Journal of Behavior Therapy and Experimental Psychiatry 71 (2021) 101637

Contents lists available at ScienceDirect

Journal of Behavior Therapy and Experimental Psychiatry

journal homepage: www.elsevier.com/locate/jbtep

Radically open dialectical behavior therapy for anorexia nervosa: A multiple baseline single-case experimental design study across 13 cases☆

Martina Isaksson [a,*], Ata Ghaderi [b,1], Mia Ramklint [a], Martina Wolf-Arehult [a,2]

[a] Department of Neuroscience, Psychiatry, Uppsala University, Entrance 10, Floor 3B, 751 85, Uppsala, Sweden
[b] Division of Psychology, Department of Clinical Neuroscience, Karolinska Institutet, SE-171 77, Stockholm, Sweden

ARTICLE INFO

Keywords:
Anorexia nervosa
Eating disorders
Overcontrol
Radically open dialectical behavior therapy
Single-case experimental design

ABSTRACT

Background and objectives: No treatment for adult anorexia nervosa (AN) has shown sufficient effectiveness or superiority to other treatments. Overcontrol has been suggested as a viable mechanism to target in the treatment of patients with AN. Radically open dialectical behavior therapy (RO DBT) is developed for disorders related to maladaptive overcontrol. Our objective was to evaluate the outcome of RO DBT for AN in a clinical outpatient setting.

Methods: Thirteen adult female patients with mild to moderate AN provided written consent and entered a multiple baseline single-case experimental design study. Median age at eating disorder (ED) onset was 15 years and the median duration of the ED was 10 years. Individual changes were assessed weekly during a baseline phase (A) of four to six weeks, and during the subsequent 40-week RO DBT phase (B). Additional assessments were conducted before and after treatment, and at a six-month follow-up. Primary outcome was ED psychopathology. Secondary outcomes were psychosocial impairment, quality of life, social connectedness, and adaptive control strategies.

Results: Eight patients (62%) completed treatment. All completers were in full remission after treatment, with BMI $\geq$18.5 kg/m^2 and ED psychopathology within one standard deviation of the community mean. Improvements occurred after introducing RO DBT, not during baseline.

Limitations: Participants were female with mild to moderate AN, limiting generalizability to severe AN or males.

Conclusions: The study provides preliminary support for using RO DBT in adult outpatients with AN and overcontrol. Further studies should replicate these findings.

1. Introduction

Despite research and availability of several treatments for anorexia nervosa (AN) in adults, no treatment is supported by robust evidence or outperforms any other (Byrne et al., 2017; Murray, Quintana, Loeb, Griffiths, & Le Grange, 2019; National Institute for Health and Care Excellence, 2017). The treatments most frequently offered have been criticized for focusing too much on symptom reduction, while failing to address the core psychopathology of AN (Watson & Bulik, 2013).

Overcontrol has been suggested as one of the mechanisms contributing to development and maintenance of AN (Hempel, Vanderbleek, & Lynch, 2018; Westen and Harnden-Fisher, 2001). Overcontrol, or self-control, is defined as the ability to inhibit emotional urges, impulses, and behaviors in order to pursue long-term goals (Letzring, Block, & Funder, 2005; Lynch, Hempel, & Dunkley, 2015). Individuals with excessive overcontrol often exhibit maladaptive perfectionism, rigidity, and emotional inhibition, with difficulties in forming warm and intimate relationships. Excessive overcontrol in AN has been found, primarily in the restricting subtype but also for patients with binge eating/purging behaviors (Isaksson, Ghaderi, Wolf-Arehult., & Ramklint, 2020; Westen and Harnden-Fisher, 2001). However, it is rarely targeted as a key element in treatment of the disorder (Lynch et al., 2013; Martinez &

☆ The study was preregistered in the ISRCTN registry, no: ISRCTN47156042, URL: https://www.isrctn.com/ISRCTN47156042.

* Corresponding author.
E-mail addresses: martina.isaksson@neuro.uu.se (M. Isaksson), ata.ghaderi@ki.se (A. Ghaderi), mia.ramklint@neuro.uu.se (M. Ramklint), martina.wolf@neuro.uu.se (M. Wolf-Arehult).
[1] Stockholm Centre for Eating Disorders, Stockholm Health Care Services, Stockholm County Council, SE-171 77 Stockholm, Sweden.
[2] Psychiatry Northwest, Region Stockholm, Clinic Management, PO Box 98, SE-191 22 Sollentuna, Sweden.

https://doi.org/10.1016/j.jbtep.2021.101637
Received 14 September 2020; Received in revised form 23 November 2020; Accepted 7 January 2021
Available online 12 January 2021

Craighead, 2015).

Radically Open Dialectical Behavior Therapy (RO DBT) was developed for mental health problems related to maladaptive overcontrol in conditions like chronic depression and AN (Lynch, 2018a, 2018b). The main goals of RO DBT are to enhance openness, flexibility, and social connectedness by targeting maladaptive overcontrol and social signaling. Initial studies investigating RO DBT show promising results for treatment-resistant depression (Lynch et al, 2020; Lynch, Morse, Mendelson, & Robins, 2003) and AN – both as inpatient treatment evaluating the full RO DBT program (Lynch et al., 2013), as outpatient treatment when standard DBT was evaluated in combination with RO DBT skills training (Chen et al., 2015), and as RO DBT skills training as ad-on to a day treatment program for adolescents (Baudinet et al., 2020). However, RO DBT has never been evaluated as a full-scale treatment program, including all four parts of treatment (skills training, individual therapy, consultation teams, and telephone coaching), in an outpatient setting for AN.

Treatment studies of AN tend to be underpowered and methodologically unsatisfactory due to low prevalence of AN, high dropout rates (30–70%), and ethical issues that make it basically impossible to use placebo as a comparison condition (Fassino, Pierò, Tomba, & Abbate-Daga, 2009; Hay, 2013; Linardon, Wade, De La Piedad Garcia, & Brennan, 2017). The Single-Case Experimental Design (SCED) has been suggested as a rigorous alternative to group designs. In a SCED, each individual provides their own control data for a within-subject comparison, enabling inferences about causality without large samples and randomized controlled trials (Smith, 2012). The method is underused in the eating disorder (ED) field and has been recommended for investigating intervention effects in ED patients (De Young & Bottera, 2018; Martinez & Craighead, 2015). To enhance internal and external validity, and enabling inferences about causality, multiple baselines and replication across several cases are recommended (Krasny-Pacini & Evans, 2018). There is no gold standard in how many replications are needed, however, a minimum of three have been recommended, and more replications further increase confidence of causal inference (Kratochwill et al., 2013).

The aim of this study was to evaluate the outcome of full-scale RO DBT for treating AN among adults in an outpatient setting. We hypothesized that participants would reduce their ED symptoms (primary outcome). In addition, we hypothesized that psychosocial impairment, quality of life, social connectedness, and adaptive control strategies would improve (secondary outcomes). We also hypothesized that improvements in weekly measures of ED behaviors would be evident within the first six weeks after introducing the intervention for such behaviors, while changes for overcontrolled behaviors would be seen within four weeks after the introduction of specific adaptive control strategies.

2. Material and methods

2.1. Research design

The study was an AB ($N = 13$) SCED with multiple baselines, where patients were randomized to baseline length. A baseline of four, five, or six weeks (A) was followed by an intervention of 40 weeks (B). Multiple baselines across individuals were used to control for threats to internal validity.

