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# A Ten-Session Cognitive Behavioral Therapy (CBT-T) for Eating Disorders: Outcomes from a Case Series of Non-Underweight Adult Patients

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# A Ten-Session Cognitive Behavioral Therapy (CBT-T) for Eating Disorders: Outcomes from a Case Series of Non-Underweight Adult Patients


## Abstract

**Objective:** Existing forms of evidence-based cognitive behavior therapy for eating disorders (CBT-ED) are relatively effective for non-underweight cases. However, they are also expensive compared to CBT for other disorders. This study reports the first outcomes for a shorter, ten-session form of CBT-ED (CBT-T) for such cases, designed to be less demanding of resources.

**Methods:** A case series of 106 non-underweight eating disordered cases were considered for this effectiveness study. A protocolized ten-session version of CBT-ED was delivered by clinical assistants, under supervision. Measures assessed eating attitudes and behaviors, anxiety, depression, personality pathology, and the working alliance. Intention-to-treat analyses were used.

**Results:** Suitability, acceptability, working alliance ratings and retention were all positive. Outcomes by the end of therapy and at three-month follow-up were positive for all symptoms, with levels of change, abstinence and remission that were comparable to those from effectiveness studies of longer forms of CBT. Higher levels of pre-treatment anxiety predicted retention in treatment, but no factors predicted poorer response. Early change in eating attitudes and the working alliance were the strongest predictors of a positive response.

**Discussion:** This ten-session form of CBT-ED for non-underweight eating disorders performed at a level that is comparable to versions of CBT-ED that are twice as long, despite being delivered by non-specialist therapists. Replication and longer-term follow-ups are needed to ensure retained effects. However, CBT-T has promise as a therapy for use in a range of healthcare settings, to enhance access to treatment for such eating disorders.


Key words:

Eating disorders; cognitive-behavioral therapy; brief; remission; abstinence

# A Ten-Session Cognitive Behavioral Therapy (CBT-T) for Eating Disorders: Outcomes from a Case Series of Non-Underweight Adult Patients

At present, the most effective treatments for eating disorders are psychotherapeutic in nature (Fairburn & Harrison, 2003; National Institute for Health and Care Excellence [NICE], 2017; Waller, 2016). For non-underweight eating disorder patients (bulimia nervosa, binge eating disorder, atypical cases), cognitive-behavioral therapy for eating disorders (CBT-ED) results in approximately 40-50% of cases recovering in clinical trials (Fairburn, Cooper, Doll, O'Connor, Bohn, Hawker, Wales & Palmer, 2009), with good long-term maintenance. That recovery rate is mirrored in effectiveness studies conducted in real-life settings (Byrne, Fursland, Allen & Watson, 2011; Knott, Woodward, Hoefkens & Limbert, 2015; Signorini, Sheffield, Rhodes, Fleming & Ward, 2018; Turner, Marshall, Stopa & Waller, 2015; Waller, Gray, Hinrichsen, Mountford, Lawson & Patient, 2014). The relevant evidence-based forms of CBT-ED (Fairburn, 2008; Waller, Cordery, Corstorphine, Hinrichsen, Lawson, Mountford & Russell, 2007) are relatively structured, protocol-based, and based in behavioral change, particularly around eating. However, many therapists either do not deliver CBT-ED (Tobin, Banker, Weisberg & Bowers, 2007) or deliver a version that omits many of the core behavioral tasks (Waller, Stringer & Meyer, 2012).

While CBT-ED for non-underweight eating disorders is efficacious relative to other therapies in terms of speed and level of effect (Fairburn, Bailey-Straebler, Basden, Doll, Jones, Murphy, O'Connor & Cooper, 2015; Poulsen, Lunn, Daniel, Folke, Mathiesen, Katznelson & Fairburn, 2014), it is relatively demanding of resources. The current standard is around 20 sessions - approximately double the length of effective CBT for many other disorders, which is often delivered by less specialised clinicians (e.g., Layard & Clark, 2014). Consequently, effective CBT-ED for non-underweight eating disorders is expensive to deliver, resulting in poorer access to treatment for many patients. There are some early data to suggest that a brief CBT can have effects for bulimia nervosa (Bulik, Sullivan, Carter, McIntosh & Joyce, 1998).

Therapies for other disorders have been shortened over time, and have been focused

on the key active elements without loss of effectiveness (e.g., Jacobson, Dobson, Truax, Addis, Koerner, Gollan, Gortner & Prince, 1996). As an example, Öst and Ollendick (2017) have shown that brief, intensive or condensed therapies for anxiety disorders are no less effective than the full versions. Therefore, it is possible that a shorter CBT-ED for non-underweight eating disordered adults, delivered by less fully trained therapists, could produce substantial results, even if not to the same degree as existing efficacy and effectiveness studies. Indeed, NICE (2017) state that a future line for research should be to determine whether psychological therapies of reduced duration are as effective for patients with eating disorders as the current recommendation (typically 20-40 sessions, according to the weight status of the individual).

