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Cognitive-behavioural therapy for outpatients with eating disorders: Effectiveness for a transdiagnostic group in a routine clinical setting

Hannah Turner (1, 2)

Emily Marshall (1)

Lusia Stopa (2)

Glenn Waller (3)

1. Eating Disorders Service, Southern Health NHS Foundation Trust, April House, 9 Bath Road, Bitterne, Southampton, SO19 5ES, UK.
2. Clinical Psychology Programme, Psychology Academic Unit, University of Southampton, Shackleton Building (44a), Highfield Campus, Southampton, Hampshire SO17 1BJ, UK
3. Clinical Psychology Unit, Department of Psychology, University of Sheffield, UK

Corresponding author

Hannah Turner, Eating Disorders Service, Southern Health NHS Foundation Trust, April House, 9 Bath Road, Bitterne, Southampton, SO19 5ES, UK. Email: hannahturner0@gmail.com; Phone: +44-23-8081-9000

Cognitive-behavioural therapy for outpatients with eating disorders: Effectiveness for a transdiagnostic group in a routine clinical setting

Abstract

Whilst there is a growing evidence to support the impact of cognitive behavioural therapy (CBT) in the treatment of adults with eating disorders, much of this evidence comes from tightly controlled efficacy trials. This study aimed to add to the evidence regarding the effectiveness of CBT when delivered in a routine clinical setting. The participants were 203 adults presenting with a range of eating disorder diagnoses, who were offered CBT in an out-patient community eating disorders service in the UK. Patients completed measures of eating disorder pathology at the start of treatment, following the sixth session, and at the end of treatment. Symptoms of anxiety, depression, and psychosocial functioning were measured pre- and post-treatment. Approximately 55% of patients completed treatment, and there were no factors that predicted attrition. There were significant improvements in eating disorder psychopathology, anxiety, depression and general functioning, with particular changes in eating attitudes in the early part of therapy. Effect sizes were medium to large for both completer and intention to treat analyses. These findings confirm that evidence-based forms of CBT can be delivered with strong outcomes in routine clinical settings. Clinicians should be encouraged to deliver evidence-based treatments when working in these settings.

Keywords: eating disorders; cognitive-behavioural therapy; effectiveness; attrition

Cognitive-behavioural therapy for outpatients with eating disorders: Effectiveness for a transdiagnostic group in a routine clinical setting

There is growing evidence to support the use of cognitive-behavioural therapy (CBT) in the treatment of adults with eating disorders. Whilst early trials demonstrated the impact of focused forms of CBT for the treatment of bulimia nervosa (e.g., Bulik, Sullivan, Carter, McIntosh & Joyce, 1999; Fairburn et al., 1995), recent studies have demonstrated the efficacy of an enhanced form of the treatment (CBT-E) that is suitable for a broader range of eating disorder presentations (e.g., Fairburn et al., 2009). CBT has since been shown to be more effective than psychodynamic psychotherapy in the treatment of bulimia nervosa (Poulsen et al., 2014), and is also suitable for use with underweight patients (Fairburn et al., 2013; Watson & Bulik, 2013; Zipfel et al., 2014). However, the majority of the evidence for CBT has come from *efficacy* studies – well-controlled treatment studies that often have tight inclusion criteria and are delivered under strict conditions with high levels of supervision. It is unclear as to whether similar outcomes can be obtained from *effectiveness* studies, where treatments are delivered in routine clinical settings. In such conditions, clinician adherence to protocols is less closely monitored and the diversity of cases is likely to be greater (e.g., higher levels of comorbidity).