2.2. Participants and setting

The ED clinic at the Uppsala University Hospital treats patients in need of specialized ED care. We included patients consenting to diagnostic assessment and treatment evaluation who were ≥18 years with AN or atypical AN (AAN; i.e., fulfilling criteria for AN, including significant weight loss, but weight still in normal range) according to DSM-5. Diagnosis was assessed with the Eating Disorder Examination interview (EDE; Cooper & Fairburn, 1987). Because patients with severe AN are treated with inpatient care or with extensive meal support in a day programme, only patients with a BMI ≥16 were included. In addition, because RO DBT is only relevant for patients with overcontrol tendencies, a patient's personality style was identified according to the prototype rating by Lynch (2018a, p. 81–82). Patients with a cutoff below 17 were excluded, representing patients that did not endorse rigid and rule-governed behaviors, emotion inhibition, or distanced relationships in their life (i.e. no overcontrol). Excluded were also patients in need of intensive treatment for ED (e.g., inpatient care or day programme), patients in immediate need of treatment for other psychiatric or somatic conditions, patients who had participated in any psychological treatment for ED during the last three months, and patients with insufficient cognitive capacity or knowledge of Swedish (if the patient could not independently fill out questionnaires or answer questions during the interviews). In total, 12 female patients with AN and one patient with AAN were included in the study (mean BMI 17.5, $SD = 0.84$). Full criteria for AN and AAN diagnoses were met at the start of treatment. Participant characteristics are presented in Table 1. The median age at ED onset was 15 years (range 12–20), the median duration living with an ED was 10 years (range 1–27), and number of current comorbid diagnoses ranged between one to three. Comparing completers and non-completers, non-completers were generally older, had more severe symptoms before treatment, and had a longer duration of the ED. Completers had suffered from an ED at a median of 7.5 years (range 1–13), the median for non-completers was 14 years (range 10–27). Age at ED onset, BMI at study start, and number of comorbid diagnoses did not differ between the groups.

2.3. Treatment and therapists

The RO DBT encompassed a 40-week full-scale intervention program, including individual therapy, skills training in class, telephone coaching (when necessary), and weekly consultation team meetings for therapists, as described by Lynch (2018a, 2018b). As for all interventions treating patients with AN, support to target key elements of AN (e.g., underweight and starvation) was included. This is in line with evidence and international recommendations by the National Institute for Health and Care Excellence (2017), and recommendations for treating AN with RO DBT (Ben-Porath et al., 2020; Gilbert, Hall, & Codd, 2020). RO DBT skills such as self-enquiry, open expression of emotion, and learning from feedback, in combination with a matter-of-fact therapeutic stance emphasizing the patient's own valued goals, were used to target ED difficulties throughout the treatment. Individual therapy consisted of a six-week engagement phase, encompassing two sessions (one per week for two weeks) that served to orient the individual to RO DBT, and eight sessions (two per week for four weeks) that focused on taking the first steps towards normal eating habits and weight. The engagement phase was followed by phase two, including 30 individual sessions and 30 skills training sessions, during which the primary focus was on enhancing openness, flexibility, and social connectedness, to continue weight restoration, minimize loneliness, and create a life worth sharing with others (Hempel et al., 2018; National Institute for Health and Care Excellence, 2017). Outpatient meal support was not offered as default, but could be offered for three meals per day at a maximum of 16 days if a patient was unable to make changes to their eating habits. This was the case for three of the 13 patients, all of whom later dropped out from the study. During the final eight weeks, sessions were held once every two weeks to enhance independence. The treatment ranged from 38 to 43 calendar weeks for completers and from 10 to 33 calendar weeks for non-completers, with individual session time of 68 min on average. Skills class attendance was between 24 and 30 sessions for completers and between 4 and 23 sessions for non-completers. Participants did not receive any additional ED treatment between treatment and follow-up measurements.

Five clinical psychologists conducted the treatment, all of whom

Table 1
Summary of participant characteristics.

Participant	Age interval (years)	Diagnosis	OC-PRS	Marital status	Highest level of education	Occupation
1	18–25	AN	21	Single	University	Unemployed
2	26–35	AAN	19	Relationship	University	Studying
3	18–25	AN	20	Single	High school	Studying
4	18–25	AN	17	Single	High school	Studying
5	18–25	AN	20	Single	High school	Studying
6	18–25	AN	18	Single	University	Studying
7	18–25	AN	20	Single	High school	Studying
8	18–25	AN	18	Single	High school	Working
9	36–45	AN	17	Relationship	University	Sick leave
10	26–35	AN	21	Relationship	University	Working
11	36–45	AN	29	Relationship	High school	Working
12	26–35	AN	25	Single	High school	Studying
13	18–25	AN	20	Relationship	High school	Studying

Note. Participants 1–8 completed treatment, participants 10–13 did not. *AN, Anorexia nervosa; AAN, Atypical AN; OC-PRS, Overcontrolled Global Prototype Rating Scale.*

underwent extensive training in RO DBT. During the study, team meetings were held weekly and the team was supervised by an approved RO DBT supervisor to improve therapeutic skills and adherence.

2.4. Assessment measurements

2.4.1. Measurements at admission

The EDE is a clinically administered semi-structured interview for assessing ED psychopathology (Cooper & Fairburn, 1987). The interview has shown satisfactory reliability and there is support for using it to differentiate between cases and non-cases (Berg, Peterson, Frazier, & Crow, 2012).

The *Overcontrolled Global Prototype Rating Scale (OC-PRS)* is a clinician-rated assessment form for evaluating core deficits commonly identified in individuals with overcontrol, as regards receptivity and openness, flexible responding, emotional awareness and expression, and forming warm and intimate interpersonal relationships (Lynch, 2018, p. 81–82 & appendix 3). The scale is based on prototype models of personality assessments where the individual is compared to prototype descriptions of personality characteristics (Lynch, 2018a; Westen, DeFife, Bradley, & Hilsenroth, 2010). The patient is given a summarized score in the range 0–32; scores over 16 indicate a good match for overcontrol. In general, use of prototype ratings has shown acceptable interrater reliability (Westen et al., 2010).

2.4.2. Weekly measurements

Body Mass Index (BMI) was calculated to evaluate nutrition status in adults (World Health Organization, n. d.). BMI is interpreted as follows: $\leq$ 18.5 kg/m^2 = underweight; 18.5–24.9 kg/m^2 = normal weight; 25.0–29.9 kg/m^2 = pre-obesity; $\geq$ 30 kg/m^2 = obesity. Height and weight were assessed using calibrated instruments.

The *Eating Disorder Symptom List (EDSL)* is an eight-item self-rating questionnaire designed to assess eating disorder symptoms important for diagnosis. The scale was developed to detect change, or lack of change, during treatment (Isaksson, Ghaderi, Wolf-Arehult, & Ramklint, 2020a). Participants are asked on how many days during the preceding week they: restricted the amount of food, restricted the type of food, binged, vomited, used laxatives/diuretics, exercised excessively, experienced fear of gaining weight, or had thoughts about weight and shape that affected their self-image. Responses are given on an eight-point Likert scale ranging from 0 (no days) to 7 (seven days). Psychometric properties have been evaluated in a Swedish clinical and non-clinical sample in a study that has not yet been published (Isaksson, Ghaderi, Wolf-Arehult et al., 2020). The scale showed good psychometric properties with high test-retest reliability (0.88) and satisfactory internal validity (0.72–0.82). In a comparison with the Eating Disorder Examination Questionnaire (EDE-Q), correlations were moderate to strong for the total scale and all individual items (ρ = 0.53–0.87). The scale had a good ability to detect change after treatment. High scores indicate more severe ED difficulties.

