

BMJ Open How do women with eating disorders experience a new treatment combining guided physical exercise and dietary therapy? An interview study of women participating in a randomised controlled trial at the Norwegian School of Sport Sciences

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ABSTRACT

Objectives To investigate how women with bulimia nervosa (BN) and binge eating disorder (BED) experience participating in a new treatment programme for eating disorders, based on guided physical exercise and dietary therapy.

Design and participants Six women with BN and four with BED were semistructurally interviewed. Transcribed interviews were analysed using a text-condensing analytic approach.

Results The analysis resulted in four main categories: (1) 'a renewed attitude towards physical activity', (2) 'a new perception of food', (3) 'mixed feelings of being in a heterogeneous treatment group' and (4) 'insight in one's own recovery process', each with 2–4 subcategories to express nuances.

Conclusion The treatment was experienced as beneficial. Improvements in the implementation of the programme were suggested.

Trial registration number NCT02079935.

INTRODUCTION

A clinical feature in eating disorders (EDs) is the overevaluation of the importance of controlling food intake, body shape and weight. Notably patients with bulimia nervosa (BN) and binge eating disorders (BED) often binge eat several times a week.¹ Following episodes of binge eating, patients with BN additionally use compensatory behaviours like vomiting and physical activity (PA).¹ The clinical severity of EDs reflected in the twofold to sixfold increase in standardised mortality² calls for effective treatments. About 80%–94% of patients with BN and BED never seek professional help,^{3–6} and among those

Strengths and limitations of this study

- Strengths are its originality as being one of few qualitative studies exploring experiences by women with eating disorders participating in a new treatment programme based on physical exercise and dietary therapy.
- It is a strength that the sample size was sufficient to capture the richness and variations in the experiences of participating in the new treatment programme.
- A limitation might be that the interviewers also were therapists in the treatment programme. This might have been a source of bias as the participants may not have felt comfortable sharing all their experiences.

who do so, a majority have had ED symptoms for at least 4–5 years.⁷ Treatment delays and repeated treatment failures prolong the course of illness, which again predict why 20%–30% of the patients with ED has a protracted course.⁸

Systematic reviews and meta-analyses^{9–11} show promising effects of cognitive-behavioural therapy (CBT) for BED, and intermediate effects for BN. In CBT, the strength of core cognitive beliefs about low self-worth and the need to control food intake, body weight and shape are challenged. In addition, stimulus control procedures are used to reduce the frequency of bingeing and/or purging.¹² Yet, up to 50% of patients do not respond to CBT.¹³ An enhanced version of CBT, addressing a wider spectrum of psychological and interpersonal problems

in addition to EDs, appears promising.¹⁴ However, the remission rates do not surpass those reported for CBT. Diverse treatment contexts and individual differences among patients and therapists make a 'one-size-fits-all' logic untenable. Thus, there is a need to explore the benefits of extended treatments options.

Systematic reviews and meta-analyses¹⁵⁻¹⁷ show promising effects for the therapeutic effect of guided aerobic physical exercise (PE) for depression and anxiety. A recent review¹⁸ has suggested that guided PE may work as an adjunctive to other treatment efforts like for instance CBT in EDs. The compulsive and excessive nature of physical activity in ED to compensate for calorie intake during binges may explain why specialised ED clinics nevertheless are reluctant to include PA in their treatment programmes.¹⁹ A previous randomised controlled trial (RCT) has, however, shown that guided PE performed equally well as CBT in treating BN²⁰ possibly because guided PE promotes better affect regulation and reduces the use of excessive physical activity for compensatory purposes.²¹ Moreover, in this previous study,²⁰ dietary therapy (DT) also proved effective, yet to a lesser extent.

However, several limitations flawed this study, notably a failure to collect patient experiences from participating in PE and DT treatment arms. Some is known about overall satisfaction in patients with ED with *modes* of treatment^{6,22-27} but to our knowledge only two studies address patient satisfaction with *specific* treatment methods or approaches, that is, psychodynamic²⁸ and family therapy,²⁹ and both have yielded mixed findings. Hence, more knowledge about patients' satisfaction with other specific ED treatment methods is required. One obvious reason is that it would be highly unfortunate to implement a treatment that is effective for EDs in terms of symptom alleviation, but which are not beneficial or acceptable to the patients. In addition, patients' experiences with treatment may add new information about how a treatment programme can be adjusted and improved. Such knowledge is important in order to combat or circumvent resistance to change and reluctance to seek treatment, a characteristic in most patients with ED. Hence, in this qualitative study, we ask how women with EDs experience a new treatment combining guided *physical exercise* and *dietary therapy* (PED-t)?