To date, very few studies have considered the effectiveness of CBT for the eating disorders in routine clinical settings. Byrne, Fusland, Allen, & Watson (2011) conducted an open trial of CBT-E for patients presenting with a broad range of eating disorders, including patients with a body mass index (BMI) of 14+. They reported significant improvements in eating disorder and general psychopathology, with changes in scores on a range of treatment measures indicating medium to large effect sizes. Of those who completed therapy, two thirds were in full or partial remission at the end of treatment. In another effectiveness study of CBT for bulimia nervosa and atypical cases, Waller et al. (2014) reported similar remission outcomes to those found in efficacy studies, with approximately 50% of patients being in remission at the end of treatment. However, those effectiveness

studies were not conducted with the same rigor as existing efficacy studies (e.g., lack of follow-up). They varied substantially in attrition rates, with the Byrne et al. study having a higher rate than the Waller et al. study, probably due to the presence of anorexia nervosa patients in the former.

These preliminary studies of effectiveness indicate that CBT can be delivered with strong outcomes in routine clinical settings. However, it is well-established that clinicians routinely fail to use CBT when working with the eating disorders (e.g., Tobin, Banker, Weisberg, & Bowers, 2007) or that they deliver it in sub-optimal ways (Waller, Stringer, & Meyer, 2012), expressing concerns about the use of ~~those~~ core CBT techniques (e.g., Turner, Tatham, Lant, Mountford, Waller, 2014) and discounting the use of evidence-based manuals to support their work (e.g., Waller et al., 2013). Therefore, there is a need for further evidence from other routine clinical settings to demonstrate that CBT for the eating disorders is an effective treatment, which others can use in their own clinics. This study aims to build on previous work by testing the effectiveness of CBT in a further routine clinical setting. It reports clinical outcomes for a large group of transdiagnostic patients who were offered CBT in a community eating disorders service in the UK. Unlike previous studies, there were very few exclusion criteria and no BMI cut-off. In this case, the variant of CBT used was based on a combination of elements from the relatively similar approaches of Fairburn (2008) and Waller et al. (2007), as used by Byrne et al. (2011) and Waller et al. (2014) respectively.

Method

Participants

The sample consisted of 203 patients (190 women and 13 men) who had been referred to a specialist National Health Service eating disorder service in the UK. Other referrals were not included because they did not meet criteria for an eating disorder. All of the 203 patients were offered a course of outpatient CBT between 2010 and 2013. Each was assessed using the Eating Disorders Examination, version 16 (Fairburn, Cooper, & O'Connor, 2008) and was diagnosed using DSM-IV criteria (American Psychiatric

Association, 1994). Of the 203 patients, 56 (28%) had a diagnosis of anorexia nervosa, 58 (29%) bulimia nervosa, and 89 (43%) eating disorder not otherwise specified. The mean age of the sample was 27.6 years (*SD* = 9.2, range = 17 - 59 years) and their mean BMI at the start of treatment was 21.0 (*SD* = 6.8, range = 12.6 - 59.4).

Measures

Patients completed the Eating Disorders Examination (EDE, Fairburn, Cooper & O'Connor, 2008) at initial assessment, and measures of eating disorder pathology at the start of treatment, following the sixth session, and at the end of treatment. Anxiety, depression and psychosocial functioning were measured at the start and on completion of CBT. These measures are administered routinely at the clinic for all patients receiving outpatient psychological therapy. As is common in routine settings, a small proportion of the data were not collected, and therefore the numbers vary across some analyses (see Tables).

The Eating Disorder Examination (EDE, version 16, Fairburn, Cooper & O'Connor, 2008). The EDE generates the following four subscales: dietary restraint, weight concern, shape concern and eating concern, as well as frequency ratings for key eating disorder behaviours, including objective bulimic episodes, self-induced vomiting, laxative misuse and excessive exercise. It can be used to generate DSM-IV diagnoses and has good psychometric properties (e.g., Berg, Peterson, Frazier, & Crow, 2012).