The *Visual Analogue Scales for measuring Flexible Control (VAS-FC)* were four visual analogue scales (VAS) created specifically for this study to assess patient experiences of adaptive control strategies for managing their maladaptive overcontrol tendencies. Endpoints were "a very low degree" and "a very high degree" on a 10-centimeter line. Two VAS (social skills and flexibility) were the same for all participants; the other two were created in collaboration with each patient at the beginning of the treatment, to target two prosocial behaviors that were important for the patient. High scores indicate adaptive control strategies.

2.4.3. Measurements before and after intervention, and at follow-up

The *Brunnsviken Brief Quality of life scale (BBQ)* is a 12-item self-rating questionnaire administered to assess self-experienced quality of life in six different life areas: leisure time, view of life, creativity, learning, friends and friendship, and view of self (Lindner et al., 2016). Responses are given on a five-point Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree). The BBQ has shown satisfactory internal consistency of 0.76 and reliability in a Swedish sample (Lindner et al., 2016). High scores indicate high quality of life.

The *Clinical Impairment Assessment (CIA)* is a 16-item self-rating questionnaire developed to assess psychosocial impairment related to an ED (Bohn et al., 2008). Respondents indicate, on a four-point Likert scale ranging from 0 (not at all) to 3 (a lot), the extent to which their ED symptoms have affected their social, personal, and cognitive functioning during the preceding month. The scale has high internal consistency (0.97) and validity (Bohn et al., 2008). Swedish norms are available (Welch, Birgegård, Parling, & Ghaderi, 2011). High scores indicate severe impairment.

The *EDE-Q* is a 36-item self-rating questionnaire designed to assess ED symptoms on four different subscales: restraint, eating concern, weight concern, and shape concern (Fairburn & Beglin, 1994). Participants indicate, on a seven-point Likert scale ranging from 0 (no days *or* not at all) to 7 (every day *or* markedly), the extent to which they have engaged in a specific ED behavior during the preceding 28 days. The scale has acceptable internal consistency (ranging from 0.70 to 0.93) and validity (Berg et al., 2012). Swedish norms are available (Welch et al., 2011). High scores indicate a higher presence of ED symptoms.

The *Social Safeness and Pleasure Scale (SSPS)* is an 11-item self-rating questionnaire designed to assess how warm, soothing, and safe people perceive their social life to be (P. Gilbert et al., 2009). This scale was chosen since these factors may be important for social connectedness. In SSPS, individuals rate their experience on a five-point Likert scale ranging from 0 (almost never) to 4 (almost all the time). The original SSPS has shown high internal consistency (Cronbach's alpha = .91) and satisfactory validity (Alavi, Ali, Moghadam, & Rahiminezhad, 2017). Preliminary data on the Swedish translation indicate similar results with high internal consistency (α > 0.90) and validity (Holmbom Goh, Ramklint, Isaksson, & Wolf-Arehult, 2020). High scores indicate more

social safeness and pleasure.

2.5. Procedure

After referral, patients were scheduled for a diagnostic evaluation using the semi-structured EDE (Cooper & Fairburn, 1987). Eleven psychologists, who were trained in performing the interview, showed complete diagnostic agreement after co-rating six randomly selected interviews performed by an expert. Diagnoses were initially based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth edition (DSM-IV-R; American Psychiatric Association, 2000). Later, they were re-coded in accordance with DSM-5, which meant including patients with amenorrhea and BMI 17.5–18.5 in AN and including patients with all criteria for AN fulfilled, except weight being in normal range, in AAN (American Psychiatric Association, 2013). Comorbidity was assessed with the Mini-International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998).

Between August 2016 and March 2019, 37 patients who were eligible in terms of BMI and diagnosis and did not meet any exclusion criteria, were briefly informed about the present study by the psychologist performing the diagnostic interview. Thirty-four patients were interested and contacted by phone to receive more information, with 25 being interested in proceeding to an interview involving in-depth evaluation of overcontrol based on the Overcontrolled Global Prototype Rating Scale (OC-PRS) (Lynch, 2018a). These interviews were performed by the first author or by a psychology student trained by the first author. The student first watched and co-rated six recordings of the first author's interviews. Ratings were discussed and the student then performed interviews. New co-ratings were made for seven of these interviews. The prevalence and bias adjusted kappa (PABAK) value was 0.71. Out of the 25 subjects, five were not overcontrolled, five declined participation, and two were excluded prior to the start of the study (one had deteriorated and did not fulfil inclusion criteria, one did not submit consent).

At study start, 13 patients signed informed consent. Patients were randomized to a baseline of four, five, or six weeks using an online resource (www.randomizer.org). The person performing the randomization was blinded to the study participants.

Weekly measurements were conducted during baseline and intervention. Measurements not appropriate for weekly measurements (BBQ, CIA, EDE-Q, and SSPS) were administered before and after treatment with paper and pencil, and at six month follow-up through the internet. For non-completers, these measurements were administered at their last session. Weighing was performed each week during baseline, at each session, and at follow-up.

In the beginning of the study, five participants performed the weekly measurements with paper and pencil for a duration of 14–20 weeks (21% of all ratings). Six months into the study, assessment method was changed and weekly measurements were administered through the internet to reduce missing data. By examining the weeks when the assessment method changed for these five patients, we saw that the method did not affect the ratings in any meaningful way.

2.6. Data analysis

Weekly data were analyzed using visual inspection, looking for changes in 1) level (mean score of data within a phase), 2) trend (slope of the best fitting straight line), 3) variability (fluctuation of data), and 4) immediacy of effect (comparing the baseline with expected change within a specific timeframe) (Kratochwill et al., 2013). To analyze the multiple baselines, restrictive eating was used as outcome, as it was the first target in treatment and therefore the outcome hypothesized to be affected first. Reduction in restriction was defined as present when an assessment during treatment was below any of the assessments during baseline. The number of weeks from start of baseline up to the first and second week of decrease in restrictive eating (compared with baseline measurements) was counted to evaluate if there was a difference in terms of when change occurred. We used R version 3.6.1 for all descriptive and visual analyses. To reduce bias that may come with visual inspection, we used the non-parametric statistical method Tau-U to estimate the average effect size. Tau-U combines a comparison of non-overlap between phases and differences in trends within each phase, while controlling for non-desirable trends within each baseline (Parker, Vannest, Davis, & Sauber, 2011). Calculations of effect size were performed using the online software calculator http://www.singlecaseresearch.org.

