Enhanced Cognitive Behavior Therapy for Eating Disorders

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Abstract

Enhanced Cognitive Behavior Therapy (CBT-E) is a psychological treatment specifically designed for eating disorders. Based upon the original cognitive behavior therapy for bulimia nervosa (CBT-BN), it has been termed "enhanced" because it uses various innovative strategies and procedures to maximize its effectiveness. It addresses flexibly and individually the transdiagnostic processes maintaining the eating-disorder psychopathology. CBT-E was initially designed for adult outpatients with eating disorders, but has subsequently been adapted for adolescents, intensive settings of care (i.e., intensive outpatients and inpatients), and complex cases featuring medical and psychiatric comorbidities. CBT-E has been trialed in both research and real-world clinical settings, and is recommended

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as the most effective treatment for all clinical presentations of eating disorders in adults, and the most valid alternative to Family-Based Treatment for the management of eating disorders in adolescents. Future challenges are to further establish the validity of CBT-E, increase its effectiveness, improve its promotion, and maximize its availability.

Keywords

Cognitive behavior therapy · Treatment · Eating disorders · Anorexia nervosa · Bulimia nervosa · Binge-eating disorder

Abbreviations

AN	Anorexia nervosa
BED	Binge-eating disorder
BMI	Body mass index
BN	Bulimia nervosa
CBT-BN	Cognitive Behavior Therapy for Bulimia Nervosa
CBT-E	Enhanced Cognitive Behavior Therapy
FBT	Family-Based Treatment
IPT	Interpersonal therapy
MANTRA	Maudsley Model Anorexia Nervosa Treatment for Adults (MANTRA)
SSCM	Specialist Supportive Clinical Management

Introduction

Enhanced Cognitive Behavior Therapy (CBT-E) is a form of cognitive behavior therapy (CBT) specifically developed for eating disorders (Fairburn et al. 2003). Based on the original CBT for Bulimia Nervosa (CBT-BN) it is a transdiagnostic treatment designed to address in a flexible and individualized way the key cognitive and behavioral processes maintaining eating-disorder psychopathology, rather than targeting a single diagnostic classification. In other words, it is equally suitable for treating anorexia nervosa, bulimia nervosa, binge-eating disorder, or "other eating disorders" (a broad term used to encompass the eating disorders that do not fit neatly into the above).

CBT-E is termed *"enhanced"* because it introduces a variety of innovative, evidence-based strategies and procedures specifically developed to enhance the effectiveness of the original CBT-BN. Though designed initially for adult outpatients with eating disorders (Fairburn et al. 2003; Fairburn 2008), it has now been adapted to be suitable for adolescents (Dalle Grave and Calugi 2020; Dalle Grave 2019; Dalle Grave and Cooper 2016), day-hospital patients and inpatients (Dalle Grave et al. 2008; Dalle Grave 2012, 2013), and complex cases involving medical and psychiatric comorbidities (Dalle Grave et al. 2021a). CBT-E has been assessed in numerous clinical trials, and is recommended as both the most effective treatment for

all clinical eating-disorder presentations in adults (National Guideline Alliance 2017), and the most valid alternative to Family-Based Treatment (FBT) for the management of eating disorders in adolescents (National Guideline Alliance 2017).

This chapter begins by describing the origin of CBT-E. It goes on to provide an overview of transdiagnostic cognitive behavior theory and treatment and its current status, and then concludes by discussing the main challenges that still remain to be addressed.

The Origins of CBT-E

The rationale behind CBT-E is closely linked with early reports describing recurrent objective binge-eating episodes and self-induced vomiting in normal-weight persons. This abnormal eating behavior pattern, initially called "bulimarexia" (Boskind-Lodahl and White 1978), was proposed as a specific eating disorder diagnosis by Gerald Russell in his landmark 1979 paper *Bulimia nervosa: An ominous variant of anorexia nervosa* (Russell 1979). In this, Russell described 30 normal-weight patients who, in addition to a fear of becoming fat, displayed recurrent binging and purging behavior. He gave the name "bulimia nervosa" to the disorder, and, intriguingly, claimed that the disorder was "intractable."

In the same period, Christopher Fairburn, a young psychiatrist working in Oxford, started to see cases with similar features to those described by Russell, and observed that these patients had three specific behaviors and concerns, specifically:

1. Unusual form of dieting, characterized by sustained attempts to follow extreme, rigid dietary rules
2. Recurrent episodes of loss of control over eating (binges) followed by self-induced vomiting or laxative misuse (purging); the binges tended to be triggered by dietary rule-breaking
3. Extreme concerns about shape and weight (which he termed "overvaluation of shape, weight and their control")

He noted that these three common features appeared to interact, serving to reinforce, or "maintain," the eating disorder, which led him to propose a theory focused on the psychology "maintaining," rather than causing, bulimia nervosa (illustrated in Fig. 1). He then developed a psychological treatment designed to address each of the maintenance mechanisms described in the theory. The outpatient treatment, called "CBT-BN," consisted of 20 sessions over 20 weeks, focused on addressing binge-eating episodes, dietary restraint and concerns about shape and weight, and achieving a full and lasting response (Fairburn 1981, 1985).