The Eating Disorders Examination–Questionnaire (EDE-Q, version 6; Fairburn & Beglin, 2008). The EDE-Q is a self–report questionnaire assessing key cognitive and behavioural aspects of eating disorders. It generates frequency ratings for key eating disorder behaviours (e.g., objective binge-eating, self-induced vomiting, laxatives misuse, and excessive exercise), as well as the following attitudinal subscales: dietary restraint, weight concerns, shape concerns, and eating concerns. A global attitudinal score can be calculated by averaging the four subscales. The EDE-Q has good psychometric properties and validity (e.g., Mond, Hay, Rodgers, Owen, & Beumont, 2004).

Clinical Impairment Assessment Questionnaire (CIA; Bohn & Fairburn, 2008). The CIA is a 16-item self-report questionnaire, assessing severity of psychosocial impairment due to eating disorder features. Respondents rate the impact that exercise, eating habits and feelings towards eating, shape and weight have on their ability to function in the world. A higher total score indicates a greater level of clinical impairment. The CIA has good reliability and validity (Bohn et al., 2008).

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The HADS has two seven-item subscales measuring anxiety and depression. Respondents rate their experiences over the past week. The following categories are used: 0-7 = normal; 8-10 = mild; 11-15 = moderate; and 16-21 = severe. The HADS has been shown to be suitable for use with eating disorder populations (e.g., Padierna, Quintana, Arostegui, Gonzalez, & Horcajo, 2000; Seed et al., 2004).

Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM; Barkham et al., 2001)**.** The CORE-OM is a self-report questionnaire measuring general psychological problems (including an assessment of risk) in those presenting for psychological therapy. It can be used as a measure of individual change over time, and hence clinical effectiveness. The CORE-OM has good psychometric properties (e.g., Barkham, Gilbert, Connell, Marshall & Twig, 2005; Evans et al., 2002) and is suitable for use with people with eating disorders (Jenkins & Turner, 2014).

Procedure

Participants completed the following measures at the start and end of therapy (EDE-Q, CIA, HADS & CORE-OM). They also completed the EDE-Q after the sixth treatment session. These measures are administered as part of routine clinical practice, and aim to monitor early clinical change, as well as the overall effectiveness of treatment. All patients gave consent for data collected as part of routine service evaluation to be used to monitor the progress and effectiveness of therapy.

Treatment. The CBT delivered within this clinic followed that described in published evidence-based manuals (Fairburn, 2008; Waller et al., 2007). It included key elements of

evidence-based practice such as: engagement; psychoeducation; developing a formulation; keeping a food diary; weekly weighing; dietary change; exposure; surveys; and cognitive restructuring. The treatment aimed to normalise eating, and to reduce ~~address~~ weight controlling behaviours, ~~and~~ abnormal eating attitudes, and body image concerns. Where necessary it also aimed to address broader psycho-emotional-social functioning, including identifying and managing emotions, ~~identifying~~ replacing the functions of illness with more adaptive means~~??~~, improving self-esteem, reducing pathological perfectionism, and reducing inter-personal difficulties. All clinicians had regular individual supervision (frequency varied between weekly and monthly, and was determined by factors such as individual clinician need and level of experience). Trainees and newly qualified staff ~~were offered~~received weekly supervision, whilst more experienced clinicians received fortnightly or monthly supervision (in line with accreditation guidelines).

Supervision was provided by the service clinical lead (HT), an accredited ~~BABCP~~ CBT supervisor, and another ~~GA, a~~ senior clinician in the team who has 10 years' experience of delivering and supervising CBT for eating disorders. Clinicians were also encouraged to use evidence-based manuals (Fairburn, 2008; Waller et al., 2007) to guide and inform the delivery of treatment. Manuals are readily available in the service and their use is supported via supervision, with supervisors requiring clinicians to demonstrate how their actions in therapy were related to the relevant protocol and requiring them to read those manuals in order to problem solve in therapy. Treatment was delivered by 11 therapists (three eating disorder therapists, four clinical psychologists, and four trainee clinical psychologists). Two of the eating disorder therapists were qualified mental health nurses ~~(RMN)~~ and one was an accredited ~~BACP~~ counsellor. All had attended training courses on delivering CBT for eating disorders.

