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A systematic review of the effectiveness of family-based treatment with and without adjunctive treatment for children and adolescents with eating disorders

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A SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF FAMILY-BASED TREATMENT WITH AND WITHOUT ADJUNCTIVE TREATMENT FOR CHILDREN AND ADOLESCENTS WITH EATING DISORDERS

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Carly Poynter

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ABSTRACT

Family-based treatment (FBT) has been widely accepted as the first-line treatment for children and adolescents with restrictive eating disorders. While this treatment has been widely studied and accepted as best practice, most studies confirming its effectiveness focus on the treatment of anorexia nervosa (AN) and bulimia nervosa (BN). There have been many studies aimed at providing adjunctive treatment to enhance the effectiveness of this treatment, but these benefits have yet to be cumulatively studied. The primary objectives of this study were to 1) summarize the effectiveness of FBT for the wide range of eating disorders, 2) summarize the effectiveness of adjunctive treatments, 3) identify predictors, moderators, and mediators that impact treatment outcomes of FBT, and 4) identify what definitions of remission are being used in the literature. Fifty-two studies were examined and synthesized. Based on these studies, FBT continues to demonstrate effectiveness when used to treat eating disorders, not limited to AN and BN. However, the results varied depending on the outcome measure. Varying predictors, moderators, and mediators of treatment have been identified, such as patient, parent, and family characteristics, severity of eating disorders, specific FBT interventions, and therapeutic alliance, among others. Adjunctive treatments were aimed at either providing greater parental support or addressing the psychological distress of the patient. Participants rated these adjunctive treatments highly and they produced favorable preliminary outcomes. The most common definition of remission for AN was achieving ≥95% EBW and an EDE Global score within one standard deviation of the community sample norms.

Chapter 1: Literature Review

Eating disorders continue to have the second-highest mortality rates among psychiatric disorders (Arcelus et al., 2011; Chesney et al., 2014). Over 28.8 million people in the United States of America will develop an eating disorder, and approximately 10,200 deaths per year are directly related to an eating disorder. Due to the medical complications associated with eating disorders, treatment often requires higher levels of medical and psychological care than other psychiatric disorders, such as hospitalization and residential treatment, which costs, on average, $64.7 billion each year in the United States (Deloitte Access Economics, 2020). Thus, eating disorders have a significant impact on medical and financial resources.

There are three primary eating disorder diagnoses. One of the most common, anorexia nervosa, is defined by the Diagnostic and Statistical Manual of Mental Disorders: DSM-5-TR (DSM-5-TR) by persistent restriction of caloric intake resulting in significantly low body weight, intense fear of gaining weight or becoming fat, persistent behavior that interferes with weight gain, and a disturbance in self-perceived weight or shape. Individuals with anorexia nervosa maintain a weight that is below the developmental level (APA, 2022). Anorexia nervosa has a typical onset in adolescence or young adulthood, with a median age of onset of 12.3 (APA, 2022; Swanson et al., 2011). Another common eating disorder, bulimia nervosa, is defined by the DSM-5-TR as recurrent episodes of binge eating, defined as eating an objectively large amount of food in a discrete period of time and/or a sense of lack of control during the binge eating episode, recurrent inappropriate compensatory behaviors to prevent weight gain that are present at least once a week for a minimum of three months, and self-evaluation that is unduly influenced by body shape and weight (APA, 2022). Bulimia nervosa has a typical onset in adolescence or young adulthood, with a median onset of 12.4 years old (APA, 2022; Swanson et al., 2011). Lastly, the DSM-5-TR defines binge-eating disorder as recurrent episodes of binge eating, where a binge is defined as a quantity of food that is objectively excessive for a typical meal, and the individual feels unable to control the overeating during the episode. These

episodes are associated with eating rapidly, eating until uncomfortably full, eating large quantities of food when not physically hungry, eating due to emotional issues, and feeling guilty or disgusted with oneself after the binge eating episode (APA, 2022). The age of onset of binge-eating disorder in the US was found to be 12.6 years old (Swanson et al., 2011).

In addition to these three primary eating disorder diagnoses, there is a classification of OSFED that includes diagnoses such as atypical anorexia nervosa, bulimia nervosa of low frequency and/or limited duration, binge-eating disorder of low frequency and/or limited duration, purging disorder, and night eating syndrome. These disorders capture eating disorders that do not meet the full threshold of anorexia nervosa, bulimia nervosa, or binge eating disorder (APA, 2022).

Treatment of Eating Disorders

Eating disorders are challenging to treat for a multitude of reasons. Lurie (2014) found that the most challenging issues were common comorbid conditions and medical complications, the ego-syntonic nature of the disorder, and the perceived ability to cope with other issues through control of food or body weight and shape. These complications magnify the importance of competency when treating individuals with an eating disorder. Despite the need for competent and available treatment, the majority of children and adolescents with eating disorders do not receive it due to limited access to qualified mental health professionals who are able to administer appropriate evidence-based treatment (Kazdin et al., 2017; Swanson et al., 2011). Of those mental health professionals who provide treatment to individuals with eating disorders, a majority report having minimal or no eating disorder specific training (Von Ranson et al., 2012). Mental health professionals most frequently reported utilizing an eclectic approach and did not endorse the use of evidence-supported treatments. Of the mental health providers sampled by Von Ranson et al. (2012), the most common reasons for not utilizing an evidenced-supported treatment for eating disorders were that it differed from their theoretical orientation and/or clinical style and they did not receive proper training in the treatment. Mental health

professionals require adequate knowledge and training to feel competent working with diagnoses such as eating disorders.

Why Involve Family in Treatment?

Given the relatively early onset of eating disorders, it is essential to consider the family system when treating children and adolescents with eating disorders. The Practice Guideline for the Treatment of Patients with Eating Disorders (3rd ed.) states that "family involvement and treatment are essential" and "most effective" for children and adolescents with anorexia nervosa and bulimia nervosa (APA, 2006, p.12 and p.45). Families are included in treatment to help reduce the burnout felt by the family or carers, to help reduce the costs, and to help improve the outcomes of treatment of individuals with an eating disorder.

A recent review of the literature focused on the value of including families in the treatment of eating disorders found that involving family or other carers can reduce the time the patients spend at higher levels of care and reduce burnout and stress felt by the family or carer (Treasure et al., 2020). Studies have also demonstrated that children and adolescents with anorexia nervosa and bulimia nervosa have more favorable treatment outcomes when the family is directly involved in their treatment when compared to individual therapy alone (Le Grange et al., 2007). In a position paper through the Academy for Eating Disorders, Le Grange et al. (2010) indicated that including parents in the treatment of adolescents with an eating disorder reduced attrition rates. Including the family or caregiving system reduces the need for higher levels of care and improves treatment outcomes, as well as reduces the resources necessary to treat individuals with eating disorders.

In a position paper through the Academy for Eating Disorders (AED), Le Grange et al. (2010) state that families need to be included in the treatment of individuals with eating disorders to improve treatment outcomes and reduce caregiver stress. The position paper was in response to previous conceptual models of eating disorders that attribute the development and maintenance of these disorders to the family or caregiving system in which the individual

has grown up (Le Grange et al., 2010). Due to these conceptual models, families were often excluded from treatment and blamed for the development of an eating disorder. However, involvement of family or social support has been indicated as a predictor of more favorable treatment outcomes in individuals with eating disorders (Le Grange et al., 2010; Vall & Wade, 2015). The researchers emphasized that the family or support system should be considered essential to treatment, and their involvement in treatment is recommended to improve treatment outcomes.

Bidirectional Family Impacts

Eating disorders often have a lengthy course and can cause severe impairment to functioning, which can lead to caregivers feeling burnout (Treasure et al., 2001). A systematic review examining the effects of caring for someone with an eating disorder found that caregivers experience significant rates of psychological distress, including anxiety and depression (Anastasiadou et al., 2014). Given the stress caring for an individual with an eating disorder places on the caregiver, it is important to involve the caregiver in the treatment process to provide them with the resources to adequately manage the added stress that comes from the caregiving role.

While caring for someone with an eating disorder can cause additional stress to the caregiver, the caregiver can also cause increased stress on the individual with an eating disorder. One study found that families or carers who engaged in self-blame or demonstrated more fear engaged more frequently in recovery-interfering behaviors such as accommodation and enabling (Stillar et al., 2016). Psychoeducation and involvement in treatment are especially needed for caregivers, as they potentially aid in the enablement of patients with eating disorders by providing reassurance in inappropriate ways, such as comments on food and body (Stillar et al., 2016). By including the family or caregiving system in treatment, the family is better equipped to support the patient and manage the added stress that is present when taking care of a loved one with an eating disorder.

Types of Family Interventions

A recent scoping systematic review outlined how families have been involved in the treatment of individuals with eating disorders (Fleming et al., 2021). Through a review of 68 studies, the researchers were able to identify five distinct categories of family interventions, including group-based skills training for caregivers, family-enhanced individual therapy for the caregivers and the patient, multi-family group educational interventions for the caregivers and the patient, Family-Based Treatment (FBT) for the caregivers and the patient, and single-family therapy including brief strategic family therapy and structural therapy for the caregivers and the patient (Fleming et al., 2021).

Psychoeducation for the families and support systems of individuals with eating disorders is often a part of treatment at all levels of care and is incorporated into most treatment modalities. This psychoeducational programming is typically offered in a multi-family group format. The typical information delineated in this format includes information about eating disorders etiology and course, medical complications, treatment approaches, and allows the families to discuss their beliefs about the origin of the eating disorder and their expectations of treatment (Dare & Eisler, 2000; Uehara et al., 2001). It is important to note that psychoeducational programs are highly variable depending on the treatment setting. However, research supports the effectiveness of psychoeducational-driven family therapy (Dare & Eisler, 2000; Uehara et al., 2001). Uehara et al. (2001) reported reduced expressed emotion at the end of a five-session family psychoeducation program. Psychoeducation is a part of most family therapy for eating disorders in a variety of ways and has demonstrated positive outcomes in the family or caregiver's understanding of eating disorders.

Types of Family Systems Therapy

There are many different family-related treatment modalities utilized to treat individuals with eating disorders, such as Systemic Family Therapy, Structural Family Therapy, Strategic Family Therapy, Milan Systems Family Therapy, Emotion-Focused Family Therapy, and Family-

Based Treatment. While all of these treatment modalities include the family, they vary in how they conceptualize the development and maintenance of the eating disorder, the goals and interventions, and the role of the family.

Systemic Family Therapy (SyFT) identifies the issue as located within the family system rather than with the individual with the eating disorder. This type of strengths-based family therapy focuses on interpersonal relationships, interactions within the family system, and the familial view of the problem and uses the current strengths and resources of the family to alleviate the problem driving the eating disorder (Hindmarch, 2000; Pote et al., 2003).

Structural Family Therapy poses that eating disorder symptoms arise due to family dysfunction and “poor hierarchical” organization, leading to dysfunctional relationships and communication patterns (Lemmon & Josephson, 2001). Other factors such as enmeshment, overprotective parents, rigidity, and a lack of ability to effectively resolve the conflict were also cited as potential factors associated with the onset and maintenance of eating disorder pathology. The goals of this therapy include modifying the hierarchical organization by reinforcing more adaptive interactions, strengthening the coalition between the parental unit, and eliminating patterns of triangulation (Fisher et al., 2010; Lemmon & Josephson, 2001).

Strategic Family Therapy focuses on the communication patterns within the family and uses directives to modify maladaptive behaviors. This type of family therapy does not emphasize the cause of the eating disorder but rather aims to promote effective communication and interactions through therapist given directives (Fisher et al., 2010; Lemmon & Josephson, 2001).

Milan Systems Family Therapy views eating disorder symptoms as playing a role in the homeostasis of the family system. This form of family therapy identifies a pattern of enmeshment of the identified patient and one parent, followed by relationship problems between other family members, leading to the perception of the identified patient holding power in the family. The therapist's role is to reframe observed patterns, help the family see these patterns

as a function of the eating disorder, and promote change through curious, nondirective questioning (Lemmon & Josephson, 2001).

Emotion-Focused Family Therapy (EFFT) is a family intervention for treating various mental health issues. This treatment postulates that the child or adolescent struggling with an eating disorder does not have the ability to express emotions in an adaptive way and believes that the eating disorder functions as a means to reduce the emotional discomfort the individual is experiencing (Robinson et al., 2015). EFFT has been used in the treatment of eating disorders to help caregivers assist in the recovery process. The main goals of EFFT are to educate the patient and caregivers about emotions, the function of the eating disorder in surprising emotions, and how to effectively process emotions (Robinson et al., 2015). More specifically, the caregivers are provided with psychoeducation to help better support the individual by becoming a "recovery coach" to help interrupt the eating disorder symptoms, help the individual effectively process emotions, and engage in "relationship repair" to help heal the blame felt by the individual and the caregiver (Strahan et al., 2017). This may also be an effective treatment, as it can help reduce the caregiver's feelings of self-blame, which can contribute to the maintenance of eating disorders.

Common themes among the family therapies are the focus on the organization of the family, disruption of negative patterns of interaction, and strengthening the coalition of the parental unit. Another family therapy for the treatment of eating disorders, Family-Based Treatment (FBT), combines these principles and focuses on externalization and developing an agnostic view of the problem.