METHODS

Study setting

The current study was run within the context of an RCT³⁰ where the overall aim was to test whether PED-t has comparable or better effects in treating EDs than CBT. Included in the RCT were women aged 18–40 years who fulfilled the Diagnostic and Statistical Manual of Mental Disorders - 5 criteria for BN or BED, respectively. The exclusion criteria for the RCT were pregnancy, self-reported body mass index (BMI) 17.5–35, suicidal risk, severe personality disorder, being a competing athlete or having been treated with CBT for an ED in the past 2 years

prior to the trial. An additional exclusion criterion for the current qualitative study of the PE treatment arm was the failure to attend about 80% of the treatment sessions. The BMI cut-off was set to reduce the heterogeneity within the treatment groups and to avoid weight-related injuries when doing the PE sessions. Both treatment arms CBT and PED-t, respectively, used a group format of 20 sessions over 16 weeks, and where each group consisted of 5–8 individuals.³⁰

Recruitment and participants

A sampling strategy was chosen to secure variation within the inclusion criteria. The last author provided written information and request to 10 of the 60 women who at the time of the current study had completed the RCT. These 10 participants (age mean 25.5 years; range 21–34 years) responded positively, and the second and fourth author contacted them to make appointments for the interviews.

Interviews

The interviews took place 1–2 months after finishing the RCT. All interviews were carried out at the study site; the Norwegian School of Sport Sciences and the participants knew the interviewers and authors (SS and TS) from their role as therapists in parts of the RCT.

The semistructured interview guide was composed based on relevant literature on ED, as well as expertise on ED and qualitative methods within the author group. The interviews were carried out as conversations about the participant's experiences of taking part in the PED-t programme. The interview guide comprised questions like: "Can you tell about your overall experiences with participating in the treatment programme?", "Have there been any changes in your everyday life after participating in the treatment programme?", "Did the programme meet your expectations? Why/why not?", "What could have made the treatment programme better?", "How did you experience being in a treatment group?". Follow-up questions were freely adjusted to the participant's answers. Each interview lasted about 1 hour, was audio taped and then the interviews were transcribed verbatim. The saturation size was judged as sufficient after 10 interviews. No repeat interviews were carried out.

Ethical considerations

The 10 patients received written and oral information about the study's purpose, confidentiality, the principles of voluntary participation and the right to exit the study at any time. All 10 participants gave their written consent to participate.

Data analysis

The transcribed interviews were analysed according to the principles of systematic text condensation.³¹ These principles describe a four-step, explorative and descriptive method for thematic cross-case analysis of qualitative data. The first step comprised reading and getting an overview of the whole data material of 54 transcribed

pages, while consciously bracketing previous preconceptions. In the second step, the units of meaning were identified, coded and grouped related to the experiences of participating in the PED-t. Third, the contents of the coded groups were condensed, and quotes were selected to illustrate the meaning of each group. In the fourth step, descriptions were summarised and the categories were named. The second author (SS) conducted the analysis, while the coauthors (GP, TS, JHR and JS-B) validated the systematic text condensation process until consensus was reached. The analysis resulted in four main categories: (1) 'a renewed attitude towards physical activity', (2) 'a new perception of food', (3) 'mixed feelings of being in a heterogeneous treatment group' and (4) 'insight in one's own recovery process', each with two to four subcategories to express nuances.

RESULTS

A renewed attitude towards physical activity

The present category describes how the treatment programme was experienced as facilitating renewed and more positive attitudes towards physical activity that included feelings of mastery and flexibility. Moreover, learning to be more aware of own needs and body signals were given attention.

