maintaining factor and accordingly was the most important to address in therapy. According to the rationale of the broad version of CBT-E, participants with more self-esteem problems are expected to respond less on the focused version of CBT-E. Although severe self-esteem problems were present, the focused version of CBT-E was successful. No additional attention for self-esteem problems was needed.

When the treatment of Mrs. M approached stage 4, not all eating disorder psychopathology was absent. Mrs. M was anxious to end therapy and the therapist was in doubt whether or not to end the therapy. In supervision, the therapist discussed reasons to continue therapy. The assumption of CBT-E, that further improvement is to be expected after therapy has ended together with positive experiences of the supervisor in similar CBT-E treatment processes helped the therapist to end the therapy within the 20 sessions. This had an additional advantage that Mrs. M could experience further improvement after treatment had ended which had an enhancing effect on her self-esteem.

Self-esteem and eating disorders

Self-esteem can be broadly defined as an individual's overall sense of self-worth or personal value (Rosenberg, 1965). Low self-esteem is reported to be an important factor associated with the aetiology and persistence of eating disorders (Cervera et al., 2003; Fairburn et al., 2003; Jacobi et al., 2004; Lo Coco et al., 2011; Sassaroli, Gallucci, & Ruggiero, 2008). Self-esteem is considered to be dependent on one's perceived ability to achieve certain life goals (Emler, 2001; Noordenbos, Aliakbari, & Campbell, 2014; Zeigler-Hill et al., 2013). Whereas most people evaluate themselves on the basis of different domains in life (e.g., work, relationships, parenting, hobbies, appearance etc), people with eating disorders judge themselves mainly on the basis of shape, weight and/or eating habits and their ability to control them (Fairburn et al., 2003). As a result, the judging of self-worth becomes largely dependent on shape and weight and the ability to control them. As mentioned earlier, this over-evaluation of shape and weight is seen as the core psychopathology of most eating disorders (Fairburn, 2008). Moreover, low self-esteem is thought to maintain the overvaluation of weight and shape and is also believed to contribute to patients' feelings of hopelessness about their capacity to change, thereby impacting their compliance with treatment (Fairburn, 2008). Fairburn describes that enhancing self-esteem may lead to better therapeutic outcomes.

Self-esteem is a complicated construct with different operationalizations in the existing literature. Different, however interrelated, dimensions of self-esteem have been described, such as whether it is stable or unstable (Kernis et al., 1993; Kernis & Goldman, 2006; Kernis, Grannemann, & Barclay, 1989), externally or internally contingent (Crocker & Luhtanen, 2003; Crocker & Park, 2004; Vonk & Smit, 2012) and implicit or explicit (Borton et al., 2012; DeHart, Pena, & Tennen, 2013; Koole & Pelham, 2003). Most studies of self-esteem in relation to eating disorders focus only on explicit self-esteem. Little is known about the relation between other dimensions of self-esteem and eating disorder psychopathology.

Treatment for self-esteem problems

It is often thought that amelioration of psychopathology symptoms during psychotherapy is associated with the automatic enhancement of self-esteem (Fennell & Jenkins, 2004). The precise mechanisms underpinning these effects are not known (Linardon, Kothe, & Fuller-Tyszkiewicz, 2019). In the meta-analysis of Linardon et al. (2019) some support was found for the beneficial effects of psychotherapy for eating disorders on self-esteem, however these

effects were small. He describes that the examined treatment studies did not directly target low self-esteem, possibly resulting in these relatively small effects. This raises the question if integrating additional therapeutic interventions, designed to directly address low self-esteem, into existing treatment protocols would result in larger improvements in self-esteem.

In the broad version of CBT-E, interventions to address core low self-esteem are based on Fennell's approach (1998, 2016). This approach is characterized by the identification and Socratic challenging of dysfunctional negative automatic thoughts, assumptions, and core beliefs about one's own worth and importance, and it is accompanied by a range of specific behavioral experiments. Most of these experiments are concerned with the anticipated reactions of others to the personal values and capacities of the patient. In the meta-analysis studying the effect of Fennell's approach (Kolubinski et al., 2018) in a variety of populations small to medium (one-day workshop) and large summary effect sizes (weekly sessions) were found. The decision whether or not to use the broad version of CBT-E is made in stage two, a stage where barriers to change are becoming clear. For most patients the focused version of CBT-E is effective (Fairburn et al., 2009). Fairburn (2008) recommends only to use the broad version including the possibility to address core low self-esteem, when this is maintaining the eating disorder.