Family-Based Treatment/ The Maudsley Model

Family-based treatment (FBT), also known as the Maudsley Method, is a manualized treatment for eating disorders in children and adolescents that utilizes the parent(s) or carers to restore weight and/or eliminate compensatory behaviors such as purging and over-exercising. FBT was manualized initially for the treatment of anorexia nervosa (FBT) and has since been

manualized for the treatment of bulimia nervosa (FBT-BN) (Le Grange & Lock, 2009; Lock & Le Grange, 2013). This behavioral, problem-focused model emphasizes that the parents are not to be blamed for the development and maintenance of the eating disorder and instead views the family as a valuable resource when treating the patient with an eating disorder (Lemmon & Josephson, 2001). The therapist's role is also to validate the impact that the eating disorder has had on all family members and align the family to work together to overcome the eating disorder (Lemmon & Josephson, 2001). The primary differences between FBT-AN and FBT-BN are in FBT-BN, the adolescent is encouraged to be more collaborative with the caregiver at the onset of treatment due to bulimia nervosa being associated with ego-dystonic features rather than ego-syntonic features in anorexia nervosa. In addition, due to the compensatory behaviors associated with bulimia nervosa, there is a stronger emphasis on the caregiver to ensure supervision continues post-meal to ensure the elimination of these behaviors (Le Grange & Lock, 2009).

Family-based treatment was initially developed at the Maudsley Hospital in London, England, and is often referred to as the Maudsley Method. This treatment takes place in three phases. The first phase is designed to help the parent(s) or carers take control of refeeding and typically takes place in sessions one through ten. The main goals of phase one are to mobilize the carer's anxiety, increase the individual's caloric intake and weight, cease any compensatory behaviors, elicit the support of other family members, and align parental and sibling units. This phase includes the family meal, which is similar to the family lunch utilized in structural family therapy (Lemmon & Josephson, 2001). During the family meal, the parents or carers are encouraged to take control and align as a parental unit in order to get the child or adolescent to eat. The therapist will also coach the parents or carers and externalize the eating disorder as separate from their child. During the weekly sessions, the therapist reviews efforts made by the carers to increase caloric intake, decrease compensatory behaviors, and assist the parents in problem-solving to address barriers to weight restoration or cessation of behaviors. Once the

child or adolescent has achieved weight restoration of at least 95% EBW, the family will progress to phase two. Phase two is designed to begin to give control back to the child or adolescent and typically takes place over sessions 11-16, and sessions begin to titrate to biweekly. The main goal of this phase is to increase the independence of the child or adolescent and help the child or adolescent develop greater self-efficacy. During this phase, the therapist helps the family identify developmentally appropriate responsibilities with food, exercise, and independence. Once the child or adolescent is able to manage these developmentally appropriate tasks and activities, the family progresses to phase three. The third phase is designed to address other issues important to the recovery of the child or adolescent and typically takes place over sessions 17-20. The main goals of this phase are to minimize family tension and address any other issues that may present as a barrier to recovery (Lock & Le Grange, 2013).

The efficacy of FBT with adolescents with anorexia nervosa and bulimia nervosa has been demonstrated by a number of studies (Le Grange et al., 2007; Lock et al., 2006; Lock et al., 2005). In a meta-analysis by Couturier et al. (2013), FBT was superior to individual treatment at the six-month to twelve-month follow-up. The effectiveness of FBT has also been demonstrated in comparative studies (Gorrell et al., 2019). Compared to systemic family therapy, FBT resulted in more significant weight gain and fewer hospitalizations for individuals with anorexia nervosa (Argas et al., 2014). When FBT was compared to supportive therapy, FBT resulted in significantly greater abstinence rates from binging and compensatory behaviors in individuals with bulimia nervosa (Le Grange et al., 2007). This significant difference in abstinence rates was also seen when comparing FBT to Adolescent-Focused Cognitive Behavioral Therapy (CBT-A) for individuals with bulimia nervosa (Le Grange et al., 2015). Overall, research has demonstrated FBT as an effective treatment modality when treating children and adolescents with an eating disorder. In fact, Lock et al. (2016) concluded that, when compared to another family-involved treatment, FBT, a behavioral treatment for eating

disorders, when used in the outpatient treatment of adolescents with anorexia nervosa, was associated with approximately 50% fewer hospitalizations and significantly shorter lengths of stays when admission to a higher level of care was required.

Adjunctive Therapies

More recently, there has been interest in how to increase the effectiveness of FBT by adding adjunctive treatment. Robison et al. (2015) suggested a model for the integration of EFFT and FBT. In addition to phase one of FBT, parents are taught how to be emotional coaches and are instructed on paying attention to the physical signs of emotional expression in their child and then taught how to attend to the emotional expression through acknowledgment of the emotion, labeling the bodily sensation, validating the emotional experience, and meeting the emotional need. Starting in this phase, the clinician is responsible for identifying anything that may hinder the parent from refeeding or eliminating compensatory behaviors. The clinician may have to identify and attend to any 'parental blocks.' In addition to phase two of FBT, the parents continue to develop their skills as emotional coaches. They are taught enhanced empathy skills to understand their child's experience better. In this phase, parents model emotion identification and regulation by attending to and supporting the child's emotions, which enhances the child's ability to self-regulate, thus reducing the necessity of the eating disorder symptoms. Parents are also taught to reflect and identify past trauma and misunderstandings that could have contributed to the development and maintenance of the eating disorder. In addition to phase three of FBT, the parent and child become more independently able to attend to and process emotions, the child is encouraged to express fear of independence, and the child will move toward greater independence with the goal of greater identity development (Robinson et al., 2015).

Additionally, dialectic behavior therapy (DBT) skills groups have been used as adjunctive treatment to increase the effectiveness of FBT. Anderson et al. (2015) suggested incorporating specific DBT skills to enhance FBT. They suggested the following additions to

FBT: family diary cards to be reviewed in session to help facilitate the discussion of observed behaviors, family behavior chain analysis to help identify the helpful and unhelpful family interactions that may have impacted the target behavior, family crisis plan to manage a crisis or urges to engage in eating disorder behavior where the child or adolescent is encouraged to utilize family, multifamily skills training to teach emotion regulation skills to the entire family, interpersonal effectiveness strategies to assist parents in behavioral interventions; telephone consultation so the parents or child/adolescent may receive the support needed to deal with an acute crisis, and parent training and contracts to help strengthen parental boundaries. A preliminary study by Peterson et al. (2020) examined a DBT skills group in combination with FBT to treat adolescents with a range of eating disorders. Their study produced promising outcomes, including an increase in adaptive skills, a decrease in maladaptive coping skills, a decrease in binge eating, an increase in weight, and a reduction in scores obtained on the EDE-Q, measuring eating disorder symptomology (Peterson et al., 2020).

Moderators, Mediators, and Predictors of FBT Outcomes

The current literature examining FBT for adolescents has suggested the need to identify moderators, mediators, and predictors of treatment outcomes. This direction for future research is necessary to help better identify for whom the treatment is best suited and how to improve treatment outcomes. Mediators are defined as constructs that show a statistical relationship between an intervention and the treatment outcome and indicate why change occurs. By identifying mediators, it is possible to increase the effectiveness of treatment. Moderators are defined as variables that influence the direction or magnitude of the correlation between an intervention and the treatment outcome. Identifying the moderators of treatment makes it possible to identify for whom treatment will work best. Predictors are secondary variables correlated with outcome variables that make it possible to identify what variables indicate a greater likelihood of a specific treatment outcome (Kraemer et al., 2002).

While predictors, mediators, and moderators of FBT treatment outcomes have not been widely examined, a study by Le Grange et al. (2012) comparing FBT to adolescent-focused therapy (AFT) identified moderators of remission, moderators of treatment effect on long-term outcomes, mediators of treatment effects, non-specific predictors of change in remission, and non-specific predictors of change in the maintenance of remission. The moderators of change in remission status were identified as baseline eating-related obsessionality, as measured by the Yale-Brown Cornell-Eating Disorder Scale (YBC-EDS) total score, and eating disorder pathology, measured by the Eating Disorder Examination (EDE) global score. Anorexia nervosa, binge-purge type, was associated with greater long-term remission when compared to anorexia nervosa, restricting type. Previous hospitalization, age, and duration of anorexia were non-specific predictors of remission. This means that adolescents who have previously been hospitalized, are older, and have a longer duration of anorexia are less likely to be in remission by the end of treatment. Higher weight at the beginning of treatment was a predictor of remission, as participants starting with a higher weight were more likely to remain in remission at the end of treatment. Le Grange et al. (2012) stated that overall, higher levels of eating disorder psychopathology were the greatest indicator of who would benefit least from FBT. Another study conducted by Le Grange et al. (2008) indicated that adolescents with less severe bulimia nervosa, as indicated by scores on the EDE, were more likely to be in remission at the end of treatment and follow-up. Other studies have identified high expressed emotion and parental criticism toward adolescents with an eating disorder as a potential moderator of the treatment outcome (Eisler et al., 2000; Szmukler et al., 1985). Parental warmth was suggested to predict more favorable treatment outcomes at the end of FBT (Le Grange et al., 2011). While there has been some advancement in better understanding the mediators, moderators, and predictors of treatment outcomes, there is a need to understand these variables cumulatively. Several authors recommend that future research explore mediators, moderators, and predictors of treatment (Murray & Le Grange, 2014), to help

clinicians better identify for whom FBT would be best suited and ways in which FBT can be enhanced.

Challenges in the Current Effectiveness and Outcome Literature

Family-based treatment (FBT) is considered a first-line treatment for children and adolescents with an eating disorder (Couturier et al., 2020; Lock, 2010). The efficacy of FBT has been widely studied for the treatment of adolescents with anorexia nervosa yet has produced inconsistent results when studied using methodology other than randomized controlled trials, studied cumulatively in prior systematic reviews and meta-analyses, and when studied for the treatment of other eating disorders, such as atypical anorexia, purging disorder, or subclinical eating disorders. Previous meta-analyses have suggested that there have not been enough randomized controlled studies and other research to conclusively determine the efficacy of FBT (Couturier et al., 2013; Vall & Wade, 2015). In addition, research is beginning to emerge about using adjunctive treatments such as EFFT and DBT to enhance the effectiveness of FBT (Lock & Le Grange, 2019). However, this research is still emerging and has yet to be cumulatively studied.

Another problem identified in the current research on family-involved treatments for eating disorders is the inconsistent definitions used to determine remission. A review conducted by Le Grange et al. (2019; pp. 1001) stated that the problem is that comparisons are happening and assuming the comparison is “apples to apples rather than apples to oranges.” The review aimed to better understand variability in remission rates when family therapy is used in the treatment of adolescents with anorexia nervosa. Through analysis of the varied definitions of remission, Le Grange et al. (2019) concluded that remission rates fell between 75% and 33%. This variability is due to how the studies determined remission, which could include BMI cut-off measurements and scores obtained on measures such as the EDE or the Morgan Russel Scale. Several other studies also cited inconsistent definitions of remission and recovery

(Hamadi & Holiday, 2020; Le Grange et al., 2019; Vall & Wade, 2015). These issues in the literature call into question the true effectiveness of FBT.

Rationale, Primary Aim, and Key Research Questions

Eating disorders are one of the most costly mental health disorders to treat due to the medical attention necessary and often lengthy course of treatment. The considerable economic resources necessary to care for a child or adolescent with an eating disorder can be mitigated through the use of FBT. Given the challenges in the literature examining FBT for children and adolescents with an eating disorder, a more up-to-date systematic review that addresses these challenges is warranted. This systematic review intends to synthesize the treatment outcomes and effectiveness of FBT to provide clinicians with a better understanding of FBT, so they feel more informed when working with children and adolescents with eating disorders.

First, the present systematic review seeks to update previous summaries of effectiveness research while including all eating disorder diagnoses. By including all eating disorders and eating disorder subtypes, this systematic review can draw conclusions about the effectiveness of FBT transdiagnostically, which addresses the issue of research separating eating disorders. While there has been some advancement in better understanding the mediators, moderators, and predictors of treatment outcomes, there is a need to understand these variables cumulatively. Therefore, the second aim of this systematic review is to identify these variables. Thirdly, this study seeks to describe adjunctive treatments that have been used with FBT and to summarize the effectiveness of FBT when an adjunctive treatment is added, as this has yet to be synthesized in the literature. An additional interest of this study is to synthesize the definitions of remission being used in the literature in order to foster consistency in research going forward, which will help more accurately compare treatments of interest.

- ***Research Question 1*:** What is the effectiveness reported when FBT is used to treat children and adolescents with an eating disorder?

- ***Research Question 2:*** What predictors, moderators, and mediators impact the outcomes being reported?
- ***Research Question 3****:* What adjunctive treatments are being used to increase the effectiveness of FBT for the treatment of children and adolescents with eating disorders?
    - 3a. What is the effectiveness of FBT when adjunctive treatment is used with FBT to treat children and adolescents with eating disorders?
- ***Research Question 4:*** What definitions of remission are being used in research studies?

Chapter 2: Methodology

Systematic Review of the Literature

This integrative systematic review synthesizes data from the current qualitative and quantitative literature to understand the outcomes and efficacy of FBT with and without adjunctive treatment for children and adolescents with an eating disorder. Both qualitative and quantitative data was included to better capture the experience of children and adolescents being treated with FBT. The design and methods of this protocol followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-P; Page et al., 2021). The sections below describe in detail the methods employed to synthesize the current literature on FBT for children and adolescents with an eating disorder.

Eligibility Criteria

Studies that met all eligibility criteria were included in this systematic review. All studies needed to be written and published in the English language. Due to inconsistencies in the literature regarding the outcomes and efficacy of FBT, the present study included studies published in the past 20 years (2003 to 2023) to ensure the most accurate and relevant information was included. All studies were peer-reviewed to promote the greatest quality of studies utilized in this systematic review. All study designs were included with the exception of systematic reviews and meta-analyses, as this systematic review only analyzed original sources of data with two specific exceptions. Secondary sources of data were included if they used secondary data from randomized controlled trials (RCTs), included an original RCT study author, data was extracted from one single RCT, and the original RCT and secondary study passed quality appraisal. The quality appraisal process was also utilized to determine the inclusion or exclusion of studies involving secondary data obtained through chart review. Only studies that achieved a score of two or above, that indicated adequate or good quality were selected for inclusion.