Discovering new aspects of PA

Regular PE gave the participants an experience of personal mastery. They described a boost of self-esteem when mastering training methods or activities they normally expected they could not accomplish. PE had resulted in a new social dimension, both by realising the value of exercising together with other group members, and by feeling comfortable being together with other gym members who did not participate in the current study. Now, they experience physical activity as completely different from the previous thinking that such an activity was part of the 'project slim' described discovering PE as a way to relax and to maintain a functional body. Additionally, improved physical fitness was experienced as advantageous in everyday life situations, for instance, by being able to run faster and longer to reach the bus—by one participant described as having 'superpowers'. Another participant summarised:

Moving focus from how I look towards the experience of having a body that is well functioning is very rewarding. I imagined that I would loose weight, and that was my goal when I enrolled in the treatment program. But now, realising the fact that I am pleased even though I did not loose weight and that I see the value of changing my thoughts about food and exercise, that tells me it was a success (28-year-old woman, BED).

One of the women had very negative associations to PE prior to treatment. However, when she was introduced to different PE activities, she experienced that going into a

gym was not as frightening as it used to be. Her life situation was difficult, which made it hard to keep up the good workout routines she had achieved during the treatment, but still felt that she wanted to continue doing PE:

I still feel stupid about exercising, but I kind of realised that training is something I should and actually want to do. Especially running gave me a feeling of being free, because I think too much. When doing strength training I had to count and think, but when running, I felt free, and that is something I will take with me as a useful experience (31-year-old woman, BN).

Understanding the importance of own needs

For the women who had used physical activity as a compensatory strategy, their focus in treatment was to learn to listen to their body. Receiving support and guidance from the group members and therapists were important, to be able to find out what was regarded as *normal*. The participants had experienced the importance of adequate energy intake and how it is related to achievements and results in training. To be able to listen to their body was reported to have positive effects in social life. For instance, the participants described how they now could join social events and they could deal with sudden changes of plans:

I have started listening to my body before I do any workout; how did I sleep? Have I eaten enough? What are my plans later today? Do I have the time for this? It's no longer a problem not to prioritise exercise, to choose to do something else. It is a lovely feeling that I can sit down and relax, to make plans and to have the time to do other things. And it's no big deal if I did not work out in the weekend (28-year-old woman, BN).

For one of the women, exercise was not a major part of the illness. For her, exercise had always been something that made everyday life rewarding and structured. She experienced that the treatment programme contributed to increase the quality of her workouts, for instance, by being introduced to new activities.

A new perception of food

This category describes how the participants experienced the benefits of learning to identify triggers to food consumption. Moreover, the therapists were regarded as providers of credible knowledge about nutrition, energy requirements and mechanisms of hunger and satiety. This knowledge facilitated a positive shift to food as a source of health and well-being among the participants.

Increased factual knowledge of nutrition and energy requirements

The participants experienced the information about the need for energy and nutrients as well as the easy access to expert advice as important. Moreover, they reported more trust in nutritional information and advices provided by the therapist than through newspapers or

social media. Many of the women had been dieting and had experiences with various forms/practices of physical activity. Reconsidering what a healthy diet really is about was experienced as advantageous. Throughout the treatment programme, they reported a better understanding of energy requirements in general, and specifically, to eat more vegetables and to have an adequate amount of macronutrients in each meal. This understanding and knowledge lead them to focus on meal composition and planning healthy snacks between main meals. One of the participants expressed it like this:

Instead of thinking of food as a friend or a foe, the thought of food is being picked apart. I think of food as nutritional components. My body needs carbohydrates to rest after workouts, proteins to rebuild muscles and cells, and fat to energise the brain and take care of joints and really just for being healthy and happy. I feel that the project has focused on healthy eating in a broad perspective (28-year-old woman, BED).

Moreover, by learning about nutrition and nutritional requirements, the participants felt good, and particularly they reported being more reassured when following a meal plan made by professionals. Some expressed that the treatment programme provided a rather comprehensive understanding of energy requirements and nutrients. Moreover, gradually the participants reported being able to teach family and friends what they had learnt. They also experienced that they could take advantage of this knowledge to prevent relapses into old patterns of dieting and overeating to cope with stress or negative emotions and self-help purposes.

Reducing the fear of food

Prior to treatment, their usual way of thinking about physical activity was some kind of a 'negative gain', that is, that the physical activity increased energy metabolism and that this increase should be sustained as long as possible by not eating following exercise. The participants reported that the treatment had contributed to a more healthy way of thinking on food. They had learnt that when exercising, they needed energy refilling the same day, and described that they were no longer afraid to eat and that food no longer was experienced as '*a bad thing*'. Consequently, they experienced a decrease in the need to keep strict dietary rules and less stress if such rules were broken. As one participant expressed it:

I have been much less tense in relation to food, but also overall. When it comes to eating chocolate, I have not been so judgmental towards myself (...). It is not like I have to hate myself if I have eaten sugar (30-year-old woman, BN).

