

COMMENTARY

Family-based treatment: Where are we and where should we be going to improve recovery in child and adolescent eating disorders

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Abstract

Objective: Family therapy has long been advocated as an effective intervention for eating disorders. A specific form of family therapy, one that utilizes family resources, has proven especially effective for adolescents with anorexia or bulimia nervosa (AN and BN). First developed in London, a behaviorally focused adaptation, called family-based treatment (FBT), has been manualized and systematically studied in six randomized clinical trials for adolescent AN and two for adolescent BN.

Method: This Commentary focuses on manualized FBT; *what we know*, *what we do not know (yet)*, and *what we hope for*.

Results: We do know that efficacy data for FBT, especially adolescent AN, are quite robust, even though remission rates remain elusive for more than half of all cases. While preliminary, moderators of FBT for adolescent AN have been identified and could aid us in determining the most (or least) responsive patient groups. And weight gain (~2.5kg) by week four has been confirmed as an early predictor of remission at end-of-treatment. What we do not know, yet, is whether specific adaptations to manualized FBT will confer improved remission rates.

Discussion: Finally, and in terms of what is hoped for, we highlight the promise of improved access, dissemination, and implementation of FBT.

KEYWORDS

adolescents, anorexia nervosa, bulimia nervosa, family-based-treatment

1 | WHAT WE KNOW

Nonspecific family therapy for eating disorders, particularly anorexia nervosa (AN), has been offered for almost half a century. These family interventions were theoretically driven approaches embedded in various schools of family therapy. Information about their effectiveness consisted of case reports or case series, and replication complicated due to the lack of manualized approaches (e.g., Minuchin et al., 1975; Palazzoli, 1974). Standards for the study of treatment effectiveness were still nascent at the time. Nonetheless, family therapy was often recommended for the treatment of AN, while therapists had little specific guidance about what type of family therapy to deliver.

This changed with the publication of the first randomized clinical trial (RCT) for AN, a seminal work by colleagues in London (Russell,

Szmukler, Dare, & Eisler, 1987), which underscored the advantage of family therapy when compared to individual psychotherapy posthospitalization. Another significant step forward was the publication of Lock and Le Grange's treatment manual of family-based treatment (FBT) for adolescent AN in 2001, now in its second edition (Lock & Le Grange, 2013), and for adolescent bulimia nervosa (BN) (Le Grange & Lock, 2007) (for a review, cf. Lock, 2015). FBT, an adaptation yet distinct form of the family therapy developed in London, has been systematically studied in eight RCTs in three different countries (Australia, Canada, and the United States) (Agras et al., 2014; Le Grange et al., 2016; Le Grange, Crosby, Rathouz, & Leventhal, 2007; Le Grange, Lock, Agras, Bryson, & Jo, 2015; Lock, Agras, Bryson, & Kraemer, 2005; Lock et al., 2010, 2015; Madden, Miskovic-Wheatley, Wallis, Kohn, Hay, et al., 2015; Madden, Miskovic-Wheatley, Wallis,

Kohn, Lock, et al., 2015). Six of these studies focus on adolescents with AN and two on adolescents with BN. The results of these studies provide a relatively strong evidence base supporting the use of manualized FBT for adolescent AN, and a moderately strong evidence base for the use of a manualized FBT for adolescent BN. Other forms of family therapy, for example, family therapy for AN (FT-AN) (Eisler et al., 2016), systemic family therapy (SFT) (Agras et al., 2014), multi-family group therapy (Eisler et al., 2016), and parent-focused family therapy (e.g., separated family therapy and parent-focused therapy [PFT]) (Eisler et al., 2000; Le Grange et al., 2016; Le Grange, Eisler, Dare, & Russell, 1992) may also be useful, but the effectiveness of these related albeit different approaches is as yet not fully established. Taken together, recently published NICE guidelines (<https://www.nice.org.uk>) as well as most other published clinical guidelines, recommend an eating disorder specific family therapy as first line treatment for adolescent AN, and as a recommended treatment for adolescent BN (Hilbert, Hoek, & Schmidt, 2017).