Multiple studies evaluated the efficacy of CBT-BN, and by 2004 over 30 randomized control trials had been conducted. These demonstrated that CBT-BN is more effective than all the treatments with which it had been compared, including a wide range of psychological therapies (e.g., supportive psychotherapy, focal

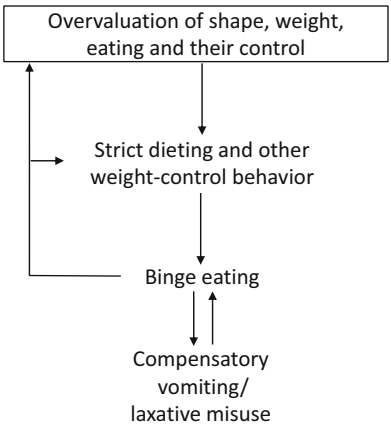

Fig. 1 The cognitive-behavioral theory of bulimia nervosa. (From Fairburn et al. (2003). Reprinted with the permission of Elsevier)

psychotherapy, supportive-expressive psychotherapy, hypnobehavioral treatment, stress management, nutritional counseling, and behavioral versions of CBT-BN), as well as various forms of exposure with response prevention, and pharmacological treatments (Wilson and Fairburn 2002). The only treatment with comparable effects to CBT-BN was interpersonal psychotherapy (IPT), but that was much slower to act (Agras et al. 2000; Fairburn et al. 1993). Summarizing the findings, 40–50% of adult patients with bulimia nervosa treated with CBT-BN displayed a complete response, which appeared to be well maintained over time. These results led the National Institute for Health and Clinical Excellence to recommend CBT-BN for adults with bulimia nervosa – a grade A recommendation (i.e., strong empirical support from well-conducted randomized trials) (National Collaborating Centre for Mental Health 2004).

Despite this, the research into the efficacy of CBT-BN made clear that the treatment is not effective enough as, at best, only half of the patients achieve full and lasting remission. Analysis of the reasons for this yielded two main clinical observations (Fairburn et al. 2003):

1. *Many of the clinical features present in bulimia nervosa are also present in anorexia nervosa and the other eating disorders* (i.e., eating disorders share a specific psychopathology – see Table 1), *and many patients' eating disorder diagnosis shifts from one to another* (e.g., from anorexia nervosa to bulimia nervosa or vice versa, the so-called "diagnostic migration" – see Fig. 2). This observation led to the idea that many of the processes that maintain bulimia nervosa, and are targeted by CBT-BN, also maintain the other eating disorders.
2. *There were consistent reasons for a lack of response to CBT-BN.* A case-by-case analysis of non-response led to the conclusion that the efficacy of CBT-BN might be extended to more patients in two main ways:
   a) By developing more effective strategies and procedures to address not only extreme concerns about shape and weight, but also ambivalence to change.

Table 1 Eating disorders share the same features

	AN	BN	OEDs
Overvaluation of shape, weight, and eating control	+++	+++	++
Strict dieting	+++	++	++
Binge eating	+	+++	++
Self-induced vomiting	+	++	+
Laxative misuse	+	++	+
Diuretic misuse	+	+	+
Excessive exercising	++	+	+
Food checking	+++	+	+
Body checking	+++	+++	++
Body avoidance	+	++	++
Feeling fat	+++	+++	+++
Low weight and starvation syndrome	+++	+	+

AN anorexia nervosa, *BN* bulimia nervosa, *OEDs* other eating disorders

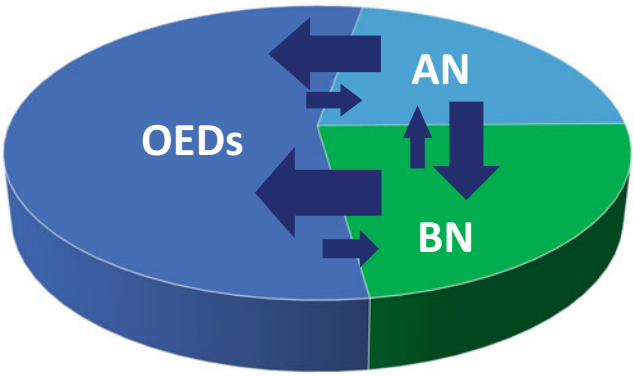

Fig. 2 Diagnostic migration of the eating disorder diagnosis. *AN* anorexia nervosa, *BN* bulimia nervosa, *OEDs* other eating disorders

b) By addressing the co-existing psychopathology that appeared to maintain some patients' eating disorders (identified as clinical perfectionism, core low self-esteem, marked interpersonal difficulties, and/or mood intolerance).

Accordingly, a "transdiagnostic" theory of the maintenance of eating disorders was proposed, and a transdiagnostic treatment based on this theory, called "CBT-E," was developed (Fairburn et al. 2003).

Transdiagnostic Theory

The transdiagnostic theory accounts for the range of processes that maintain any eating disorder diagnosis, irrespective of its presentation. According to this theory, a distinctive self-evaluation scheme, termed the *overvaluation of shape, weight, eating and their control* is the "core," or central feature maintaining eating disorders. People who display this trait judge their self-worth mainly, or even exclusively, on their shape, weight, and ability to control them. This psychopathological preoccupation with eating, weight, shape, and control seems to drive the other clinical features characteristic of eating disorders, including extreme weight-control behaviors (e.g., *dietary restraint and restriction, purging* and *excessive exercising*), *feeling fat,* and various forms of *body checking and avoidance*. From the transdiagnostic perspective, these features of eating disorders are expressions of an individual's belief that controlling their weight, shape, and eating is vital to their self-evaluation.

