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Feasibility of a parent education and skills workshop for improving response to family-based treatment of adolescent anorexia nervosa

Running Title

Parent skills workshop for family-based treatment

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Conflict of Interests

None.

Abstract

Early response to family-based treatment (FBT) is a robust predictor of positive outcomes for adolescents with anorexia nervosa (AN). We introduced a parent education and skills workshop in the first 4 weeks of treatment with the aim of improving changes in parent self-efficacy in FBT and, in turn, patient weight gain. Forty-five families who had at least one parent attend the workshop were compared to a matched control of families who did FBT before the workshop was introduced. Among adolescents who were underweight at baseline, weight gain by week 4 of treatment was higher for adolescents whose parents attended the workshop (M = 90.84% median BMI) than those who did not (M = 88.54% mBMI, $p < .05$). There was no significant difference in weight at week 12 or at end of treatment, nor was there a difference in self-efficacy as measured by the Parent Versus Anorexia Scale. Participants reported a high level of satisfaction with the workshop and significant improvements in knowledge and confidence. Overall, the workshop was a feasible adjunct for improving early response to FBT.

Keywords: anorexia nervosa; adolescents; family therapy; peer support; self-efficacy

Word Count: 2,000

Family Based Treatment (FBT; Lock & Le Grange, 2013) is considered the strongest evidenced-based treatment for adolescent anorexia nervosa (AN; Lock, 2015). However, recent trials report remission rates between 22% and 42% (Le Grange et al., 2016; Lock et al., 2010). Research consistently shows that weight gain within the first 4 weeks is a robust predictor of recovery (Le Grange, Accurso, Lock, Agras, & Bryson, 2014; Madden et al., 2015), and that increased parental efficacy during FBT predicts greater adolescent weight gain (Byrne, Accurso, Arnow, Lock, & Le Grange, 2015).

Given these findings, interventions that enhance parental self-efficacy early in FBT may improve outcomes. We therefore developed a parent education and skills workshop for parents undertaking FBT for adolescents with restrictive eating disorders with the aim of improving parental self-efficacy and treatment outcomes. Parent efficacy in FBT refers to parents' sense of confidence in their ability to manage their child's AN behaviours and restore them to a healthy weight through meal support. Empowering parents to take charge of these aspects of recovery is considered the most salient principle of FBT (Dimitropoulos, Freeman, Lock, & Le Grange, 2017). The workshop was therefore designed to boost parental efficacy through education, skill development, and peer support. So as to impact on early treatment gains, the workshop was delivered within the first 4 weeks of treatment.

The current study aimed to evaluate the feasibility of the workshop to increase parents' knowledge and confidence, and improve changes in parent efficacy, weight gain, and eating disorder symptoms. It was hypothesised that workshop attendees would have an increased understanding of AN and FBT, as well as improved confidence in managing AN behaviours and distress. It was also hypothesised that there would be greater improvements in parent efficacy, weight gain, and eating disorder symptoms in families of parents who attended the workshop compared to a matched-pair sample of families who undertook FBT before the workshop was introduced.

Method

Participants & Procedure

The study took place at a specialist service providing FBT for adolescents with restrictive eating disorders (i.e., AN, atypical AN, avoidant/restrictive food intake disorder) (Hughes et al., 2014). Parents of adolescents who commenced FBT August 2015-June 2016 were required to attend the workshop during their first 4 weeks of treatment. Two non-English speaking families were excluded from attending. In total of 96 parents (51 mothers, 45 fathers) across 53 families were eligible to attend.

A matched-pair control sample was selected from a databank of 261 adolescents who commenced FBT prior to the workshop being introduced (July 2010-July 2015). The samples were matched on adolescent age in years (workshop: M = 15.2, SD =1.7, control: M = 15.2, SD = 1.5~~; p = .902~~), sex (both 80% female~~; p = .999~~) and closest % median body mass index (mBMI) at presentation measured to the nearest whole number (workshop: M = 93.9, SD =16.7, control: M = 92.6, SD = 113.3~~; p = .660~~). When there was more than one suitable match, control participants were selected randomly using a random number generator. There were no significant differences in family structure (both 67% intact; p = .999) or baseline Eating Disorders Examination Global Score (workshop: M = 2.37, SD =1.83, control: M = 2.55, SD = 1.80; p = .650).