What the studies of manualized FBT for adolescent AN show is an average remission rate (defined as percent median BMI greater than 94 of expected for age, height, and gender, and an eating disorder examination [EDE] score within one standard deviation of population means; Couturier & Lock, 2006) of about 38% (range 22–49%) for all participants at the end of treatment. Treatment response (defined as an improvement in weight and eating-related psychopathology) is at an average of about 75% (range 60–85%). For adolescent BN, the average end of treatment remission (defined as abstinence from bingeing and purging for four consecutive weeks prior to assessment), is about 40% in the two studies that have utilized manualized FBT-BN. These data suggest that the best evidence-based approach for adolescent AN (i.e., FBT), and to a lesser extent for BN (i.e., FBT-BN), falls far short and leaves about 60% of this patient population still not fully remitted. On the other hand, full recovery from a mental health disorder is a high bar that is seldom used as the sole means to evaluate treatment effects. In the case of manualized FBT, significant clinical improvement rates are almost double the full remission rate. Nonetheless, data suggest that achieving remission decreases the likelihood of relapse and should therefore be our ultimate treatment target.

Data also suggest there are some moderators of manualized FBT for adolescent AN that could be used to identify the most and least responsive patient groups. Of these, the most replicated is the presence of some form of perseverative thinking and behavior or obsessive-compulsive features. When these are present, manualized FBT appears to be less effective and take longer in a short versus long version of FBT (Lock et al., 2005), or when FBT is compared to SFT (Agras et al., 2014). This suggests that there is an opportunity for improving manualized FBT to address the needs of this patient group. In addition, family structure matters; separated, divorced, single parent, and reconstituted families need more sessions of manualized FBT to achieve similar remission rates (Lock et al., 2005). This suggests that there is a need for improving FBT for such families. When FBT is compared to an individual adolescent focused therapy, FBT is superior when perseverative thinking and behavior or obsessive-compulsive features are quite severe (Le Grange et al., 2012). This suggests that a behavioral approach, such as FBT, is better equipped to address this

psychopathology rather than focusing such effort on the adolescent. In addition to the moderators, a strong early predictor of remission is the degree of weight gain by 1 month of manualized FBT (Doyle, Le Grange, Loeb, Celio-Doyle, & Crosby, 2010; Le Grange, Accurso, Lock, Agras, & Bryson, 2014; Madden, Miskovic-Wheatley, Wallis, Kohn, Hay, et al., 2015; Madden, Miskovic-Wheatley, Wallis, Kohn, Lock, et al., 2015). Together, these studies show that rates of recovery drop by 70% if weight gain does not reach about 2.4 kg at this time point. Thus, if there was a way to improve early response, recovery rates could also improve. Other studies suggest that parental criticism, as measured by expressed emotion (EE) (Leff & Vaughn, 1985), may limit the effectiveness when manualized FBT is delivered in conjoint format, while remission is enhanced when delivered in a separated format (e.g., PFT) (Allan, Le Grange, Sawyer, McLean, & Hughes, 2018; Le Grange et al., 2016). Therefore, approaches to minimize parental criticism in the therapeutic setting might be another way to improve remission rates.

Perhaps the greatest challenge facing manualized FBT is the relatively few patients who stand to benefit from the approach compared to the overall need, that is, the accessibility to this treatment. Dissemination of manualized FBT has been advanced in several ways; a short version (10 sessions) is as effective as the standard 20-session version (Lock et al., 2005), similar treatment effects have been achieved across centers (Couturier, Isserlan, & Lock, 2010; Hughes et al., 2013; Le Grange, Binford, & Loeb, 2005; Wallis, Rhodes, Kohn, & Madden, 2007), and it can be delivered by telehealth (Anderson, Byrne, Crosby, & Le Grange, 2017), or web-based support (Lock, Darcy, Fitzpatrick, & Vierhile, 2017). In addition, one study suggests that while overall fidelity to manualized FBT is not ideal (Couturier et al., 2013), fidelity to the first phase (where early weight response is crucial) is satisfactory. Taken together, these studies are preliminary, and few in number, scale, or scope. Training, supervision, and systems change to support clinicians who utilize manualized FBT is also far from adequate. This gap might be narrowed through the use of technology, but this remains an untested inquiry for now.