The one behavior that is not a direct expression of this core eating disorder feature is *binge eating*. A large subgroup of people with eating disorders experience binge-eating episodes, which seem to stem indirectly from the overvaluation of shape, weight, and eating through the following mechanisms:

1. *Severe undereating*. The overvaluation of shape, weight, eating and their control can lead an individual to undereat. Doing so produces several neuroendocrine signals that control food intake, messaging hunger over satiety.
2. *Extreme and rigid dietary rules.* People with eating disorders tend to react in a negative and extreme (often all-or-nothing) way when these extreme and rigid dietary rules are, almost inevitably, broken, and even small transgressions tend to be interpreted as evidence of a personal failing and lack of self-control. This often results in a temporary abandonment of the effort to restrict the diet, triggering a binge-eating episode. In turn, this episode intensifies concerns and beliefs regarding their lack of control over shape, weight, and eating, and encourages further dietary restriction, thereby increasing the risk of subsequent binge-eating episodes.
3. *Self-induced vomiting or other compensatory behaviors*. The false belief that purging behaviors effectively prevent calorie absorption removes a major deterrent (i.e., the fear of gaining weight) to relaxing the dietary rules and binge eating.
4. *Events and associated mood changes.* These seem to maintain binge-eating episodes through three main mechanisms:
   a) It is more difficult to maintain a high level of dietary restriction when life difficulties and associated emotional changes inevitably occur, and such events facilitate the breaking of extreme and rigid dietary rules.
   b) Binge eating distracts from problems and temporarily improves mood. It may therefore be adopted as a dysfunctional means of coping with life's difficulties and uncomfortable emotions.
   c) Binge eating may be used to gratify and reward oneself (a common process reported by people with binge-eating episodes and obesity).

In persons with the anorexia nervosa presentation, binge-eating episodes are usually subjective or absent, while undereating and being underweight predominate. These lead to the development of several *starvation symptoms*, such as hunger, dizziness, weakness, feeling cold, early sense of fullness, irritability, mood swings, social withdrawal, reduced sexual desire, and preoccupation with food (Keys et al. 1950). These, like undereating, binge-eating and the other eating-disorder features, perpetuate the preoccupation with and overvaluation of shape, weight, and eating control, ensuring that the *eating-disorder mindset* becomes locked in place. This occurs through several mechanisms (see Table 2).

This vicious and debilitating cycle can be conceptualized and illustrated to patients via a transdiagnostic *formulation*, featuring the core processes involved in the maintenance of eating disorders according to transdiagnostic cognitive-behavioral theory (Fig. 3). This can be adapted to reflect any diagnostic category of eating disorders, or rather individual manifestations of the eating-disorder psychopathology, with minimal changes. For example, the formulation of a person with bulimia nervosa does not contain the box "low weight and starvation symptoms," but may include all the other characteristics described in the array of possible eating disorder symptoms. In contrast, the formulation of a patient with anorexia nervosa restricting type will always include the box "low weight and starvation symptoms," but not the "binge-eating" and "self-induced vomiting and "misuse of laxatives" boxes. A patient with anorexia nervosa of the binge-eating/purging type will display the greatest number of maintenance processes, while those with binge-eating disorder will have the smallest number.

As mentioned briefly above, in addition to the core eating-disorder maintenance processes, transdiagnostic cognitive behavioral theory proposes that one or more of the following additional mechanisms may be operating in some patients (Fig. 4) (Fairburn et al. 2003): (i) clinical perfectionism, (ii) core low self-esteem, (iii) marked interpersonal difficulties, and (iv) mood intolerance. If present and marked, these "external" maintenance mechanisms interact with the core processes, perpetuating the eating disorder and hindering its treatment (see Table 3).

Overview of CBT-E

CBT-E is a specialized psychological treatment for eating disorders based on the transdiagnostic cognitive behavioral theory described above. It was initially devised by Fairburn and colleagues at the Centre for Research on Eating Disorders at Oxford (CREDO) to treat eating disorders in adults with a body mass index (BMI) of between 15.0 and 39.9 (Fairburn et al. 2003; Fairburn 2008). It was then adapted by Dalle Grave and colleagues at the Villa Garda Hospital Department of Eating and Weight Disorders, Italy, to be suitable for both adolescents of at least 12 years of age (Dalle Grave and Calugi 2020; Dalle Grave 2019) and more intensive settings of care (Dalle Grave 2012, 2013), such as day-hospital and residential units, where patients with severe eating disorders and or BMI <15.0 are generally treated. The

Table 2 Principal maintaining mechanisms of eating disorders

Dietary restraint and dietary restriction
• Increase the preoccupations with eating
• Cause anxiety every time one eats
• Restrict the way one eats
• Contribute to binge-eating episodes
• Are the major cause of becoming and remaining underweight
• Can be used to manage events and associated mood changes in a dysfunctional way
• Impair interpersonal relationships
Objective and subjective binge-eating episodes
• Increase concerns about shape and weight
• Intensify dieting to compensate for the calories consumed during the binges
• Favor the use of compensatory behaviors (e.g., self-induced vomiting, laxative, and/or diuretic misuse)
• Can be used to manage events and associated mood changes in a dysfunctional way
Excessive exercising
• Increases the preoccupations about weight and body shape
• Promotes binge eating (when used as a compensatory behavior)
• Is a cause of becoming and remaining underweight
• Can be used to manage events and associated mood changes in a dysfunctional way
Purging (self-induced vomiting, laxative, and diuretic misuse)
• Relax the control of diet as the individuals think incorrectly that they are able to eliminate all the ingested calorie through purging
• The prolonged use of laxatives can lead to chronic constipation, which can in turn increase general concern with eating and stomach shape and perpetuates the perceived need to use more of these drugs
• Some people think that if they do not evacuate regularly, they will gain weight
Underweight
• Some starvation symptoms are interpreted by individuals with an eating disorder as a threat to their control over eating (e.g., hunger potentially prompting them to eat more than they had planned) or as their failure to control their food intake (e.g., the early sense of fullness being seen as a sign that they have overeaten)
• Other starvation symptoms, such as social withdrawal, induce individuals to isolate from external "normal" experiences that could serve to reduce their overvaluation of shape, weight, and eating control by introducing/reinforcing other self-evaluation domains
• Some starvation symptoms (e.g., hunger, dizziness, weakness, and feeling cold) are interpreted in a positive light, seeing them as signs of their success in controlling eating and weight
Body checking
• Frequent weighing leads to misinterpreting the minimal variation of body weight – generally due to change of body hydration – as "having gained weight" and encourages the intensification of dieting or the adoption of other extreme weight control behaviors
• Repetitively scrutinizing disliked parts of the body amplifies the perceived flaws and intensifies the body dissatisfaction, which encourages the intensification of dietary restriction
• The superficial and rapid observation of body parts of a filtered subgroup of thin and attractive people or with distinct physical features confirm that one's body shape is wrong, and maintain body dissatisfaction

