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BRIEF REPORT

Outcome parameters associated with perceived helpfulness of family-based treatment for adolescent eating disorders

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Abstract

Objective: Family-based treatment (FBT) is an efficacious treatment for adolescent eating disorders, yet it is not routinely implemented in clinical practice. Given that consumers play a role in treatment selection, this study sought to examine families' perspectives on FBT and remission markers associated with increased treatment satisfaction across families.

Method: Participants were 40 adolescents and 43 caregivers who received outpatient FBT. FBT helpfulness was assessed using a treatment follow-up questionnaire, and eating disorder symptomatology was assessed using percent expected body weight (%EBW) and the eating disorder examination (EDE). Regression analyses were used to assess whether changes in symptoms from baseline to end-of-treatment (EOT) were significantly associated with helpfulness reports.

Results: On average, patients and their parents perceived FBT as "quite helpful" and "extremely helpful," respectively. Improvements in all EDE subscales, with the exception of restraint, were significantly associated with adolescent report of helpfulness (all $p < .05$); increase in %EBW was significantly associated with maternal report of helpfulness ($p = .03$). There were no significant findings for paternal report.

Discussion: Both patients and their parents perceived FBT as helpful, but patients seemed to prioritize cognitive improvements while mothers prioritized physical improvements in rating their satisfaction with FBT.

KEYWORDS
adolescents, eating disorders, family-based treatment, family perception, implementation

1 | INTRODUCTION

Eating disorders (ED), such as anorexia nervosa (AN) and bulimia nervosa, pose a serious risk to adolescent psychological and physical well-being. These disorders carry the highest mortality rate of any psychiatric disorder (4–5%) (Arcelus, Mitchell, Wales, & Nielsen, 2011), due to medical complications secondary to malnutrition (Rome & Ammerman, 2003) and high rates of suicidality (Crow, Swanson, le Grange, Feig, & Merikangas, 2014), and are further associated with high rates of hospitalization and rehospitalization (Steinhausen, Grigoroiu-Serbanescu, Boyadjieva, Neumärker, & Winkler Metzke, 2008), compromised cognitive function (Green, Elliman, & Rogers, 1996), and high levels of comorbid psychopathology (Braun, Sunday, & Halmi, 1994). In light of these complications, it is imperative to develop and improve effective clinical treatments for these disorders.

Family-based treatment (FBT) is one evidence-based approach with several studies supporting its efficacy in the treatment of youth with restrictive and binge-purge type EDs (Le Grange, Lock, Agras, Bryson, & Jo, 2015; Lock et al., 2010). When compared with individual therapies such as supportive psychotherapy and cognitive-behavioral therapy, FBT has been shown to be more efficacious in improving symptoms of eating pathology—for example, promoting weight gain and reducing binge eating and purging—and in producing full remission at end-of-treatment (EOT) (Le Grange et al., 2015; Lock et al., 2010). Moreover, a meta-analysis found FBT superior to individual therapy at 6- and 12-month follow-ups, in both anorexia and bulimia samples (Couturier, Kimber, & Szatmari, 2013).

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Despite empirical evidence in favor of FBT, familial and clinical barriers can pose a challenge to FBT uptake (Couturier, Kimber, Jack et al., 2013). For example, many parents do not participate in therapy because they do not understand the severity of their child's illness, or because they believe their child needs to receive individual treatment in order to recover (Couturier, Kimber, Jack et al., 2013); this is corroborated by anecdotal reports suggesting some clinicians are hesitant to implement FBT out of concern regarding how families will perceive treatment (Hughes et al., 2014). However, research demonstrates that parental involvement in treatment is paramount: family involvement is associated with reduced psychological and medical morbidities, especially in younger patients with shorter duration of illness (Eisler, Simic, Russell, & Dare, 2007; Lock, Couturier, & Agras, 2006). Some literature also suggests that parental involvement may mediate dropout rates, providing partial explanation for lower attrition rates seen in pediatric, versus adult, samples (15 versus 50%, respectively) (Halmi et al., 2005).

Indeed, family perspectives on FBT have rarely been assessed in the context of existing randomized clinical trials, despite the fact that such data may inform FBT implementation across broader settings. A better understanding of families' perceptions of FBT could facilitate prospective families' initial engagement—particularly, those who may be hesitant to participate. Understanding how different family members may perceive FBT could also aid in combatting barriers to treatment uptake, by providing clinicians with an idea of how to best promote FBT to individual family members.

Given the aforementioned lack of treatment feedback from families who have completed FBT, this study sought to elucidate patient and parent perspectives on the helpfulness of FBT, following treatment; our primary aim was to examine whether these perspectives are related to specific changes in patient symptoms by EOT.

2 | METHOD

2.1 | Participants

This study utilized data from families, presenting for outpatient ED treatment at a research-clinical program at The University of Chicago, who consented to having their clinical data used for research purposes. Families included were those who had (a) at least one member complete an EOT follow-up questionnaire; and (b) at least one measure of patient symptomatology—percent expected body weight (%EBW) and/or the Eating Disorder Examination (EDE)—at both baseline and EOT.