The present study aims to test the impact of a brief version of CBT-ED (CBT-T) for normal-weight eating disorders, where key elements of the longer versions of the therapy are delivered by non-specialists over ten rather than 20 sessions. In keeping with recommendations for the development of new, complex interventions (Craig, Dieppe, Macintyre, Mitchie, Nazareth & Petticrew, 2008), a case series of this sort is an optimum first step in the development of CBT-T. Therefore, this case series should be regarded as an effectiveness study, establishing the basis for future randomized controlled trials. The comparable results will be those of other effectiveness studies based in routine clinical settings (Byrne et al., 2011; Knott et al., 2015; Signorini et al., 2018; Turner et al., 2015; Waller et al., 2014), using longer treatment delivered by highly trained therapists. It is hypothesised that CBT-T will result in significant clinical change in eating disorder behaviors and cognitions, alongside changes in comorbidity. It will also consider whether pre-therapy characteristics or early symptom change are predictors of outcome.

## Method

### Ethical considerations

The UK National Health Service National Research Ethics Service guidance on such research (National Health Service Research Authority, 2011) determined that the study did not require ethical appraisal or clearance, as it was an evaluation of routine practice. All

patients were informed that their clinical data would be used for evaluation purposes, and that there would be no breach of confidentiality as a result.

**Patient group**

The sample consisted of 106 adult eating-disordered patients (aged ≥ 18 years), all with a body mass index (BMI) in the normal-overweight range (> 18.0). Baseline DSM-5 (American Psychiatric Association, 2013) diagnoses were established by qualified clinicians before the CBT-T started, using the Eating Disorders Examination (Fairburn, 2008) or a semi-structured interview (Waller et al., 2007). Any uncertainty over diagnosis was resolved by team discussion. Of the 93 who started treatment during the period of this service evaluation (see Figure 1), 90 were female, and three were male. They were drawn from two NHS specialist outpatient eating disorder clinics. The comparability of the patients from the two clinical settings is considered below (Table 1).

The mean age of the overall sample was 27.4 years (*SD* = 8.66; range = 18-57), their mean height was 1.67m (*SD* = 0.07; range = 1.51-1.86), their mean weight was 67.5kg (*SD* = 14.8; range = 49.1-150.9), and their mean BMI was 24.4 (*SD* = 4.90; range = 18.4-48.0). Using DSM-5 criteria (American Psychiatric Association, 2015), 51 met criteria for bulimia nervosa, 25 for binge-eating disorder, and 17 for Other Specified Feeding and Eating Disorders (including eight who met criteria for purging disorder). The only exclusion criteria were active suicidality, physical risk, or an inability to undertake the therapy for reasons of learning disability or limited English language skills.

**Measures**

The patients completed measures of eating pathology (at sessions 1, 4 and 10, and at three-month follow-up), depression and anxiety (sessions 1, 4 and 10), working alliance (sessions 1, 4 and 10 and three-month follow-up), and personality disorder cognitions (session 1). Their height was measured at the first session, and their weight was measured (and shared with them) weekly as part of the therapy session. Frequency of objective bingeing, vomiting and laxative abuse were obtained from daily food intake diaries.

**Eating Disorders Examination–Questionnaire** (EDE-Q, version 6; Fairburn, 2008).

The EDE-Q assesses four cognitive aspects of eating disorders: restraint, weight concerns, shape concerns, and eating concerns. The measure has good psychometric properties (Mond, Hay, Rodgers, Owen & Beumont, 2004). A clinical cut-off of 2.77 on the EDE-Q Global scale was calculated, based on the UK mean for non-clinical women plus one standard deviation.

**Patient Health Questionnaire** (PHQ-9; Kronke, Spitzer & Williams, 2001)**.** The PHQ-9 is a nine-item self-report measure, designed for monitoring changes in levels of depression. It has well-established psychometric properties. A clinical cut-off score of ≥10 has been suggested (Gilbody, Richards, Brealey & Hewitt, 2007).

**Generalised Anxiety Disorder Questionnaire** (GAD-7; Spitzer, Kroenke, Williams & Lowe, 2006). The GAD-7 is a seven-item measure, used to monitor levels of anxiety. Its psychometric properties are satisfactory. A clinical cut-off score of ≥8 has been suggested (Swinson, 2006).

**Personality Belief Questionnaire – Short Form** (PBQ-SF; Butler, Beck & Cohen, 2007). The PBQ-SF assesses the cognitions underlying ten personality disorders. Higher scores reflect a greater level of beliefs underpinning that specific personality disorder. Its clinical validity and utility have been demonstrated with eating-disordered patients (Connan, Dhokia, Haslam, Mordant, Morgan, Pandya & Waller, 2009).

**Working Alliance Inventory – Short Form** (WAI-SF, Hatcher & Gillaspy, 2006). The WAI-SF is a 12-item measure of the core elements of the working alliance – attachment bond, shared tasks and shared goals. It has well-established clinical and psychometric properties.

**Intervention**

The therapy delivered was a ten-session version of CBT-ED for eating disorders (CBT-T). It was developed the first four authors, based on clinical experience and the evidence regarding key elements of evidence-based versions of CBT-ED (Fairburn, 2008; Waller et al., 2007). It is focused on the here-and-now and on maintenance cycles, rather than analysis of past experiences. The key tasks of CBT-T include:

- self-monitoring of food intake and weekly open weighing;
- a ‘here and now’ formulation, based on cognitions, emotions, behaviors and

physiology;

- early behavioral change as a driver of change across all domains;
- early restoration of nutritional adequacy;
- exposure with response prevention to reduce the role of safety behaviors;
- behavioral experiments to address distorted cognitions;
- historical review, and links to current maintaining factors;
- body image work linked to relevant maintaining factors (exposure, behavioral experiments, surveys);
- preparing and implementing a therapy blueprint, for relapse prevention.