Measurements before and after intervention, and at follow up, were analyzed with clinical significance (remission) and reliable change. Full remission was defined as no residual ED psychopathology indicated by an EDE-Q value within 1 SD of the Swedish community mean, i.e., $<$ 2.83 (Welch et al., 2011) for both AN and AAN, and BMI at least at normal weight $\geq$ 18.5 kg/m^2 for AN. Partial remission was defined as residual ED psychopathology (i.e., an EDE-Q value at or above 1 SD of the Swedish community mean, i.e., $\geq$ 2.83), and BMI at least at normal weight $\geq$ 18.5 kg/m^2. In addition, weight maintenance, defined as weight change <3% (Stevens, Truesdale, McClain, & Cai, 2006), was used as an additional criteria defining if the patient was still in remission from end of treatment to follow-up. Reliable change was calculated based on data from assessment before and after treatment, as suggested by Jacobson and Truax (1991).

For weekly measurements data is presented visually, no imputations for missing values were performed. For the measurements performed before and after treatment, and at follow-up, mean imputation was used, replacing the missing value with the mean of the non-missing values.

2.7. Ethical considerations

The study was approved by the Regional Ethics Committee in Uppsala (Ref. no. 2014/252). All participants gave informed consent. Detailed individual information is left out, so the patients cannot be identified. Identification between patients who participated in the same skills class is unlikely, as RO DBT was also given to patients who did not participate in the study (e.g., because they entered RO DBT after first receiving inpatient care), and as patients only participated in the skills class together for a limited time (since the open group format allowed patients to start at different timepoints).

3. Results

3.1. Visual analysis

Eight patients completed treatment (62%) and five patients dropped out (38%). Reasons for drop-out were an inability to engage in treatment and need of more intense support, e.g., through inpatient care or additional meal support beyond the 16 days that were allowed in the study (four patients), or an unwillingness to comply with continued weight regain and participation in skills class (one patient). Weekly measurements of BMI, restrictive eating, and flexibility are presented in Fig. 1 for completers and in Fig. 2 for non-completers. These measures were presented in the manuscript for the following reasons: BMI for its objectivity, restrictive eating for assessing early change in eating habits, and flexibility for its potentially long-lasting effects on recovery. Other weekly measurements are reported in the Appendix. The pattern of change is similar for measurements presented in the manuscript and in the Appendix.

When mean *level of phase A versus B* was investigated, all but one participant (No. 10) showed a decrease in restrictive eating, 11 participants (seven completers) showed an increase in BMI, and five showed an increase in flexibility.

In terms of *trend of phase A versus B*, six completers and three non-completers showed a decrease in restrictive eating. For BMI, a positive shift in trend was identified for seven completers and three non-

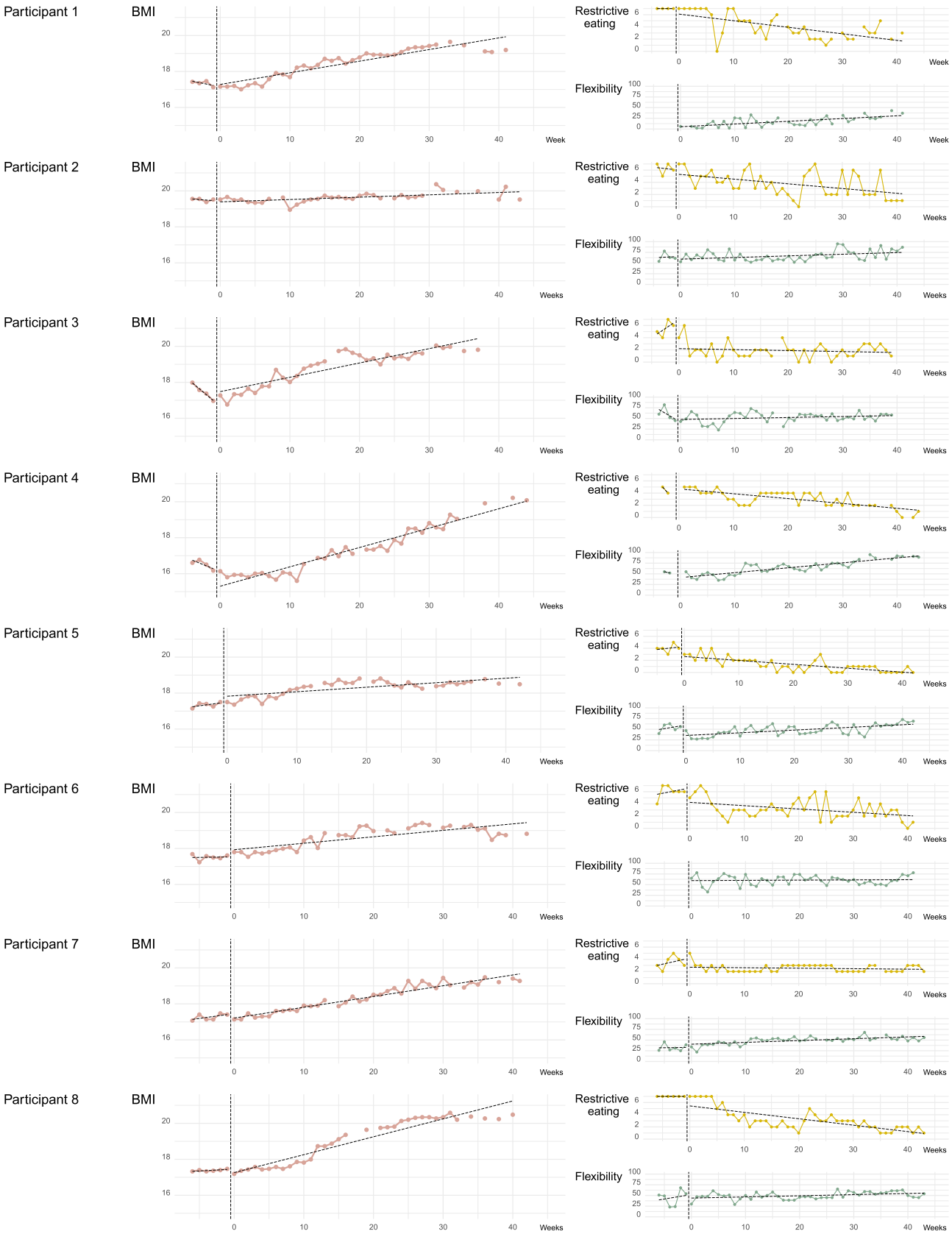

Fig. 1. Weekly, repeated measurements of BMI, restrictive eating, and flexibility for *completers*.
Note. The black vertical lines show treatment start, the black sloping lines show the trend before and after treatment start. y-axis for restrictive eating = days per week (0–7), y-axis for flexibility = degree of the behavior present (very low to very high). BMI, Body Mass Index; Restrictive eating: item one from Eating Disorder Symptom List; Flexibility from Visual Analogue Scale.