(continued)

Table 2 (continued)

Body avoidance
• Allows concerns and fears about body weight and shape to persist in the absence of an objective reflection of what one looks like (false beliefs regarding body weight and shape remain unchallenged)
• Denies the possibility of receiving positive comments from others and therefore maintains negative beliefs about their bodies
• Restricts interests, does not allow an intimate life, and leads the persons to isolate themselves focusing more and more on the control of their body shape and weight
• Avoiding weighing maintains the fear of weight gain and facilitates weight gain or loss, as it prevents the use of measures to address the changes in weight
Feeling fat
• It tends to be equated with "being fat" by both underweight and non-underweight individuals with an eating disorder

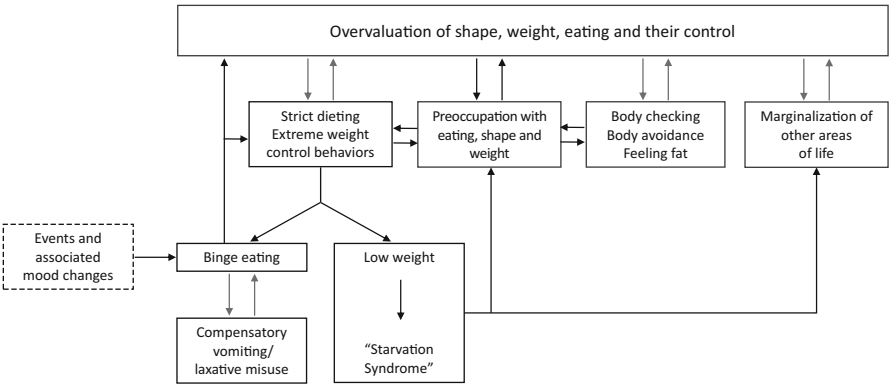

Fig. 3 The core processes involved in the maintenance of eating disorders, according to trans-diagnostic cognitive-behavioral theory

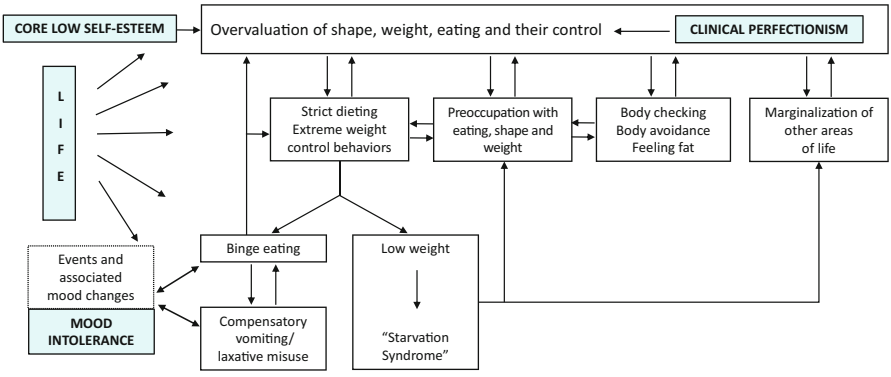

Fig. 4 Composite transdiagnostic formulation of eating disorders featuring additional maintenance processes. "Life" is shorthand for interpersonal life

Table 3 "External" mechanisms operating in a subgroup of persons with eating disorders

Clinical perfectionism This refers to overvaluation of achievement and achieving demanding personal standards, despite the adverse consequences. It maintains the eating-disorder psychopathology through two main mechanisms:
1. The individual's self-evaluation system focuses on the commitment to trying to achieve "perfect" control of shape, weight, and eating, as well as in pursuing demanding standards in other domains of life (e.g., work or sport performance)
2. It intensifies some aspects of the psychopathology of eating disorders (e.g., dieting and/or excessive exercising), making this more difficult to treat
Core low self-esteem This is characterized by a pervasive negative valuation of self-worth which is not affected by either events or changes in the state of the eating disorder. It maintains the eating-disorder psychopathology through two main processes:
1. It creates a sense of helplessness and a lack of confidence in the ability to change, negatively influencing treatment adherence
2. It encourages the individual to pursue success in some areas that are judged important for improving their self-esteem (e.g., control of shape, weight, and eating) with determination, thereby making it even more difficult to enact change in these areas
Marked interpersonal difficulties These maintain eating-disorder psychopathology through various mechanisms. Examples include:
• Family tensions may intensify dietary restriction, especially in younger patients. A process that reflects the intensification of their need to have a sense of control is shifted to control over eating
• Some interpersonal environments (e.g., school and family) intensify concerns about control over shape, weight, and eating
• Adverse interpersonal events and associated emotional changes can affect eating control and promote binge-eating episodes
• Persistent interpersonal difficulties may undermine self-esteem and prompt patients to struggle even harder to achieve certain "positive" goals such as success in controlling shape, weight, and eating
Mood intolerance This is defined as an inability to tolerate intense moods, or excessive sensitivity to mood states, which are managed using "dysfunctional mood-modulation behaviors," such as excessive alcohol intake, substance misuse, or self-harming behaviors (e.g., cutting or burning the skin). It maintains the eating-disorder psychopathology through the following mechanism:
• Binge-eating, self-induced vomiting, and excessive exercising are used as means to modulate mood