There is an underlying focus on maintaining patient safety, developing the alliance and motivation as a product of change, and developing the patient's sense of agency. Progress is monitored throughout. The initial contract is for four sessions, extended only if the patient is undertaking the tasks of therapy. If the patient is not actively engaging in the therapy, then therapy is ended early, and alternative options are explored only if there is a considerable risk. Otherwise, the patient is encouraged to return to treatment in the future, when ready to engage fully (such patients are included in the analyses below).

CBT-T consists of ten individual sessions (unless there is an agreed earlier ending, due to early completion of the protocol and symptom relief). The sessions are usually weekly, but can be delayed for 1-2 weeks if necessary (e.g., staff absence; patient holidays). These sessions are followed by two follow-ups (one and three months post-treatment) to assess progress and, if necessary, advise on how to reinstate the gains of treatment. Sessions last for 50-60 minutes, unless shortened due to the patient not completing the set tasks (Waller et al., 2007).

The therapy is delivered using a session-by-session checklist of core tasks, to facilitate adherence (Gawande, 2011). The protocol checklist used is presented as supplementary online material. In keeping with developments in the delivery of psychological therapies, the staff who delivered the treatment were relatively junior (clinical assistants with Bachelors level

psychology degrees). Each was already working in one of the two services as an assistant, so were not recruited specifically for their ability to deliver CBT-T. All received a one-day training course delivered by one author (GW), which covered the principles of CBT-T, detailed the delivery of the protocol, dealt with therapy-interfering and life-threatening issues, and used role-plays of the necessary skills. Each assistant was supervised weekly for CBT-T by one author (GW), and was supervised for case management by one of the other authors (MT, HT). The CBT-T supervision reviewed each patient on every occasion.

**Data analysis**

Data were analysed using SPSS (v.24). Percentage scores were calculated to determine the proportion of the 106 referred patients who were suitable for the therapy, the proportion of patients who found the therapy acceptable, and attrition rates at each stage. Potential pre-treatment characteristics predicting attrition were assessed using chi-squared analyses for categorical variables (diagnosis) and a binomial logistic regression for dimensional variables. The remaining analyses were all conducted using intention-to-treat methods. Unless specified, multiple imputations were used to substitute for missing data. Differences in levels of pathology and responses to treatment were compared across the two sites, using independent samples *t*-tests.

Levels of eating characteristics were compared between the start of treatment, session 4, session 10 (end of treatment), and the three-month follow-up, using a series of repeated measures ANOVAs, with post hoc Least Significant Difference (LSD) tests to determine pairwise differences. The same analyses were used for measures of depression, anxiety and the working alliance, though these were not collected at follow-up.

Abstinence and remission rates were calculated at two time points – end of the ten sessions of therapy (EoT) and at the three-month follow-up session (FU3). Abstinence was defined as being free of all bulimic behaviors (objective binges, vomiting, laxative abuse) over the past week (EoT) or the past two months (FU3). Remission was defined as being abstinent (as outlined) plus having an EDE-Q Global score that was no greater than one SD above the UK norm for non-clinical females (≤ 2.77). In this case, to ensure comparability with previous

research, intention-to-treat (last number carried forward) and completer analyses were used.

Finally, multiple regression analyses (intention-to-treat, with multiple imputations) were used to determine whether any pre-treatment variables predicted treatment benefit. Similar analyses were used to determine any relationship between early change (reduction in symptoms over the first four sessions) and change across the course of therapy.

## Results

### Suitability for therapy, and acceptability to potential patients

Originally, 106 patients were considered for CBT-T (Figure 1). Of those, three did not meet the inclusion criteria due to not having an appropriate diagnosis, and one was excluded due to being judged to be at high risk of suicidal behavior (and was allocated to an approach focusing on risk management). Thus, suitability for admission to this therapy was high.

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Insert Figure 1 about here

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Acceptability to patients was assessed by considering: those who actively declined the therapy when it was described (and chose to wait for a longer alternative within the same service); and those who passively opted out of the therapy by not attending the offered first appointment. Figure 1 shows that the number who declined (actively or passively) was 9/102 (8.8%), suggesting a relatively high level of acceptability.

### Retention rates through therapy

Of the 93 patients who started therapy, 64 completed the course of treatment (Figure 1 shows reasons for attrition). This represents an attrition rate of 31.2% of those who started treatment, and 37.3% of those who were offered treatment. The 31.2% figure can be compared to the attrition rates of 22.1% reported by Fairburn et al. (2009), 36.3% reported by Byrne et al. (2011) and 40.8% found by Knott et al. (2015) for similar clinical groups entering CBT-E. Thus, the rate of loss to therapy was higher than that in efficacy studies, but lower than in comparable effectiveness studies.

**Predictors of attrition**

Chi-squared analyses showed no associations between drop-out and diagnosis, either during treatment ($X^2$ = 2.84; *NS*) or during follow-up ($X^2$ = 2.00; *NS*). Binomial logistic regression was used to predict drop-out during the course of therapy, based on key dimensional clinical features at the first session ($N$ = 93). The measures used were: age; global EDE-Q score; frequency of objective binge-eating, vomiting and laxative use; body mass index; GAD-7 scores; PHQ-9 scores; WAI-SF scores; and PBQ-SF scores. There was an overall significant effect ($X^2$ = 39.8, $df$ = 21, $P$ < .008), which was due to one individual predictor variable – a negative association with GAD-7 anxiety scores (*beta* = -.313, $P$ < .04). In short, attrition was less likely among patients who had greater levels of anxiety.