Another, somewhat different, approach to address low self-esteem is competitive memory training COMET (Korrelboom, 2011). COMET is aimed at making patients feel what they already know by enhancing the accessibility of positive self-representations from long-term memory. According to Brewin (2006), cognitive therapy does not modify the negative meaning of concepts directly, but rather influences the relative retrievability from long-term memory of the different meanings that are associated with these concepts. Strengthening the possibility of retrieving positive self-representations that are in retrieval competition with negative self-representations is considered to be the key element of COMET.

In several randomized controlled trials COMET showed to be effective in improving self-esteem in various populations (Korrelboom, Maarsingh, & Huijbrechts, 2012; Korrelboom, Marissen, & van Assendelft, 2011; Staring et al., 2016; van der Gaag et al., 2012). One study has been completed in a group of hospitalized and day-treatment patients with eating disorders and/or personality disorders (Korrelboom et al., 2009). In this study, self-esteem was enhanced, and depression was diminished.

Research aims

As described above, regular eating disorder therapy (treatment as usual) in clinical practice varies greatly. There are no empirical data about the exact content, effectiveness and efficiency of this treatment as usual. Although CBT-E is an evidence-based treatment for eating disorders, randomized controlled trials that studied the effectiveness of this protocol were mainly performed by the research group that developed the treatment protocol. This raises the question whether these results can be generalized to other treatment settings and populations. In addition, no former treatment studies compared the effectiveness of CBT-E with treatment as usual in terms of effectiveness and efficiency.

Therefore, the first aim of this thesis is to test the alleged superior effectiveness and efficiency of CBT-E compared to treatment as usual. In addition, to increase understanding of the content of treatment as usual, this treatment condition will be carefully monitored and differences in the duration and intensity between CBT-E and treatment as usual will be explored.

Furthermore, according to the rationale of the broad version of CBT-E, participants with more self-esteem problems, perfectionism and interpersonal problems are expected to respond less to the focused version of CBT-E. Identification of patient characteristics that could help to answer the question for whom CBT-E is more effective would enable treatment matching. Therefore, self-esteem, perfectionism and interpersonal problems, the supposed additional maintaining mechanisms for severe eating disorder psychopathology, will be examined as possible moderating variables.

Most studies of self-esteem in relation to eating disorder psychopathology focus only on explicit self-esteem. Little is known about the relation between other dimensions of self-esteem and eating disorders. The second aim of this thesis is to gain more insight into the relationship of explicit and implicit self-esteem as a multidimensional construct of self-esteem in an eating disorder sample.

Finally, notwithstanding its presumed critical role in maintaining eating disorders, only one study has specifically addressed the treatment of low self-esteem in this patient population. Competitive memory training (COMET) is described as a promising treatment intervention to enhance self-esteem, but its effectiveness has never been investigated in eating disorder patients

in a randomized controlled trial. The last aim of this thesis is to evaluate the cognitive behavioral intervention COMET for the treatment of low self-esteem in patients with eating disorders.

Outline of this thesis

Chapter 2 reports on the associations between the (severity of) eating disorders and explicit/implicit self-esteem.

Chapter 3 reports on the effectiveness of a cognitive behavioral intervention, competitive memory training (COMET), for the treatment of low self-esteem in patients with eating disorders.

Chapter 4 contains a systematic review of CBT-E effectiveness studies on bulimia nervosa, binge eating disorder and transdiagnostic samples.

Chapter 5 presents the study protocol and Chapter 6 reports the results of a randomized controlled trial investigating the effectiveness of CBT-E compared to treatment as usual for eating disorders.

Finally, Chapter 7 contains a summary and general discussion of the main findings. Furthermore, the strengths and limitations are considered, and implications and directions for future research as well as clinical practice are presented.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders, 5th ed. (DSM-5)*. Washington, DC: American Psychiatric Association.