Participants in the eligible studies needed to be a child or adolescent, which was defined as age 18 or under. In studies that select parents or the caregivers as participants, the individuals being treated were age 18 or under. To be included, participants had to be diagnosed by a mental health or healthcare professional with one of the following eating disorders: anorexia nervosa (restricting or binge-purge type, all severity levels), bulimia nervosa (all severity levels), binge-eating disorder (all severity levels), and OSFED (atypical anorexia, bulimia nervosa of low frequency or limited duration, binge-eating disorder of low frequency or limited duration, or purging disorder). The present study did not include other feeding disorders of childhood, such as avoidant and restrictive intake disorder (ARFID), pica, or obesity due to the inherent difference in etiology and course of the feeding disorders (APA, 2013).

Eligible studies included the intervention of FBT with or without adjunctive treatment. All studies that modified FBT were not considered, as adjunctive treatment was defined as any treatment that was added to manualized FBT. Only the outpatient level of care was considered eligible for the present study, as FBT was designed to be implemented at the outpatient level of care. All other treatment settings (i.e., inpatient, partial hospitalization program, and intensive outpatient program) were not considered for this study as they modify the original treatment rather than add an adjunctive treatment component. For the purpose of this systematic review, all eligible studies also included outcome data measuring the outcomes of FBT or FBT with an adjunctive treatment, including qualitative analysis of the outcomes described by patients or by the caregiver(s) of children or adolescents being treated with FBT. Due to the varying outcome measures and definitions of treatment success, all outcome measures were included (Vall & Wade, 2015).

Search, Screening, and Selection Process

Information Sources

The electronic psychological databases that were utilized during the searching process were EBSCOhost academic search complete and Scopus. These databases extract literature

from sources of interest such as psychINFO, psychArticles, and journals such as the *International Journal of Eating Disorders, Eating Disorders, Eating and Weight Disorders,* among many others. Electronic medical and psychiatric databases were also searched due to the medical complications associated with eating disorders and the medical settings in which treatment may take place. The electronic medical databases utilized were PubMED and PsychiatryOnline. In addition to these databases, publications by the authors James Lock and Daniel Le Grange were searched, as these authors are predominant in the literature and they created the treatment manuals for FBT (Le Grange & Lock, 2009; Lock & Le Grange, 2013). The reference lists of included articles were reviewed as a source of information to find other relevant articles that meet inclusion criteria. However, upon random selection and testing of 25% of the selected articles, no additional relevant studies were included when using reference lists as a source.

Search Terms

Search terms were selected to best represent children and adolescents with an eating disorder treated with FBT with or without adjunctive treatment. Terms included to capture the spectrum of eating disorders include “eating disorders” OR “eating disorder” OR “anorexia nervosa” OR “bulimia nervosa” OR “binge-eating disorder” OR “other specified feeding and eating disorder” OR “atypical anorexia” OR “purging disorder.” The terms selected to capture relevant psychotherapy interventions include “family-based treatment” OR “FBT” OR “Maudsley method.” The search terns selected to capture relevant adjunctive treatment include, “adjunctive treatment” OR “additional treatment” OR “in addition” OR “adjunctive” OR “combined with” OR “emotion focused family therapy” OR “EFFT” OR “parent coaching” OR “support groups” OR “groups” OR “dialectic behavior therapy” OR “DBT.” The search terms selected to capture outcomes include “outcomes” OR “effectiveness” OR “efficacy” (Appendix A).

Screening of Studies

This systematic review utilized a three-part screening process after duplicate studies were eliminated. First, the titles and keywords of the studies identified in the search results were reviewed by the author to determine if they meet inclusion criteria. Second, the abstracts of the studies from phase one were screened by the author to determine if they meet inclusion criteria. Third, the full text of remaining studies were reviewed by the author to determine which studies met eligibility criteria. To reduce bias and error, a second reviewer (NK) randomly selected 25% of the studies to review and check for accuracy of the applied eligibility criteria. Based on the second reviewer's analysis, there were no discrepancies found in the application of inclusion criteria. An excel spreadsheet was used to record the screening and selection data. The PRISMA flowchart (2020; Appendix B) recorded the number of studies from the preliminary search and then the remaining studies after eligibility criteria were applied.

Data Collection and Extraction

Data were collected and extracted using a modified version of the Effective Practice and Organisation of Care (EPOC; Cochrane, 2013). The EPOC form was modified to include research variables and study characteristics that reflect the present study's research questions. The excel data extraction form was created based on the EPOC form and collected descriptive and analytical information from each study, including the author(s), year of publication, full title of the study, focus of study, research variables, design and sample characteristics, definition of remission, description of the intervention(s), and results specific to remission or reduction of eating disorder symptoms, effectiveness of the treatment, and predictors, moderators, and mediators. Data was extracted from the studies by the author (CP) and 25% of the extracted data was reviewed by the second reviewer (NK) in order to reduce the chance for error and bias. Based on the second reviewer's analysis, there were no discrepancies in the application of data extraction.

Quality Appraisal

This systematic review utilized the Individual Study Quality Appraisal Form for Systematic Reviews (Harrell, 2021) to assess the quality of the eligible studies. This document reviews studies based on methodology, the strength of the literature foundation and rationale for the study, the clarity and specificity of the research aims, questions, and hypotheses, the quality of the research design, the sample selection and characteristics, the data collection tools, the data collection process, the analysis and presentation of data, the limitation, and the consideration of culture and diversity (Appendix C). These study characteristics are rated as *strong* = 3, *good/adequate* = 2, *weak* = 1, *missing* = 0, or *not applicable* (N/A), and then a total score is calculated based on the average rating. When a study was rated between a 1 and 2, the second reviewer (NK) completed the quality appraisal for the specific study to determine if the study should be raked as a 1 or 2. The overall rating is expressed as *strong*, *good/adequate*, or *weak*. For the purpose of this systematic review, studies with an overall rating of *weak* were excluded from the analysis.

The quality of randomized controlled trials (RCTs) was examined using a quality appraisal form specific to RCTs, the JBI Critical Appraisal Checklist for Randomized Controlled Trials (Appendix D). This checklist evaluated RCTs on randomization, allocation of participants to treatment groups, blinding of participants and those delivering treatment, reliability of outcome measures, appropriateness of study design, and appropriateness of analysis. Based on these factors, each RCT earned an overall appraisal to include, exclude, or seek further information. The quality appraisal process was completed by the author and a second reviewer (NK) during the data extraction phase. Based on the author's and reviewer's analysis, there were no discrepancies found in the rating of quality appraisal.

To address variation in the sample size of the included studies, the quality appraisal described above was integral to ensuring the quality of the studies selected. Studies were appraised according to the study type and the sample size was examined based on the methodology of the study to determine if the sample size was appropriate. Studies containing a

small sample size should demonstrate good quality in other areas of the study design in order to optimize the study (Hopkin et al., 2015). This appraisal was captured in the study design and sample selection sections of the quality appraisal form. Based on the quality appraisal, all studies included in this systematic review included appropriate sample sizes for the given study design.

Data Management, Data Analysis and Synthesis

This integrative systematic review ordered, coded, categorized, and summarized the data collected from the primary sources. The table of included studies contains the following information: author(s), publication year, study aim, design characteristics, sample characteristics, and intervention(s) selected. Table 1 can be found in the appendicies. A constant comparison method was used to identify patterns and themes from the data. The sample size of each study was specifically included in this table to limit overrepresentation from studies with a small sample size. In addition, studies with a low sample size are specifically identified in the results section. Low sample size was determined to be equal to or less than $N = 30$, as a normal distribution is reached at this sample size according to the central limit theorem (Gravetter & Wallnau, 2019).

Data reduction was used to distill data from the table of included studies into subgroups to facilitate analysis. For the purpose of the present study, the subgroups were based on the variables of interest for each research question. Tables 2 through 14 include relevant information extracted from the included studies.

Chapter 3: Results

During the search and screening process, an initial 1366 studies were found. Of the 1366 studies, 763 were duplicates, and 551 were removed based on the application of the inclusion and exclusion criteria. A total of 52 qualitative, quantitative, and mixed-method articles met the full inclusion criteria for this systematic review. The PRISMA diagram can be found in Appendix B. A table of the included studies can be found in Table 1. Of the final number of studies included, 40 examined the effectiveness and efficacy of FBT, and 12 examined the effectiveness of FBT with an adjunctive treatment.

Sample Characteristics

The sample characteristics can be found in Table 1. Of the fifty-two studies selected for this review, the majority of studies include participants between the ages of 14 and 16, are predominately Caucasian, female, and had a diagnosis of anorexia nervosa at the onset of treatment. Families tended to be intact and from a higher socioeconomic background. In addition, most of the studies were conducted in Westernized countries, predominately the United States. Most research was qualitative in design and varied greatly in sample size. All studies used the manual versions of FBT and FBT-BN (Le Grange & Lock, 2009; Lock & Le Grange, 2013).

Participant Characteristics

Subject of interest. While all studies were interested in the outcome of FBT for the child or adolescent struggling with an eating disorder, some studies chose to explore the experience of other family members. Nine studies focused on the experience of the family participating in FBT. Of those nine, two were explicitly focused on the parents' experience, and one study focused on the psychosocial well-being of the sibling participating in FBT.

Age. The ages of the participants receiving treatment ranged from 8 to 18. The majority of studies reported a mean age ranging from 14 to 16.

Gender. The samples of the studies selected were heavily comprised of female participants. Of the 52 studies, twelve included only female participants, and just one case study focused on a male participant. The majority of the studies included over 80% female participants. No studies reported the inclusion of any other gender identity.

Ethnicity. The majority of the participants in the studies were Caucasian. Two studies included all Caucasian participants. The percentage of Caucasian participants ranged from 75% to 100%; Asian participants ranged from 1.3% to 13%; Hispanic participants ranged from 2.9% to 10.1%; African American participants ranged from 0.8% to 15%; Bi-racial participants ranged from 5% to 8.6%; and other race/ethnicity participants ranged from 1.3 to 5%. Twenty-five studies did not report data on the race/ethnicity of the participants.

Diagnoses. The most frequently reported diagnosis was anorexia nervosa. Thirty-five studies reported a diagnosis of anorexia nervosa, with the exception of amenorrhea; ten studies reported the subtype of anorexia nervosa; five studies reported atypical anorexia nervosa, six studies reported bulimia nervosa and eight studies reported other specified feeding or eating disorder (OSFED) or eating disorder not otherwise specified (EDNOS). Duration of illness before the start of treatment ranged from 3 months to 19 months, with the most frequently reported duration of illness ranging from 11 to 15 months. The percentage of participants with a comorbid psychiatric diagnosis at baseline ranged from 21% to 67%. Of the comorbid diagnoses reported, the following comorbid diagnoses were reported in order of most frequently reported to least: depressive disorders, anxiety disorders, obsessive-compulsive disorder, attention-deficit/hyperactivity disorder, autism spectrum disorder, adjustment disorder, body dysmorphic disorder, gender dysphoric disorder, panic disorder, specific phobia disorder, and bipolar disorder. In studies that reported participant use of psychotropic medication before the onset of treatment, numbers ranged from 9% to 17% of participants using psychotropic medication.

Other participant characteristics. Other important information collected by some studies was about the family's socioeconomic status, the presentation of the family, and parental education level. Of the studies that examined the family's socioeconomic status, most families were classified as middle to upper class (USD $50,000 to $150,000 or more per year). The majority of families were intact, with the percentage of intact families ranging from 58% to 86% of participants, with the exception of participants from case studies, as their data was only representative of one to two participants. Other categories of family presentations included divorced, separated, single-parent, blended, and reconstituted. Few studies reported parental education level. However, of those that did, the majority of parents obtained at least four years or more of post-secondary education.

Study Design

Methodology. Forty studies used a quantitative methodology. Five of these studies used RCT design. Of note, 18 studies used secondary data from three primary RCTs: Lock et al. (2010), Agras et al. (2014), and Le Grange et al. (2015). Seven studies used qualitative design. Five studies used mixed methodology to examine data.

Sample Size. The sample size varied greatly, ranging from one to 158. Few studies (*n* = 5) were case study designs that followed one to three participants throughout treatment. The greatest number of participants from any given study was 158 (Agras et al, 2014). To limit overgeneralization from case studies which by their nature have limited sample size, these studies were thoroughly examined during quality appraisal and identified throughout the results section

Location of Study. The majority of studies were completed in the United States (*n* = 31). Other study locations included Australia (*n* = 17), Canada (*n* = 3), and Scotland (*n* = 1). While all studies were completed in the outpatient setting, most were conducted at academic medical centers and specialty outpatient eating disorder clinics. Other treatment settings included private practice and community mental health clinics.

Research Question #1: Outcomes of FBT

Forty studies examined the outcomes of FBT. The most widely studied outcome measures of FBT included remission status, changes in weight, eating disorder psychopathology, comorbid conditions, family functioning, rate of hospitalization during treatment, and the need for continued psychological intervention post-FBT. It was also of interest to understand how FBT compares to other treatments. In addition, other areas of interest in the current literature included understanding the experience of the patient, parents, and siblings going through FBT and the specific components of FBT that were viewed as helpful or harmful.

Remission Related Outcomes

Rates of remission and abstinence were variable. The majority of studies supported FBT as effective in producing remission or abstinence (Agras et al., 2014; Ciao et al., 2015; Goldstein et al., 2016; Hughes et al., 2017; Le Grange et al., 2014a; Le Grange et al., 2014b; Le Grange et al., 2005; Le Grange et al., 2015; Lock et al., 2010; Loeb et al, 2007; Matheson et al, 2020). Hughes et al. (2017) found that remission rates fell between 38% and 52%, depending on the applied remission criteria. When the Morgan-Russel Outcomes scale was used to determine remission, Le Grange et al. (2005) found that 56% of patients achieved good treatment outcomes. Achievement of a rating of good outcomes according to the Morgan-Russel scale was also observed in all patients with subthreshold anorexia nervosa (SAN) by the end of treatment (Loeb et al., 2007). When FBT was disseminated to the private practice setting, 45.9% of patients achieved full remission, and 43.2% achieved partial remission (Goldstein et al., 2016). Other predictors of remission and the differing definitions of recovery are discussed later in the results section.