**Site differences in patient characteristics**

Table 1 shows the mean start of treatment scores of the two clinical samples on key variables (age, BMI, eating attitudes, depression, anxiety, working alliance), and the differences between in their responses to treatment (intention-to-treat analyses, with multiple imputations). One group (Site 2) showed greater initial levels of negative eating attitudes, depression and anxiety and a poorer initial working alliance. However, those differences were small to medium, and there were no differences in the treatment outcomes of patients at the two sites. The possibility of early pathology being associated with treatment response is addressed further below.

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Insert Table 1 about here

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**Eating disorder symptom change across the course of treatment**

Table 2 shows the outcome of CBT-T, using repeated measure ANOVAs and LSD tests. Intention-to-treat analyses were used, with multiple imputations for missing values. Effect sizes are shown using partial eta$^2$, using the convention of an effect size greater than .14 being 'large'.

Insert Table 2 about here

On all eating-related variables other than BMI, there were significant and very large changes over the course of the treatment. BMI showed no change in weight over the course of the treatment or at follow-up. For the EDE-Q scores, eating attitudes dropped significantly across the course of therapy and remained low at the three-month follow-up. It is noteworthy that the patients' mean EDE-Q global scores began well within the clinical range, but ended below the clinical cut-off (i.e., 2.77) and relatively close to the norm for a non-clinical group. There was also a substantial reduction in the frequency of all three bulimic behaviors during therapy. While there was some increase in the level of these behaviors by follow-up, they remained very substantially lower than they were at the beginning of treatment.

**Abstinence and remission rates**

Abstinence and remission and were calculated at two time points (end of treatment; follow-up), using completer and intention-to-treat analyses (last number carried forward method). At the end of CBT-T, 43 of the 64 completers were free of behaviors over the previous week, giving an abstinence rate of 67.2%. The comparable intention-to-treat abstinence rate was 55 out of 93 (59.1%). Considering remission, the rate among completers was 32/64 (50.0%) while the intention-to-treat rate was 39/93 (40.2%). At follow-up, completer analysis showed an abstinence rate of 15/35 (42.8%) and a remission rate of 13/35 (37.1%). Intention-to-treat analysis demonstrated an abstinence rate of 39 out of 93 (41.9%) and a remission rate of 34 out of 93 (36.6%). These figures appear comparable to or stronger than those of studies of longer versions of CBT-ED (e.g., Byrne et al., 2011; Fairburn et al., 2009; Turner et al., 2015), though direct comparison is difficult in the context of different therapies and designs.

**Change in other symptoms across the course of treatment**

Table 3 shows the level of change in non-eating disorder characteristics (anxiety,

depression, working alliance) over the course of therapy, using intention-to-treat analyses with multiple imputation. Anxiety and depression levels fell substantially, particularly following session 4, with large and very large effect sizes respectively. Mean GAD-7 anxiety and PHQ-9 depression scores each fell to below the clinical cut-off (Gilbody et al., 2007; Swinson et al., 2006). There was also a significant increase in patients' working alliance ratings, with an improvement in the overall WAI-SR score (large effect size) over the first four sessions in particular. This improvement was found specifically in the shared Goals and the attachment Bond elements of the alliance, each of which started relatively high, but improved still further.

Insert Table 3 about here

**Predictors of change in eating pathology across the course of therapy**

Two classes of predictor were considered, in order to determine whether individual characteristics predicted changes in eating pathology (as measured by the reduction in global EDE-Q scores from session 1 to 10). The first was the role of the individuals' characteristics at the outset of treatment. The second was the early change in key eating variables, across sessions 1-4.

**Characteristics at outset of therapy.** Multiple regression analyses (using intention-to-treat analyses, based on multiple imputations) were used to determine whether any eating or non-eating variables at the start of therapy were related to outcome (change in EDE-Q global scores). Considering eating variables at the beginning of therapy (EDE-Q subscales; BMI; frequency of binges, vomiting and laxative use), there was no predictive power ($t < 0.8$, *NS* in all cases). Similarly, initial non-eating variables (PBQ-SF personality disorder cognitions; individual WAI-SR working alliance scores; GAD-7 anxiety; PHQ-9 depression) were unrelated to changes in global EDE-Q scores across the 10 sessions of therapy ($t < 1.8$, *NS* in all cases). Therefore, it can be concluded that initial eating characteristics and comorbidity do not influence the outcome of CBT-T with non-underweight patients.

**Association of early change with overall change.** Multiple regression analysis (intention-to-treat, using multiple imputation) was used to predict the overall change in EDE-Q global scores (session 1-10) from early changes (sessions 1-4) in eating characteristics, anxiety, depression, and the working alliance (global EDE-Q; GAD-7; PHQ-9; WAI-SR total). There was a significant effect overall ($F$ = 8.50, $P$ = .001; adjusted $R^2$ = 0.244), suggesting that these four variables accounted for nearly 25% of variance in CBT-T outcome by the end of therapy. There were no significant effects of early changes in anxiety or depression ($t < \pm$ .30 in both cases). However, there were significant associations of early change in EDE-Q Global scores ($t$ = 2.46; $P$ < .02) and early change in WAI-SR total scores ($t$ = 5.23; $P$ < .001) with overall change in EDE-Q Global scores. To summarise, early reduction in eating attitudes and an early improvement in the overall working alliance were associated with later improvement in eating attitudes.