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. *Archives of General Psychiatry, 68*(7), 724-731. https://doi.org/10.1001/archgenpsychiatry.2011.74

Borton, J. L. S., Crimmins, A. E., Ashby, R. S., & Ruddiman, J. F. (2012). How do individuals with fragile high self-esteem cope with intrusive thoughts following ego threat? *Self and Identity, 11*(1), 16-35. https://doi.org/10.1080/15298868.2010.500935

Brewin, C. R. (2006). Understanding cognitive behaviour therapy: A retrieval competition account. *Behaviour Research and Therapy, 44*(6), 765-784. https://doi.org/10.1016/j.brat.2006.02.005

Bulik, C. M., Sullivan, P. F., Tozzi, F., Furberg, H., Lichtenstein, P., & Pedersen, N. L. (2006). Prevalence, heritability, and prospective risk factors for anorexia nervosa. *Archives of General Psychiatry, 63*(3), 305-312. https://doi.org/10.1001/archpsyc.63.3.305

Cervera, S., Lahortiga, F., Martinez-Gonzalez, M. A., Gual, P., de Irala-Estevez, J., & Alonso, Y. (2003). Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *International Journal of Eating Disorders, 33*(3), 271-280. https://doi.org/10.1002/eat.10147

Collier, D. A., & Treasure, J. L. (2004). The aetiology of eating disorders. *British Journal of Psychiatry, 185*, 363-365. https://doi.org/10.1192/bjp.185.5.363

Crocker, J., & Luhtanen, R. K. (2003). Level of self-esteem and contingencies of self-worth: unique effects on academic, social, and financial problems in college students. *Personality and Social Psychology Bulletin, 29*(6), 701-712. https://doi.org/10.1177/0146167203029006003

Crocker, J., & Park, L. E. (2004). The costly pursuit of self-esteem. *Psychological Bulletin, 130*(3), 392-414. https://doi.org/10.1037/0033-2909.130.3.392

DeHart, T., Pena, R., & Tennen, H. (2013). The development of explicit and implicit self-esteem and their role in psychological adjustment. In V. Zeigler-Hill (Ed.), *Self-esteem* (pp. 99-123). New York, NY: Psychology Press.

Emler, N. (2001). *Self-esteem: The Costs and Causes of Low Self-worth*. York: Joseph Rowntree Foundation.

Fairburn, C. G. (2008). *Cognitive Behavior Therapy and Eating Disorders*. New York, NY: Guilford Press.

Fairburn, C. G., Cooper, Z., Doll, H. A., O'Connor, M. E., Bohn, K., Hawker, D. M., *et al.* (2009). Transdiagnostic cognitive-behavioral therapy for patients with eating disorders: a two-site trial with 60-week follow-up. *American Journal of Psychiatry, 166*(3), 311-319. https://doi.org/10.1176/appi.ajp.2008.08040608

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour Research and Therapy, 41*(5), 509-528. https://doi.org/10.1016/s0005-7967(02)00088-8

Fennell, M. J. V. (1998). Low self-esteem. In N. Tarrier, A. Wells, & G. Haddock (Eds.), *Treating Complex Cases: The Cognitive Behavioural Therapy Approach* (pp. 217-240). New York, NY: John Wiley & Sons.

Fennell, M. J. V. (2016). *Overcoming Low Self-Esteem: A Self-Help Guide Using Cognitive Behavioral Techniques* (2nd rev. ed.). London: Little Brown.

Fennell, M. J. V., & Jenkins, H. (2004). Low self-esteem. In J. Bennett-Levy, G. Butler, M. Fennell, A. Hackmann, M. Mueller, & D. Westbrook (Eds.), *Oxford Guide to Behavioural Experiments in Cognitive Therapy*. Oxford, UK: Oxford University Press.

Graves, T. A., Tabri, N., Thompson-Brenner, H., Franko, D. L., Eddy, K. T., Bourion-Bedes, S., *et al.* (2017). A meta-analysis of the relation between therapeutic alliance and treatment outcome in eating disorders. *International Journal of Eating Disorders, 50*(4), 323-340. https://doi.org/10.1002/eat.22672

Hay, P., Chinn, D., Forbes, D., Madden, S., Newton, R., Sugenor, L., *et al.* (2014). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. *Australian & New Zealand Journal of Psychiatry, 48*(11), 977-1008. https://doi.org/10.1177/0004867414555814

Hilbert, A., Hoek, H. W., & Schmidt, R. (2017). Evidence-based clinical guidelines for eating disorders: international comparison. *Current Opinion in Psychiatry, 30*(6), 423-437. https://doi.org/10.1097/YCO.0000000000000360

Hudson, J. I., Hiripi, E., Pope, H. G., Jr., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*(3), 348-358. https://doi.org/10.1016/j.biopsych.2006.03.040

Jacobi, C., Paul, T., de Zwaan, M., Nutzinger, D. O., & Dahme, B. (2004). Specificity of self-concept disturbances in eating disorders. *International Journal of Eating Disorders, 35*(2), 204-210. https://doi.org/10.1002/eat.10240