Overall, treatment outcomes appear to be stable once remission is achieved. At the one-year follow-up, 4.5% of FBT patients relapsed (Le Grange et al., 2014b). In another study, 33.1% of patients achieved remission at the end of treatment, and 40.7% achieved remission at

follow-up (Agras et al., 2014). Lock et al. (2010) found that rates of full remission in FBT at the end of treatment were 42%, 40% at the six-month follow-up, and 49% at the 12-month follow-up. 39.4% of patients in the FBT-BN condition achieved abstinence from binge-eating and purging behaviors by the end of treatment, 44.0% at the six-month follow-up, and 48.5% at the 12-month (Le Grange et al., 2015). Some studies reported rates of relapse during the follow-up period. Lock et al. (2010) found that 10% of FBT patients who were in full remission at the end of treatment reported relapse. At the long-term follow-up, one patient from the FBT condition met the criteria for BN, and one patient from the FBT condition met the criteria for EDNOS (Le Grange et al., 2014b). Table 2 in the appendices provides and overview of the remission related outcomes of FBT.

Weight Gain Outcomes

Table 3 in the appendices provides detailed information about the weight related outcomes of FBT. Thirteen studies reported specific weight-related outcomes of FBT. FBT appears to be effective in promoting weight gain. Of the thirteen studies, twelve reported that FBT produced weight gain by the end of treatment (Agras et al., 2014; Couturier et al., 2010; Goldstein et al., 2016; Ellison et al., 2012; Isserlin & Couturier, 2012; Lebow et al., 2019; Le Grange et al., 2005; Le Grange et al., 2014a; Le Grange et al., 2015; Lim et al., 2023; Lock et al, 2010; Loeb et al, 2007). One study found that patients gained an average of 7.8 kg and achieved an average of 95.7% ideal body weight (IBW) by the end of treatment (Couturier et al., 2010). Significant weight gain was still achieved when FBT was disseminated to the private practice setting (Goldstein et al., 2016). However, one study also found that the change in %IBW was not significant at the end of treatment for patients with atypical anorexia nervosa (Hughes et al., 2017).

Lebow et al. (2019) identified five distinct weight gain trajectories. The category of *slow and steady gain* was characterized by low baseline body mass index (BMI) that improved slowly and steadily and was made up of 48.4% of patients. The category of *moderate gains with mid-*

treatment maintenance was characterized as moderate initial weight gain that slowly plateaued to maintenance by three months into FBT and was made up of 24.8% of patients. The category of *dramatically rapid early gains that stabilize at the 65th percentile* was characterized as substantial weight gain from below the fifth percentile to the 80th pearceite within six sessions, followed by weight loss to the 60th percentile by three months and stabilization at the 65th percentile at six-months and was made up of 2.6% of patients. The category of *maintenance at the 60th percentile* was characterized as baseline %BMI above 60 with a steady weight gain to initial %BMI by three months and was made up of 18.3% of patients. *Rapid gain with early stabilization* was characterized as early rapid weight gains that peak at session six, remain stable, and are made up of 5.9% of patients. The category of *early responders to treatment*, defined as weight gain of ≥6.5lbs by session four, were significantly associated with *dramatically rapid early gains that stabilize at the 65th percentile*, *rapid gains with early stabilization*, and *moderate gains with mid-treatment maintenance* (Lebow et al., 2019).

Eating Disorder Psychopathology Outcomes

Table 4 in the appendices depicts the change observed in eating disorder psychopathology after FBT. The majority of these studies indicated that FBT was effective in producing a positive change in eating disorder psychopathology (Accurso et al., 2014; Couturier et al., 2010; Hughes et al., 2017; Le Grange et al., 2005; Le Grange et al., 2012; Le Grange et al., 2015; Lim et al., 2023; Lock et al., 2010; Loeb et al., 2007; Springall et al, 2022). Of the measures used to assess eating disorder psychopathology, the EDE and EDE-Q were most commonly used (*n* = 28), followed by the YBC-EDS (*n* = 11), EDI (*n* = 3), and EDSIS (*n* = 2). Couturier et al. (2010) specifically found that the restraint subscale of the EDE and interoceptive deficits and maturity fears subscales of the Eating Disorder Inventory (3rd ed; EDI-3) were most improved over the course of treatment. Another study found that the EDE restraint and eating concern subscales improved most, but no significant changes were observed in the EDE shape or weight concern (Loeb et al., 2007).

Springall et al. (2022) found that FBT continued to demonstrate effectiveness at the long-term follow-up (five or more years), as there were no significant differences between the group of former FBT patients and the healthy control in eating and exercise behaviors, as indicated by scores on the EDE-Q and Commitment to Exercise Scale (CES). Accurso et al. (2014) also found that eating disorder psychopathology continued to improve from the end of treatment to the 12-month follow-up, with the greatest improvement on the EDE restraint subscale and the least improvement on the EDE weight and shape concern subscales.

Improvements in eating disorder psychopathology were also demonstrated when FBT was used to treat patients diagnosed with atypical anorexia nervosa (Hughes et al., 2017). This improvement in eating disorder psychopathology was also observed when FBT was disseminated to the clinical research setting (Loeb et al., 2007). In addition to improved eating disorder psychopathology, FBT was also effective in significantly increasing the rate of resumption and regularity of menses by the end of treatment (Couturier et al., 2010; Hughes et al., 2017; Le Grange et al., 2005; Loeb et al., 2007).

Other Mental Health Related Outcomes

Table 5 in the appendices includes information related to the impact of FBT on other mental health issues, such as depression and self-esteem. A study by Lim et al. (2023) found that patients with an eating disorder and comorbid mental health disorders experienced similar recovery rates to patients with an eating disorder without comorbidities. There was no difference between these groups in number of hospitalizations during treatment, changes to psychological symptoms, or BMI. However, patients with comorbidities experienced a longer length of treatment (Lim et al., 2023).

Many studies found that depressive symptoms improved over the course of treatment (Accurso et al., 2014; Hughes et al., 2017; Le Grange et al., 2015; Valenzuela et al., 2018). Valenzuela et al. specifically found that Beck Depression Inventory (BDI) scores reduced by 36.9% and continued to improve at the 12-month follow-up, with a 46.9% reduction. Another

study also found that patients achieved a reduction in scores on the BDI at the end of treatment (Le Grange et al., 2015). However, Loeb et al. (2007) found no significant improvement in the Child Depression Ratine Scale-Revised (CDRS-R). Accurso et al. (2014) found that depressive symptoms reduced over time regardless of weight gain. In a study that examined patients who received FBT five or more years ago, former patients reported experiencing significantly greater levels of depression, anxiety, and stress than the controls. In addition, this study found that former patients reported that the COVID-19 pandemic restrictions were a trigger for eating-disordered attitudes and behaviors and endorsed some changes to body image and eating (Springall et al., 2022).

Wallis et al. (2017) found that adolescents reported an increased sense of self and confidence after FBT. Valenzuela et al. (2018) also found that self-esteem scores, measured by the Rosenberg Self-Esteem Scale (RSE), returned to a level found in healthy adolescents by the 12-month follow-up. However, a study by Hughes et al. (2017) found no significant improvement in self-esteem or obsessive-compulsive features. Another study by Accurso et al. (2014) did not observe significant improvement in self-esteem.

Family Functioning-Related Outcomes

Table 6 in the appendices demonstrates the changes to family functioning as an outcome of FBT. Families reported some baseline impairment to family functioning, with adolescents reporting greatest impairment to family functioning. Prior to FBT, parents identified themes related to conflict and disconnect. Adolescents reported that their relationship with their parents was strained, tense, and stressed, leading to isolation and reduced confidence (Wallis et al., 2017). FBT demonstrated substantial positive changes in perceived family functioning, specifically in communication and behavioral control (Ciao et al., 2015). Another study also found several changes to the family dynamic over the course of FBT, including improved communication, closer family relationships, and intrapersonal change for adolescents and parents (Wallis et al., 2017).

After FBT, adolescents reported improved closeness and communication with their parents, and parents reported similar changes. In addition, parents reported a stronger and closer connection with their partners and an overall change in their parenting style (Wallis et al., 2017). In a study by Krautter and Lock (2004), 70% of participants reported positive changes in family functioning. The positive changes reported included increased family closeness, communication, openness and honesty, problem-solving skills, parental understanding, awareness and attention to feelings, family support, patience, parental cooperation, appreciation for one another, overall happiness, and decreased arguing, criticism, and blame. Only one mother perceived negative change in family dynamics, and three mothers, four fathers, and four adolescents perceived positive and negative changes. Another study identified several changes to the family dynamic over the course of FBT, including improved communication, closer family relationships, and intrapersonal change for adolescents and parents (Wallis et al., 2017).

Experience of Patients and Family Members

Of the studies examining the perspective of patients and their families, most found that FBT was experienced with benefits and challenges. Conti et al. (2021) examined the experience of patients treated with FBT. The majority of participants viewed their parents taking control of their eating as relieving and could identify their parents' support as vital to their treatment. Similarly, Wallis et al. found that parents experienced FBT as helpful. Wufong et al. (2019) found that parents initially experienced FBT as relief and felt comforted by finding a professional who specialized in the treatment of anorexia nervosa.

The main criticisms of FBT include a lack of attention to the psychological distress of the patient, specific components of FBT and the therapeutic style of FBT, and the lack of additional support for parents or carers. Some participants reported an increase in family conflict. Participants also reported that the weight gain alone did not significantly reduce their psychological distress and that their psychological distress was overlooked, which was cited as a primary reason for dropout. In addition, participants also felt a loss of voice and autonomy in

treatment, as their parents were expected to take control of their eating (Conti et al., 2021). Wufong et al. (2019) also found that patients were disappointed with the lack of focus on addressing psychological distress due to the emphasis on eating-related behaviors. Parents also stated that FBT "*sounds easy in principle*" and identified the re-feeding process in phase one as distressing. In cases where the adolescent did not gain weight, parents felt helpless. Other parents continued to feel anxious about the future of their child, especially when eating disorder psychopathology or other mental health issues persisted (Wufong et al., 2019). Williams et al. (2020) identified that parents initially felt shock and guilt when identifying the eating disorder, felt dismissed by healthcare professionals, experienced challenges at mealtimes, family conflict, and changes to occupational, financial, and social resources, relied on religion, spirituality, and other belief systems to manage emotions, and noted strengths and weaknesses of the treatments.

One study focused on the experience of fathers participating in FBT (McMahon et al., 2022). Overall, fathers made a large contribution and valued being involved in treatment. From the analysis of interviews, initially, fathers described feeling on the outside and needing to find a way to understand and overcome feeling overwhelmed and inadequate. Fathers reported that they felt judged and scrutinized during the family meal, which they reported made it challenging to engage with treatment fully. FBT therapists who were collaborative helped fathers take an active role in treatment and increased their confidence. Fathers from non-intact families especially valued the opportunity to be more involved in treatment and with their children. Fathers reported feeling more confident and engaged in treatment when early weight gain was achieved and experienced self-blame, inadequacy, and a lack of support when weight gain was slow or when weight loss occurred. Fathers reported experiencing “rescripting,” which was described as “finding a way to be” by keeping their child in mind while taking action to manage the effects of the eating disorder and identifying they have a contribution to make (McMahon et al., 2022).

Hughes et al. (2018) examined the involvement of parents and siblings. They found that maternal attendance was fairly consistent, fathers' attendance declined, and sibling(s) attendance declined rapidly over treatment. Fathers from non-intact families attended significantly fewer sessions than fathers from intact families, and fathers from families participating in the RCT attended significantly more sessions than fathers from families who were not participating in the RCT (Hughes et al., 2018). No significant differences in attendance were found for mothers and siblings based on family characteristics or treatment structure. Another study examined the psychosocial well-being of siblings (Van Langenberg et al., 2016). Overall, the psychosocial well-being of siblings did not significantly change at the end of treatment. Before treatment, siblings endorsed elevated levels of emotional difficulties, hyperactivity/inattention, and total difficulties. Mothers reported that the sibling(s) had low conduct problems and prosocial behaviors. Fathers also reported low levels of sibling conduct problems. Siblings of patients who were medically hospitalized prior to FBT had lower emotional difficulties, lower hyperactivity/inattention, and fewer total difficulties compared to those with siblings who were not previously hospitalized. Longer duration of illness was associated with greater sibling emotional difficulties, peer problems, lower prosocial behaviors, and total difficulties (Van Langenberg et al., 2016). Parental self-efficacy significantly increased for mothers and fathers early in treatment for the FBT condition (Sadeh-Sharvit et al., 2018). The information regarding the experience of patients and their families is included in Table 7.

FBT Specific Components

Studies also examined the specific elements of FBT that parents found helpful or challenging. The structured and supportive approach of FBT was reported to create stability and reduce uncertainty. The FBT interventions that were reported as most beneficial were the initial focus on parental management of eating disorder symptoms, the importance of parental alliance, the role of sibling(s), and externalizing the eating disorder. Parents reported increased trust and security through greater understanding, reduction of criticism, and learning to provide

support (Wallis et al., 2017). Externalization of the illness was viewed as helpful, as it allowed parents to focus their frustration on fighting the illness. However, parents also continued to experience guilt related to the etiology of the eating disorder and when weight gain was not sufficient during the re-feeding phase (Wufong et al., 2019). Another study found that parental control, externalization of the illness, restructuring the family, and parental consistency predicted weight gain at the end of treatment, with parental control as the strongest predictor (Ellison et al., 2012). Studies found that FBT was rated as effective and acceptable (Couturier et al., 2010; Krautter & Lock, 2004). Parents expressed mixed thoughts about conjoint sessions, with some stating that it "disrupted" their relationship and others stating that transparency helped them maintain a relationship with their child and assisted in developing strategies to build trust in their relationship (Williams et al., 2020).