Another participant had good experiences in separating the eating problem from her problem with low self-esteem.

To focus on eating without thinking that it affects the self-esteem has in fact solved a lot of my self-esteem problems. Instead of struggling with this huge problem that I cannot get my head around, and rather start working with the food separately, has been really positive for me (28-year-old woman, BED).

Identifying triggers and strategies

Overall, the participants expressed that they had learnt to recognise patterns and triggers leading to binge eating or compensatory behaviours. Typical triggers were feelings of being upset or stressed or having eaten a subjectively or objectively large amount of food. They had also learnt several strategies to identify and cope with these triggers. Such strategies comprised to avoid grocery shopping when being hungry or upset, or to plan and buy meals for the next three days rather than do shopping on daily basis. Another strategy was to adopt regular and adequate meal routines to avoid the feeling of hunger throughout the day. For example, this could be to increase the intake of carbohydrates, which was experienced as both energising and challenging:

Earlier, eating carbohydrates was a total disaster, but I realised that it was important for my energy levels to consume carbohydrates and that a low intake was the reason for my binge eating episodes. Hence, I just had to practice it, but it was very demanding (28-year-old woman, BN).

Another strategy reported was the importance to let people know when they felt down or upset, no matter how they would react. Using these new strategies was experienced as motivating:

I have noticed that I use the strategies I have learned, and that I use them to make myself stronger. Experiencing that they are effective makes me continue to use them, and this differs from my previous experience. Previously I did not know how to fix it, and some of the methods I used previously only made it worse (26-year-old woman, BED).

Mixed feelings about being in a heterogeneous treatment group

In this category, the participants reflected on both positive and negative aspects of being in a heterogeneous treatment group. Though the group was described as a supportive environment, they often experienced different issues when participants clearly were progressing in different rates and directions. As a result, many realised they primarily had to commit themselves to recovery as a personal project.

Accept and support despite group heterogeneity

Overall, the women described the group climate in a positive manner. The ED as the common denominator and the gateway to mutual connection promoted the good

climate. Hence, they experienced that they shared the same struggles about food, emotions, body image and PE, and the good group climate was promoted by the opportunity to talk about such personal issues.

You accept yourself more, when you feel accepted in a group as the person you are—which include your problems. It is important to feel free to talk about the ED problems without being afraid of negative feedback. Not all others in the group understood, I noticed that there were differences and that we were not all the same. But every person was very supportive to each other (24-year-old woman, BED).

Some expressed that the group worked well because all participants attended every session. Nevertheless, some of the women expressed that they had missed this positive group climate because they had been in a group where several participants had not participated regularly.

Heterogeneity as a challenge

The fact that the group consisted of participants where some had BN and others had BED was experienced as challenging and frustrating in various ways. One woman experienced that she did not fit in with the group because many of the other women were only interested in calories and high-intensity training, which were distinct from her own problems.

I was not sure that I fitted in with the group, I had mixed feelings. I recognised a lot of things that they said about thoughts and problems, but when they talked about their behaviour it was not the same (24-year-old woman, BED).

Another issue mentioned was that some found it challenging when other group members showed improvement while others still struggled.

When one of the group members said they did not think of food as difficult anymore, I just felt that “Okay, that’s good—but what about the rest of us? Help us!” I wish she could have used her energy on us, instead of “signing out” of the group (29-year-old woman, BN).

Another challenge was the differences in the understanding of symptoms. For instance, one woman could complain about being fat and did not accept the obvious fact stated by the other group members that she was very thin. In addition, a source of irritation was the uneven attention and opportunities to speak:

I noticed that I became irritated when other participants got a lot of the attention in the group, and when they said things that were very relevant to themselves, but not to the rest. They should have gotten a time frame (31-year-old woman, BN).

It was a general opinion that the therapist should have been stricter when organising the group sessions, for instance, in defining time frames. Hence, it would have

been easier for everyone to have their say, and to feel free and safe when having ‘their’ time frame to speak. However, one of the women who had spoken a lot during the group sessions experienced that she *had* to speak because no one else did.