## Discussion

This study has considered the effectiveness of brief version of outpatient CBT (CBT-T) for non-underweight eating disorder patients. The therapy had a high level of suitability and acceptability, and patients rated the working alliance as high. CBT-T's attrition was comparable to that of longer treatments, with greater retention among patients with higher initial anxiety levels. This finding is in contrast to Knott et al. (2015), who found that anxiety was associated with *lower* retention in a longer form of CBT.

The major aim was to determine whether this 10-session version of CBT-ED could approach the effectiveness of existing evidence-based 20-session versions (Fairburn, 2008; Waller et al., 2007). CBT-T was associated with substantial changes in eating and related pathology, similar to those shown in existing, longer versions (Byrne et al., 2011; Fairburn et al., 2009; Knott et al., 2015; Waller et al., 2014), and those improvements were largely maintained throughout follow-up. Abstinence and remission rates were broadly comparable to longer versions of CBT for eating disorders (e.g., Byrne et al., 2011; Fairburn et al., 2009; Turner et al., 2015), but any such comparison needs to be treated with caution until these findings are replicated and extended. The end-of-treatment outcomes for this group were

substantially stronger than those of an existing eight-session CBT-ED (Bulik et al., 1998), suggesting that recent developments in CBT-ED has benefitted CBT-T. To summarise, this version of CBT has an equivalent effect to existing CBT-ED for similar cases, despite being briefer and delivered by therapists with less training.

The question of whether this approach has a wider effect is an important one, as existing forms of CBT-ED have also been shown to be effective for comorbid problems (e.g., Karačić, Wales, Arcelus, Palmer, Cooper & Fairburn, 2011; Turner et al., 2015). CBT-T was successful in reducing both anxiety and depression levels, with effect sizes (*partial eta*$^2$) that were at least equivalent to the effects reported in 20-session therapies (Byrne et al., 2011; Fairburn et al., 2009; Knott et al., 2015; Waller et al., 2014). This comparability with longer versions of CBT-ED might best be explained by noting the importance of early reduction in restrictive eating in CBT-ED, which is associated with later improvements in anxiety and depression (Turner et al., 2015). Thus, the early nutritional and exposure-based elements of both longer CBT-ED and CBT-T might be key to the success of cognitive-behavioral approaches for a broad range of comorbid pathology in eating disorders.

There was no evidence that CBT-T was more suitable for patients with less severe initial eating characteristics or comorbidity. The key domain where there is consistency across CBT-T and other forms of CBT-ED is in the importance of early change in eating attitudes (Raykos et al., 2013; Turner, Marshall, Wood, Stopa & Waller, 2016). Such change should be a focus of all forms of CBT-ED. This study also suggests that early change results in an improved working alliance from the patient's perspective, which is related to positive outcomes.

Taken as a whole, the results from this case series support the potential value of CBT-T for eating disorders as an effective intervention for non-underweight patients in routine clinical settings. However, these findings are derived from only two clinical settings within one healthcare system, limiting their generalizability. They are also limited by the lack of any comparison with other therapies, which might also show positive results from such case series. Therefore, further research is needed to test and extend these early findings. Such work will

include replication of this case series and carrying out randomized controlled trials to compare CBT-T directly with existing forms of CBT-ED (e.g., enhanced CBT; guided self-help) and other therapies for eating disorders. Such studies should include consideration of longer-term follow-ups to determine recovery rates. It is also possible to consider whether CBT-T could be applied to patients with anorexia nervosa (albeit over more than 10 sessions, to allow time for weight gain). Future research should measure comorbidity and parallel treatments (e.g., medication) formally and more extensively, to determine more conclusively whether comorbid conditions might influence treatment outcomes, or whether CBT-T has a wider effect on comorbid psychological problems.

If these findings are replicated and extended, CBT-T could be considered as an effective and economical therapeutic tool for a very large number of such patients. In the UK, waiting times for adults with eating disorders are longer than is desirable in specialist services. In the UK, adoption of this approach to treating non-underweight cases might be better considered within the Improving Access to Psychological Therapies services, as the time frame and less specialised clinician base would be a closer fit to the CBT-ED protocol. However, involvement of specialist eating disorder clinicians in a supervisory role would be more likely to ensure skilful supervision to ensure protocol adherence and prevent therapist drift (Waller, 2009). Issues of limitations on health care provision mean that this approach to treatment is likely to be valuable in many countries where patients cannot access or afford longer-term evidence-based therapy for their eating disorders.

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## References

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

Bulik, C. M., Sullivan, P. F., Carter, F. A., McIntosh, V. V., & Joyce, P. R. (1998). The role of exposure with response prevention in the cognitive-behavioural therapy for bulimia nervosa. *Psychological Medicine, 28*, 611-623.

Butler, A. C., Beck, A. T., & Cohen, L. H. (2007). The Personality Belief Questionnaire-short form: Development and preliminary findings. *Cognitive Therapy and Research, 31*, 357-370.

Byrne, S, M., Fursland, A., Allen, K. L., & Watson, H. (2011). The effectiveness of enhanced cognitive behavioural therapy for eating disorders: an open trial. *Behaviour Research and Therapy, 49*, 219-226.

Connan, F., Dhokia, R., Haslam, M., Mordant, N., Morgan, G., Pandya, C., & Waller, G. (2009). Personality disorder cognitions in the eating disorders. *Behaviour Research and Therapy, 47*, 77-82.