The main criticism of FBT was that other psychological issues and distress were not addressed (Conti et al., 2021; Krautter & Lock, 2004; Wufong et al., 2019). The specific FBT elements criticized by patients and their families were the amount of time required for FBT, resulting in changes to occupational and social functioning, and that FBT is "demanding and impersonal." Parents reported mixed feelings about the family meal; some stated it was "*force-feeding*," and others reported that it supported them in challenging things. One parent described the FBT clinician as "*saying what they were trained to say…without caring*" and reported the clinician's inflexibility as a reason for premature dropout (Williams et al., 2020). Parents also reported struggling to hand control of eating and exercise back to the adolescent in phase two (Wufong et al., 2019). Other criticisms included FBT not including a follow-up plan after treatment, no group therapy, and no parent support group or parental therapy. Some families suggested that individual or family therapy would be helpful to address issues other than the eating disorder (Krautter & Lock, 2004).

Darcy et al. (2013) examined observed patient and parental behavior in sessions one to four. Patients who displayed fewer negative verbal behaviors and who moved away from the

table less in the first session and family meal session were more likely to respond to treatment early. Parents who made less critical statements and who did not repeatedly present food during the family meal session were more likely to have adolescents with early response to treatment. In addition, the following parental behaviors observed in session one were predictive of early response to treatment: confidence and empowerment, positive physical encouragement, verbal encouragement, serving and presenting food, and modeling eating. Parents who increased their positive physical behaviors from session one to four and increased neutral verbal behaviors were more likely to respond early to treatment (Darcy et al., 2013).

Regarding treatment compliance, one study found that 71% of patients received 20 or fewer treatment sessions, and the remaining 29% received more than 20 treatment sessions. On average, patients completed 17 sessions over 9.7 months, and most families (87.8%) remained in treatment until it was mutually decided by the parents and therapist (Le Grange et al., 2005). While FBT was consistent with the treatment manuals, the individual who conducted the treatment varied from study to study. Le Grange et al. (2005) found no significant differences in outcomes for patients treated by the senior therapist (D.L.G.) compared with the group of trainee therapists.

Despite the criticism of FBT, the therapeutic alliance was established. Forsberg et al. (2014) found that parental therapeutic alliance scores were greater than adolescent therapeutic alliance scores early in treatment. It was found that despite the presence of elevated eating disorder psychopathology, a therapeutic alliance was able to be established (Lo Tempio et al., 2013). Details about the experience of specific FBT components is depicted in table 8.

FBT Compared to Other Treatments

Twenty-three studies compared FBT to another evidence-based treatment. Thirteen of those studies compared FBT and adolescent-focused therapy (AFT), five studies compared FBT and systemic family therapy (SyFT), four studies compared FBT-BN and CBT for adolescents (CBT-A), and one study compared FBT to non-manualized systemic family

interventions. The comparison of FBT and other treatments can be found in Table 9 in the appendices.

Weight Gain. When FBT was compared to another treatment, all but two studies found FBT to produce greater weight gain at the end of treatment. Agras et al. (2014) found that patients treated with FBT gained weight at a significantly greater rate than those treated with SyFT. Le Grange et al. (2014a) found that patients receiving FBT achieved a weight gain of 95% of estimated body weight (EBW) or sooner than patients receiving AFT. Lock et al. (2010) also found that FBT demonstrated a significantly greater increase in weight gain at the end of treatment compared to AFT. However, this difference in %BMI was no longer significant between FBT and AFT by the six-month follow-up and continued not to be observed at the 12-month follow-up. In addition, two studies did not detect a significant difference between treatment types regarding weight gain at any time point. Agras et al. (2014) found no significant differences in weight gain between FBT and SyFT at the end of treatment and the 12-month follow-up. Le Grange et al. (2015) also did not detect significant differences between FBT and CBT-A on %EBW.

Remission. Results were variable when comparing FBT to another treatment on rates of remission. Several studies determined that FBT was superior to other treatments in producing greater rates of remission and abstinence (Ciao et al., 2015; Le Grange et al., 2015; Lock et al., 2010; Matheson et al., 2020). Le Grange et al. (2015) found that patients in the FBT-BN condition achieved greater rates of abstinence from binge eating and purging behaviors at the end of treatment (FBT-BN = 39.4%; CBT-A= 19.7%) and the six-month follow-up (FBT-BN = 44.0%; CBT-A = 25.4%). Reduction and abstinence from binge eating and purging behaviors were also achieved sooner in the FBT-BN condition compared to CBT-A (Matheson et al., 2020). However, many other studies suggested that there were no significant differences in remission between treatments or that the differences observed at the end of treatment were no longer observed at various follow-up points (Agras et al., 2014; Le Grange et al., 2014a; Le

Grange et al., 2014b; Locket al., 2010; Le Grange et al., 2015; Matheson et al., 2020). Le Grange et al. (2014b) found that once remission was achieved, it was stable, and there were no significant differences between FBT and AFT in relapse (FBT = 4.5%, AFT = 9.1%) or new remission during the one-year follow-up period. Lock et al. (2010) found that FBT produced greater rates of partial remission at the end of treatment, but there was no difference in rates of full remission between FBT and AFT. The difference in partial remission was no longer observed at the six-month or 12-month follow-up. Le Grange et al. (2015) found that differences in abstinence between FBT-BN and CBT-A were no longer detected at the 12-month follow-up (FBT-BN = 48.5%, CBT-A = 32.0%). Conversely, Le Grange et al. (2014a) did not detect a significant difference in remission rates at the end of treatment but did detect significant differences in remission between FBT and AFT at the six-month (FBT = 40%, AFT = 18%) and 12-month (FBT = 49%, AFT = 23%) follow-up periods. While this difference between FBT-BN and CBT-A and FBT and AFT were no longer statistically significant during the follow-up periods, these differences are clinically meaningful.

Eating Disorder Psychopathology. Outcomes related to eating disorder psychopathology and other mental health conditions were also variable. One study found that patients with more severe eating disorder psychopathology, as indicated by scores obtained in the YBC-EDS and EDE, achieve better treatment outcomes in FBT compared to AFT (Le Grange et al., 2012). Patients in the FBT condition also obtained a significantly greater improvement of scores on the EDE at the end of treatment. However, these differences in improvement were no longer observed at the six-month and 12-month follow-ups (Lock et al., 2010). Other studies did not detect significant differences between treatments in eating disorder psychopathology (Accurso et al., 2014; Agras et al., 2014; Le Grange et al., 2015; Lock et al., 2010). Accurso et al. (2014) found that most psychological symptoms improved in FBT and AFT. Agras et al. (2014) did not detect differences in changes to eating disorder psychopathology between FBT and SyFT at the end of treatment or the 12-month follow-up. Le

Grange et al. (2015) also did not detect a difference in changes to scores obtained on the EDE or YBC-EDS. Patients also experienced a reduction in depressive symptoms. Valenzuela et al. (2018) found that depressive symptoms and self-esteem significantly improved in both FBT-BN and CBT-A and continued to improve at the 12-month follow-up. Patients in the FBT-BN condition in a study by Le Grange et al. (2015) also demonstrated a reduction in depressive symptoms on the BDI at the end of treatment. In addition, parental psychological symptoms were reduced in both FBT and AFT (Forsberg et al., 2017). These findings suggest that the psychological distress of the patient and parent is reduced at the end of treatment.

Other Outcomes. Other significant differences detected between FBT and other treatments include patients being treated with FBT were hospitalized during treatment less frequently and for shorter durations than SyFT and AFT (Agras et al., 2014; Le Grange et al., 2015; Lock et al., 2016). One study found no differences in patients requiring hospitalization during the first five weeks of treatment. However, patients in the AFT condition continued to increase in hospitalizations after the first five weeks of treatment. Patients in the FBT condition also spent significantly fewer days in the hospital than AFT patients (Lock et al., 2010). Patients treated with FBT spent significantly less on treatment (mean treatment cost per individual: FBT = $8,963, SyFT = $18,005; Agras et al., 2014). According to parental feedback conducted by Williams et al. (2020), parents did not identify a preference for FBT or non-manualized systemic family interventions. FBT was also found to produce greater positive changes in family functioning, specifically in communication and behavioral control, compared to AFT (Ciao et al., 2015). Parental self-efficacy significantly increased early in the FBT treatment condition (Sadeh-Sharvit et al., 2018). Parental alliance with the therapist was developed earlier in treatment in FBT (Forsberg et al., 2014). In addition, therapeutic alliance scores between patient and therapist were significantly greater in the AFT condition (Forsberg et al., 2013).

Research Question #2: Mediators, Moderators, and Predictors of FBT

Twenty-six of the fifty-two studies reported variables that mediated, moderated, or predicted treatment outcomes. Tables 10, 11, and 12 in the appendices display these studies.

Mediators

Of the twenty-six studies, five studies examined mediators of FBT. Only one study was able to identify mediators of treatment. Sadeh-Sharvit et al. (2018) found that improved maternal self-efficacy by session eight of FBT mediated short-term weight gain. Three other studies conducted analyses to examine mediators of treatment. However, no significant mediators were found. Rhodes et al. (2008) also assessed parental self-efficacy as a mediator of treatment. However, they did not detect parental self-efficacy as a mediator of weight gain. Le Grange et al. (2012) assessed the BDI, RSES, General Self-Efficacy Scale (GSES), Parents versus Anorexia Scale (PvA), and %BMI as potential mediators, and none were found to be significant.

Moderators

Nine studies reported moderators of FBT. Of the variables examined, baseline scores obtained on the YBC-EDS were the most frequently reported moderators of treatment outcomes, such as remission and hospitalization during treatment (Le Grange et al., 2012; Lock et al., 2016). Gorrell et al. (2019) did not find significant evidence that motivation for change moderates obsessive-compulsive eating disorder behaviors, as measured by the YBC-EDS. Agras et al. (2014) found that patients with higher CY-BOCS scores at baseline gained significantly more weight in SyFT by the end of treatment than in FBT. Global EDE scores also moderated remission and therapeutic alliance, such that patients with high scores on the EDE Global at baseline were more likely to be in remission at the end of treatment and report a greater therapeutic alliance when treated with FBT (Le Grange et al., 2012; Lo Tempio et al., 2013). The relationship between eating-related obsessionally, as measured by the YBC-EDS, and weight gain was a moderator of treatment, such that patients being treated with FBT were more likely to experience both an increase in weight and a reduction in eating-related

obsessionally. Maternal depression was found as a moderator of adolescent weight gain at the end of treatment in FBT (Forsberg et al., 2017). When the type one error rate was relaxed to an alpha of 0.10, the YBC-EDS and BDI emerged as moderators of hospitalization, such that patients with high baseline YBC-EDS or BDI scores were less likely to require hospitalization when being treated with FBT (Lock et al., 2016). One study found that the Family Environment Scale (FES) Conflict subscale emerged as a moderator of treatment response, such that patients with lower FES Conflict subscale scores at baseline responded better to FBT-BN than CBT-A (Le Grange et al., 2015). The anorexia nervosa subtype was also found to moderate treatment, such that patients with anorexia nervosa, binge-purge type, responded better to FBT. Rienecke et al. (2016) did not find evidence to support parental expressed emotion as a moderator of treatment.

Predictors

Twenty-four studies examined variables that predicted treatment outcomes. Overall, there were many identified predictors of treatment outcomes. Baseline characteristics of patients, parents, and siblings, measures of eating disorder psychopathology and psychological symptoms, and illness presentation varied in their ability to predict treatment outcomes such as weight gain, eating disorder psychopathology, remission, other psychiatric conditions, and hospitalization during treatment.

Predictors of Weight Gain. Many predictors of weight gain were found in the various studies examined. Illness presentation and other factors related to the eating disorder were found to predict weight gain. The EDE-Q Global and Weight Concern subscale scores predicted patients maintaining weight at the 60th percentile (Lebow et al., 2019). Agras et al. (2014) found that a shorter duration of illness was a non-specific predictor of greater weight gain. Atypical anorexia nervosa was predictive of weight trajectory, such that individuals with AAN were more likely to maintain their weight at the 60th percentile (Lebow et al., 2019). However, Lebow et al. (2019) did not find the duration of illness to be a predictor of weight trajectory. Various variables

were examined that were not found to predict weight gain. Ellison et al. (2012) did not find that hospital stay prior to FBT was a predictor of weight gain. The use of atypical antipsychotic medication was not a predictor of weight trajectory (Lebow et al., 2019). Comorbid psychiatric conditions did not predict weight gain (Goldstein et al., 2016). When patients required inpatient intervention during the standard course of FBT, early hospitalization was a negative predictor for weight gain (Lock et al., 2016).

Patient variables that were predictive of weight gain included age and perfectionism. Younger age was a non-specific predictor of weight gain (Agras et al., 2014). Younger age also predicted a weight gain trajectory classified as *dramatically rapid early gains that stabilize at the 65th percentile* (Lebow et al., 2019). Perfectionism was a predictor of weight gain at the end of treatment and follow-up (Welch et al., 2022). However, high levels of maladaptive perfectionism did not predict weight gain at the end of treatment or follow-up (Welch et al., 2022). Increased adolescent self-efficacy was not found to predict weight gain in either treatment (Byrne et al., 2015). Gender did not predict weight gain trajectory (Lebow et al., 2019).