In this commentary, we take up in more detail the questions this overview of FBT has highlighted, first turning to adaptations to manualized FBT before examining the challenges of access, dissemination, and implementation. We conclude with our hopes for the future.

2 | WHAT WE DO NOT KNOW (YET)

2.1 | Changing formats: Multifamily therapy

Given the inherent loss of a shared experience in single family treatments, as well as increasing costs and limited access to specialist eating disorder services, multifamily therapy (MFT) has been proposed as an alternative to address these concerns (Eisler, 2005; Scholz, Rix, Scholz, Gantcher, & Thomke, 2005; Simic & Eisler, 2015). MFT, firmly grounded in established family therapy practices, is set apart from single family therapy approaches in that it leverages group processes to facilitate therapeutic change, thereby relying on the families' own resources to bring about therapeutic change. Through working together, and in addition to symptomatic relief for the adolescent, families report reduced helplessness, isolation, and shame.

To date, there has been only one systematic study to test the efficacy of MFT. Eisler et al. (2016), conducted a pragmatic randomized trial across several London sites. A total of 169 adolescents with DSM-IV AN or eating disorder not otherwise specified (restricting type) were randomized to one of two outpatient family interventions, single family therapy (FT-AN), or MFT. In this superiority trial, assessments were conducted at baseline, 3 months, end-of-treatment (12 months), and 18 months. Clinical gains were reported in both treatment groups. However, using the Morgan-Russell Outcome Criteria, about 60% of adolescents who received FT-AN versus more than 75% of those who received MFT achieved a good or intermediate outcome (Odds Ratio (OR) = 2.55, $p = .019$). These weight gains as well as other relevant clinical changes (e.g., eating disorder psychopathology, mood, and menstrual status) were maintained at 18 months post baseline. However, the difference between FT-AN and MFT in terms of categorical outcomes was no longer statistically significant.

In their conclusion, the authors are somewhat cautious not to unduly assign the upper hand to MFT. Instead, they report that this RCT affirms the effectiveness of an eating disorder focused family therapy, and only tentatively highlight the benefits of MFT, that is, bringing families together as groups, and in so doing, amplifying families' resources and support for one another which in the end can lead to improved outcomes. While the utilization of MFT clearly seems promising, a sober conclusion will have to abide by the absence of long-term efficacy data for this mode of family therapy.

Another way for families to utilize a shared experience is a short-term intensive family therapy (IFT), partially based on FBT, and developed by colleagues in San Diego and London (Rockwell, Boutelle, Trunko, Jacobs, & Kaye, 2011). In IFT, four to five families engage in a 8-hr day, 5-day treatment week. At an average of 10-months follow-up of their first cohort of 19 adolescents and their families, these colleagues report mean percent expected body weight to increase from 83% to 99% (Rockwell et al., 2011). In a subsequent 30-month follow-up of 74 cases in either single-family IFT (S-IFT) or multifamily IFT (M-IFT), with remission defined as weight at or above 95% of expected for sex, age, and height *plus* EDE-Questionnaire global score within 1 *SD* of norms, and the absence of binge-purging behaviors, an impressive 88% of participants, regardless of whether they participated in S-IFT or M-IFT, achieved remission (Marzola et al., 2015). While preliminary, IFT shows promising results and may be a helpful alternative for families who might not otherwise be able to access specialist services, or serve as an ancillary resource for treatment-resistant cases (Knatz et al., 2015).

Taken together, providing family therapy to multiple families simultaneously, whether in MFT or IFT format, seems a promising route to address several limitations to FBT already alluded to here. Clearly, replication of both these treatment formats in larger and more controlled settings is desirable.