A personal project after all

The women expressed that it was generally positive to be in the treatment group, and they supported each other and especially those who needed encouragement. However, they primarily had commitments to themselves and working on their own recovery process was described as a personal responsibility. Several reported that it was up to each person to have the will to keep up the effort, and to be open and reflective to get as much as possible out of the treatment. One woman expressed it like this:

It was a little disappointing and demotivating that some did not prioritise the treatment enough. ‘Cause it was a lot of work (...). But it did not affect me that much. I took care of myself. You have to take responsibility for yourself if you want to benefit from this (28-year-old woman, BN).

The women experienced getting both general information and individual guidance. The importance of individual guidance and customised advice was emphasised because it gave a feeling of being acknowledged and helped them to set reachable goals.

Insight in one’s own recovery process

This category describes how the participants came to realise the nature and challenges of a process of recovery from their ED, notably by facing the illness and to put insights into practice in everyday life. Moreover, the wish for follow-up was reported and the treatment had given the participants a more realistic picture of future challenges.

Facing the illness

All the participants had struggled with an ED for years, and some had experiences from other treatment programmes. Taking the step into this particular treatment programme was experienced both as easy and tough. Entering treatment had made it necessary to reflect on their healing process. One woman experienced that the threshold to enter the current treatment programme had been high because she was uncertain and afraid about who she would meet in the group, and because she did not feel confident about the exercise part. For several of the women, however, the threshold was low, because at the time of enrolment they felt motivated and committed to recover. For one woman, this was the first step into treatment ever:

I have never spoken to anyone about it, so I felt that this was a good opportunity to make things clearer. I did not have that many expectations; I just finally dared to start talking about my ED problems (24-year-old woman, BED).

Some expressed that it was tough to give up their need for control. Facing the illness was described as the only way to get better, even though it was tough:

I remember the first session, I cried for hours afterwards. I had never been asked these questions before, and since I answered honestly, I was shocked when I realised how sick I really was (26-year-old woman, BED).

It was also demanding to be in a group setting because they had to face many people when being weak. Pretending that everything was okay when anxiety and anger was screaming inside was experienced as tough:

Sitting here the first times and telling people how I really felt was incredibly demanding. I had never done it before, but I just had to continue, since I first started (21-year-old woman, BN).

Challenges taking theory into practice and daily life

Generally, it was reported as challenging to make use of what they learnt, both during and after the intervention period. One reason was that the DT progressed in a speed that made it difficult to integrate many new habits at one time. One participant expressed the problem like this:

When you have used so many years becoming who you are, it's not easy to start making changes. (...) I felt a pressure to set new goals before I was ready. It would have been nice to slow things down (24-year-old woman, BED).

In many ways, combining their ordinary and often hectic daily life with the efforts needed to learn and practice new habits was experienced as demanding. Some reported that it was *after* finishing the treatment programme that they got a better overview over what coping tools they had actually achieved. Others had problems with a lack of support at home. One of the women was married to a man from a different culture, and had challenges making healthy meals at home:

It was hard to do things right because of my husband. He wanted the traditional cooking, while I was trying to eat healthier. This was a problem for me (34-year-old woman, BED).

A wish for follow-up

Almost all of the women expressed that the treatment would have been more helpful if the programme had lasted longer, or if booster sessions had been offered either monthly or on demand. In their opinion, such options would have contributed to a feeling of being cared for, a feeling of personal commitment from the therapist and would have helped them to manage the days where the ED felt particularly distressing.

It was a sudden end to it. Even though we were prepared, it is always hard to be alone again like all of a sudden. I wish we had been followed up on a

monthly basis after the last group session (24-year-old woman, BED).

A better understanding of future challenges

The treatment programme was described as a part of a recovery process. Some women believed that this process was rapid, and it was experienced as challenging for them to realise that the process had to be slower and including many subgoals. One woman experienced that her goal changed throughout the treatment programme:

I feel that there have been changes in my head. I am thinking that I am not quite there yet, but I'm on a good path. My goal is not really getting thin anymore; my goal is to calm down my thoughts and my feelings. The treatment has made me aware that even though I have an ED, the ED is not who I am (28-year-old woman, BED).