2.2 | Measures

ED symptomatology (i.e., weight and ED cognitions) was assessed using %EBW and the EDE (14th ed.) (Fairburn & Cooper, 2000). The EDE is a semistructured interview used to assess the severity of ED symptoms; it consists of four subscales (dietary restraint, eating concerns, shape concerns, and weight concerns), and an averaged, global score. %EBW was determined using percent median BMI (i.e., 50th BMI percentile), as defined by the Center for Disease Control and Prevention (CDC, 2002). Symptoms were assessed at both baseline and EOT, and change scores were calculated as the difference in scores between the two time points.

Family members' perspectives of the helpfulness of FBT were assessed using a single item from a treatment follow-up questionnaire ["How helpful was treatment?": 1 (Not Helpful) to 10 (Extremely Helpful)], administered only at EOT.

2.3 | Statistical analyses

Data were analyzed using SPSS (v.24). Stepwise logistic regression analyses were calculated to assess whether improvements in ED symptoms from baseline to EOT significantly affected participant report of FBT helpfulness at EOT.

3 | RESULTS

3.1 | Participant characteristics

Participants were 40 youth (ages 9–20 years) and 43 parents. At baseline, mean patient age was 14.6 years ($SD = 2.4$); duration of illness was 10.3 months ($SD = 10.96$); and mean %EBW was 84.9 ($SD = 9.93$). Patients were predominantly female (92.5%), and white (95%). Approximately half the patients met DSM-IV TR criteria for AN (47.5%, $n = 19$), followed by subthreshold AN (32.5%, $n = 13$), and ED not otherwise specified (20%, $n = 8$). Most patients (80.0%, $n = 32$) had at least one parent who completed the parent questionnaires, and of the 43 parents who participated, the majority were mothers (67.4%, $n = 29$), and the remainder ($n = 14$), fathers.

3.2 | FBT helpfulness and treatment outcome

On average, families participated in 21.17 sessions ($SD = 11.84$) of FBT, over an average of 10.01 months ($SD = 9.43$). Overall, families reported being very satisfied with treatment: on average, adolescents rated FBT as "Quite Helpful" (mean = 7.30, $SD = 3.01$), while mothers and fathers rated FBT as "Extremely Helpful" (mothers: mean = 9.28, $SD = 1.10$; fathers: mean = 8.93, $SD = 1.59$). Of those families for whom helpfulness data was captured for both caregivers, parental scores were modestly correlated ($r = .316$). Change in ED symptomatology, from baseline to EOT, is presented in Table 1.

Improvements in EDE Global scores from baseline to EOT were most strongly associated with adolescent ratings of FBT helpfulness ($b = -.554$, $t[29] = -3.585$, $p < .001$). Although not as robust, decreases in all EDE subscales, with the exception of Restraint, were also associated with adolescent approval of treatment (see Table 2). Change in %EBW was not associated with adolescent approval of treatment.

Only increase in %EBW from baseline to EOT was significantly associated with mothers' ratings of FBT helpfulness ($b = .442$, $t[22] = 2.309$, $p < .031$). None of the adolescent outcomes were significantly associated with fathers' ratings of FBT helpfulness (all $p > .05$).

4 | DISCUSSION

Thus study aimed to assess whether treatment outcome, as measured by ED symptomatology, contributed to family members' approval of FBT. Our findings suggest that different family members evaluate

TABLE 1 Eating disorder symptomatology, baseline to end-of-treatment

	Mean score at baseline (*SD*)	Mean score at EOT (*SD*)	Change score (*SD*, significance)[a]
%EBW	86.576 (1.92)	119.443 (100.14)	15.133 (10.70, <.001***)
EDE weight concerns	2.519 (1.68)	1.295 (1.40)	−1.224 (1.52, <.001***)
EDE shape concerns	3.009 (1.54)	1.596 (1.65)	−1.308 (1.71, <.001***)
EDE restraint concerns	2.541 (1.71)	.578 (1.23)	−1.962 (1.70, <.001***)
EDE eating concerns	1.508 (1.24)	.751 (1.28)	−.757 (1.37, .002**)
EDE global score	2.429 (1.29)	1.032 (1.23)	−1.330 (1.27, .005**)

Note. %EBW = percent expected body weight; EDE = eating disorder examination; EOT = end-of-treatment.
[a]Change score calculated as difference between end-of-treatment and baseline scores.
**Very significant at $p < .01$; ***extremely significant at $p < .001$.

treatment helpfulness using different outcome measures: improvements in eating-related psychopathology were associated with adolescents' perceptions of FBT helpfulness, while improvements in %EBW were associated with mothers' perceptions of FBT helpfulness.

These findings substantiate current FBT literature and theory. Improvements in weight and shape concerns, in particular, were associated with adolescent report of treatment helpfulness, and support existing literature demonstrating that greater body image disturbance contributes relapse in AN (Keel, Dorer, Franko, Jackson, & Herzog, 2005). Given patient resistance to weight gain, it was not surprising to find that improvements in this regard were not significant in predicting treatment helpfulness for adolescents. However, these data are a reflection of adolescent perception of treatment helpfulness and not, strictly speaking, of the helpfulness of treatment itself.