Jenkins, P. E., Hoste, R. R., Meyer, C., & Blissett, J. M. (2011). Eating disorders and quality of life: a review of the literature. *Clinical Psychology Review, 31*(1), 113-121. https://doi.org/10.1016/j.cpr.2010.08.003

Keel, P. K., Brown, T. A., Holm-Denoma, J., & Bodell, L. P. (2011). Comparison of DSM-IV versus proposed DSM-5 diagnostic criteria for eating disorders: reduction of eating disorder not otherwise specified and validity. *International Journal of Eating Disorders, 44*(6), 553-560. https://doi.org/10.1002/eat.20892

Kernis, M. H., Cornell, D. P., Sun, C. R., Berry, A., & Harlow, T. (1993). There's more to self-esteem than whether it is high or low: the importance of stability of self-esteem. *Journal of Personality and Social Psychology, 65*(6), 1190-1204. https://doi.org/10.1037//0022-3514.65.6.1190

Kernis, M. H., & Goldman, B. M. (2006). Assessing Stability of Self-Esteem and Contingent Self-Esteem. In *Self-esteem Issues and Answers: A Sourcebook of Current Perspectives* (pp. 77-85). New York, NY: Psychology Press; US.

Kernis, M. H., Grannemann, B. D., & Barclay, L. C. (1989). Stability and level of self-esteem as predictors of anger arousal and hostility. *Journal of Personality and Social Psychology, 56*(6), 1013-1022. https://doi.org/10.1037//0022-3514.56.6.1013

Keski-Rahkonen, A., & Mustelin, L. (2016). Epidemiology of eating disorders in Europe: prevalence, incidence, comorbidity, course, consequences, and risk factors. *Current Opinion in Psychiatry, 29*(6), 340-345. https://doi.org/10.1097/YCO.0000000000000278

Kessler, R. C., Berglund, P. A., Chiu, W. T., Deitz, A. C., Hudson, J. I., Shahly, V.*, et al.* (2013). The prevalence and correlates of binge eating disorder in the World Health Organization World Mental Health Surveys. *Biological Psychiatry, 73*(9), 904-914. https://doi.org/10.1016/j.biopsych.2012.11.020

Kolubinski, D. C., Frings, D., Nikcevic, A. V., Lawrence, J. A., & Spada, M. M. (2018). A systematic review and meta-analysis of CBT interventions based on the Fennell model of low self-esteem. *Psychiatry Research, 267*, 296-305. https://doi.org/10.1016/j.psychres.2018.06.025

Koole, S. L., & Pelham, B. W. (2003). On the nature of implicit self-esteem: The case of the name letter effect. In *Motivated Social Perception: The Ontario Symposium, Vol. 9* (pp. 93-116). Mahwah, NJ: Lawrence Erlbaum Associates Publishers; US.

Korrelboom, C. W., van der Weele, K., Gjaltema, M., & Hoogstraten, C. (2009). Competitive memory training (COMET) for treating low self-esteem: A pilot study in a routine clinical setting. *The Behavior Therapist, 32*(1), 3-8.

Korrelboom, K. (2011). *COMET voor negatief zelfbeeld: competitive memory training bij lage zelfwaardering en negatief zelfbeeld*. Houten: Bohn Stafleu van Loghum.

Korrelboom, K., Maarsingh, M., & Huijbrechts, I. (2012). Competitive memory training (COMET) for treating low self-esteem in patients with depressive disorders: a randomized clinical trial. *Depression and Anxiety, 29*(2), 102-110. https://doi.org/10.1002/da.20921

Korrelboom, K., Marissen, M., & van Assendelft, T. (2011). Competitive memory training (COMET) for low self-esteem in patients with personality disorders: a randomized effectiveness study. *Behavioural and Cognitive Psychotherapy, 39*(1), 1-19. https://doi.org/10.1017/S1352465810000469

Linardon, J., Kothe, E. J., & Fuller-Tyszkiewicz, M. (2019). Efficacy of psychotherapy for bulimia nervosa and binge-eating disorder on self-esteem improvement: Meta-analysis. *European Eating Disorders Review, 27*(2), 109-123. https://doi.org/10.1002/erv.2662

Lo Coco, G., Gullo, S., Salerno, L., & Lacoponelli, R. (2011). The association among interpersonal problems, binge behaviors, and self-esteem, in the assessment of obese individuals. *Comprehensive Psychiatry, 52*(2), 164-170.