Treatment length was typically 20 sessions, but that was shortened in the event of rapid change (to a minimum of 10 sessions) and extended for those patients with more significant comorbidity or a restrictive presentation (up to 40 sessions). Such extension was on condition that the patient was actively engaged in therapy. Whilst a small number of

Comment [P1]: Avoids 'BABCP'

Comment [H2]: Will readers know what BABCP is ? cd put consultant clinical psychologist instead ?

GLENN – They will have no idea, so see my alternative?

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Comment [GW3]: They will not know who GA is.

Comment [P4]: Added this bit to give it some more oomph. See what you think?

Comment [H5]: Ann (nurse) is IAPT trained – should we make this clear or leave as is ?

GLENN – see the suggested changes. Need to keep it international in tone and terms.

patients had occasional dietetic reviews during the course of treatment, none had any other psychological therapy or more intensive treatment (e.g., day care) during the time they received CBT.

Data analysis

The impact of start of treatment features on attrition was tested using binary logistic regression. As not all data were normally distributed, change in symptoms were tested using non-parametric tests. Completer and intention to treat analyses are presented, with the latter involving the carrying forward of the last available data point. In 11 cases, the participant completed treatment, but the end of treatment measures were not completed. These individuals were included in the 'Completer' group, carrying forward their last available data point. This was adopted as a relatively conservative approach, as it reduces the chances of finding an effect of therapy, while reflecting the true therapy retention rate. Eating disorder symptom change was measured comparing scores across baseline, session six, and end of treatment, using Friedman tests and post-hoc multiple comparisons (Wilcoxon tests). Given evidence of the importance of early symptom change (e.g., Agras et al., 2000; Wilson et al., 1999), the inclusion of session six scores allows for identification of early change. Change in other features (HADS, CIA and CORE-OM scores) from baseline to end of treatment was tested using Wilcoxon tests. Finally, for underweight patients (BMI < 17.5) only, BMI levels were compared between the start of therapy, session 6 and the end of therapy, using Friedman and post-hoc Wilcoxon tests. Effect sizes (*tau*) were calculated for each significant pairwise difference.

Results

Attrition from treatment

Of the 203 patients who started CBT for their eating disorder, 24 left therapy for system-level reasons (transfer to another area, etc.). Of the remaining 179, 100 completed treatment and 79 dropped out. ~~,~~ This yields an attrition rate of 44.1%. ~~,~~ ~~which is very close to that of Byrne et al. (Byrne et al, 2011), who were also working with a mixture of normal-~~

~~weight and underweight eating disorder patients.~~ However, not all patients completed all measures at all time points. No data were substituted, so the N varies across measures (as shown in the tables, below). The data analyses in the tables are based on those numbers where there is a complete data set for the relevant time points.

A binary logistic regression was used to determine whether any pre-treatment variables predicted the patient terminating treatment early (discounting those who left for reasons other than drop-out). The variables used were the patients' ages and BMIs, their four individual EDE-Q attitudinal scales, the three EDE-Q behavioural scales, HADS depression and anxiety scores, the CIA total score, and the CORE-OM total score. The overall model did not approach significance (X^2 = 10.5; *df* = 12; *P* = .57), indicating that none of these pre-treatment indices predicted loss to treatment. Furthermore, none of the individual variables approached significance (*P* > .10 in all cases).

Remission rates

A relatively strict definition of end of treatment remission was used for all patients (BMI > 18.5; no reported objective binges, vomiting or laxative use in the past 28 days; and EDE-Q total score < 2.46 [under one *SD* above the community mean – Mond et al., 2004). As a conservative strategy, all of the 179 patients were included, with last available scores used to determine their outcome. Of the 179 patients, 34 (19%) achieved complete remission. However, that proportion differed across those who did and did not complete treatment. Of those 100 who did complete treatment, 31 (31%) achieved full remission. Of the 79 who did not complete treatment, only three (3.8%) achieved remission. This difference was significant (X^2 = 19.5; *df* = 1; *P* < .001). There was no significant difference in remission rates for anorexia nervosa (9/52 cases), bulimia nervosa (8/51) or atypical cases (17/76) (X^2 = 1.02; *df* = 2; *P* < .60).