management of patients with eating-disorder psychopathology and a BMI equal to or greater than 40 has also been described (Dalle Grave et al. 2018).

Goals of CBT-E

CBT-E has four general goals:

1. To engage the patient in treatment by motivating them to recover and involving them actively in the process of change
2. To help them overcome their eating-disorder features (e.g., dietary restraint and restriction, low weight, self-induced vomiting, laxative misuse, excessive exercising, and preoccupation with shape, weight, and eating)
3. To correct the mechanisms maintaining the eating-disorder features
4. To ensure lasting change and prevent relapse

General Treatment Strategy

CBT-E is a time-limited, personalized psychological treatment designed to treat an individual's psychopathology. It does so by addressing the behavioral and cognitive processes maintaining their eating-disorder features through a flexible and personalized set of strategies and procedures. It has been developed as a comprehensive, standalone treatment, and is therefore not to be combined with other forms of therapy. It is equally well suited to males and females, and is designed to involve the patient actively in all phases of treatment, from the decision to start to the choice of which problems to address and how. This fosters a sense of personal control, as does the progressive education a patient receives to help them make informed decisions.

At the very beginning, patients are taught about the two main ways of understanding eating disorders, namely the so-called "disease" and "psychological" models, and the treatment approaches based upon them. Specifically:

1. The *disease model* postulates that the psychopathological features displayed by the patient are the result of a specific disease – in this case anorexia nervosa or bulimia nervosa, etc. – and are therefore outside their control. As such, they are told not to trust their thoughts about shape, weight, and eating, as these are symptoms of their disease, and asked to adopt a passive role in the treatment of their illness. In other words, the disease model is the grounds for a traditional prescriptive approach to treatment, in which the patient must simply follow the instructions of their doctors, psychologists, and dietitians to recover.
2. The *psychological model* adopted by CBT-E, on the other hand, is based on a psychological explanation of the patient's eating disorder; specifically, the affected person has difficulties seeing dieting and low weight as a problem because their self-evaluation scheme has become skewed, and is predominantly based on shape, weight, eating and their control. This explains why being able to diet and achieving a low weight is associated with a sense of triumph and realization, despite its negative consequences. However, according to this stance, patients can be helped to understand the psychological mechanisms maintaining their eating disorder and that their self-evaluation system is dysfunctional. They can actively decide to find other, more functional solutions for reaching a stable and balanced self-evaluation scheme, and therefore recover from their illness.

The psychological model explains why CBT-E never uses "prescriptive" or "coercive" procedures. Indeed, asking a patient to do things that they are unwilling to is only likely to increase their resistance to change. For example, in underweight patients one of the first major goals is not weight regain itself, but instead to decide whether or not to actively address weight regain by helping them understand how their eating problem operates and is maintained. If they do not conclude that they have a problem to address, the treatment cannot start or must be postponed for a time, but this is seldom the outcome. This "informed decision-making" approach is also used to address other egosyntonic features of eating-disorder psychopathology, like dietary restraint and/or excessive exercising. To this end, a key CBT-E strategy is to collaboratively create with the patient a personalized formulation (or set of hypotheses) of the main mechanisms maintaining their individual eating-disorder psychopathology, which they will actively decide to target one by one during treatment.

Once the patient is engaged in the process of change, their eating-disorder psychopathology is addressed via a flexible set of cognitive, behavioral, and interpersonal treatment strategies and procedures, integrated with ongoing education. Patients are encouraged to observe how the processes illustrated in their formulation operate in real life, and to monitor their eating, and the events, thoughts, and feelings that have influenced their eating, in real time. They are asked, if they agree, to make gradual behavioral changes, and analyze the effects and implications of each change on their way of thinking. By empowering the patient to disrupt the main eating-disorder maintenance mechanisms, this approach usually produces a gradual reduction in their preoccupation with shape, weight, eating and their control. In the later stages of treatment, when patients report experiencing periods free from such concerns, CBT-E focuses on helping them to recognize the early warning signs of eating-disorder mindset reactivation, and to de-center from it quickly, with a few to averting relapse.

If the patient is an adolescent, their parents are actively involved in creating an optimal home environment for change and, with the young person's consent, providing support as they address the main mechanisms maintaining their eating problem. A similar strategy is used with adult patients if both the therapist and the patient agree that involving their significant other(s) might aid their recovery.

Forms of CBT-E

CBT-E can be administered in two forms:

1. *Focused form*, which only targets their eating-disorder psychopathology
2. *Broad form*, which focuses on both their eating-disorder psychopathology and one or more of their external maintenance mechanisms (i.e., clinical perfectionism, core low self-esteem, mood intolerance, or marked interpersonal difficulties), if deemed necessary

The focused form is indicated for most patients, whereas the broad module(s) are introduced if the external psychopathology is pronounced, appears to reinforce the eating disorder, and interferes with the treatment. The decision to use the broad form is taken in a review session held after 4 weeks in not-underweight patients, or one of the review sessions later on in underweight patients.