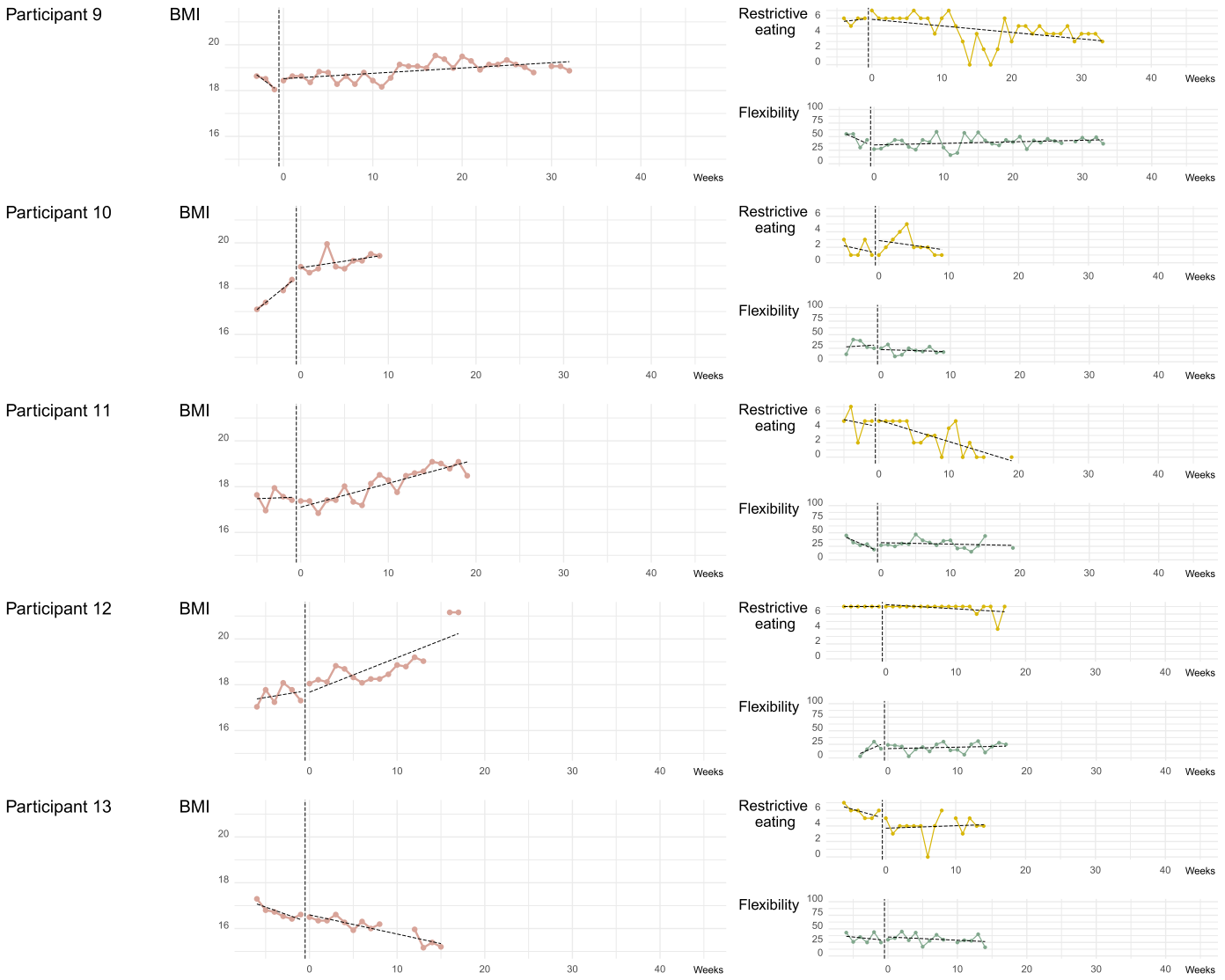

Fig. 2. Weekly, repeated measurements of BMI, restrictive eating, and flexibility for *non-completers*.
Note. The black vertical lines show treatment start, the black sloping lines show the trend before and after treatment start. y-axis for restrictive eating = days per week (0–7), y-axis for flexibility = degree of the behavior present (very low to very high). BMI, Body Mass Index; Restrictive eating: item one from Eating Disorder Symptom List, Flexibility from Visual Analogue Scale.

completers. For flexibility, three completers and one non-completer showed a trend shift in a positive direction.

In terms of *variability*, it was generally larger for the self-rating measurements than for BMI (where variability was low), making interpretation of the intervention effect reported by self-ratings more difficult to interpret.

When estimating *immediacy of effect*, decrease in restrictive eating was seen within the first six weeks, as hypothesized, for all but two completers (No. four, where a decrease was observed in week 10, and No. seven, who showed no decrease compared with the lowest baseline measurement), and for participant 11 among the non-completers. BMI increased within six weeks after restrictive eating was reduced for all completers except patients two and seven, and for two non-completers (No. 11 and 12). Flexibility decreased for several patients at the start of the treatment (for two of the completers this baseline is missing). It increased during treatment for five of the completers, but not for any of the non-completers. In analyses of the multiple baselines, two patients (No. seven and 10) showed no decrease in restrictive eating when contrasted to the baseline. For the other 11, we found that time to change in restrictive eating increased as the baseline increased. The average number of weeks from first assessment at baseline until change was seen was 10.6 for the 4-week baseline, 11.5 for the 5-week baseline, and 13 for the 6-week baseline, indicating that change was an effect of the intervention. Results were similar when counting the weeks up to two measurements below baseline, indicating stability in the decrease.

3.2. Descriptive analyses

Measurements before and after treatment and at six-month follow-up are presented in Table 2. Mean change in BMI before versus after treatment was 1.7 kg/m^2 for the whole group, and 2.0 kg/m^2 for completers. Mean change in BMI before treatment versus at six-month follow-up was 2.0 kg/m^2 for completers. Weight maintenance (weight drop <3%) from end of treatment to follow-up was achieved by all completers but patient one and four. These two also dropped to a weight below 18.5.

Eight out of 13 patients (62%) were in full remission after treatment, four were in partial remission, and one had deteriorated. Six (46%) were still in full remission at follow-up. Among completers, all eight (100%) were in full remission after treatment, while six (75%) were in full

Table 2
Eating disorder psychopathology, quality of life, and social safeness before (PRE) and after treatment (POST), and at follow-up (FU).

	BMI[a]			EDE-Q global			CIA			BBQ			SSPS		
	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU	PRE	POST	FU
1	17.0	**19.2**[b]	18.1[b]	4.53	**2.21**[b]	**2.56**[b]	43	26	26	24	**56**	**50**	27	30	34
2	**19.5**	**19.5**	**23.2**[b]	3.08	**0.74**[b]	**0.25**[b]	22	6	**4**	22	36	**50**	38	44	48
3	17.0	**19.8**[b]	**19.7**[b]	2.90	**1.28**[b]	**1.17**[b]	25	**9**	**17**	38	**62**	**76**	35	37	39
4	16.6	**20.2**[b]	18.4[b]	2.99	**1.36**[b]	**0.52**	19	**8**	**4**	**84**	**92**	**96**	55	51	55
5	17.5	**18.5**[b]	**18.5**[b]	4.50	**2.22**[b]	**2.14**[b]	35	18	18	29	**49**	**40**	18	34	39
6	17.6	**18.8**[b]	**19.6**[b]	3.46	**0.88**[b]	**1.24**[b]	21	**7**	**8**	**61**	**63**	**61**	47	33	44
7	17.4	**19.3**[b]	**18.9**[b]	2.95	**1.46**[b]	**1.51**[b]	22	**10**	**14**	**60**	**69**	**68**	39	33	41
8	17.5	**20.5**[b]	**20.0**[b]	4.21	**1.52**[b]	**1.61**[b]	23	**9**	**11**	42	**50**	**62**	39	39	42
9	18.0	**18.9**[b]	NA	4.16	-	NA	32	-	NA	**54**	-	NA	38	–	NA
10	18.4	**19.4**[b]	NA	3.03	-	NA	19	-	NA	41	-	NA	29	–	NA
11	17.4	**18.5**[b]	NA	5.27	4.08[b]	NA	36	36	NA	17	32	NA	30	38	NA
12	17.3	**21.2**[b]	NA	4.91	-	NA	47	-	NA	10	-	NA	22	–	NA
13	16.2	15.2	NA	3.21	3.71	NA	31	42	NA	18	24	NA	18	27	NA

Note. BMI, Body Mass Index; EDE-Q, Eating Disorder Examination-Questionnaire; CIA, Clinical Impairment Questionnaire; BBQ, Brunnsviken Brief Quality of life scale*; SSPS, Social Safeness and Pleasure Scale; NA, Not Administered. Bold indicates healthy weight for BMI, and values within one standard deviation of the Swedish community mean for the self-rating scales (not available for S*SPS).