Data for this study were obtained from the Eating Disorder Research Databank approved by the institutional ethics committee.

Measures

Parents completed a questionnaire regarding their knowledge of AN and confidence in FBT at the beginning of the workshop. The questionnaire was designed by the authors for this study and comprised 9 items rated on a 5-point scale (0=*nil* to 4=*very high*). The same 9

items were completed at the end of the workshop, together with 4 items assessing satisfaction with the workshop rated on a 5-point scale (1=*poor* to 5 = *excellent*).

Adolescents were weighed while wearing a gown at baseline, weeks 4 and 12 of treatment, and end of treatment (EOT). Height was measured at baseline, week 12, and EOT. Percentage mBMI was calculated using growth charts of the Centers for Disease Control (2000). Adolescents completed the Eating Disorders Examination (EDE; Fairburn & Cooper, 1993) at baseline and EOT.

Parents completed the Parent Versus Anorexia Scale (PVA) (Rhodes, Baillie, Brown, & Madden, 2005) at baseline, weeks 4 and 12, and EOT. The PVA comprises 7-items assessing the parent's self-efficacy regarding their ability to bring about recovery in their child in FBT.

Workshop

The 3-hour workshop was designed and facilitated by two clinicians (MG, MP). It was initially developed as a 1-hour workshop for a carers' conference (Ganci & Pradel, 2015) before being expanded into the current format. The structure of the workshop is detailed in Table 1. Further detail on the content can be found in Ganci (2016) and obtained from the authors. In brief, it was an interactive group comprising introductions, psychoeducation, skill development, and guest presentations by parents who had successfully completed FBT. The inclusion of veteran parents was based on previous research showing parent-to-parent consultations to improve early outcomes in FBT (Rhodes, Baillee, Brown, & Madden, 2008).

Results

Workshop Attendance

Ten workshops were held during the study period. Group size ranged from 4 to 10 parents (M = 7.4, SD = 2.1), representing 3 to 6 patients per workshop (M = 4.5, SD = 1.1). Of the 53 patients with parents eligible to attend, 45 (85%) had at least one parent who attended a workshop, and 38 (72%) had all parents attend a workshop (i.e., both parents in two-parent families and one parent in single-parent families). Overall, 42 (82%) mothers attended, and 32 (71%) fathers attended. Forty families (89%) attended the workshop within 4 weeks of their first FBT session.

Perceived Impact and Satisfaction

Among the 45 families (42 mothers, 32 fathers) who attended the workshop, 38 (90%) mothers and 29 (91%) fathers completed the knowledge and confidence questionnaire. Results are shown in Table 1. Comparing pre- and post-workshop ratings, both mothers and fathers reported a significant increase in knowledge and confidence across all domains ($p <$ .001). Thirty-six (86%) mothers and 24 (75%) fathers completed questions regarding their satisfaction with the workshop. The overall usefulness of the workshop was rated highly, with 32 (89%) mothers and 22 (88%) fathers rating it as 'Very Good' or 'Excellent'. The influence of the workshop on the way parents managed their child's illness was also rated highly, with 30 (83%) mothers and 23 (96%) of fathers rating this as 'Very Good' or 'Excellent'.

Treatment Engagement and Outcomes

As the workshop was intended to impact on early treatment response, only the 40 families in which at least one parent attended the workshop within 4 weeks of starting treatment were included in the following analyses. There were no significant differences between the workshop and control groups in length of treatment (M = 20.3 weeks, SD = 5.3 vs M = 18.1, SD = 6.7), number of sessions (M = 14.9, SD = 3.6 vs M = 14.2, SD = 4.7), or dropout rate (< 9 sessions; n = 4, 10% vs n = 6, 15%), ps > .100.

Repeated-measures analysis of variance (ANOVA) compared baseline to follow-up scores on the EDE and PVA, with between-subject comparisons by group (i.e., workshop vs. controls). See Table 2. There was a significant decrease in EDE Global Score between baseline and EOT (p < .001), and significant increases in maternal PVA score between baseline and each follow-up point (week 4 p = .014; week 12 p = .007; EOT p = .023). However, there were no changes in paternal PVA score, and no differences by group.