Treatment outcomes for eating pathology

Tables 1 and 2 shows eating disorder attitudes (EDE-Q scores) and behaviours (objective bulimic episodes, self-induced vomiting and laxative misuse) at the three time points, for the completer and the intention to treat analyses.

Completer analysis. Considering only those who completed therapy (Table 1), there were significant overall reductions in eating disorder attitudes and behaviours. The EDE-Q attitudinal scales showed early improvements, as well as longer-term improvement. In contrast, the behaviours changed more slowly, with no significant change by session six. The effect sizes (*tau*) for these changes between session 1 and the end of therapy were large for all variables with the exception of vomiting and laxative misuse, which showed medium effects. For those under a BMI of 17.5 at the start of therapy, the Table shows that their BMI rose significantly across the three time points, with strong effect sizes for each pairwise comparison.

Insert Table 1 about here

~~**BMI change in underweight patients.** Considering only those who presented with an AN-spectrum clinical presentation (BMI <= 17.5). There were significant changes in BMI across the course of therapy (~~

Intention to treat analysis. The pattern of change across therapy was less ~~pronounced~~ significant in this analysis (Table 2), as would be expected. However, the pattern of significant change was almost identical to that in the completer analysis, as was the pattern and general strength of effect sizes.

Insert Table 2 about here

Treatment outcomes for non-eating measures

Comment [H6]: We can either include as a separate para or include in existing tables instead – see T1 for example of what it would look like – I think maybe table…

GLENN - Agreed, but it needs mentioning here. See my attempt, and feel free to butcher it.

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Comment [H7]: ??

GLENN – I would stick with 'pronounced' or something like 'substantial', otherwise someone might say 'how did you test the significance of the difference between the two sets of analyses?' However, over to you… See my comments in the letter.

Table 3 shows the start and end of treatment scores for anxiety, depression, functional impairment and general pathology, showing both the completer and intention to treat analyses. Both analyses show a significant improvements in all those domains, with strong effect sizes.

Insert Table 3 about here

Discussion

This study reports the effectiveness of CBT for eating disorders - outcomes when delivered in a routine clinical setting, where there are few exclusion criteria and where adherence to evidence-based protocols is less intensively monitored. Whilst therapists varied in their level of experience, all received regular clinical supervision and all were actively encouraged to use treatment manuals ~~(Fairburn, 2008; Waller et al., 2007)~~ to guide the delivery of treatment. This study differs from those of Byrne et al. (2011) and Waller et al. (2014) in two important ways. First, it included patients with lower BMIs than either of those studies. Second, the therapy used was an amalgam of the two versions of CBT that those two studies employed (Fairburn, 2008; Waller et al., 2007).

The findings were broadly comparable to previously published effectiveness studies ~~in a number of ways~~. First, the attrition rate was similar to that reported in other studies (e.g., Byrne et al., 2011; Campbell, 2009). Second, there was a substantial reduction in eating attitudes and behaviours, with the change in global EDE-Q mirroring that reported by Byrne et al. (2011). Showing comparability with existing effectiveness and efficacy studies (Byrne et al., 2011; Fairburn et al., 2009), the element of eating attitudes that showed the least improvement by the end of treatment was the EDE-Q shape concerns scale. There was also a significant reduction in anxiety and depression, as well as an overall improvement in general psychological functioning. These broader improvements in general mental health and quality of life reflect those found in previous studies (Byrne et al, 2011; Waller et al,

2014). Furthermore, those patients who had an ~~In relation to those presenting with~~ AN-spectrum presentation also benefitted. Their ~~s there was a~~ significant ~~improvement in BMI over the course of treatment, with the~~ mean change in BMI (2.6, *SD* = 1.8) compares~~ing~~ favourably with that reported in previous research trials (e.g., ~~Dare, Eisler, Russell, Treasure & Dodge~~Dare, Eisler, Russell, Treasure & Dodge, 2001; McIntosh, Jordan, Carter, Luty, McKenzie, Bulik, Frampton, & Joyce, 2005), and at a similar level to that found by ~~;~~Fairburn, Cooper, Doll, O'Conner, Palmer and~~&~~ Dalle Grave (~~,~~2013).