Some of the women experienced that they had reduced or stopped doing the compensatory behaviours, but that they still had work to do:

Sometimes the brain just sets back to the old routines. So I need to keep fighting those fights every single day (24-year-old woman, BN).

One woman became aware of that she needed more help:

I know that there are things buried deep down, and that I need help to deal with them. The treatment has started many processes in me, and I hope I can get some help to change my need to use food as a way to control my feelings. However, I now have the tools I need to exercise, so I hope I can continue doing that (31-year-old woman, BN).

DISCUSSION

The aim of the current study was to investigate how women with EDs experience participating in a new treatment programme for EDs, which focused on guided PE and DT. We found four main categories that meaningfully captured the participants' experiences, that is (1) a renewed attitude towards PA, (2) a new perception of food, (3) mixed feelings of being in a heterogeneous treatment group and (4) insight in one's own recovery process.

Overall, the present findings echo mainstream results indicating that recovery from EDs is generally a high-demanding process.^{32,33} The results showed that the participants valued the factual information about food, nutrition and nutritional needs, and that they viewed the expertise knowledge provided by the programme leaders as more thrustful than information conveyed through newspapers and social media. Even more, they experienced the factual information as some kind of a buffer against various and often conflicting information provided in the

media. Moreover, factual information about food and nutrition helped the participants to realise what the body needs. However, equally much the factual information lead them to revise opinions about possible devastating consequences for weight gain of occasionally not eating the 'right kind of food'. This new insight experienced as a kind of 'freedom' or flexibility. Hence, education from sources experienced as credible, and exploring own options within a group setting may have contributed to the participant's ability to become flexible eaters.

Our results echo previous findings^{34 35} that changing food attitudes is vital for improvement and recovery from EDs in the way that also a focus on the psychological aspects of food and eating was experienced as beneficial. Hence, the treatment programme was experienced as being helpful in providing tools to increase the ability to identify and neutralise everyday life trigger situations for overeating and compensatory behaviours. Moreover, the programme facilitated attitudes towards food as a source of health and well-being. This points to a qualitative difference from a stimulus-control approach in CBT programmes, where the idea is to help patients just *to control* food through the identification of triggers of overeating.

It has been argued that demographic and clinical heterogeneity may corrupt group cohesiveness and group climate.^{34 36-38} In the present study, group heterogeneity was related to diagnosis, the nature and pretreatment level of physical activity as well as unpredictable dropout from particular group sessions. Such dropouts are often related to shame and guilt feelings associated with overeating and purging in EDs,³⁹ and may block the otherwise effective efforts to exchange group participation⁴⁰ to prevent permanent dropouts.⁴¹ In principle, this kind of dropout may halt or even destroy all group processes and the extra benefits of group cohesion believed to characterise group therapy. Thus, dropouts may force group members to start afresh almost every session.³⁸ Indisputable, all these sources of heterogeneity were experienced as negative, however with some nuances. Thus, clinical differences in ED symptoms within a group seem to have been more related to how each group member coped with her own recovery process. On the other hand, the heterogeneity in terms of commitment to attend all group sessions seems to have been regarded as negative for the group climate and the personal disclosure.

Overall, the participants experienced the treatment groups as beneficial, supportive and as a safe place to discuss challenges and to explore new strategies to cope with the ED symptoms. In particular, and regardless of the pretreatment level of physical activity, our findings indicated that the participants realised that guided PE was a source of mastery and competence and that working out had added a positive social dimension in their lives. In addition, they reported feelings of being comfortable exercising with other group members in a gym along with people outside the group who did not have an ED because of a shift of

focus away from 'performance' and physical appearance. This sense of mastery seems understandable given the fact that the PE objectively leads to better physical fitness, and corresponds to research¹⁵⁻¹⁷ which points to the relationship between fitness and mood alleviations. Whether such feelings of mastery and a change towards more healthy motives for PE may facilitate group cohesiveness and healing processes is a topic for further research.