Versions of CBT-E

Outpatient CBT-E for Adults

The outpatient version of CBT-E lasts 20 weeks in non-underweight patients and 40 weeks in underweight patients. It is recommended for most adult patients with an eating disorder (Fairburn 2008), and can in some cases be shortened, for example, in patients with binge-eating disorder whose binge eating rapidly ceases and who have little other psychopathology to address. More often, however, there is a case for extending treatment. Examples include when the treatment has been disrupted (e.g., by the onset of clinical depression or an interpersonal crisis), or when a patient is benefitting from the treatment but is still underweight. Under these circumstances, the treatment should be continued for some additional months, with a detailed review of progress every 4 weeks to ensure continuation is justified.

Outpatient CBT-E for Adolescents

CBT-E has been adapted for adolescents based on the consideration of two factors that distinguish them from adults, namely physical health concerns and the need for parental involvement. Indeed, some medical complications associated with eating disorders, e.g., osteopenia and osteoporosis, may be severe in this age range and have lifelong repercussions. Therefore, regular medical assessment and a lower threshold for hospital admission are integral parts of CBT-E for adolescents. The treatment lasts 20 weeks in non-underweight patients, but in underweight patients, the "standard" 40 weeks may be shortened to about 30 weeks, as the evidence shows that adolescents tend to return to normal body weight faster than adults (Calugi et al. 2015).

In the great majority of cases, parental involvement is beneficial to treatment. Parents are asked to participate alone in an interview lasting approximately 90 min during the first week, and subsequently the patient and parents are seen together for 15–20 min immediately after the fourth to sixth sessions (in patients who are not underweight) or the eighth to tenth sessions (in patients who are underweight). Table 4 describes the core elements of the adolescents' version of CBT-E for underweight patients.

Intensive Outpatient CBT-E

This version of treatment is designed for patients who may need more professional input than outpatient CBT-E can provide, but whose conditions are not sufficiently severe to warrant hospitalization. This adaptation of CBT-E incorporates all of the

Table 4 The core elements of the focused CBT-E version for not-underweight adolescent patients

Step one – starting well and deciding to change The aims are to engage the patient in treatment and change, including addressing weight regain The appointments are twice weekly for 4 weeks and involve the following:
• Jointly creating a formulation of the processes maintaining the eating disorder
• Establishing real-time self-monitoring of eating and other relevant thoughts and behaviors
• Educating about: body weight regulation and fluctuations, the adverse effects of dieting, and, if applicable, the ineffectiveness and physical complications of self-induced vomiting and laxative misuse as a means of weight control
• Introducing and establishing weekly in-session weighing, and becoming proficient in interpreting and coping with weight fluctuations
• Introducing and adhering to a pattern of regular eating, with planned meals and snacks
• Thinking about addressing weight regain
• Involving parents to facilitate treatment
Step two – addressing the change The aim is to address weight regain and the key mechanisms that are maintaining the patient's eating disorder The appointments are twice a week until the rate of weight regain stabilizes, at which time they are held once a week. This step involves the following CBT-E modules:
• Underweight and undereating: creating a daily positive energy balance of about 500 kcal to achieve a mean weekly weight regain of about 0.5 kg
• Overvaluation of shape and weight: providing education on overvaluation and its consequences; nurturing previously marginalized domains of self-evaluation; reducing unhelpful body checking and avoidance; re-labeling unhelpful thoughts or feelings such as "feeling fat"; exploring the origins of the overvaluation and learning to identify and control the eating-disorder mindset
• Dietary restraint: changing inflexible dietary rules into flexible guidelines, and introducing previously avoided foods
• Events and mood-related changes in eating: developing proactive problem-solving skills to tackle such triggering events, and developing skills to accept and modulate intense moods
• Setbacks and mindsets: providing education about setbacks and mindsets; identifying eating-disorder mindset reactivation triggers; spotting setbacks early on; displacing the mindset; exploring the origins of the overvaluation
Review sessions These are held 1 week after Step One and then every 4 weeks, for the purposes of:
• Collaboratively reviewing treatment compliance and progress
• Identifying barriers to change, both general (e.g., school pressures) and features of the eating disorder itself (e.g., difficulties in weight regain, presence of dietary restraint)
• Adjusting the initial formulation in light of progress and/or emerging issues
• Deciding to continue with the focused form of CBT-E rather than the broad form[a]
Step 3 – ending well The aims are to ensure that progress made during treatment is maintained, and that the risk of relapse is minimized. There are three appointments, 2 weeks apart, covering the following:
• Addressing concerns about ending treatment
• Devising a short-term plan for continuing to implement changes made during treatment (e.g., reducing body checking, introducing further avoided foods, eating more flexibly, maintaining involvement in new activities) until the post-treatment review session
• Phasing out treatment procedures, in particular self-monitoring and in-session weighing
• Education about realistic expectations and identifying and addressing setbacks

(continued)

Table 4 (continued)

• Devising a long-term plan for maintaining body weight, and averting and coping with setbacks
Post-treatment review session
• Reviewing the long-term maintenance plan around 4, 12, and 20 weeks after treatment has finished

[a]The broad form of CBT-E includes four additional modules (i.e., clinical perfectionism, low self-esteem, interpersonal difficulties, and mood intolerance), one of which may be added to the focused modules in Step Two. This form of treatment is indicated if clinical perfectionism, low self-esteem, interpersonal difficulties, or mood intolerance are marked, and appear to be maintaining the disorder and obstructing change

strategies and procedures of outpatient CBT-E, but includes several additional features developed specifically for this new approach (Dalle Grave 2012, 2013).