The temporal pattern of change is also relevant, given the importance of early change in predicting treatment outcome in eating disorders (e.g., Agras et al., 2000; Raykos, Watson, Fursland, Byrne, & Nathan, 2013; Wilson et al., 1999). The present findings indicated a significant early reduction in EDE-Q attitudes, reflecting the pattern of change shown by Raykos et al. (2013). Raykos et al. have defined early rapid response as a change of 1.52 or greater on the global EDE-Q over the first 3-6 sessions. This level of change was achieved by 30% of the sample in the present study, which is similar to the 34% reported by Raykos et al. (2013). However, the transdiagnostic nature of the sample means that early changes in behaviours cannot be meaningfully compared to the findings of other papers (e.g., Agras et al., 2000; Wilson et al., 1999), as a proportion of patients in this study were ~~would~~ not ~~have been~~ engaging in binge eating or self-induced vomiting at baseline.

This study has confirmed the previous contention that CBT for eating disorders can be effective in routine clinical practice, based on a relatively large sample size and the use of well-validated measures. However, the study also has a number of the limitations that are inherent in such clinic-based work. In particular, although therapists were encouraged to follow evidence-based manuals and were guided in the delivery of CBT via supervision, there were no external check that the treatment delivered was actually the intended amalgam of ~~an~~ evidence-based form~~s~~ of CBT. It is therefore possible that the interventions were not as theoretically or therapeutically 'pure' as those in efficacy studies. The different levels of training and experience of the therapists might have impacted on outcomes, and this would merit further study. Similarly, the impact of therapists' attitudes to and use of

Comment [H8]: I don't want to overstate the findings as n is small but I think that if I've analysed it correctly we're in line with fairburn changes in BMI and better than dare study

GLENN – I do not think that you are overstating it – just made some minor amendments. I did change it so that you did not seem to be saying that you did better than Fairburn et al. Plus, your N really is not that much smaller than other studies (and bigger than some).

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Comment [H9]: See point 15. Not quite sure what to add. I looked at % who had 1 OBE or more at baseline and none at end (47%) and same for SIV about 50% who had SIV at start stopped – but I'm not sure how meaningful adding any of this would really be

Glenn – I think that this is about the right level. My reading is that they are saying that you should consider the fact that the comparability of the findings with those of some other studies (e.g., Waller et al., 2014) is limited because some of the people in your sample never started out bingeing, so could not have shown a reduction. Therefore, the mean number of binges per patient in your study would be lower than normal for a group who all binged.

I would suggest beefing up the letter in response to their point by saying that you have acknowledged that the comparability with other studies is not perfect due to the fact that this is a transdiagnostic sample, but that you did not want to take liberties by adding the much greater amount of material that would be necessary to present further analyses that addressed this point as it had not been required in the review, and you wanted to be economical in the presentation to stress the main findings. Sound reasonable?

manuals to support treatment for eating disorders (e.g., Wallace & von Ranson, 2011; Waller et al., 2013) requires further research, to clarify whether such manuals facilitate the dissemination of evidence-based interventions. Furthermore, the lack of follow-up data means it is not known whether the changes made during treatment were sustained long-term. Another methodological issue is that the recording of eating disorder behaviours and weight was taken from the EDE-Q, rather than from weekly symptom monitoring records. This use of EDE-Q behavioural measures might mean that there was over-reporting of binge-eating in this study (e.g., Black & Wilson, 1996). It will also be important for future research to consider symptom change on a session-by-session basis (e.g., Waller, Tatham, Turner, Mountford & Tritt, 2014), in order to understand the importance of early and sudden change on clinical outcomes in more detail.