2.2 | Focus on moderators and mediators

One important strategy that is being examined to improve manualized FBT is finding ways to address moderators on treatment outcome that decrease likelihood of response. One replicated marker of poor

treatment response is the presence of limited cognitive flexibility as expressed through obsessive-compulsive and perseverative thinking (Le Grange et al., 2012; Lock, Couturier, Bryson, & Agras, 2006; Madden, Miskovic-Wheatley, Wallis, Kohn, Hay, et al., 2015; Madden, Miskovic-Wheatley, Wallis, Kohn, Lock, et al., 2015). Data, particularly from adults with AN, suggest that inefficiencies in cognitive flexibility may be a cognitive endophenotype of AN that can be addressed through cognitive remediation therapy (CRT). Data suggest that CRT is feasible and acceptable to adults as well as adolescents with AN, and leads to improvements in cognitive flexibility (Tchanturia, Giombini, Leppanen, & Kinnaird, 2017). Thus, adding CRT to manualized FBT could reduce the effects on cognitive inflexibility on outcome, as was done in a recent feasibility study (Lock, Fitzpatrick, Agras, Weinbach, & Jo, 2018). Thirty adolescents with DSM-5 AN, who also reported perseverative thinking based on the CYCOS (Scahill et al., 1997) or YBC-ED (Mazure, Halmi, Sunday, Romano, & Einhorn, 1994), were randomized to manualized FBT plus CRT, or manualized FBT plus Art Therapy. This study was a feasibility design in preparation for a planned adequately powered RCT. Feasible was confirmed with a relatively low-attrition rate of 17%. Although the cognitive assessment battery was time consuming because of the range of cognitive measures examined, it was well tolerated by the participants. Both randomized groups gained weight and showed improvements on the EDE (both changes were associated with large effects sizes). Because this was a group of participants at risk for doing poorly given the elevated levels of cognitive inflexibility, this finding is important as it provides support that adding CRT might improve outcomes. This study is preliminary, and it remains unclear whether adding a targeted and specific individual therapy to FBT aimed at a moderator of perseverative thinking is feasible and worthy of further study.

2.3 | Family characteristics as potential moderators—Parental criticism

It has long been held that there is no "typical" family with an adolescent with an eating disorder (Dare, Le Grange, Eisler, & Rutherford, 1994), and that families are not responsible for or play a role in the etiology of eating disorders (Le Grange, 2016; Le Grange, Lock, Loeb, & Nicholls, 2010). Nor has the limited number of exploratory moderator analyses identified any family characteristics as potential moderators. Notwithstanding, at least four studies (Allan et al., 2018; Eisler et al., 2000; Le Grange, Eisler, Dare, & Hodes, 1992; Le Grange, Eisler, Dare, & Russell, 1992; Szmukler, Eisler, Russell, & Dare, 1985) have shown that the presence of parental criticism at the start of family interventions, as measured via EE (Leff & Vaughn, 1985), does seem to impact treatment outcome. In the first of these studies, high levels of parental criticism toward the unwell offspring predicted premature treatment drop-out (Szmukler et al., 1985), while a pilot investigation, comparing a conjoint versus separated format of family therapy for adolescent AN, showed that outcomes were poorer for the conjoint rather than separated family therapy when baseline parental criticism is elevated (Le Grange, Eisler, Dare, & Hodes, 1992; Le Grange, Eisler, Dare, & Russell, 1992). These initial findings were subsequently underscored in a somewhat larger RCT (Eisler et al., 2000). More recently, in a RCT comparing manualized conjoint FBT

versus a separated version of the same treatment (PFT¹) (Le Grange et al., 2016), EE was measured at baseline and posttreatment. Interestingly, findings from the earlier investigations which seemed to favor a separated format of this treatment when parental criticism is high were amplified here (Allan et al., 2018). Regardless of remission, PFT rather than conjoint FBT was associated with a decrease in maternal criticism. Moreover, an increase in maternal criticism was more likely to occur in conjoint FBT as opposed to PFT. Remission at end of treatment was also less likely in adolescents where maternal EE increased during treatment, or remained high, compared to when EE decreased or remained low during treatment. While manualized FBT highlights the importance that high EE has a potential deleterious effect on treatment outcome, and that the treating clinician should therefore heed this forewarning, what remains unclear is *why* the conjoint format of FBT appears less “capable” to address parental criticism in the same way that the separated format seems to. Consequently, and until we are better able to explain this differential effect across treatment format, it would be prudent to opt for PFT when baseline parental criticism is high, or perhaps switch to the separated format if it seems clear that parental criticism is on the increase during a course of FBT.