[a] One patient was pregnant at FU, which may have affected BMI.

[b] Measurements that changed reliably from PRE measurement.

remission at follow-up.

Reliable Change Index was calculated for BMI ($z = 0.23$), with a reliable change for 11 out of the 12 individuals who were underweight at study start, and for EDE-Q ($z = -0.74$), with reliable change for nine individuals. For completers, all seven with underweight at study start had a reliable change in BMI and all eight had a reliable change in EDE-Q.

3.3. Statistical measurements of effect

The overall magnitudes of change (Tau-U) between phases and during treatment, when controlling for non-desirable phase A trend change, are presented in Table 3. For ED outcomes, effects were moderate to large. For outcomes regarding adaptive control strategies, effects were small.

4. Discussion

The aim of the current study was to investigate the outcome of RO DBT for adult patients with AN and overcontrol in an outpatient setting. For primary outcomes, main findings showed that RO DBT significantly, clinically, and reliably reduced ED psychopathology. For secondary outcomes, the main findings were that quality of life was improved and that impairment due to ED was reduced. Changes in restrictive eating and BMI occurred within the expected timeframe, while changes in adaptive control strategies were generally smaller and – as expected – more delayed.

In terms of weekly, repeated measurements, the levels, trends, and variability in the data indicated valid effects, in particular for ED symptoms. In terms of immediacy of effect, we expected a shift in trend within six weeks for ED psychopathology, and within four weeks for overcontrol difficulties. As highlighted by De Young and Bottera (2018), change in BMI is often somewhat delayed, as it is mediated by change in e.g., eating habits. A decreasing trend in restrictive eating was therefore expected to start at the latest in week seven, mediating an effect of increase in BMI. This was the case for one non-completer and all but two completers. In the majority of cases, ED psychopathology continued to decrease after entering phase two, with much less emphasis and time spent on ED behaviors. Additionally, and as has previously been shown (Turner, Bryant-Waugh, & Marshall, 2015), early change seemed to be an important predictor of successful treatment outcome.

For outcomes related to adaptive control, the changes in ratings were generally smaller and results were more difficult to interpret due to the unstable baselines and the delayed effects. Because of this and because adaptive control was measured using a VAS developed for this study, conclusions regarding the effects on adaptive control should be drawn with caution. Especially since the VAS-scales were not validated and hence may not have been the optimal way to measure these outcomes.

Due to the complexity of the treatment, with multiple interventions introduced simultaneously, the effect of specific interventions or mechanisms on specific outcomes cannot be ascertained. However, the RO DBT intervention as a whole, targeting social signals of overcontrolled behaviors and the negative consequences on social connectedness, seems promising for treating the disorder.

Previous studies show that remission rates after outpatient treatment for AN are rarely higher than one third of the whole sample (Byrne et al., 2017; Fairburn et al., 2013; Zipfel et al., 2014). In this study, remission rates were 100% for completers and 62% for the entire sample post-treatment, with 75% of completers and 46% of the whole sample still in full remission at follow-up. However, group outcomes are to be viewed upon as preliminary. Because the present study had a small sample, it is not appropriate to draw any conclusions at a group level and in contrast to other, larger, studies.

Dropout rates for treatments targeting outpatients with AN vary between around 30 to 70% (Byrne et al., 2017; Byrne, Fursland, Allen, & Watson, 2011; Fairburn et al., 2013; Fassino et al., 2009). In this study, five individuals dropped out or were removed from the study (38%): one was deteriorated with lower weight, and four fulfilled the definition of

Table 3
Averaged Tau-U scores of omnibus effect sizes for repeated measurements, based on individual Tau-U scores corrected for baseline trend.

		Tau-U	*p*	CI 95% *LL, UL*
BMI	Completers ($N = 8$)	**0.7437**	<.0001	0.5450, 0.9423
	Non-completers ($N = 5$)	**0.4123**	.0036	0.1345, 0.6900
	All ($N = 13$)	**0.6237**	<.0001	0.4613, 0.7860
EDSL	Completers ($N = 8$)	**−0.7408**	<.0001	−0.9503, −0.5313
	Non-completers ($N = 5$)	−0.2218	.0994	−0.4856, 0.0420
	All ($N = 13$)	**−0.5451**	<.0001	−0.7091, −0.3810
VAS-S	Completers ($N = 6$)	**0.3366**	.0075	0.0897, 0.5836
	Non-completers ($N = 5$)	−0.2324	.0944	−0.5047, 0.0399
	All ($N = 11$)	0.0852	.3615	−0.0978, 0.2681
VAS-F	Completers ($N = 6$)	0.1755	.1636	−0.0714, 0.4225
	Non-completers ($N = 5$)	−0.1575	.2569	−0.4299, 0.1148
	All ($N = 11$)	0.0284	.7613	−0.1546, 0.2113

Note. BMI, Body Mass Index; EDSL, Eating Disorder Symptom List; VAS-S, Visual Analogue Scale - Social connectedness; VAS-F, Visual Analogue Scale - Flexibility; CI, confidence interval; *LL*, lower limit; *UL*, upper limit. **Bold** indicates significant TAU scores at the $p < .05$ level.

partial remission. Thus, even though remission rates were relatively high, 38% were not able to complete, or fully benefit from, treatment. It is also worth mentioning that two of the patients in full remission at follow-up had a weight drop of 1.1 kg and 1.4 kg respectively. Even though these numbers are within the range of what is defined as weight maintenance (Stevens et al., 2006), a longer follow up period would have been preferable to fully conclude if patients were still in remission. Further, when analyzing the patients dropping out from treatment, they were generally older, showed more severe symptoms, and had suffered from the ED for a longer time, whereas seven out of eight that were in their young adulthood (18–25 years) completed and were in full remission after treatment. This might indicate that the treatment, in the outpatient form provided in this study, may be more effective for younger patients with AN. It is also likely that patients with more long-lasting and severe ED symptoms could benefit from a more flexible approach allowing for inpatient care or more extensive meal support prior to or in parallell with the RO DBT treatment. However, as previously mentioned it is important to not draw any firm conclusion regarding group outcomes with a small sample.

In sum, it has been suggested that treatment options with disparate approaches are warranted since one size does not fit all in treatments targeting AN (Martinez & Craighead, 2015). Patient feedback also highlights the need for individualization of treatment by addressing the underlying mechanisms that are specific to each patient, instead of mere focus on eating and weight gain (Rance, Moller, & Clarke, 2017). Overcontrolled difficulties have been identified as one of these core mechanisms for patients with AN, and interventions targeting maladaptive overcontrol is a viable option for patients displaying these difficulties (Farstad, McGeown, & von Ranson, 2016; Martinez & Craighead, 2015). Results from the present study support these ideas.