Machado, P. P., Goncalves, S., & Hoek, H. W. (2013). DSM-5 reduces the proportion of EDNOS cases: evidence from community samples. *International Journal of Eating Disorders, 46*(1), 60-65. https://doi.org/10.1002/eat.22040

Mulkens, S., de Vos, C., de Graaff, A., & Waller, G. (2018). To deliver or not to deliver cognitive behavioral therapy for eating disorders: Replication and extension of our understanding of why therapists fail to do what they should do. *Behaviour Research and Therapy, 106*, 57-63. https://doi.org/10.1016/j.brat.2018.05.004

National Institute for Health and Care Excellence (NICE). (2017). Eating disorders: recognition and treatment. In *NICE Guideline [NG69]* (pp. 41). London, UK: NICE.

Netwerk Kwaliteitsontwikkeling GGz. (2017). *Zorgstandaard Eetstoornissen.* Utrecht: Netwerk Kwaliteitsontwikkeling GGz.

Noordenbos, G., Aliakbari, N., & Campbell, R. (2014). The Relationship Among Critical Inner Voices, Low Self-Esteem, and Self-Criticism in Eating Disorders. *Eating Disorders, 22*(4), 337-351. https://doi.org/http://dx.doi.org/10.1080/10640266.2014.898983

Rosenberg, M. (1965). *Society and the Adolescent Self-image*. Princeton, NJ: Princeton University Press.

Sassaroli, S., Gallucci, M., & Ruggiero, G. M. (2008). Low perception of control as a cognitive factor of eating disorders. Its independent effects on measures of eating disorders and its interactive effects with perfectionism and self-esteem. *Journal of Behavior Therapy and Experimental Psychiatry, 39*(4), 467-488. https://doi.org/10.1016/j.jbtep.2007.11.005 18328461

Smink, F. R., van Hoeken, D., & Hoek, H. W. (2013). Epidemiology, course, and outcome of eating disorders. *Current Opinion in Psychiatry, 26*(6), 543-548. https://doi.org/10.1097/YCO.0b013e328365a24f

Staring, A. B., van den Berg, D. P., Cath, D. C., Schoorl, M., Engelhard, I. M., & Korrelboom, C. W. (2016). Self-esteem treatment in anxiety: A randomized controlled crossover trial of Eye Movement Desensitization and Reprocessing (EMDR) versus competitive memory training (COMET) in patients with anxiety disorders. *Behaviour Research and Therapy, 82*, 11-20. https://doi.org/10.1016/j.brat.2016.04.002

Stice, E., Marti, C. N., & Rohde, P. (2013). Prevalence, incidence, impairment, and course of the proposed DSM-5 eating disorder diagnoses in an 8-year prospective community study of young women. *Journal of Abnormal Psychology, 122*(2), 445-457. https://doi.org/10.1037/a0030679

Tobin, D. L., Banker, J. D., Weisberg, L., & Bowers, W. (2007). I know what you did last summer (and it was not CBT): a factor analytic model of international psychotherapeutic practice in the eating disorders. *International Journal of Eating Disorders, 40*(8), 754-757. https://doi.org/10.1002/eat.20426

van der Gaag, M., van Oosterhout, B., Daalman, K., Sommer, I. E., & Korrelboom, K. (2012). Initial evaluation of the effects of competitive memory training (COMET) on depression in schizophrenia-spectrum patients with persistent auditory verbal hallucinations: a randomized controlled trial. *British Journal of Clinical Psychology, 51*(2), 158-171. https://doi.org/10.1111/j.2044-8260.2011.02025.x

Vonk, R., & Smit, H. (2012). Optimal self-esteem is contingent: Intrinsic versus extrinsic and upward versus downward contingencies. *European Journal of Personality, .26*(3), 186-193. https://doi.org/10.1002/per.817

Waller, G., Stringer, H., & Meyer, C. (2012). What cognitive behavioral techniques do therapists report using when delivering cognitive behavioral therapy for the eating disorders? *Journal of Consulting and Clinical Psychology, 80*(1), 171-175. https://doi.org/10.1037/a0026559

Yager, J., Devlin, M. J., Halmi, K. A., Herzog, D. B., Mitchell III, J. E., Powers, P.*, et al.* (2014). Guideline watch (August 2012): Practice guideline for the treatment of patients with eating disorders, 3rd Edition. *Focus, 12*(4), 416-431. https://doi.org/10.1176/appi.focus.120404