2.4 | Intensive parental coaching for early nonresponders—Addressing treatment process and mediators or mechanisms

Another potential avenue for improving outcome in manualized FBT is to address therapeutic process itself by adapting this intervention when there is a need to address specific clinical factors that could diminish treatment effect. One example in manualized FBT that has been identified in several studies is the need to achieve rapid weight gain early on in treatment in order to maximize the likelihood of remission (Doyle et al., 2010; Le Grange et al., 2014; Madden et al., 2015). As stated earlier, these studies found that weight gain in the range of 2–3 kg by about a month of FBT predicts remission of about 80%; conversely, failure to gain this amount of weight reduces the changes of remission to about 30%. To address this within treatment predictor of outcome, an adaptive intervention called intensive parental coaching (IPC) was developed to challenge those families that had not achieved this early weight increase, in order to identify obstacles and develop strategies to urgently address their concerns (Darcy et al., 2013; Fitzpatrick, Darcy, Le Grange, & Lock, 2015). IPC entails three additional sessions to standard manualized FBT, that is, (a) a family session to reinvigorate parents to make behavioral changes to support weight gain, (b) a parent only session to identify impediments that interfere with weight gain, and (c) a second family meal with therapist coaching to help parents address those challenges identified during the prior meeting. In addition to examining the impact of IPC on outcome, it is possible to examine possible mechanisms of manualized FBT. Mechanisms, also referred to as mediators, are within treatment changes in relevant variables that shed light on *how* a particular

treatment achieves an effect. Preliminary data suggest that change in parental self-efficacy is a likely mechanism of treatment effect in manualized FBT (Byrne, Accurso, Arnow, Lock, & Le Grange, 2015). In our pilot study (Lock et al., 2015), 45 adolescents with DSM-5 AN were randomized to either standard FBT or an adaptive FBT arm that offered IPC to those who failed to gain the required weight by session four. By the end of treatment, 58.3% of those who received the combination of FBT + IPC were weight restored, a rate similar to those that had responded early to FBT (63%). These data suggest that adding IPC to FBT for early nonresponders may help families “catch up” in terms of weight restoration. In addition, higher self-efficacy scores in mothers predicted early treatment response, and when IPC was added after session four of manualized FBT, parental self-efficacy also improved. As with the other preliminary studies reviewed here, IPC is not ready for clinical dissemination until these results are confirmed in a larger RCT.

3 | WHAT WE HOPE

Perhaps the greatest challenge in advancing manualized FBT is not so much improving its effectiveness, but rather successfully making it available to more of those who could benefit from the current version. We suggest three strategies that may be a step forward. The first is delivering manualized FBT using telehealth technology. Next, we discuss the potential of using a manualized form of FBT via a guided self-help (GSH) model. Finally, we discuss the potential of web-based training and supervision of FBT to increase the availability of skilled providers.

3.1 | Telehealth using manualized FBT

Several significant barriers to the uptake of FBT have already been alluded to in this Commentary. Among these are a restricted number of specialist programs in urban areas that provide FBT, as well as a limited number of trained providers outside the academic institutions where this treatment was developed (Murray & Le Grange, 2014). Telehealth psychiatry is quite well established across mental health diagnoses (Backhouse et al., 2012), but only a limited number of attempts have been made to extend eating disorders care via this platform (Mitchell et al., 2008). To date, there has been only one attempt to test the feasibility and preliminary effectiveness of delivering FBT via telehealth (Anderson et al., 2017; Anderson, Byrne, Goodyear, Reichel, & Le Grange, 2015). This study provides evidence for the acceptability and feasibility of delivering FBT via telehealth, which includes medical monitoring by a local physician. Moreover, this study provides strong evidence, albeit preliminary given the modest sample size ($N = 10$), that satisfactory clinical outcomes are attainable when FBT is delivered via telehealth (moderate to large effect sizes on the main outcomes of weight and eating disorder psychopathology were achieved). Taken together, treatment delivery in formats other than traditional in-person meetings is promising, however, a larger confirmatory study is required to fully determine the effectiveness of telehealth FBT delivery.

¹The dose and intensity of PFT is similar to conjoint FBT, that is, in PFT, the adolescent is first seen for ~10 min before the clinician meets with the parents for the remainder of the therapeutic hour.