4.1. Limitations

Several limitations need to be addressed. First, follow-up was performed at six months, limiting the possibility to draw conclusions about long-term effects of RO DBT. Second, adherence was not assessed, due to the absence of valid RO DBT adherence rating instruments. Nevertheless, the therapists received regular supervision with review of video recordings, and additional consultations when needed. Third, appropriate measurements for investigating weekly changes in specific RO DBT targets did not exist in Swedish, for which reason we constructed study-specific VAS. Conclusions about secondary outcomes related to overcontrol should therefore be drawn with caution. Lastly, due to the controlled study design with multiple baselines and with the intervention replicated over several cases, it is reasonable to conclude that our results can be generalized to female patients with overcontrol and mild to moderate AN. However, neither males nor individuals with severe underweight receiving stepwise treatment with inpatient care as the first intervention have been evaluated in this study.

4.2. Conclusion

The current study provides preliminary support for the use of RO DBT as outpatient treatment for mild to moderate adult AN with overcontrol. Further studies should replicate these findings, and investigate if targeting dysfunctional overcontrol can decrease long-term risks for relapse and social ostracism.

CRediT authorship contribution statement

Martina Isaksson: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - original draft, Visualization, Project administration. **Ata Ghaderi:** Conceptualization, Methodology, Formal analysis, Writing - review & editing, Supervision. **Mia Ramklint:** Conceptualization, Methodology, Formal analysis, Writing - review & editing, Supervision. **Martina Wolf-Arehult:** Conceptualization, Methodology, Formal analysis, Writing - review & editing, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

We would like to thank Region Uppsala for providing salary to the first author and Hans Arinell for advice on statistics. We also want to thank research assistants Bendik Hjelm Waaler, Erica Nyström, Maria Ziuzina and Ylva Walldén, as well as the participants and clinicians for their involvement in the study. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. Declarations of interest: none. Data will not be made publicly available due to confidentiality, but can be made available upon reasonable request to the corresponding author. All authors provided substantially to each part of the manuscript. The study was preregistered in the ISRCTN registry, no: ISRCTN47156042, URL: https://www.isrctn.com/ISRCTN47156042.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jbtep.2021.101637.

References

Alavi, K., Ali, M., Moghadam, A., & Rahiminezhad, A. (2017). Psychometric properties of social safeness and pleasure scale (SSPS). *Fundamentals of Mental Health, 19*(5), 5–13.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author: American Psychiatric Association.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author: American Psychiatric Publishing.

Baudinet, J., Simic, M., Griffiths, H., Donnelly, C., Stewart, C., & Goddard, E. (2020). Targeting maladaptive overcontrol with radically open dialectical behaviour therapy in a day programme for adolescents with restrictive eating disorders: An uncontrolled case series. *Journal of Eating Disorders, 8*(1), 1–13. https://doi.org/10.1186/s40337-020-00338-9

Ben-Porath, D., Duthu, F., Luo, T., Gonidakis, F., Compte, E. J., & Wisniewski, L. (2020). Dialectical behavioral therapy: An update and review of the existing treatment models adapted for adults with eating disorders. *Eating Disorders, 28*(2), 101–121. https://doi.org/10.1080/10640266.2020.1723371

Berg, K. C., Peterson, C. B., Frazier, P., & Crow, S. J. (2012). Psychometric evaluation of the eating disorder examination and eating disorder examination-questionnaire: A systematic review of the literature. *International Journal of Eating Disorders, 45*(3), 428–438. https://doi.org/10.1002/eat.20931

Bohn, K., Doll, H. a, Cooper, Z., O'Connor, M., Palmer, R. L., & Fairburn, C. G. (2008). The measurement of impairment due to eating disorder psychopathology. *Behaviour Research and Therapy, 46*(10), 1–15. https://doi.org/10.1016/j.brat.2008.06.012

Byrne, S., 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*(4), 219–226. https://doi.org/10.1016/j.brat.2011.01.006

Byrne, S., Wade, T., Hay, P., Touyz, S., Fairburn, C. G., Treasure, J., et al. (2017). *A randomised controlled trial of three psychological treatments for anorexia nervosa, 2823–2833*. https://doi.org/10.1017/S0033291717001349

Chen, E. Y., Segal, K., Weissman, J., Zeffiro, T. A., Gallop, R., Linehan, M. M., et al. (2015). Adapting dialectical behavior therapy for outpatient adult anorexia nervosa-A pilot study. *International Journal of Eating Disorders, 48*(1), 123–132. https://doi.org/10.1002/eat.22360

Cooper, Z., & Fairburn, C. G. (1987). The eating disorder examination: A semi-structured interview for the assessment of the specific psychopathology of eating disorders. *International Journal of Eating Disorders, 6*(1), 1–8. https://doi.org/10.1002/1098-108X(198701)6:1<1::AID-EAT2260060102>3.0.CO;2-9

De Young, K. P., & Bottera, A. R. (2018). A summary of reporting guidelines and evaluation domains for using single-case experimental designs and recommendations for the study of eating disorders. *International Journal of Eating Disorders, 51*(7), 617–628. https://doi.org/10.1002/eat.22887

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders, 16*(4), 363–370.

Fairburn, C. G., Cooper, Z., Doll, H. A., Connor, M. E. O., Palmer, R. L., & Dalle, R. (2013). Enhanced cognitive behaviour therapy for adults with anorexia nervosa : A UK–Italy study. *Behaviour Research and Therapy, 51*(1), R2–R8. https://doi.org/10.1016/j.brat.2012.09.010

Farstad, S. M., McGeown, L. M., & von Ranson, K. M. (2016). Eating disorders and personality, 2004-2016: A systematic review and meta-analysis. *Clinical Psychology Review, 46*, 91–105. https://doi.org/10.1016/j.cpr.2016.04.005

Fassino, S., Pierò, A., Tomba, E., & Abbate-Daga, G. (2009). Factors associated with dropout from treatment for eating disorders: A comprehensive literature review. *BMC Psychiatry, 9*, 67. https://doi.org/10.1186/1471-244X-9-67

Gilbert, K., Hall, K., & Codd, R. T. (2020). Radically open dialectical behavior therapy: Social signaling, transdiagnostic utility and current evidence. *Psychology Research and Behavior Management, 13*, 19–28. https://doi.org/10.2147/PRBM.S201848

Gilbert, P., Mcewan, K., Mitra, R., Richter, A., Franks, L., Mills, A., et al. (2009). An exploration of different types of positive affect in students and patients with bipolar disorder. *Clinical Neuropsychiatry*, (January), 135–143.

Hay, P. (2013). A systematic review of evidence for psychological treatments in eating disorders: 2005-2012. *International Journal of Eating Disorders, 46*(5), 462–469. https://doi.org/10.1002/eat.22103

Hempel, R., Vanderbleek, E., & Lynch, T. R. (2018). Radically open DBT: Targeting emotional loneliness in anorexia nervosa. *Eating Disorders, 26*(1), 92–104. https://doi.org/10.1080/10640266.2018.1418268

Holmbom Goh, M., Ramklint, M., Isaksson, M., & Wolf-Arehult, M. (2020). *Psychometric properties of the Swedish version of the social safeness and pleasure scale (SSPS) (in preparation*.