Family variables that predicted weight gain include parental self-efficacy, symptomology, maternal therapeutic alliance, the application of specific FBT techniques and principles, and session attendance. Bryne et al. (2012) found that increased parental self-efficacy predicted greater weight gain. As indicated by scores on the Symptom Checklist (SCL-90), greater maternal symptomology, and improvement in maternal symptomology were non-specific predictors of weight gain at the end of treatment and the 12-month follow-up (Forsberg et al., 2017). However, parental symptomology at baseline was not predictive of weight gain at the end of treatment (Forsberg et al., 2017). Ellison et al. (2012) found that overall, parental therapeutic alliance did not predict weight gain. However, greater paternal therapeutic alliance predicted less weight gain (Ellison et al., 2012). In addition, parental Engagement in the Therapeutic Process (ETP) during the family meal (session 2) was associated with weight gain at the end of treatment (Isserlin & Couturier, 2012). Ellison et al. (2012) also found that parental

control, unity, not criticizing the patient, and externalization were predictors of weight gain, and the therapist's perspective of parental achievement of the principles of FBT was also a predictor of weight gain (Ellison et al., 2012). A study by Hughes et al. (2018) found that greater session attendance by fathers predicted greater weight gain. However, session attendance by mothers did not predict weight gain (Hughes et al., 2018). Another study by Darcy et al. (2013) examined the specific behaviors of adolescents and parents in FBT and found that both adolescent and parental behaviors were predictive of early response to treatment, as defined as (<1.8kg weight gain by session four). Adolescents with lower observed negative verbal behavior during session one and more eating and non-nutritive drinking (i.e., diet soda, water, etc.), less moving away from the table during the family meal session, and an increase in neutral verbal statements and negative verbal behavior from session one to four was associated with early response to treatment. Greater parental confidence and empowerment and lower positive parental physical behaviors observed in session one, lower levels of verbal criticism and verbal warmth, and parental increase in positive physical behaviors from session one to four were predictive of early treatment response. Observed parental behaviors during the family meal session that were predictive of non-early response to treatment included more serving food, presenting food, putting food on plates and utensils, and modeling eating (Darcy et al., 2013). Perceived changes in family flexibility did not predict early weight gain (Sadeh-Sharvit et al., 2018). Sibling attendance was also not found to predict weight gain (Ellison et al., 2012; Hughes et al., 2018).

Other variables examined as predictors of weight gain were early response to treatment and treatment adherence. Early weight gain was predictive of weight restoration at the end of treatment (Le Grange et al., 2014a). The number of FBT sessions completed did not predict weight trajectory (Lebow et al., 2019).

Predictors of Eating Disorder Psychopathology. Many variables, such as perfectionism, obsessive-compulsive traits, illness presentation, and parental factors, emerged as predictors of reduced eating disorder psychopathology. Perfectionism was found to be a

predictor of eating-related psychopathology at the end of treatment and follow-up (Welch et al., 2022). In addition, Higher levels of maladaptive perfectionism were found to be a non-specific predictor of eating-related psychopathology. This relationship was strengthened when YBC-EDS scores were also high (Welch et al., 2022). Obsessive-compulsive symptoms have emerged as predictors of eating disorder psychopathology at the end of treatment and six months post-treatment (Rhodes et al., 2008). Motivation to change obsessive-compulsive features of bulimia nervosa, as measured by the YBC-EDS Motivation for Change subscale, emerged as a non-specific predictor of cognitive recovery, as measured by the EDE Global scores at the end of treatment (Gorrell et al., 2019).

Illness presentation was also found to predict eating disorder psychopathology. Anorexia nervosa, binge-purge type emerged as a predictor of faster rates of improvement in scores on the Dietary Restraint, Weight Concern, Shape Concern, and Eating Concern subscales (Accurso et al., 2014). Accurso et al. (2014) also found that previous hospitalization was predictive of faster improvement with eating disorder psychopathology. However, this was only significant in the bivariate analysis (Accurso et al., 2014). Comorbid psychiatric conditions did not predict a reduction of physical and psychological eating disorder symptoms (Lim et al., 2023).

Family factors that predicted eating disorder psychopathology included criticism and attendance of specific family members. Paternal criticism predicted less improvement in eating disorder psychopathology at the end of treatment (Rienecke et al., 2016). None of the remaining paternal expressed emotion subscales predicted improved eating disorder psychopathology at the end of treatment (Rienecke et al., 2016). A study by Hughes et al. (2018) found that greater session attendance by fathers predicted lower eating disorder psychopathology as measured by the EDE Global score. However, session attendance by mothers and siblings did not predict reduction in eating disorder psychopathology (Hughes et al., 2018).

Other variables that were predictive of eating disorder psychopathology were engagement in treatment and weight gain. Greater Shared Sense of Purpose (SSP) scores at session one predicted lower EDE scores at the end of treatment (Isserlin & Couturier, 2012). In addition, greater adolescent Engagement in the Therapeutic Process (ETP) scores at sessions two and three predicted lower EDE scores at the end of treatment (Isserlin & Couturier, 2012). Weight gain emerged as a predictor of improved eating disorder psychopathology, as measured by the eating concern, dietary restraint, and global subscales of the EDE at the end of treatment (Accurso et al., 2014).

Predictors of Remission and Abstinence. Variables found to predict remission were illness presentation, family factors, weight gain and higher baseline weight, gender, and therapeutic alliance. Anorexia nervosa, binge-purge type, emerged as a predictor of remission at the end of treatment (Agras et al., 2014). Le Grange et al. (2012) found that the duration of illness was a predictor of remission, such that patients with a longer duration of illness were less likely to be in remission at the end of treatment. They also found that prior hospitalization was a non-specific predictor of remission and rate of remission at the end of treatment. Lower YBC-EDS scores at baseline predicted abstinence at the end of treatment (Le Grange et al., 2015). The reduction of binge eating at sessions two through five, nine, and ten predicted abstinence at the end of treatment, with session four being the strongest predictor. The reduction of binge eating at session nine predicted abstinence at the 12-month follow-up. Reduction in purging at sessions two to four was associated with abstinence at the end of treatment, with session two as the strongest predictor.

Change and rate of weight change was also a predictor of remission. High baseline weight was predictive of lower rates of remission during the six- and twelve-month follow-up period (Le Grange et al., 2012). Weight gain during FBT sessions three to eight was significantly associated with remission at the end of treatment. Specifically, weight gain of five or more pounds by session three and eleven or more pounds of weight gain by session eight predicted

remission at the end of treatment (Le Grange et al., 2014a). However, one study found that early weight gain did not predict remission at the 12-month follow-up (Le Grange et al., 2014a). Early recovery was predictive of recovery at the end of treatment (Forsberg et al., 2014). Finally, weight restoration at the end of treatment predicted long-term recovery (Le Grange et al., 2014a).

Family and patient factors that predicted remission included session attendance by certain family members, family functioning, and family presentation. A study by Hughes et al. (2018) found that greater session attendance by fathers predicted greater rates of remission. However, session attendance by mothers and siblings did not predict remission (Hughes et al., 2018). One study found that the FES Cohesion, Intellectual-Cultural Orientation, Active Recreational Orientation, and Organization subscales were non-specific predictors of abstinence at the end of treatment (Matheson et al., 2020). Intact families were also predictive of remission at the end of treatment (Agras et al., 2014). Forsberg et al. (2017) found that parental symptomology at baseline was not predictive of remission status at the end of treatment or follow-up. The patient's age was found to be a predictor of remission, such that older patients were less likely to be in remission at the end of treatment and follow-up (Le Grange et al., 2012).

The therapeutic alliance was inconsistently found as a predictor of remission. Forsberg et al. (2013) found that adolescent therapeutic alliance was predictive of partial remission but not full remission at the end of treatment. Greater Shared Sense of Purpose (SSP) scores at session one did not predict remission at the end of treatment (Isserlin & Couturier, 2012). Forsberg et al. (2013) similarly found that parental therapeutic alliance did not predict recovery at the end of treatment. In addition, the difference between parent and adolescent therapeutic alliance scores is not predictive of recovery at the end of treatment (Forsberg et al., 2014). In addition, male gender was found to be a non-specific predictor of abstinence at the end of treatment (Le Grange et al., 2015).

Predictors of Hospitalization During Treatment. One study examined predictors of hospitalization during treatment. Lock et al. (2016) found that high levels of perfectionism, as measured by the Multidimensional Perfectionism Scale, was a non-specific predictor of hospitalization during treatment. Depressive symptoms and comorbid conditions also predicted hospitalization during treatment (Lock et al., 2016). In addition, YBC-EDS scores emerged as a non-specific predictor of hospitalization during treatment (Lock et al., 2016). Another baseline variable that emerged as non-specific was baseline self-esteem, such that lower self-esteem, as measured by the RSE, was predictive of hospitalization during treatment (Lock et al., 2016).

Predictors of Other Psychiatric Conditions. One study found predictors of reduction of other psychiatric issues. Accurso et al. (2014) found that greater overall eating disorder psychopathology at baseline was predictive of a greater rate of reduction in depressive symptoms. The presence of comorbid conditions predicted reduced depressive symptoms at the end of treatment, and patients with a longer duration of illness at baseline experienced a faster rate of reduction in depressive symptoms (Accurso et al., 2014).

Predictors of Other Treatment Outcomes. Predictors of other treatment outcomes include time spent in treatment and family functioning at the end of treatment. Lim et al. (2023) found that the presence of a comorbid psychiatric condition was predictive of time spent in treatment, such that patients with comorbid conditions required more time in treatment. Maternal hostility was predictive of impaired family functioning and communication at the end of treatment (Rienecke et al., 2016).

Research Question #3: Adjunctive Treatments Used with FBT

Of the fifty-two studies selected for this systematic review, twelve studies examined the use of an adjunctive treatment to enhance FBT as manualized (Table 13 in the appendices). The majority of adjunctive interventions focused on increasing parental support and skills to be successful in weight restoration and abstinence from eating disorder behaviors. Other studies focused on improving the child or adolescent's emotion regulation and cognitive-based skills.

Parent Groups as Adjunctive Treatment

Eshkevari et al. (2022) examined parent group training as an adjunctive to FBT. Parent group training was offered as six weeks of weekly sessions or a two-day intensive program. Both formats covered the same content, including psychoeducation about eating disorders, medical complications, myths about eating disorders, the impact of the eating disorder on the family system, recognition of parental responses, use of strengths, understanding change and motivational principles, communication skills, effective meal planning and re-feeding, and exploration of maintaining factors and behaviors. According to parents, the two-day intensive group format was preferred and resulted in significant perceived improvements in understanding, knowledge, skills, and confidence in managing their child's eating disorder. Parents reported that it was helpful to have the opportunity to share personal experiences, receive information on how to manage eating disorders, have group participation and discussion, and meet other parents struggling with similar issues. While there were no significant changes in parental well-being and adolescent BMI, the weekly group format demonstrated improvement to a healthier BMI range over the three-month period. The two-day intensive format maintained a BMI in the healthy range over the three-month period.

Another parent-focused group adjunctive treatment to FBT was parent-to-parent consultation (Rhodes et al., 2008). Parent-to-parent consultation connected parents who had completed the Maudsley treatment with new parents one time between sessions three and five. The therapists conducted a structured interview that allowed the veteran parents to share their experiences with FBT and how they helped their children recover. The interview included parents describing their child, their life before, during, and after FBT, how the parents brought about recovery in their child, and allowed for questions. Rhodes et al. (2008) found that parent-to-parent consultation initially resulted in a significant increase in the rate of weight gain compared to the treatment-as-usual group. However, no differences in %BMI were found

between groups at EOT. There was also no significant evidence to suggest that parent-to-parent consultation impacted parental efficacy.

Binford et al. (2013) examined Internet-based support as an adjunctive treatment. These support groups were conducted live at fixed times for fifteen 90-minute sessions. Group sessions were facilitated by a licensed clinical psychologist trained in FBT. The group was classified as "open," which allowed participants from various phases of FBT to join. The open format allowed parents at later stages of FBT to provide parents at earlier phases with advice, hope, and encouragement. Group sessions were used to encourage and support parents as they help their child recover from an eating disorder. Sessions also provided parents with an opportunity to express both positive and negative feelings and thoughts about the caregiving process, including sharing stories about past treatment experiences and residual feelings of being excluded from treatment and/or being blamed for causing or contributing to the eating disorder. Binford et al. (2013) found that internet-based support groups are a feasible adjunctive treatment for FBT. Parents reported high satisfaction and found the chat group to be helpful overall. More specifically, parents reported that this group helped them implement the principles and strategies of FBT, feel less alone, and cope with their child's eating disorder better. The after-chat session questionnaire demonstrated that the majority of parents were satisfied with the previous session and viewed it as helpful. Parents reported that the chat group was accessible, convenient, and easy to use. The majority of parents completed all fifteen sessions. The reasons cited for the parents who dropped out include that the group had helped them and did not need more support and a belief that they received everything they could and wanted from the group. The main criticism of the group was that the computer format was impersonal and did not facilitate getting to know the other participants very well.

Other Skills-Based Parent Training as Adjunctive Treatment

Intensive Parent Coaching **(**IPC) was examined as a possible adjunctive treatment with FBT (Lock et al., 2015). IPC consisted of three additional sessions added after session four of

manualized FBT. These sessions focused on coaching mealtime for families whose children had not gained 2.3kg (4.8lbs) by session four. Session one focused on identifying the failure to meet the weight goal as a "crisis" and helping the family make the necessary behavioral changes to achieve weight gain. Session two focused on what the parents view as interfering with progress. During session three, the family completed a second family meal with more direct coaching by the therapist to address the issues the parents had identified in the previous session. The results of this study indicated that IPC did not add to the outcomes associated with FBT. However, IPC was found to be a feasible addition to FBT for patients who fail to gain sufficient weight by session four. IPC resulted in significant improvements in the rate of weight gain for early poor responders to a level comparable to those considered early responders by the end of treatment. Differences in the scores obtained on the PvA between mothers of early responders and non-early responders suggested that parents of early responders view themselves as more self-efficacious. However, scores on the PvA significantly improved in the IPC group, and there were no longer differences between early and non-early responders, which suggests that IPC increased parental self-efficacy. No significant differences existed between groups in attrition and parental and patient suitability ratings (Lock et al., 2015).