These findings have clear clinical implications. First, CBT's evidence base for use in routine clinical settings is enhanced. Clinicians' own concerns about the delivery of CBT (Turner et al., 2014) should not be used to justify avoiding its use. Nor can clinicians simply argue for ~~justify~~ adopting a more eclectic approach (Tobin et al., 2007) or omitting key elements of CBT (Waller et al., 2012) on the grounds that CBT is 'not suitable for our patients in real-life settings'. Second, it will be important to ensure the delivery of evidence-based training, supervision and outcome monitoring, in order to ensure the development of clinical skills and competence (Fairburn & Cooper, 2011) and to promote protocol adherence (e.g., Hogue et al., 2008). ~~.~~ Such training should stress the need for early change in the eating disorders symptoms. That focus is particularly important given the strong links between early change and later treatment outcome, over and above the impact of other therapeutic elements such as the working alliance (Raykos, et al., 2014). ~~It is, h~~However, it is important to ~~, also~~ acknowledge~~d~~ that ~~whilst~~ the benefit of early change that has been clearly demonstrated in efficacy trials might not apply in other settings, such as this one. It is possible that differences in patient groups, chronicity of disorder and other features might mean that early treatment benefits in routine clinical settings do not have the same

Comment [H10]: Relates to point 16 – not sure of my response…

GLENN = I think you are on the button here, though I have fiddled with it, of course…

importance or impact as have been shown in research settings~~., this has yet to be fully explored in relation to its impact on treatment outcome in effectiveness studies.~~

Overall the findings from the present study demonstrate that evidence-based forms of CBT can be delivered with strong outcomes in routine clinical settings. It is important that clinicians should deliver those evidence-based treatments and monitor outcomes as a matter of course, to ensure maximum available benefit to patients. Such practice should allow us to close any gaps between the outcomes of treatment delivered in rigorously controlled treatment trials and those delivered in routine clinical settings. Comparing the current study and other effectiveness studies (e.g., Byrne et al., 2011) with efficacy studies (e.g., Fairburn et al., 1995; 2009), the most important focus is no longer whether the treatment works in clinical settings, but the need to enhance retention in routine clinical settings, to ensure that more patients can benefit from proven treatments.

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~~Dare~~

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Table 1

Change in eating disorder pathology (EDE-Q scores) during CBT for eating disorders in a routine clinical setting (Completer analysis)

		Measurement point					**Friedman's test (*df* = 2)**			**Effect size (*Tau*)**		
EDE-Q measure	*N*	Session 1 (S1)		Session 6 (S6)		End of CBT (ET)	X^2	*P*	Wilcoxon MC tests (*P* < .05)	S1-S6	S6-ET	S1-ET
Attitudes		*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*					
Total	80	4.20	(1.21)	3.17	(1.38)	2.07	(1.42)	117.0	.001	S1 > S6 > ET	0.56	0.64	1.19
Restraint	80	3.87	(1.51)	2.33	(1.48)	1.32	(1.43)	137.8	.001	S1 > S6 > ET	0.54	0.75	1.29
Eating	76	3.69	(1.30)	2.82	(1.46)	1.66	(1.41)	83.2	.001	S1 > S6 > ET	0.48	0.52	1.01
Weight	80	4.39	(1.40)	3.46	(1.71)	2.27	(1.71)	83.1	.001	S1 > S6 > ET	0.36	0.62	0.98
Shape	80	4.82	(1.28)	4.12	(1.58)	3.04	(1.79)	66.1	.001	S1 > S6 > ET	0.31	0.56	0.87
Behaviors over 28 days													
Objective binges	80	8.28	(12.1)	6.40	(11.2)	3.30	(10.0)	22.7	.001	S1 = S6 > ET	-	0.34	0.53
Vomiting	80	7.32	(14.3)	5.33	(13.0)	1.81	(9.53)	35.6	.001	S1 = S6 > ET	-	0.23	0.40
Laxatives	78	4.41	(9.37)	4.58	(23.2)	0.49	(2.51)	19.5	.001	S1 > ET	-	-	0.24
BMI (<=17.5)	18	15.78	(1.08)	16.36	(1.43)	18.43	(2.24)	15.2	.001	S1 < S6 < ET	0.59	0.80	0.81