Strengths of this study are its originality as being one of few qualitative studies focusing on experiences in participating in a particular treatment, and notably in a novel treatment approach combining PE and DT. Moreover, the sample size was sufficient to capture the richness and variations in the experiences of participating in the new treatment programme. A limitation is a possible bias from the fact that interviewers also were therapists in the treatment programme. Although not noted during the interviews, the risk of under-report of less favourable treatment experiences might have been raised by this bias. However, the openly reporting of negative experiences with heterogeneity of the group composition indicates that the under-reporting of critical comments was negligible. Moreover, clinical severity might have coloured the experiences. However, a possible impact of clinical severity would be negligible because the inclusion criteria in the RCT provided a clinically rather homogenous sample, and because the study focus was on the treatment programme per se.

In conclusion, the participants provided important suggestions with respect to how the implementation of this novel treatment could be further improved. Moreover, the present study shows promising positive results in the sense that the participants experienced the new treatment programme as beneficial by providing tools to combat ED symptoms, but equally much in promoting mastery, health and general well-being. Studies under way will explore whether symptom alleviations may parallel these positive experiences.

Contributors All authors (GP, SS, JHR, TS, TFM, JS-B) were responsible for planning the study. The second (SS) and the fourth author (TS) conducted the data collection. SS did the coding and the primary analysis, and TS, GP and JS-B contributed in the validation of the analysis. All authors (GP, SS, TS, TFM, JHR, JS-B) contributed in the writing of the manuscript.

Competing interests None declared.

Patient consent Obtained.