Emotion-focused family therapy (EFFT) has also been used as an adjunctive treatment for FBT (Robinson et al., 2015). Phase one of FBT and EFFT, titled "going back," focused on educating parents and patients about the function of the eating disorder in avoiding and managing uncomfortable emotions. Phase one also taught parents to become "emotion coaches" by identifying and responding to emotions by labeling and providing validation and other responses such as soothing sadness, protection for fear, and appropriate boundaries with anger. In addition, parental blocks were also identified to help remove barriers to treatment. Phase two of FBT and EFFT, titled "getting back on track," focused on assisting parents to continue to develop their abilities as "emotion coaches," which included learning skills such as enhanced empathy, "speaking the unspoken," and acknowledging parental responsibility for

past injuries and losses to "free" the child from self-blame. During phase three of FBT, the EFFT, titled "moving forward," focused on helping parents respond to the child's emotions and soothe them as the child continues to develop their ability to self-soothe. The therapist also supports parents in processing their emotional reactions to the child's identity development separate from their parents.

Robinson et al. (2015) conducted a case study (*N* = 1). They found that at the end of treatment, the patient achieved weight restoration, medical stability, and medical remission, with the exception of bone mass. Per the parental report, EFFT added value to FBT and helped the family be able to help their daughter recover after struggling to achieve remission prior to this treatment. The parents specifically cite the principles of EFFT as instrumental in achieving remission by the end of treatment. Three years after treatment, the patient maintained gains made in treatment and achieved typical developmental growth, such as graduation from high school, ability to live independently at college, development and maintenance of appropriate social relationships, and appropriate use of social support.

Peterson et al. (2016) used Emotion Communication Skills (ECS) as an adjunctive treatment to FBT to treat an adolescent male (*N* = 1) with anorexia nervosa, restricting type. During this treatment, the parents were taught active listening, how to provide emotional support and emotional coaching. The specific skills taught included active listening through nonverbal behaviors (i.e., eye contact, body posture, tone of voice), reflection, maintaining a child focus instead of parent focus in conversation, and the use of focused and helpful questions to help understand the patient's emotions and perspective. Each session consisted of a didactic component and in-session practice via role-plays to practice the new skills. By the end of treatment, the patient had gained a significant amount of weight and no longer reported psychological symptoms of anorexia nervosa. In addition, the patient no longer met the criteria for malnutrition, bradycardia, and POTS. The patient also reported an increase in his overall mood, and his parents reported him being more engaged with his family. While these two case

study finding are encouraging, it is important to not heavily weight these findings due to the limited sample size

Wade et al. (2022) completed a pilot study to examine if guided self-help (GSH) was feasible and effective for families of patients on the waitlist for FBT. GSH was administered online weekly for twelve sessions, and each week included a video of a clinician teaching the principles and strategies of FBT. Parents were also assigned weekly homework, including reading sections from the book *Help your Teenager Beat an Eating Disorder* (Lock & Le Grange, 2005) and tracking the principles and strategies they used during the week. Parents also received 30-minute support from a clinician to help apply the principles and strategies from the videos and assigned readings. Recruitment for this adjunctive treatment was low, as only 13% of the eligible families were interested in and partook in this intervention, and only 7% completed the GSH intervention. Parents who completed GSH reported an increase in knowledge, skills, and confidence in managing their child's eating disorder. In addition, parents also reported a reduction in eating disorder behaviors, weight gain of approximately 6kg, and improved mood over the course of twelve weeks.

Cognitive Behavioral Therapy as Adjunctive Treatment

Three studies used CBT as the primary adjunctive treatment to increase the effectiveness of FBT. Two of these studies (Hurst & Zimmer-Gembeck, 2015; 2019) examined CBT for perfectionism (CBT-P) as an adjunctive treatment to help reduce underlying perfectionism in the presentation of the eating disorder being treated. Both studies used the "*Perfectionism in Perspective"* modules, which include content about perfectionism, costs and benefits of perfectionism, maintaining factors of perfectionism, managing and reducing perfectionistic behaviors, challenging perfectionistic thinking, adjusting unhelpful rules and assumptions, re-evaluating the importance of achievement and self-worth, and developing an adaptive model of appropriate self-standards. These modules include psychoeducation, worksheets, activities for in-session and between-session, and behavioral exposures. Both

studies delivered the nine CBT-P modules after the completion of phase one FBT and in parallel with phase two FBT. Hurst and Zimmer-Gembeck (2015) found that the use of CBT-P as an adjunctive treatment was effective for patients with perfectionism as a maintaining factor of their eating disorder. Of the three patients, one achieved full remission, and the other two achieved partial remission by the end of treatment. All patients reduced scores in self-orientation perfectionism and socially prescribed perfectionism at the end of treatment. In addition, cognitive flexibility was improved by the end of treatment. Per patient and parent feedback, the most beneficial aspects of this adjunctive treatment were using behavioral experiments, as they targeted dichotomous thinking and inflexible beliefs about body weight and shape, identification of high standards and the impacts high standards have on self-worth, and achievement-oriented tasks. However, this study included a small sample (N = 3) and the results of this study should be considered preliminary and in need of replication with larger samples. The study conducted by Hurst and Zimmer-Gembeck (2019) found that weight, eating disorder symptoms, perfectionism, and self-oriented perfectionism improved over the course of treatment. In addition, a positive correlation was found between improvements in eating disorder symptomology and measures of perfectionism, except socially prescribed perfectionism. By the end of treatment, 57% of the patients reached full remission, and 43% achieved partial remission.

Hurst et al. (2017) used enhanced CBT (CBT-E) as an adjunctive treatment to FBT. CBT-E is a manualized treatment designed for the treatment of eating disorders. Phase one of this adjunctive treatment included phase one of FBT and stages one and two of CBT-E. FBT-BN was delivered as manualized, which included assisting parents in taking control of eating and food-related activities and decreasing binge and purge episodes, the family meal, and externalization of the eating disorder. The CBT-E phases focused on psychoeducation about the ineffectiveness of dietary restraint and compensatory behaviors, formulation of the eating disorder, identification of positive and negative consequences of the eating disorder, regular

eating as a foundation for change, and self-monitoring of eating and compensatory behavior, and the patient was requested to keep food logs. Phase two of the adjunctive treatment included phase two of FBT-BN and stage three of CBT-E. In the FBT-BN phase two, the patient was supported in resuming developmentally appropriate control over food and exercise. The formulation was adjusted and examined in the CBT-E stage for additional maintaining factors (i.e., core low self-esteem, perfectionism, interpersonal and mood-related issues). Phase three of the adjunctive treatment included phase three of FBT-BN and stage four of CBT-E. The FBT-BN phase focused on maintaining gains made in the previous phases and addressing developmentally appropriate issues. In the CBT-E stage, the patient challenged rigid or distorted thoughts and other maintaining factors of the eating disorder and highlighted improvements made over the course of treatment.

FBT and CBT-E as adjunctive treatment resulted in full remission in both patients (*N* = 2) in the study based on abstinence from binge and purge episodes and a significant reduction in scores obtained on the EDE. Parents reported that the FBT-BN-specific content increased their knowledge, helped prepare them for future issues, and increased family cohesion. Patients reported it was a "relief" having their parents take control of their food in FBT-BN. The parents and the patient in the FBT and CBT-E condition reported that the formulation session was important in understanding the maintaining factors. They also reported that the CBT-E elements helped increase their ability to challenge eating disorder beliefs cognitively. It is important to acknowledge the small sample size of this study and interpret the generalization of this study with caution.

Dialectical Behavioral Therapy as Adjunctive Treatment

Only one of the studies examining DBT as an adjunctive treatment met the criteria for this study. Peterson et al. (2020) added a DBT skills group to manualized FBT. This skills group followed Marsha Linehan's (2014) standard DBT skills training schedule, which included an introduction to DBT, two weeks of mindfulness, six weeks of distress tolerance, two weeks of

mindfulness, seven weeks of emotion regulation, two weeks of mindfulness, and five weeks of interpersonal effectiveness. The DBT group was open, and participants started the group during different phases of FBT. Each group session included a mindfulness activity, collection of diary cards, review of homework, the new content, and assignment of new homework. At the end of treatment, patients experienced a reduction in eating disorder symptoms as measured by the EDE-Q, an increase in adaptive skills such as emotion regulation and distress tolerance, and a decrease in overall maladaptive coping skills. In addition, a small to medium effect size was found for a reduction in objective binge eating and EDE-Q global and restraint subscales and Child Depression Inventory (CDI) scores, as well as an increase in weight gain (Peterson et al., 2020).

Acceptance-Based Interoceptive Exposure Therapy as Adjunctive Treatment

To target fear of certain foods in restrictive eating disorders, Plasencia et al. (2019) used acceptance-based interoceptive exposure therapy (ABIE) to apply the disgust condition as an adjunctive treatment to FBT to a single participant. ABIE was applied over six sessions and taught the patient skills to tolerate the visceral sensation of disgust and exposure to physical sensations. Session one included psychoeducation and ABIE. Session two included mindfulness-based skills such as observing and describing the exposure. Session three included mindfulness-based skills of attention to the present moment and exposures. Session four included having the patient be willing to experience discomfort and exposure. Session five included positive coping skills and ABEI exposures. Session six included active acceptance and exposure. The exposure chosen in this case study was a milkshake. Plasencia et al. (2019) determined that ABIE may be most beneficial during phase one of FBT, as it provided the patient with distress tolerance skills and exposure to foods with high disgust potential. In addition, the patient achieved an increase in weight and a change in eating disorder pathology, as indicated by improvement on the global, restraint, weight concern, and shape concern subscales of the Youth Eating Disorder Examination-Questionnaire (YEDE-Q). This study

contained a small sample size (*N* = 1) and the results of this study should be considered with that in mind.

Research Question #4: Definitions Used to Describe Remission/Recovery in Children and Adolescents

Table 14 in the appendices is comprised of studies that included a definition of remission, recovery, or abstinence. Of the 52 studies selected for the present study, 25 studies included one of the above definitions.

Twenty-one studies provided a definition of remission or recovery to anorexia nervosa. It should be noted that the majority of studies did not include criterion D, amenorrhea, as necessary for a diagnosis of anorexia nervosa. The most commonly used definition of full remission from AN (*n* = 15) was the patient achieving ≥95% EBW, mBMI, or IBW and EDE Global score within one standard deviation of the community sample norm. Other definitions of full remission from anorexia nervosa were based on weight or EDE Global scores alone. Two studies used weight gain of ≥95% EBW or IBW, and one study used weight gain of ≥85% IBW as an indicator of remission. Another study used an EDE Global score of two standard deviations from adolescent norms to indicate remission at the end of treatment. Partial remission was most commonly (*n* = 3) defined as >85% EBW but no greater than 95% EBW. Two studies used the same definition of partial remission and included an optional criterion of continued elevation of EDE Global scores at the end of treatment. One study required both >85% EBW but no greater than 95% EBW and a change in EDE scores at the end of treatment. Two studies (Le Grange et al., 2005; Loeb et al., 2007) used the Morgan-Russell outcome categories to indicate treatment outcomes. According to this scale, good outcomes include a return to normal weight (≥85% IBW) and return of menses; intermediate outcomes include a return to normal weight or return of menses; and poor outcomes include below normal weight and amenorrhea as well as the presence of binge eating or compensatory behaviors.

Two of the studies defined remission from atypical anorexia nervosa or EDNOS. One study (Goldstein et al., 2016) categorized full remission as ≥95% EBW and partial remission as ≥85% EBW but <95% EBW. Another study (Hughes et al., 2017) measured remission in two ways. 1) ≥95% mBMI and EDE Global score within one standard deviation of community norms. 2) Applying parent and adolescent responses on the EDE to the criteria from the DSM-5. Depending on which definition of remission was applied, remission rates fell between 38 to 52%. When the second definition was applied, 37.5% of patients no longer met the criteria for an eating disorder and were considered to be in remission.

Four studies reported a definition of remission or abstinence from bulimia nervosa or EDNOS binge-purge type. Two of these studies reported abstinence as abstinence from binge eating and purging for four weeks. One study calculated abstinence by summing subjective and objective binge eating and compensatory episodes. One study identified remission as cessation of bingeing and compensatory behavior.

Chapter 4: Discussion

Aims

The primary aim of this systematic review was to summarize the effectiveness of FBT with and without adjunctive treatment. The secondary aim was to cumulatively review the mediators, moderators, and predictors of treatment outcomes of FBT in order to understand who is most likely to benefit from treatment, what will increase the effectiveness of FBT, and what will predict treatment outcomes. In addition, this systematic review sought to present the definitions used in the literature to define remission and abstinence to move toward a consistent definition. This systematic review also aimed to expand the literature reviewed by others by including treatment outcomes beyond anorexia nervosa and bulimia nervosa.

Effectiveness of FBT

Remission, Weight Gain, and Changes in Eating Disorder Psychopathology

The use of FBT to treat eating disorders produced some inconsistent results related to remission and changes in weight and eating disorder psychopathology. However, the majority of studies supported FBT as effective in producing remission or abstinence (Ciao et al., 2015; Agras et al., 2014; Goldstein et al., 2016; Hughes et al., 2017; Le Grange et al., 2014a; Le Grange et al., 2014b; Le Grange et al., 2005; Le Grange et al., 2015; Lock et al., 2010; Loeb et al, 2007; Matheson et al, 2020). Remission and abstinence rates varied significantly depending on the definition used to determine remission or abstinence. Treatment outcomes also appear stable once remission is achieved (Agras et al., 2014; Le Grange et al., 2014b; Lock et al., 2010).