Table 2

Change in eating disorder pathology (EDE-Q scores) during CBT for eating disorders in a routine clinical setting (ITT analysis)

		Measurement point					**Friedman's test (*df* = 2)**			**Effect size (*Tau*)**		
EDE-Q measure	*N*	Session 1 (S1)		Session 6 (S6)		End of CBT (ET)	X^2	*P*	Wilcoxon MC tests (*P* < .01)	S1-S6	S6-ET	S1-ET
Attitudes		*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*					
Total	120	4.17	(1.29)	3.40	(1.39)	2.92	(1.68)	117.8	.001	S1 > S6 > ET	0.51	0.43	0.95
Restraint	120	3.87	(1.65)	2.70	(1.54)	2.28	(1.82)	136.2	.001	S1 > S6 > ET	0.63	0.35	0.98
Eating	117	3.71	(1.39)	3.05	(1.50)	2.57	(1.72)	74.7	.001	S1 > S6 > ET	0.41	0.36	0.74
Weight	120	4.32	(1.49)	3.63	(1.67)	3.09	(1.90)	63.9	.001	S1 > S6 > ET	0.39	0.40	0.79
Shape	119	4.75	(1.37)	4.22	(1.55)	3.75	(1.85)	63.9	.001	S1 > S6 > ET	0.30	0.49	0.69
Behaviors over 28 days													
Objective binges	119	8.62	(12.1)	7.37	(13.1)	5.41	(11.6)	20.1	.001	S1 = S6 > ET	-	0.26	0.30
Vomiting	119	9.59	(18.0)	7.26	(15.5)	5.42	(13.2)	23.3	.001	S1 > ET	-	-	0.29
Laxatives	116	4.79	(14.4)	4.03	(19.0)	2.12	(7.19)	29.4	.001	S1 > ET	-	-	0.23
BMI <=17.5	31	15.68	(1.25)	16.30	(1.71)	17.67	(2.27)	16.6	.001	S1 < S6 < ET	0.49	0.68	0.79

Table 3

Change in mood, anxiety and functional impairment from the beginning to the end of CBT for eating disorders in a routine clinical setting (Completer and ITT analyses)

			Measurement point		**Wilcoxon test**		**ES**
Measure	**N**		Session 1	End of treatment	*Z*	*P*	*Tau*
Completer analysis							
HADS depression	93	*M*	8.92	4.79	7.17	.001	0.74
		(SD)	(4.23)	(3.83)			
HADS anxiety	93	*M*	12.7	9.66	6.10	.001	0.63
		(SD)	(4.03)	(3.99)			
CIA total	94	*M*	31.4	15.5	7.66	.001	0.79
		(SD)	(10.2)	(11.9)			
CORE-OM	88	*M*	3.49	1.67	7.19	.001	0.77
		(SD)	(1.40)	(1.53)			
Intention to treat							
HADS depression	116	*M*	9.19	6.97	6.87	.001	0.64
		(SD)	(4.32)	(4.73)			
HADS anxiety	116	*M*	12.9	11.3	5.75	.001	0.53
		(SD)	(4.18)	(4.51)			
CIA total	117	*M*	32.4	23.3	7.86	.001	0.73
		(SD)	(10.6)	(14.8)			
CORE-OM	110	*M*	3.22	2.39	6.65	.001	0.63
		(SD)	(1.36)	(1.68)			