Intensive outpatient CBT-E can be flexibly adapted to both the clinical needs of the patient and the logistical characteristics of the clinical service that delivers it. However, it should include the following procedures on weekdays: (i) supervised daily meals; (ii) individual CBT-E sessions; (iii) sessions with a CBT-E-trained dietitian to plan and review weekend meals; and (iv) regular reviews with a CBT-E-trained physician. Intensive outpatient treatment lasts for a maximum of 12 weeks, but may be shorter if patients successfully progress in the areas in which they were struggling in outpatient CBT-E (e.g., lack of progress in weight regain, reducing binge eating, and/or eating regular meals). Toward the end of intensive treatment, patients who have responded well are gradually encouraged to eat meals outside the unit, thereby allowing the treatment to evolve into conventional outpatient CBT-E.

Inpatient CBT-E

Inpatient CBT-E is indicated as a first-line option for patients who require close medical supervision, or for those who are not responding well to the less intensive versions. The treatment features all the main strategies and procedures of outpatient CBT-E, which are delivered in group format as well as individual sessions, but has three main features that set it apart (Dalle Grave 2012, 2013). First, the treatment is delivered by a non-eclectic multidisciplinary team, rather than a sole therapist. This will comprise physicians, psychologists, dietitians, and nurses who have all been fully trained in CBT-E. Second, assistance with eating is provided in the early weeks of treatment. This is to help patients overcome their difficulties in real time. Third, adolescent patients are given the opportunity to continue their studies during hospitalization with the aid of on-site educators. Inpatient CBT-E also includes the following additional elements, designed to reduce the high rate of relapse typically seen after discharge from hospital (Dalle Grave et al. 2008):

- The inpatient unit is open, with patients being free to go outside. This is so they are not sheltered from the environmental stimuli that tend to trigger their eating-disorder mindset and behaviors, but can rely on professional support.

- Before the scheduled discharge, the CBT-E team will work with the patient to identify likely environmental setback triggers. These will then be addressed during the individual CBT-E sessions in the final weeks of inpatient treatment.
- Toward the end of treatment, parents are helped to create a positive, stress-free home environment in readiness for the patient's return.

Post-inpatient Outpatient CBT-E

In order to capitalize on and reinforce the progress made during inpatient treatment, this is generally followed with 20 sessions of outpatient treatment over 20 weeks. Post-inpatient outpatient sessions are held twice weekly in the first month after discharge, and thereafter less frequently. The main objectives of these sessions are to help patients to consolidate the changes they have achieved during their residential treatment, to provide them with strategies for dealing with the difficulties that occur once they return home, and to identify and address any residual maintenance and control mechanisms, with a view to preventing relapse.

The Status of CBT-E

CBT-E has been tested in England, Australia, Denmark, Germany, Italy, and the USA on patients from all diagnostic categories of eating disorders. Focusing on the studies in which CBT-E was delivered well, the evidence suggests that about 80% of patients who are not significantly underweight complete treatment. Among these, about two-thirds achieve full remission, which appears stable over time. Many of the remaining patients improve, but do not achieve remission. The remission rate is similar with underweight patients, but treatment is only completed by about 65% of such patients.

In general, the research findings can be summarized as follows:

- CBT-E is suitable for treating all diagnostic categories of eating disorders in adult (Fairburn et al. 2009, 2013, 2015; Byrne et al. 2017) and adolescent patients (Le Grange et al. 2020; Dalle Grave et al. 2013b, 2015, 2019). This is not true of any other treatment (Dalle Grave et al. 2021b).
- In bulimia nervosa, CBT-E for adults has proven to be superior to all the psychological treatments it has been compared with, including psychoanalytic psychotherapy (Poulsen et al. 2014) and interpersonal therapy (IPT) (Fairburn et al. 2015).
- In anorexia nervosa, outpatient CBT-E has demonstrated promising results in adult patients (Fairburn et al. 2013). It was found to be more effective than Specialist Supportive Clinical Management (SSCM) and Maudsley Model Anorexia Nervosa Treatment for Adults (MANTRA) in helping patients achieve a physically healthy weight (in 59%, 47.5%, and 44% of participants, respectively), albeit not significantly so (Byrne et al. 2017).
- In inpatient settings, CBT-E has good outcomes in both adolescents and adults. Eighty-five percent complete the treatment, and among completers, about 50%

still display a full response at 60-week follow-up (Dalle Grave et al. 2013a, 2014, 2020).

- CBT-E has also displayed efficacy in patients with severe and extreme anorexia nervosa, who are seldom included in clinical trials due to their supposed intractability. A completion rate of 66% has been reported in such outpatients, and about 50% of these exhibited a full response at 60 weeks of follow-up (Calugi et al. 2021). In another sample, 85% completed inpatient CBT-E, and 33% of completers displayed a full response at 12-month follow-up (Calugi et al. 2017).
- In adolescent patients with anorexia nervosa, about 72% completed outpatient CBT-E, and among completers about 62% displayed a full response at follow-up (Dalle Grave et al. 2013b). These outcomes were similar to FBT at 6- and 12-month follow-up (Le Grange et al. 2020). Comparably encouraging results have also been achieved when delivering the treatment in real-world clinical settings (Dalle Grave et al. 2019).