TABLE 2 Regression analyses using change scores and ratings of FBT helpfulness

	Change score[a] × FBT helpfulness		
	B	*t*	*p*
Adolescent report			
%EBW	−.145	−.705	.49
EDE weight concerns	−.493	−3.054	.005**
EDE shape concerns	−.474	−2.896	.007**
EDE restraint concerns	−.316	−1.792	.08
EDE eating concerns	−.518	−3.263	.003**
EDE global score	−.554	−3.585	.001***
Mother report			
%EBW	.481	2.513	.02*
EDE weight concerns	.109	.548	.59
EDE shape concerns	−.128	−.644	.53
EDE restraint concerns	.106	.533	.60
EDE eating concerns	.140	.705	.49
EDE global score	−.100	−.503	.62
Father report			
%EBW	.238	.647	.54
EDE weight concerns	.312	1.040	.32
EDE shape concerns	−.226	−.735	.48
EDE restraint concerns	.045	.142	.89
EDE eating concerns	−.314	−1.046	.32
EDE global score	−.228	−.742	.48

Note. FBT = family based treatment; %EBW = percent expected body weight; EDE = eating disorder examination.
[a]Change score calculated as difference between end-of-treatment and baseline scores.
*Significant at $p < .05$; **very significant at $p < .01$; ***extremely significant at $p < .001$.

In contrast, maternal sensitivity to adolescent weight gain suggests that mothers may be more attuned to quantifiable, visible changes in recovery rather than subjective ones (i.e., adolescent cognitions). This finding is consistent with core FBT principles that underscore the importance of early weight gain, and the necessity of proactive parenting and parental alignment in this process (Accurso, Ciao, Fitzsimmons-Craft, Lock, & Le Grange, 2014). This finding also serves as a "check," regarding the fundamental goals of FBT. FBT does attempt to have parents identify weight as a critically important variable—and, that mothers tended to rate FBT as helpful in the context of adolescent weight gain, suggests that FBT is indeed successful in establishing weight gain of the utmost importance.

Several limitations should be considered. The modest sample size of total participants ($n = 83$)—and, in particular, that of fathers ($n = 14$)—limits statistical power and generalizability; as such, future studies should aim to recruit a larger sample of patients and their caregivers to replicate and extend the findings. Additionally, it is important to note that families who opted not to complete an assessment at EOT may have had alternative views not captured in this paper; and, that those families who found treatment helpful, may have been more inclined to provide EOT data, potentially inflating average reports of helpfulness. Indeed, the lowest maternal score on the helpfulness measure was a value of 7 ("Quite Helpful"; $n = 3$) and the lowest paternal score was a value of 5 ("Moderately Helpful"; $n = 1$). The lowest adolescent score in this regard however, was a value of 1 ("Not Helpful"; $n = 3$)—suggesting that adolescent reports were more variable than those of the cargivers surveyed here.

Future studies should aim to collect data from the complete family unit. Of the patients who underwent treatment, only 27.5% ($n = 11$) had both parents comlete EOT questionnaires; however, the majority of patients (85%, $n = 34$) came from intact families. Having the entire family unit necessarily complete the assessment not only provides a

larger sample size, but also allows for examination of concordance between family members' opinions of treatment. Current literature offers contradictory evidence on family dynamics during treatment: some studies have found significant parent–child discord (Emanuelli et al., 2004; McDermott, Batik, Roberts, & Gibbon, 2002) and mother–father accord (McDermott et al., 2002); while others (Ciao, Accurso, Fitzsimmons-Craft, Lock, & Le Grange, 2015) have shown significant father–child accord, but mother–child discord. It would be worthwhile to examine familial accord in relation to FBT attitudes, to identify the formation of within family "coalitions" that may unite to collectively combat anorexia.

Future studies should also consider assessing expectations of helpfulness at BL and perceived helpfulness at longer term follow-ups, to determine whether ratings of helpfulness change over time and whether adolescents become more agreeable towards weight gain at follow-up—perhaps even considering it a significant variable in the context of treatment helpfulness. It may also be of interest to see whether expectations of treatment at BL and actual treatment outcome has an impact on ratings of helpfulness. Finally, although our sample was lacking in complete depression inventory reports, depression symptoms may also be important to consider in the context of treatment acceptability.

Nevertheless, this study provides preliminary evidence for an association between treatment outcome and report of FBT helpfulness. These findings elucidate families' perspectives and may inform efforts to effectively engage families in care; for example, selectively focusing on different remission markers among family members, at the initiation of FBT, may promote engagement in treatment. Therapists may increase treatment buy-in, by highlighting the importance of weight gain to parents, while underscoring the potential for long-term cognitive improvements to the adolescent. Optimizing FBT in a clinical setting enhances its reputation as a helpful and viable treatment, and therefore favors its implementation across broader settings.

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