Craig, P., Dieppe, P., Macintyre, S., Mitchie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions: The new Medical Research Council guidance. *British Medical Journal, 337*, 979-983.

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

Fairburn, C. G., Bailey-Straebler, S., Basden, S., Doll, H. A., Jones, R., Murphy, R., O'Connor, M. E., & Cooper Z. (2015). A transdiagnostic comparison of enhanced cognitive behaviour therapy (CBT-E) and interpersonal psychotherapy in the treatment of eating disorders. *Behaviour Research and Therapy, 70,* 64-71.

Fairburn, C. G., Cooper, Z., Doll, H. A., O'Connor, M. E., Bohn, K., Hawker, D., Wales, J., & Palmer, R. L. (2009). Transdiagnostic cognitive-behavioural therapy for patients with eating disorders: a two-site trial with 60 week follow-up. *American Journal of Psychiatry, 166*, 311-319.

Fairburn, C. G., & Harrison, P. J. (2003). Eating disorders. *Lancet, 361*, 407-416.

Gawande, A. (2011). *The Checklist Manifesto: How to Get Things Right*. London, UK: Profile.

Gilbody, S., Richards, D., Brealey, S., & Hewitt, C. (2007). Screening for depression in medical settings with the Patient Health Questionnaire (PHQ): A diagnostic meta-analysis. *Journal of General Internal Medicine, 22*, 1596-1602.

Hatcher, R. L., & Gillaspy, J. A. (2006). Development and validation of a revised short version of the Working Alliance Inventory. *Psychotherapy Research*, *16*, 12-25.

Jacobson, N. S., Dobson, K. S., Truax, P. A., Addis, M. E., Koerner, K., Gollan, J. K., Gortner, E., & Prince, S. E. (1996). A component analysis of cognitive-behavioral treatment for depression. *Journal of Consulting and Clinical Psychology, 64*, 295-304.

Karačić, M., Wales, J. A., Arcelus, J., Palmer, R. L., Cooper, Z., & Fairburn, C. G. (2011). Changes in alcohol intake in response to transdiagnostic cognitive behaviour therapy for eating disorders. *Behaviour Research and Therapy, 49,* 573-577.

Knott, S., Woodward, D., Hoefkens, A., & Limbert, C. (2015). Cognitive behaviour therapy for bulimia nervosa and eating disorders not otherwise specified: translation from randomized controlled trial to a clinical setting. *Behaviour and Cognitive Psychotherapy, 43,* 641-654.

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9 - Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*, 606-613.

Layard, R, & Clark, D. M. (2014). *Thrive: The Power of Evidence-Based Psychotherapies.* London, UK: Allen Lane.

Mond, J. M., Hay, P. J., Rodgers, B., Owen, C., & Beumont, P. J. V. (2004). Validity of the Eating Disorder Examination Questionnaire (EDE-Q) in screening for eating disorders in community samples, *Behaviour Research and Therapy, 42*, 551–567.

National Health Service Health Research Authority (2011). *National Research Ethics Service Guidance: Does My Project Require Review by a Research Ethics Committee?* Downloaded from: http://www.hra.nhs.uk/documents/2013/09/does-my-project-

require-rec-review.pdf

National Institute for Health and Care Excellence (2017). *Eating disorders: Recognition and treatment.* London, UK: National Institute for Health and Care Excellence.

Öst, L.-G., & Ollendick, T. H. (2017). Brief, intensive and concentrated cognitive behavioral treatments for anxiety disorders in children: A systematic review and meta-analysis. *Behaviour Research and Therapy, 97,* 134-145.

Poulsen, S., Lunn, S., Daniel, S. I. F., Folke, S., Mathiesen, B. B., Katznelson, H., & Fairburn, C. G. (2014). A randomized controlled trial of psychoanalytic psychotherapy versus cognitive behavior therapy for bulimia nervosa. *American Journal of Psychiatry*, 171, 109-116.

Raykos, B.C., Watson, H.J., Fursland, A., Byrne, S.M., Nathan, P. (2013) Prognostic value of rapid response to enhanced cognitive behavioral therapy in a routine clinic sample of eating disorder outpatients. *International Journal of Eating Disorders*, *46*, 764-770.

Signorini, R., Sheffield, J., Rhodes, N., Fleming, C., & Ward, W. (2018). The effectiveness of enhanced cognitive behavioural therapy (CBT-E): A naturalistic study within an out-patient eating disorder service. *Behavioural and Cognitive Psychotherapy, 46*, 21-34.

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Lowe, B. (2006). A brief measure for assessing generalized anxiety disorder - The GAD-7. *Archives of Internal Medicine, 166*, 1092-1097.

Swinson, R. P. (2006). The GAD-7 scale was accurate for diagnosing generalised anxiety disorder. *Evidence-Based Medicine, 11*, 184.

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*, 754-757.

Turner, H., Marshall, E., Stopa, L., & Waller, G. (2015). Cognitive-behavioural therapy for outpatients with eating disorders: Effectiveness for a transdiagnostic group in a routine clinical setting. *Behaviour Research and Therapy, 68*, 70-75.

Turner, H., Marshall, E., Wood, F., Stopa, L., Waller, G. (2016). CBT for eating disorders: The impact of early changes in eating pathology on later changes in personality pathology, anxiety and depression. *Behaviour Research and Therapy, 77*, 1-6.