Implications for Clinical Services

The results obtained through CBT-E in both research and real-world settings have important implications for clinical services providing treatment for eating disorders. CBT-E is the logical first-line treatment for all eating disorders, as patients can be treated via a single, well-delivered, evidence-based treatment, rather than the common evidence-free "eclectic" approach.

To achieve optimal outcomes, therapists need to be adequately trained in CBT-E. However, clinicians only have to learn a single psychological treatment to treat most adults and adolescent patients with any eating disorder, with substantial clinical and financial benefits. Moreover, multistep implementation of CBT-E, by offering outpatient, intensive outpatient, inpatient, and post-inpatient treatment (Dalle Grave 2013), minimizes the problems associated with transitions from outpatient to intensive treatment. In a unified multistep service, patients avoid the confusing and counterproductive changes in therapeutic approach that commonly accompany such transitions.

Remaining Challenges

Several research and clinical challenges will need to be addressed in the future in order to make the treatment more effective, efficient, and available. Future studies should: (i) clarify the relative effectiveness of CBT-E and FBT in the treatment of younger patients; (ii) identify moderators of the effects of CBT-E; (iii) assess the effects of the broad form of CBT-E; and (iv) develop and test specific modules to address comorbidities (e.g., obesity, post-traumatic stress disorder). It is also crucial to study how to increase the effectiveness of CBT-E, identifying, for example, the reasons for non-response and the mediators of the effects of CBT-E, and then modify the treatment accordingly.

To maximize CBT-E availability, currently under investigation are two strategies, specifically (i) how best to train more therapists via digital training while offering supervision by experts in CBT-E; and (ii) how to make CBT-E more scalable via innovative forms of digital treatment (Fairburn and Patel 2017). It will also be important to improve the promotion of CBT-E via social networks and other modern communication strategies. To this end, a website (www.cbte.co) devoted to the treatment has been recently created for the general public, therapists, and patients.

Applications in Other Eating Disorders

This chapter reviewed "enhanced" cognitive behavioral therapy (CBT-E) for eating disorders. CBT-E is a "transdiagnostic" treatment for all forms of eating disorders, including anorexia nervosa, bulimia nervosa, binge-eating disorder, and other similar states. CBT-E was developed as an outpatient treatment for adults, but is available as an intensive version for day patients and inpatients. There is also a version for younger people. CBT-E addresses common eating disorder maintenance mechanisms, reflecting their shared and evolving psychopathology, rather than the specific diagnosis. The treatment is highly individualized, and the therapist creates a specific version of CBT-E to suit the individual issues of the person receiving treatment. CBT-E is effective in all forms of eating disorders encountered in adults and adolescents. Therapists need to receive training in CBT-E to obtain optimal effects.

Mini-Dictionary of Terms

- **Body checking:** repeated and frequent checking of one's body weight and shape
- **Core psychopathology:** the overvaluation of shape, weight, and eating control characteristic of most eating disorders
- **Dietary restraint:** attempts to limit the amount of food eaten
- **Dietary restriction:** undereating in the physiological sense
- **Dietary rules:** highly specific rules on what, when, and how to eat, etc.
- **Enhanced**: a term used to highlight that the treatment uses various innovative strategies and procedures to enhance the effectiveness of the original cognitive behavior therapy developed for bulimia nervosa
- **Objective binge eating:** episodes of eating characterized by the following: (1) eating a large amount of food given the circumstances, and (2) a sense of lack of control during such episodes
- **Overvaluation of shape, weight, eating and their control:** judging self-worth largely, or even exclusively, in terms of one's shape, weight, and ability to control them
- **Starvation symptoms:** the physical and psychosocial symptoms that occur secondary to dietary restriction and undereating

- **Transdiagnostic:** a mechanism that is present across disorders, irrespective of the specific diagnosis

Key Facts of Enhanced Cognitive Behavior Therapy for Eating Disorders

- Enhanced Cognitive Behavior Therapy (CBT-E) is a specific form of therapy for eating disorders.
- It is focused on the eating disorder psychopathology operating in the patient (not the eating disorder diagnosis).
- It uses strategies and procedures sequentially but flexibly to treat each patient's individual psychopathology.
- Developed as an outpatient treatment for adults, it is now available for younger people and as an intensive version for day patients and inpatients.
- About two-thirds of those who begin treatment make a full recovery with CBT-E. Although fewer patients who are substantially underweight complete treatment, their response rate is similar.

Summary Points

- Enhanced cognitive behavior therapy (CBT-E) is a specialized psychological treatment for eating disorders.
- It was initially devised to treat eating disorders in adults with eating disorders, but has since been adapted for adolescents of at least 12 years of age and intensive settings of care.
- CBT-E is designed to treat the patient's psychopathology. It does so by addressing in a flexible and personalized way the behavioral and cognitive processes maintaining the eating-disorder features of the patient.
- CBT-E can be administered in two forms: (i) the focused form, addressing only the eating-disorder psychopathology; or (ii) a broad form, also incorporating modules for one or more of the following external psychopathologies, as indicated: clinical perfectionism, core low self-esteem, and marked interpersonal difficulties.
- About 80% of not-underweight patients complete treatment, and among them, about two-thirds achieve full remission, which appears well maintained over time. In underweight treatment is completed in about 65% of cases, but the remission rate is similar.
- Future challenges to address are: (i) to further validate CBT-E; (ii) to study how to increase the effectiveness of CBT-E; (ii) to improve the promotion of CBT-E; and (iv) to maximize CBT-E availability, training more therapists and making the treatment more scalable.

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