For the analyses of %mBMI, only the 26 participants who were <95%mBMI at baseline and their matched control were included. For these adolescents, there was a significant increase in %mBMI between baseline and each follow-up (all ps < .001). There was also a significant difference in %mBMI between groups at week 4 (p = .030), with adolescents whose parents attended the workshop being at a higher weight than the control sample. There were no group differences at week 12 or EOT.

The proportion of adolescents who were remitted at EOT in each group was examined. In line with previous clinical trials of FBT for adolescent AN, remission was defined as ≥95% mBMI and EDE Global Score within 1SD of community norms (Le Grange et al., 2016; Madden et al., 2014). Of adolescents whose parents attended the workshop, 58% were remitted at EOT compared to 39% in the control group. The difference was not statistically significant (Fisher's Exact Test p = .099; OR = 2.24, 95% CI: 0.80, 6.28).

Discussion

This study demonstrated that a parent education and skills workshop can have a positive effect on early outcomes of FBT. Specifically, there was higher weight gain at week 4 for adolescents whose parents attended the workshop compared to those who did not. However, there was no difference at week 12 or EOT. Parents reported high levels of satisfaction and significant improvement in knowledge and confidence following the workshop, although there did not appear to be an impact on parent efficacy as measured by the PVA.

A likely strength of the workshop was its targeting of education and skill development early in FBT. Early response has been shown to be critical for remission (Le Grange et al., 2014; Madden et al., 2015). As such, the requirement that parents attend the workshop early in treatment was an important aspect of its design. Indeed, the greater weight gain observed at week 4 suggests that this approach was effective. However, the superior weight gain observed for adolescents whose parents attended the workshop was not maintained at week 12 or EOT. While this may suggest that additional interventions are needed later in treatment to ensure sustained effects, it also raises the question of whether the workshop promoted earlier weight gain in those who would have improved regardless, or whether it enabled change in those who might otherwise have had poorer response to treatment.

Although it was hypothesized that the workshop would improve outcomes by increasing parent efficacy, this was not supported as similar increases in efficacy were observed in the workshop and control groups. It may be that parent efficacy is impacted in the earliest FBT sessions, masking any further impact of the workshop as measured by the PVA. In addition, as the PVA is specific to FBT, it does not capture the broader concept of self-efficacy (Bandura, 1982) which may be more relevant to the effects of the workshop. Alternatively, other factors may be responsible for improving weight gain; for example, the specific knowledge and skills fostered in the workshop, such as food requirements and managing

distress, could have led parents to make more appropriate food choices and provide more effective meal support. Although individual family sessions also focus on these areas, the didactic presentations from facilitators combined with the exchange of knowledge and experience with other parents may help to expand and consolidate parents' knowledge and capacity. Further, the exchange of stories often resulted in a hopeful and emotive experience, which may have been particularly helpful for parents who felt unsure about FBT. Finally, the workshop may have impacted upon family interactions. There is evidence that parental criticism is associated with poorer outcomes in FBT (Rienecke, Accurso, Lock, & Le Grange, 2016). The workshop may have fostered greater warmth and positive communication between parents and children which aided weight restoration efforts at home. Clearly, there is a need for more research into these mechanisms and how interventions such as this workshop can have an impact.

Although the results of the study are promising, the sample size was small, and as such the findings should be view with caution. In addition, more research is required to ascertain why this workshop is effective and further improve its impact.

Overall, the study indicates that the workshop is a feasible adjunct to FBT, and makes an important contribution to current evidence for the capacity for peer-based interventions (e.g., Eisler et al., 2016; Marzola et al., 2015; Rhodes et al., 2008) to improve treatment of adolescent AN.

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Table 1

Overview of the Parent Education and Skills Workshop

Time	Content	Aim
20 minutes	Introduction to aims of workshop in context of FBT. Parents introduce themselves and share their path to a diagnosis of AN and progress in FBT	Build social connections, reduce isolation, and dispel feelings of guilt and self-blame
20 minutes	Overview of adolescent development, the physical and psychosocial impacts of AN during adolescence, and the role of FBT	Improve knowledge and motivation through psychoeducation
100 minutes (with 15 minute break)	Interactive skill development: 1. Refeeding your Adolescent: factors that make eating difficult for the adolescent, food variety and quantities required for weight gain, addressing fear foods, behaviours that impede weight gain; 2. Managing your Child's Distress: how anxiety manifests in the brain, distraction and calming techniques, the importance of managing parental distress; 3. Parental Unity: the importance of parental unity; factors that lead to disunity, parental emotional responses; problem solving wheel.	Develop skills in refeeding, distress tolerance, and parental unity. Parents are encouraged to share their experiences and ideas, and to discuss how they would apply the skills to their personal situations. Therapists facilitate peer problem-solving and guidance, and identify common themes.
40 minutes	One or two parents who had successfully completed FBT join the group. Therapists interview the veteran parent(s) about their experience, and facilitate a group discussion with veteran parent.	Further reduce isolation, provide hope of recovery, and increase confidence