Zeigler-Hill, V., Besser, A., Myers, E. M., Southard, A. C., & Malkin, M. L. (2013). The status-signaling property of self-esteem: the role of self-reported self-esteem and perceived self-esteem in personality judgments. *Journal of Personality, 81*(2), 209-220. https://doi.org/10.1111/j.1467-6494.2012.00790.x

Appendix

Diagnostic criteria for anorexia nervosa, bulimia nervosa, binge eating disorder and otherwise specified feeding or eating disorder according to the DSM-5 (American Psychiatric Association, 2013)

Anorexia nervosa

A. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than minimally expected.
B. Intense fear of gaining weight or of becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.
C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Specify whether:

Restricting type: During the last three months, the individual has not engaged in recurrent episodes of binge eating or purging behavior (i.e. self-induced vomiting, or the misuse of laxatives, diuretics, or enemas). This subtype describes presentations in which weight loss is accomplished primarily through dieting, fasting and/or excessive exercise.

Binge-eating/purging type: During the last three months the individual has engaged in recurrent episodes of binge eating or purging behavior (i.e. self-induced vomiting, or the misuse of laxatives, diuretics, or enemas).

Specify current severity:

Mild: BMI more than 17
Moderate: BMI 16- 16.99
Severe: BMI 15-15.99
Extreme: BMI less than 15

Bulimia nervosa

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
   1. Eating in a discrete period of time (e.g. within any 2 hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances;
   2. A sense of lack of control over eating during the episodes (e.g. a feeling that one cannot stop eating or control what or how much one is eating.
B. Recurrent inappropriate compensatory behaviors to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.
D. Self-evaluation is unduly influenced by body shape and weight.
E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

Specify current severity:

Mild: An average of 1-3 episodes of inappropriate compensatory behaviors per week.
Moderate: An average of 4-7 episodes of inappropriate compensatory behaviors per week.
Severe: An average of 8-13 episodes of inappropriate compensatory behaviors per week.
Extreme: An average of 14 or more episodes of inappropriate compensatory behaviors per week.

Binge eating disorder

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both:
   1. Eating in a discrete period of time (e.g. within any 2 hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances;
   2. A sense of lack of control over eating during the episodes (e.g. a feeling that one cannot stop eating or control what or how much one is eating).

B. Binge eating episodes are associated with three or more of the following:
   1. Eating much more rapidly than normal;
   2. Eating until feeling uncomfortably full;
   3. Eating large amounts of food when not feeling physically hungry;
   4. Eating alone because of feeling embarrassed by how much one is eating;
   5. Feeling disgusted with oneself, depressed, or very guilty afterwards.

C. Marked distress regarding binge eating is present.

D. The binge eating occurs, on average, at least once a week for 3 months.

E. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior as in bulimia nervosa and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

Specify current severity:

Mild: 1-3 binge eating episodes per week.
Moderate: 4-7 binge eating episodes per week.
Severe: 8-13 binge eating episodes per week.
Extreme: 14 or more binge eating episodes per week.

Otherwise specified feeding or eating disorder

Symptoms characteristic of a feeing or eating disorder that cause clinical distress or impairment in social, occupational, or other important areas of functioning predominate.

- However DO NOT meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class.
- This category can also be used in situations to communicate the specific reason the presentation does not meet the criteria for a specific eating disorder.
- This is done by recording "other specified feeding or eating disorder" followed by the specific reason e.g. "bulimia nervosa-low frequency".

Examples:

1. **Atypical Anorexia Nervosa**: all of the criteria for anorexia nervosa are met, except that despite significant weight loss, the individual's weight is within or above the normal range.
2. **Bulimia Nervosa (of low frequency and/or limited duration)**: all of the criteria for bulimia nervosa are met, except that the binge eating and inappropriate compensatory behaviors occur, on average, less than once a week and/ or for less than 3 months.
3. **Binge-eating disorder (of low frequency and/or limited duration)**: all of the criteria for binge-eating disorder are met, except that the binge occurs, on average, less than once a week and/ or for less than 3 months.
4. **Purging disorder**: recurrent purging behavior to influence weight or shape (e.g. self-induced vomiting; misuse of laxatives, diuretics, or other medications) in the absence of binge eating.
5. **Night eating syndrome**: Recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. There is awareness of recall of the eating. The night eating is not better explained by external influences such as changes in the individual's sleepwake cycle or by local social norms. The night eating causes significant distress and/or impairment in functioning. The disordered pattern of eating is not better explained by binge-eating disorder and or another mental disorder, including substance use, and is not attributable to another medical disorder or to an effect of medication.