Waller, G. (2009). Evidence-based treatment and therapist drift. *Behaviour Research and Therapy, 47*, 119-127.

Waller, G. (2016). Recent advances in psychological therapies for eating disorders. *F1000 Research, 5*, 702.

Waller, G., Corstorphine, E., Cordery, H., Hinrichsen, H., Lawson, R., Mountford, V., & Russell, K. (2007). *Cognitive-behavioral therapy for the eating disorders: A comprehensive treatment guide.* Cambridge, UK: Cambridge University Press.

Waller, G., Gray, E., Hinrichsen, H., Mountford, V., Lawson, R. & Patient, E. (2014), Cognitive-behavioral therapy for bulimia nervosa and atypical bulimic nervosa: Effectiveness in clinical settings. *International Journal of Eating Disorders*, *47*, 13–17.

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*, 171-175.

**Figure 1**

CONSORT diagram, showing recruitment, retention and attrition of patients undertaking CBT-T for eating disorders.

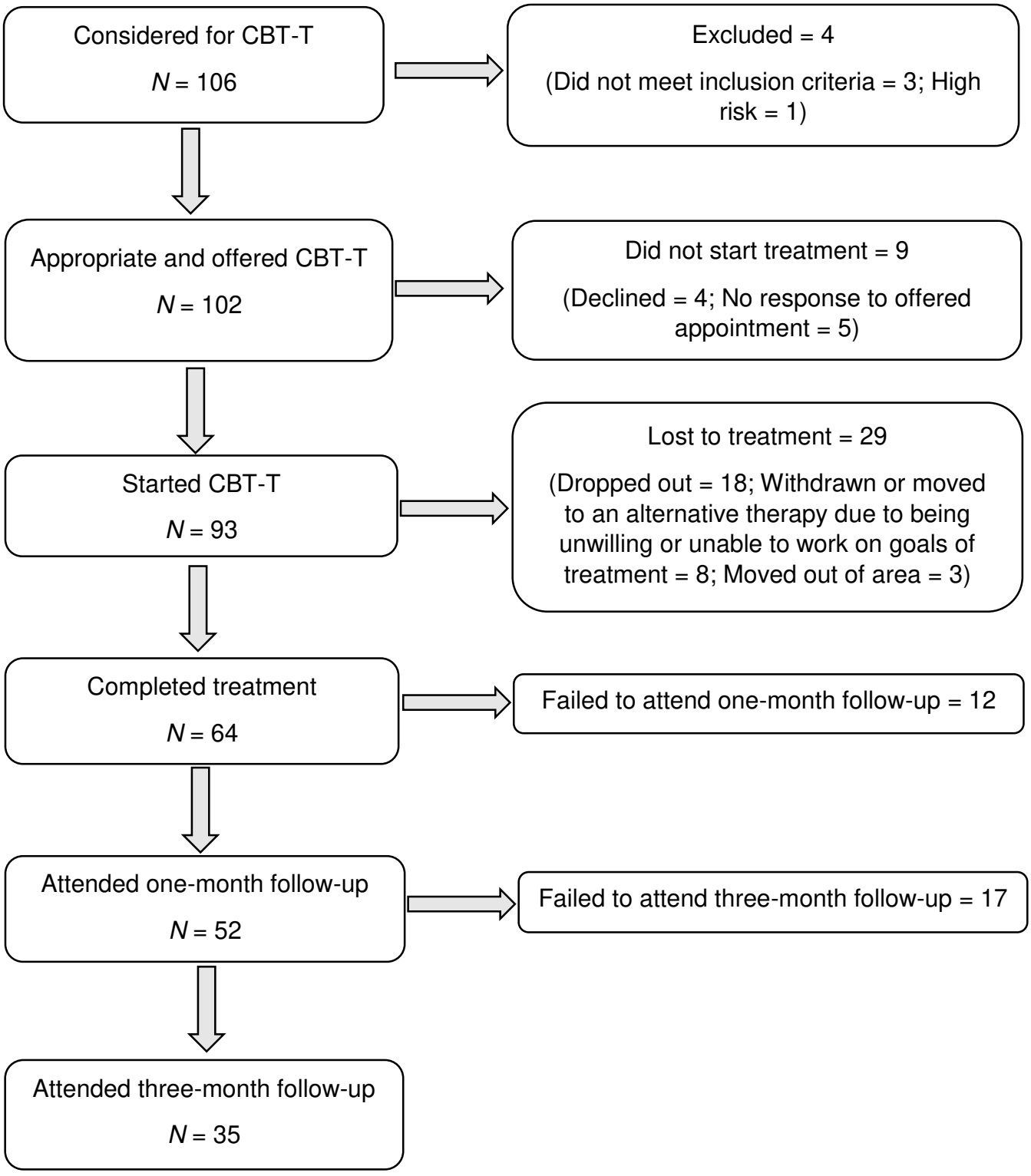

**Table 1**

Characteristics of the patients recruited at the two sites, and changes in scores across therapy (sessions 1 to 10). Intention-to-treat analyses, conducted using multiple imputations.