Isaksson, M., Ghaderi, A., Wolf-Arehult, M., & Ramklint, M. (2020a). *Overcontrolled, undercontrolled, and resilient personality styles among patients with eating disorders. Manuscript Submitted for Publication*.

Isaksson, M., Ghaderi, A., Wolf-Arehult, M., & Ramklint, M. (2020b). *Psychometric properties of the Eating Disorder Symptom List (EDSL), a brief questionnaire for weekly assessment of eating disorder symptoms. Manuscript Submitted for Publication*.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12–19. https://doi.org/10.1037//0022-006x.59.1.12

Krasny-Pacini, A., & Evans, J. (2018). Single-case experimental designs to assess intervention effectiveness in rehabilitation: A practical guide. *Annals of Physical and Rehabilitation Medicine, 61*(3), 164–179. https://doi.org/10.1016/j.rehab.2017.12.002

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., et al. (2013). Single-case intervention research design standards. *Remedial and Special Education, 34*(1), 26–38. https://doi.org/10.1177/0741932512452794

Letzring, T. D., Block, J., & Funder, D. C. (2005). Ego-control and ego-resiliency: Generalization of self-report scales based on personality descriptions from acquaintances, clinicians, and the self. *Journal of Research in Personality, 39*(4), 395–422. https://doi.org/10.1016/j.jrp.2004.06.003

Linardon, J., Wade, T. D., De La Piedad Garcia, X., & Brennan, L. (2017). The efficacy of cognitive-behavioral therapy for eating disorders: A systematic review and meta-analysis. *Journal of Consulting and Clinical Psychology, 85*(11), 1080–1094. https://doi.org/10.1037/ccp0000245

Lindner, P., Frykheden, O., Forsström, D., Andersson, E., Ljótsson, B., Hedman, E., et al. (2016). The Brunnsviken Brief quality of life scale (BBQ): Development and psychometric evaluation. *Cognitive Behaviour Therapy, 6073*(March), 1–14. https://doi.org/10.1080/16506073.2016.1143526

Lynch, T. R. (2018a). *Radically open dialectical behavior therapy: Theory and Practice for treating disorders of overcontrol*. Oakland, CA: New Harbinger Publications.

Lynch, T. R. (2018b). *The skills training manual for Radically open dialectical behavior therapy*. New Harbinger Publications.

Lynch, T. R., Gray, K. L. H., Hempel, R. J., Titley, M., Chen, E. Y., & O'Mahen, H.a. (2013). Radically open-dialectical behavior therapy for adult anorexia nervosa: Feasibility and outcomes from an inpatient program. *BMC Psychiatry, 13*(1). https://doi.org/10.1186/1471-244X-13-293, 293–209.

Lynch, T. R., Hempel, R. J., & Dunkley, C. (2015). Radically open-dialectical behavior therapy for disorders of over-control: Signaling matters. *American Journal of Psychotherapy, 69*(2), 141–162. https://doi.org/10.1176/appi.psychotherapy.2015.69.2.141

Lynch, T. R., Hempel, R. J., Whalley, B., Byford, S., Chamba, R., Clarke, P., et al. (2020). Refractory depression - mechanisms and efficacy of radically open dialectical behaviour therapy (RefraMED): Findings of a randomised trial on benefits and harms. *British Journal of Psychiatry, 216*(4), 204–212. https://doi.org/10.1192/bjp.2019.53

Lynch, T. R., Morse, J. Q., Mendelson, T., & Robins, C. J. (2003). Dialectical behavior therapy for depressed older adults: A randomized pilot study. *American Journal of Geriatric Psychiatry, 11*(1), 33–45. https://doi.org/10.1097/00019442-200301000-00006

Martinez, M. A., & Craighead, L. W. (2015). Toward person(ality)-centered treatment: How consideration of personality and individual differences in anorexia nervosa may improve treatment outcome. *Clinical Psychology: Science and Practice, 22*(3), 296–314. https://doi.org/10.1111/cpsp.12111

Murray, S. B., Quintana, D. S., Loeb, K. L., Griffiths, S., & Le Grange, D. (2019). Treatment outcomes for anorexia nervosa: A systematic review and meta-analysis of randomized controlled trials. *Psychological Medicine, 49*(4), 535–544. https://doi.org/10.1017/S0033291718002088

National Institute for Health and Care Excellence. (2017). *Eating disorders: Recognition and treatment* (NICE guideline No. 69). Retrieved from https://www.nice.org.uk/guidance/ng69.

Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). *Tau - U - Behavior Therapy - 2011, 42*, 284–299.

Rance, N., Moller, N. P., & Clarke, V. (2017). "Eating disorders are not about food, they're about life": Client perspectives on anorexia nervosa treatment. *Journal of Health Psychology, 22*(5), 582–594. https://doi.org/10.1177/1359105315609088

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., et al. (1998). The Mini-International Neuropsychiatric Interview (M.I.N.I): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry, 59*(20), 22–33.

Smith, J. D. (2012). Single-case experimental designs: A systematic review of published research and current standards. *Psychological Methods, 17*(4), 510–550. https://doi.org/10.1037/a0029312

Stevens, J., Truesdale, K. P., McClain, J. E., & Cai, J. (2006). The definition of weight maintenance. *International Journal of Obesity, 30*(3), 391–399. https://doi.org/10.1038/sj.ijo.0803175

Turner, H., Bryant-Waugh, R., & Marshall, E. (2015). The impact of early symptom change and therapeutic alliance on treatment outcome in cognitive-behavioural therapy for eating disorders. *Behaviour Research and Therapy, 73*, 165–169. https://doi.org/10.1016/j.brat.2015.08.006

Watson, H. J., & Bulik, C. M. (2013). Update on the treatment of anorexia nervosa: Review of clinical trials, practice guidelines and emerging interventions. *Psychological Medicine, 43*(12), 2477–2500. https://doi.org/10.1017/S0033291712002620

Welch, E., Birgegård, A., Parling, T., & Ghaderi, A. (2011). Eating disorder examination questionnaire and clinical impairment assessment questionnaire: General population and clinical norms for young adult women in Sweden. *Behaviour Research and Therapy, 49*(2), 85–91. https://doi.org/10.1016/j.brat.2010.10.010

Westen, D., DeFife, J. A., Bradley, B., & Hilsenroth, M. J. (2010). Prototype personality diagnosis in clinical practice: A viable alternative for DSM-5 and ICD-11. *Professional Psychology: Research and Practice, 41*(6), 482–487. https://doi.org/10.1037/a0021555

Westen, D., & Harnden-Fisher, J. (2001). Personality profiles in eating disorders: Rethinking the distinction between Axis I and Axis II. *American Journal of Psychiatry, 158*(4), 547–562. https://doi.org/10.1176/appi.ajp.158.4.547

n.d. World Health Organization. Body mass index - BMI. Retrieved from http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi

Zipfel, S., Wild, B., Grob, G., Friederich, H. C., Teufel, M., Schellberg, D., et al. (2014). Focal psychodynamic therapy, cognitive behaviour therapy, and optimised treatment as usual in outpatients with anorexia nervosa (ANTOP study): Randomised controlled trial. *The Lancet, 383*(9912), 127–137. https://doi.org/10.1016/S0140-6736(13)61746-8