3.2 | Guided self-help using manualized FBT

Use of therapists to support self-help efforts has been explored with adults with eating disorders. Mitchell and colleagues found GSH to be both useful and cost-effective (Mitchell et al., 2011). Schmidt et al. (2007) found that cognitive behavior therapy-GSH (CBT-GSH) had comparable treatment effects to family therapy for adolescents with BN, and was more cost-effective than family therapy. CBT-GSH utilized a self-help book, and face-to-face therapy time was similar to that of family therapy. A recent study for adolescent AN examined a GSH form of manualized FBT (GSH-FBT) using an online platform wherein therapists provided 20 min of guidance to parents once per week over 12 weeks (Lock et al., 2017). Weekly training comprised short videos (<7 min each) in conjunction with specific readings from Lock and Le Grange's parent manual (Lock & Le Grange, 2014). Nineteen families participated in this study, and recruitment and retention was satisfactory. Outcomes of the participants appeared similar to that expected in RCTs that involved FBT.

3.3 | Web-based training and supervision of manualized FBT

Another possible way to improve access is through increasing the number of providers who can deliver manualized FBT with fidelity. Currently, to become certified in manualized FBT requires a 1.5 day in-person training with an expert FBT clinician, followed by 25 hr of telephone or in-person case consultation. Such in-person trainings require all participants to be trained together at the same time which can be challenging for busy clinicians to schedule. On the other hand, these in-person trainings are generally well-received, involve group learning that reinforces and supports mastery, and provide an opportunity for in-person interaction with experts in manualized FBT. Nonetheless, the need for training far exceeds the current person power available to conduct them, while many health care systems cannot afford to fund such trainings. One strategy that is currently under investigation is the use of a web-based training program of manualized FBT. This training program involves the use of a combination of short didactic videos, texts, clinical vignettes, video illustration of key interventions used in manualized FBT, opportunities for self-evaluation, and group discussions using a forum feature. This web-based protocol was initially piloted with psychology and psychiatry postdoctoral students and residents, and is now being used in a feasibility study with community clinicians treating adolescents with AN. While detailed data are not yet available on the feasibility of the training, at a minimum, this work supports the view that web-based training of therapists could be a way forward to increase the availability of therapists qualified to treat adolescents with AN using a manualized FBT approach. Further studies will need to compare the relative efficacy of the in-person versus web-based training and include a cost-effectiveness evaluation.

4 | DISCUSSION

With this Commentary, we set out to reflect on two broad questions in terms of the utility of FBT in bringing about improved recovery in

child and adolescent eating disorders; *Where are we, and Where should we be going?* In terms of the distance traveled since an earlier noneating disorder specific family therapy for eating disorders was first advocated, we are now at a place where a specific form of family therapy for this patient population (FBT for the purposes of this Commentary), has amassed a body of efficacy data affirming its position as first-line treatment for adolescents with AN. Support for this approach in the treatment of adolescents with BN is also quite promising, albeit perhaps less emphatic. Considerable work remains as remission rates utilizing this approach for this patient population (AN and BN), remain stubbornly around the 40% mark. There is reason for optimism when one looks at this number in the broader context of all child and adolescent psychiatric diagnoses. However, there is no room for complacency either, as was underscored in a recent meta-analysis that aimed to distinguish whether weight- and psychological-based outcomes have differential trajectories in RCTs for AN (Murray, Quintana, Loeb, Griffiths, & Le Grange, 2018). This study showed that specialized treatments confer weight-based symptom advantage over comparator treatments, but not for psychological-based symptoms, pointing to the future need for a specific focus on this domain of AN. In this Commentary, we also highlighted several spheres where current research holds out promise, whether we can improve the efficacy of FBT by adding very specific interventions (e.g., FBT + IPC), explore moderators in better powered RCTs that will enable us to improve our capacity to match patients with specific treatments, or utilize multifamily resources more efficiently (e.g., MFT or IFT). Last, we underscored that in addition to targeting our efforts to improve the efficacy of FBT, a real dilemma that remained largely dormant until recently is the dissemination of this treatment. Considerable resources should be spent to successfully make FBT available to more families who could benefit from the current version of this intervention.

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