| | **Site 1** (*N* = 74) | | **Site 2** (*N* = 19) | | ***t*-test** | | |
|---|---|---|---|---|---|---|---|
| Baseline characteristics | *Mean* | *(SD)* | *Mean* | *(SD)* | *t* | *P* | *d* |
| Age | 27.3 | (8.12) | 27.8 | (10.7) | 0.20 | *NS* | - |
| Body Mass Index (BMI) | 24.2 | (4.26) | 24.8 | (6.88) | 0.49 | *NS* | - |
| Eating attitudes (EDE-Q Global) | 3.98 | (1.25) | 4.06 | (0.94) | 2.02 | .05 | .067 |
| Anxiety (GAD-7) | 11.6 | (5.04) | 12.7 | (6.29) | 2.12 | .04 | .207 |
| Depression (PHQ-9) | 14.3 | (4.20) | 16.4 | (4.76) | 2.37 | .02 | .487 |
| Working alliance (WAI-SR total) | 5.98 | (1.23) | 5.07 | (1.91) | 2.47 | .02 | .654 |
| **Changes across therapy** | | | | | | | |
| Eating attitudes (EDE-Q Global) | -2.16 | (2.22) | -2.28 | (1.73) | 0.26 | *NS* | - |
| Anxiety (GAD-7) | -6.18 | (7.65) | -6.37 | (6.40) | 0.10 | *NS* | - |
| Depression (PHQ-9) | -8.38 | (9.72) | -5.74 | (8.15) | 1.06 | *NS* | - |
| Working alliance (WAI-SR total) | 0.27 | (2.32) | 0.64 | (2.64) | 0.67 | *NS* | - |

**Table 2**

Changes in level of eating pathology over the course of ten-session CBT-T for non-underweight eating disorders (*N* = 93), assessed using intention-to-treat analyses with multiple imputations.

| | Start of treatment | | Session 4 | | End of treatment (session 10) | | Three-month follow-up | | Repeated measures ANOVA | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *M* | *(SD)* | *M* | *(SD)* | *M* | *(SD)* | *M* | *(SD)* | *F(3,90)* | *P* | Multiple comparison (LSD) [$P < .05$] | Partial $eta^2$ |
| EDE-Q Global | 4.11 | (1.20) | 3.09 | (1.20) | 2.11 | (1.32) | 2.14 | (1.47) | 60.5 | .001 | SoT > S4 > EoT = FU | .668 |
| EDE-Q Restraint | 3.46 | (1.52) | 2.06 | (1.87) | 1.28 | (2.02) | 1.30 | (1.13) | 51.1 | .001 | SoT > S4 > EoT = FU | .630 |
| EDE-Q Eating control | 3.78 | (1.36) | 2.61 | (1.52) | 1.76 | (1.67) | 1.99 | (1.37) | 56.0 | .001 | SoT > S4 > EoT = FU | .651 |
| EDE-Q Shape control | 4.79 | (1.25) | 4.13 | (1.26) | 2.83 | (1.65) | 2.64 | (1.55) | 58.7 | .001 | SoT > S4 > EoT = FU | .662 |
| EDE-Q Weight control | 4.40 | (1.38) | 3.56 | (1.71) | 2.57 | (1.74) | 2.30 | (1.53) | 41.2 | .001 | SoT > S4 > EoT = FU | .578 |
| Objective binges/week | 4.32 | (4.43) | 1.44 | (2.87) | 0.23 | (0.59) | 0.41 | (0.53) | 27.2 | .001 | SoT > S4 > EoT < FU | .476 |
| Vomiting/week | 3.52 | (5.24) | 1.58 | (2.94) | 0.13 | (1.30) | 1.74 | (2.55) | 21.0 | .001 | SoT > S4 = FU > EoT | .402 |
| Laxatives/week | 0.70 | (1.76) | 0.39 | (1.24) | 0.01 | (0.15) | 0.29 | (0.62) | 13.4 | .001 | SoT > S4 = FU > EoT | .308 |
| BMI | 24.4 | (4.88) | 24.3 | (4.95) | 24.2 | (5.37) | 28.9 | (2.39) | 0.61 | *NS* | - | .020 |

**Table 3**

Changes in level of anxiety, depression and the working alliance over the course of ten-session CBT-T for non-underweight eating disorders (*N* = 93), assessed using intention-to-treat analyses with multiple imputations.

| | Start of treatment | | Session 4 | | End of treatment (session 10) | | Repeated measures ANOVA | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *M* | *(SD)* | *M* | *(SD)* | *M* | *(SD)* | *F* | *P* | Multiple comparison (LSD – *P* < .05) | Partial eta$^2$ |
| Anxiety (GAD-7) | 12.2 | (4.92) | 11.1 | (9.41) | 7.92 | (12.9) | 10.2 | .001 | SoT = S4 > EoT | .181 |
| Depression (PHQ-9) | 13.0 | (7.97) | 11.5 | (10.4) | 5.71 | (6.31) | 46.3 | .001 | SoT = S4 > EoT | .502 |
| WAI-SF Task | 6.64 | (0.57) | 6.62 | (0.72) | 6.29 | (2.03) | 0.94 | *NS* | - | .031 |
| WAI-SF Goal | 5.65 | (1.71) | 6.69 | (2.41) | 6.20 | (1.18) | 5.10 | .008 | SoT < S4 = EoT | .100 |
| WAI-SF Bond | 5.47 | (1.82) | 6.17 | (1.20) | 6.15 | (1.35) | 9.13 | .001 | SoT < S4 = EoT | .116 |
| WAI-SF Total | 5.69 | (1.62) | 6.42 | (0.67) | 6.23 | (1.17) | 10.2 | .002 | SoT < S4 = EoT | .181 |