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REFERENCES

- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th edn. Washington DC: American Psychiatric Association, 2013.
- Arcelus J, Mitchell AJ, Wales J, et al. Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. *Arch Gen Psychiatry* 2011;68:348–58.
- Keski-Rahkonen A, Hoek HW, Susser ES, et al. Epidemiology and course of anorexia nervosa in the community. *Am J Psychiatry* 2007;164:1259–65.
- Hoek HW, van Hoeken D. Review of the prevalence and incidence of eating disorders. *Int J Eat Disord* 2003;34:383–96.
- Wentz E, Gillberg C, Gillberg IC, et al. Ten-year follow-up of adolescent-onset anorexia nervosa: psychiatric disorders and overall functioning scales. *J Child Psychol Psychiatry* 2001;42:613–22.
- Reichborn-Kjennerud T, Bulik CM, Sullivan PF, et al. Psychiatric and medical symptoms in binge eating in the absence of compensatory behaviors. *Obes Res* 2004;12:1445–54.
- Rosenvinge JH, Klusmeier AK. Treatment for eating disorders from a patient satisfaction perspective: a Norwegian replication of a British study. *Eur Eat Disord Rev* 2000;8:293–300.
- Rosenvinge JH, Pettersen G. Epidemiology of eating disorders part II: An update with a special reference to the DSM-5. *Adv Eat Disord: Theory, Res Pract* 2015.
- Hay P. A systematic review of evidence for psychological treatments in eating disorders: 2005–2012. *Int J Eat Disord* 2013;46:462–9.
- Spielmanns GI, Benish SG, Marin C, et al. Specificity of psychological treatments for bulimia nervosa and binge eating disorder? A meta-analysis of direct comparisons. *Clin Psychol Rev* 2013;33:460–9.
- Vist G. *Cognitive behavior therapy compared to other psychotherapy for treatment of bulimia*. Oslo: Report from the Norwegian Institute of Public Health, 2016.
- Waller G. A 'trans-diagnostic' model of the eating disorders: a new way to open the egg? *Eur Eat Disord Rev* 2008;16:165–72.
- Wilson GT, Grilo CM, Vitousek KM. Psychological treatment of eating disorders. *Am Psychol* 2007;62:199–216.
- Groff SE. Is enhanced cognitive behavioral therapy an effective intervention in eating disorders? A review. *J Evid Inf Soc Work* 2015;12:272–88.
- Larun L, Nordheim LV, Ekland E, et al. Exercise in prevention and treatment of anxiety and depression among children and young people. *Cochrane Database Syst Rev* 2006;19:CD004691.
- Cooney GM, Dwan K, Greig CA, et al. Exercise for depression. *Cochr Database Syst Rev* 2013;9.
- Rosenbaum S, Tiedemann A, Sherrington C, et al. Physical activity interventions for people with mental illness: a systematic review and meta-analysis. *J Clin Psychiatry* 2014;75:964–74.
- Brauhardt A, de Zwaan M, Hilbert A. The therapeutic process in psychological treatments for eating disorders: a systematic review. *Int J Eat Disord* 2014;47:565–84.
- Bratland-Sanda S, Rosenvinge JH, Vrabel KA, et al. Physical activity in treatment units for eating disorders: clinical practice and attitudes. *Eat Weight Disord* 2009;14:e106–e112.
- Sundgot-Borgen J, Rosenvinge JH, Bahr R, et al. The effect of exercise, cognitive therapy, and nutritional counseling in treating bulimia nervosa. *Med Sci Sports Exerc* 2002;34:190–5.
- Bratland-Sanda S, Sundgot-Borgen J, Rø Ø, et al. "I'm not physically active - I only go for walks": physical activity in patients with longstanding eating disorders. *Int J Eat Disord* 2010;43:88–92.
- de la Rie S, Noordenbos G, Donker M, et al. Evaluating the treatment of eating disorders from the patient's perspective. *Int J Eat Disord* 2006;39:667–76.
- Newton JT, Robinson PH, Hartley P. Treatment for eating disorders in the United Kingdom. Part II. Experiences of treatment: A survey of members of the eating disorders association. *Eur Eat Disord Rev* 1993;1:10–21.
- Clinton D, Björck C, Sohlberg S, et al. Patient satisfaction with treatment in eating disorders: cause for complacency or concern? *Eur Eat Disord Rev* 2004;12:240–6.
- Swain-Campbell NR, Surgenor LJ, Snell DL. An analysis of consumer perspectives following contact with an eating-disorders service. *Aust N Z J Psychiatry* 2001;35:99–103.
- Clinton D. Expectations and experiences of treatment in eating disorders. *Eat Disord* 2001;9:361–71.
- Bell L. What can we learn from consumer studies and qualitative research in the treatment of eating disorders? *Eat Weight Disord* 2003;8:181–7.
- Poulsen S, Lunn S, Sandros C. Client experience of psychodynamic psychotherapy for bulimia nervosa: An interview study. *Psychotherapy: Theory, Research, Practice, Training* 2010;47:469–83.
- Krautter T, Lock J. Is manualized family-based treatment for adolescent anorexia nervosa acceptable to patients? Patient satisfaction at the end of treatment. *J Fam Ther* 2004;26:66–82.
- Mathisen TF, Rosenvinge JH, Pettersen G, et al. The PED-t trial protocol: The effect of physical exercise -and dietary therapy compared with cognitive behavior therapy in treatment of bulimia nervosa and binge eating disorder. *BMC Psychiatry* 2017;17:180.
- Malterud K. Systematic text condensation: a strategy for qualitative analysis. *Scand J Public Health* 2012;40:795–805.
- Pettersen G, Rosenvinge JH, Ytterhus B. Patient experiences with bulimic symptoms in daily life interactions. *Eat Disord* 2008;16:204–11.
- Pettersen G, Thune-Larsen K-B, Wynn R, et al. Eating disorders: challenges in the later phases of the recovery process. *Scand J Caring Sci* 2013;27:92–8.
- Björck T, Ahlström G. The patient's perception of having recovered from an eating disorder. *Health Care Women Int* 2008;29:926–44.
- Lindgren BM, Enmark A, Bohman A, et al. A qualitative study of young women's experiences of recovery from bulimia nervosa. *J Adv Nurs* 2015;71:860–9.
- Rosenvinge JH. Group therapy for anorexic and bulimic patients. Some aspects on the conduction of group therapy and a critical review of some recent studies. *Acta Psychiatr Scand* 1990;361:38–43.
- Pettersen G, Rosenvinge JH, Wynn R. Healing processes in eating disorders related to psychoeducation - patients' experiences. *Scand J Car Sci* 2011;25:12–18.
- Wanlass J, Kelly Moreno J, Thomson HM. Group therapy for eating disorders: a retrospective case study. *J Spec Group Work* 2005;30:47–66.
- Fassino S, Pierò A, Tomba E, et al. Factors associated with dropout from treatment for eating disorders: a comprehensive literature review. *BMC Psychiatry* 2009;9:67.
- Bell L. What predicts failure to engage in or drop out from treatment for bulimia nervosa and what implications does this have for treatment? *Clin Psychol Psychother* 2001;8:424–35.
- Wampold BE. How important are the common factors in psychotherapy? An update. *World Psychiatry* 2015;14:270–7.