Table 2

Parent ratings of their knowledge and confidence regarding AN and FBT at the beginning (pre) and end (post) of the workshop.

	Mothers		Fathers	
	Pre	Post	Pre	Post
1. What is anorexia?	2.46 (0.90)	3.39 (0.68)	1.97 (0.91)	3.14 (0.79)
2. Medical & psychological impact of anorexia	2.32 (0.94)	3.37 (0.59)	1.79 (0.90)	3.03 (0.63)
3. How to refeed my child	1.82 (0.83)	3.03 (0.88)	1.93 (0.88)	3.10 (0.72)
4. What makes it hard for my child to eat?	1.95 (0.90)	3.29 (0.69)	1.83 (0.97)	3.00 (0.93)
5. How much to feed a child with anorexia	1.76 (0.93)	3.05 (0.99)	1.79 (1.24)	3.00 (0.76)
6. What are anorexic behaviours?	2.21 (0.96)	3.34 (0.63)	1.72 (0.96)	3.03 (0.68)
7. How to respond to a child with an anorexia	1.65 (0.89)	3.21 (0.78)	1.57 (0.92)	3.10 (0.67)
8. How to manage my child's distress	1.74 (0.95)	3.00 (0.93)	1.52 (0.91)	2.76 (0.79)
9. How confident do you feel in doing FBT?	2.22 (1.00)	3.16 (0.95)	2.24 (0.87)	3.17 (0.85)

Note. All pre and post comparisons are significant at $p < .001$, paired t-tests. Response scale: 0 = nil, 4 = very high.

Table 3

Eating disorder symptoms, parent self-efficacy and weight of families who completed the workshop before week 4 compared to the control sample

Measure	Group	Baseline M (SD); [95% CI]	Week 4 M (SD) ; [95% CI]	Week 12 M (SD) ; [95% CI]	End of Treatment M (SD); [95% CI]
EDE - Adolescent	Workshop	2.37 (1.78); [1.82, 2.96]	-	-	0.85 (1.24); [0.47, 1.32]
	Control	2.68 (1.84); [2.08, 3.25]	-	-	1.34 (1.47); [0.82, 1.87]
PVA - Mother	Workshop	19.15 (3.14); [18.15, 20.27]	23.35 (3.38); [22.60, 24.80]	22.25 (3.55); [20.53, 23.88]	22.86 (3.48); [21.33, 24.30]
	Control	19.53 (3.95); [18.21, 20.78]	23.67 (4.72); [21.36, 26.17]	24.00 (4.03); [21.93, 26.15]	22.53 (2.58); [21.25, 23.63]
PVA - Father	Workshop	18.86 (3.18); [17.70, 20.03]	23.71 (3.20); [22.21, 25.46]	23.63 (2.50); [22.13, 25.29]	22.39 (3.99); [20.79, 24.16]
	Control	18.92 (4.19); [17.16, 20.50]	22.25 (2.53); [20.90, 23.67]	23.33 (2.35); [21.78, 24.71]	22.00 (3.00); [20.29, 23.99]
%mBMI – Adolescent [a]	Workshop	84.87 (7.39); [82.10, 87.64]	90.84[b] (8.06); [87.81, 93.95]	94.63 (8.06); [91.59, 97.74]	96.24 (8.22); [93.27, 99.51]
	Control	85.11 (7.01); [82.49, 87.99]	88.54[b] (7.75); [83.36, 91.77]	94.29 (8.58); [90.72, 97.64]	95.17 (7.39); [92.46, 98.05]

Notes. %mBMI = percentage of median body mass index, EDE = Eating Disorders Examination, PVA = Parent Versus Anorexia Scale. [a] Includes only adolescents ≤95% mBMI at baseline (n = 26). [b] Groups differ significantly at $p < .05$.