FBT appears to be effective in promoting weight gain, with the majority of studies demonstrating significant weight gain in patients being treated with FBT by the end of treatment (Agras et al., 2014; Couturier et al., 2010; Goldstein et al., 2016; Ellison et al., 2012; Isserlin & Couturier, 2012; Lebow et al., 2019; Le Grange et al., 2005; Le Grange et al., 2014a; Le Grange et al., 2015; Lim et al., 2023; Lock et al, 2010; Loeb et al, 2007). However, one study also found

that the change in %IBW was not significant at the end of treatment for patients with atypical anorexia nervosa (Hughes et al., 2017).

The majority of studies indicated that FBT was effective in producing a positive change in eating disorder psychopathology (Accurso et al., 2014; Couturier et al., 2010; Hughes et al., 2017; Le Grange et al., 2005; Le Grange et al., 2012; Le Grange et al., 2015; Lim et al., 2023; Lock et al., 2010; Loeb et al., 2007; Springall et al, 2022). Improvement in eating disorder psychopathology was found to continue to improve from the end of treatment to the 12-month follow-up (Accurso et al., 2014), and in one study, persisted upwards of five years post-treatment (Springall et al., 2022). Improvements in eating disorder psychopathology were also demonstrated when FBT was used to treat patients diagnosed with atypical anorexia nervosa (Hughes et al., 2017). In addition to improved eating disorder psychopathology, FBT was also effective in significantly increasing the rate of resumption and regularity of menses by the end of treatment (Couturier et al., 2010; Hughes et al., 2017; Le Grange et al., 2005; Loeb et al., 2007).

Patient and Family Experience with FBT

Patients and families reported mixed experiences with FBT and provided clarity in understanding the perspective of those receiving FBT rather than relying on the examination of measurable treatment outcomes. Families reported improvement in overall family functioning, communication, managing the eating disorder, and attending to the patient's needs (Ciao et al., 2015; Krautter & Lock, 2004; Wallis et al., 2017). However, some participants stated that family conflict increased (Conti et al., 2021). Patients reported feeling relieved when their parents took control of them and identified their parents' support as vital to their treatment (Conti et al., 2021). Parents initially experienced FBT as relief and felt comforted by finding a professional who specialized in the treatment of anorexia nervosa (Wufong et al., 2019).

Some of the common criticisms reported by patients and their families included the lack of treatment focus on psychological distress and a loss of autonomy (Conti et al., 2021; Krautter & Lock, 2004; Wufong et al., 2019). Parents indicated that the principles of FBT were

challenging to implement and the substantial commitment of FBT impacted their occupational, financial, and social resources. Parents also feel helpless when their children do not gain sufficient weight (Williams et al., 2020; Wufong et al., 2019). Fathers reported feeling overwhelmed, inadequate, judged, and scrutinized but felt involved and valued when the FBT therapists were collaborative and helped fathers take an active role in treatment (McMahon et al., 2022). Other criticisms included FBT not including a follow-up plan after treatment, no group therapy, and no parent support group or parental therapy (Krautter & Lock, 2004).

The attendance and involvement of family members is an essential element of treatment. Maternal attendance was fairly consistent, fathers' attendance declined, and sibling(s) attendance declined rapidly over treatment (Hughes et al., 2018). Sibling support did not predict weight gain, which contradicts the importance of sibling support that the FBT manuals report (Ellison et al., 2012).

Other Treatment Outcomes

Other treatment outcomes observed when using FBT included changes in comorbidities and other characteristics and reduced need for hospitalization during treatment. Recovery rates, hospitalization during treatment, changes to psychological symptoms, and weight changes were found to be similar for patients with and without a comorbid psychiatric disorder (Lim et al., 2023). Patients receiving FBT were hospitalized less, for fewer days if hospitalized, and spent less on treatment (Agras et al., 2014; Le Grange et al., 2015; Lock et al., 2010). Depressive symptoms also improved throughout treatment (Accurso et al., 2014; Hughes et al., 2017; Le Grange et al., 2015; Valenzuela et al., 2018). In addition, self-esteem also improved throughout treatment (Wallis et al., 2017; Valenzuela et al., 2018). However, changes in depressive symptoms and self-esteem were not found to change significantly in all studies examining these treatment outcomes (Accurso et al., 2014; Hughes et al., 2017; Loeb et al., 2007).

FBT Compared to Other Treatments

Many studies compared FBT to other evidence-based treatments such as AFT, SyFT, non-manualized systemic family interventions, and CBT-A. These studies produced varying results of remission, changes in weight, eating disorder psychopathology, and other outcomes. Despite the variation, FBT and FBT-BN tended to produce more favorable outcomes with some exceptions. FBT produced a superior rate of weight gain when compared to SyFT and AFT (Agras et al., 2014; Le Grange et al., 2014a). FBT also produced an overall greater weight gain at the end of treatment when compared to AFT, but this difference was no longer significant during the six- and 12-month follow-up period (Lock et al., 2010). Two studies did not detect a significant difference in weight gain between FBT and SyFT and FBT-BN and CBT-A (Agras et al., 2014; Le Grange et al., 2015). Several studies indicated that FBT and FBT-BN were superior to other treatments in producing greater rates of remission and abstinence (Ciao et al., 2015; Le Grange et al., 2015; Lock et al., 2010; Matheson et al., 2020). FBT-BN achieved greater rates of abstinence from binge eating and purging behaviors at the end of treatment and the six-month follow-up (Le Grange et al., 2015). Reduction and abstinence from binge eating and purging behaviors were also achieved sooner in FBT-BN (Matheson et al., 2020).

However, many other studies suggested no significant differences in remission between treatments or that the differences observed at the end of treatment were no longer observed at various follow-up points. FBT produced greater rates of partial remission at the end of treatment, but there was no difference in rates of full remission between FBT and AFT, and the difference in partial remission was no longer observed at the six-month or 12-month follow-up (Lock et al., 2010). Once remission was achieved, it was relatively stable, and there were no significant differences between FBT and AFT in relapse or new remission during the one-year follow-up period (Le Grange et al., 2014b). The difference in abstinence between FBT-BN and CBT-A was no longer detected at the 12-month follow-up (Le Grange et al., 2015). Conversely, Le Grange et al. (2014a) did not detect a significant difference in remission rates at the end of

treatment but did detect significant differences between FBT and AFT at the six-month and 12-month follow-up periods.

Outcomes related to changes in eating disorder psychopathology and other mental health conditions were also variable. Patients with more severe eating disorder psychopathology had better treatment outcomes in FBT compared to AFT (Le Grange et al., 2012; Lock et al., 2010). However, these differences in improvement were no longer observed at the six-month and 12-month follow-ups (Lock et al., 2010). Other studies did not detect significant differences between FBT and SyFT or FBT and AFT in eating disorder psychopathology (Accurso et al., 2014; Agras et al., 2014; Le Grange et al., 2015; Lock et al., 2010). Patients also experienced a reduction in depressive symptoms when treated with either FBT-BN or CBT-A (Le Grange et al., 2015; Valenzuela et al., 2018). In addition, parental psychological symptoms were reduced in both FBT and AFT (Forsberg et al., 2017).

FBT was superior to other treatments in hospitalization rates and duration of hospitalization during treatment (Agras et al., 2014; Le Grange et al., 2015; Lock et al., 2010; Lock et al., 2016). Patients treated with FBT also spent significantly less on treatment (Agras et al., 2014). FBT also produced more positive changes in family functioning compared to AFT (Ciao et al., 2015). Parental self-efficacy significantly increased early in the FBT treatment condition (Forsberg et al., 2014; Sadeh-Sharvit et al., 2018). However, therapeutic alliance scores were significantly greater in the AFT condition (Forsberg et al., 2013).

Mediators, Moderators, and Predictors of Treatment Outcomes

Only one study of the four that examined mediators was able to detect a mediator of treatment outcomes. Sadeh-Sharvit et al. (2018) found that improved maternal self-efficacy by session eight of FBT mediated short-term weight gain.

Several studies examined moderators of treatment. Baseline scores on the YBC-EDS were frequently reported as moderators of treatment outcomes, such as remission at the end of treatment (Le Grange et al., 2012) and hospitalization during treatment (Lock et al., 2016) when

FBT is used. Baseline EDE Global scores moderated remission (Le Grange et al., 2012) and therapeutic alliance (Lo Tempio et al., 2013). Other moderators of treatment included maternal depression as a moderator of weight gain (Forsberg et al., 2017), eating disorder subtype, and FES Conflict scores as a moderator of treatment (Le Grange et al., 2015). These findings suggest that patients with greater eating-related obsessionality and eating disorder psychopathology, patients with anorexia nervosa, binge-purge type, patients with mothers with minimal depressive symptoms, and patients with low levels of family conflict respond best to FBT. However, obsessive-compulsive symptoms at baseline moderated weight gain in SyFT and not FBT, suggesting that patients with greater obsessive-compulsive symptoms may respond better to SyFT (Agras et al., 2014).

Predictors of treatment were the most widely studied. Predictors of full and partial remission or abstinence included baseline YBC-EDS scores (Le Grange et al., 2015), eating disorder subtype (Agras et al., 2014), duration of illness (Le Grange et al., 2012), reduction of binge eating and purging (Matheson et al., 2020), session attendance by fathers (Hughes et al., 2018), early weight gain (Le Grange et al., 2014a), FES's Cohesion, Intellectual-Cultural Orientation, Active Recreational Orientation, and Organization subscales (Matheson et al., 2020), intact families (Agras et al., 2014), and adolescent therapeutic alliance (Forsberg et al., 2013). High baseline weight was predictive of lower rates of remission during the six- and twelve-month follow-up period (Le Grange et al., 2012). However, early weight gain did not predict remission at later follow-up periods (Le Grange et al., 2014a). Session attendance by mothers and siblings (Hughes et al., 2018) and parental symptomology at baseline were not predictive of remission status (Forsberg et al., 2017).

Predictors of weight gain or weight gain trajectory included perfectionism (Welch et al., 2022), eating disorder subtype (Lebow et al., 2019), duration of illness (Agras et al., 2014), session attendance by fathers (Hughes et al., 2018), baseline maternal symptomology and improvement in maternal symptomology (Forsberg et al., 2017), increased parental self-efficacy

(Byrne et al., 2015), implementation of specific FBT principles and the therapist's perspective of parental achievement of these principles of FBT (Ellison et al., 2012), Parental ETP during the family meal (Isserlin & Couturier, 2012). Perceived changes in family flexibility (Sadeh-Sharvit et al., 2018), number of sessions completed (Lebow et al., 2019), and session attendance by mothers and siblings (Ellison et al., 2012; Hughes et al., 2018) did not predict early weight gain or weight gain trajectory.

Predictors of eating disorder psychopathology included perfectionism (Welch et al., 2022), obsessive-compulsive symptoms (Rhodes et al., 2008), the motivation for change subscale of the YBC-EDS (Gorrell et al., 2019), eating disorder subtype (Accurso et al., 2014), session attendance by fathers (Hughes et al., 2018), and paternal criticism (Rienecke et al., 2016). However, session attendance by mothers and siblings did not predict a reduction in eating disorder psychopathology (Hughes et al., 2018), SSP at session one, or adolescent ETP scores (Isserlin & Couturier, 2012). Predictors of other psychological changes included duration of illness, the presence of a comorbid diagnosis, and eating disorder-related psychopathology and behaviors (Accurso et al., 2014). In addition, the use of atypical antipsychotic medication was not a predictor of weight trajectory (Lebow et al., 2019).

Predictors of early response to treatment include gender (males), greater family disadvantages, engaging in purging behaviors (Le Grange et al., 2014a), and specific observed adolescent and parental behaviors early in FBT (Darcy et al., 2013).

The presence of a comorbid diagnosis at baseline produced mixed results, with some studies indicating comorbidities as a predictor of treatment outcomes. Other studies did not find comorbid psychiatric conditions as a predictor (Goldstein et al., 2016; Lim et al., 2023). Prior hospitalization was also inconsistently found as a predictor of treatment. Two studies found that prior hospitalization was a predictor of remission (Le Grange et al., 2012) and a rate of improvement in eating disorder psychopathology. However, one study did not detect prior hospitalization as a predictor of treatment outcomes (Ellison et al., 2012), and one found that

prior hospitalization emerged as a negative predictor for weight gain (Lock et al., 2016). Predictors of hospitalization during treatment included perfectionism (Lock et al., 2016), baseline YBC-EDS scores (Lock et al., 2016), the presence of a comorbid diagnosis (Lock et al., 2016), self-esteem (Lock et al., 2016).

Predictors of therapeutic alliance included baseline YBC-EDS scores (Lo Tempio et al., 2013), the presence of a comorbid diagnosis (Lo Tempio et al., 2013), and eating disorder-related psychopathology and behaviors (Lo Tempio et al., 2013). Parental therapeutic alliance predicted treatment outcomes in various ways. Maternal therapeutic alliance predicted weight gain. Conversely, greater paternal therapeutic alliance predicted less weight gain (Ellison et al., 2012). Parental therapeutic alliance did not predict weight gain (Ellison et al., 2012) or recovery (Forsberg et al., 2013). In addition, the difference between parent and adolescent therapeutic alliance scores is not predictive of recovery at the end of treatment (Forsberg et al., 2014).

Other predictive factors included maternal hostility (Rienecke et al., 2016) and the patient's age (Agras et al., 2014; Lebow et al., 2019; Le Grange et al., 2012). Finally, early recovery was predictive of recovery at the end of treatment (Forsberg et al., 2014), and weight restoration at the end of treatment was predictive of long-term recovery (Le Grange et al., 2014a).

Effectiveness of FBT with an Adjunctive Treatment

Patients, parents, and previous research have identified the need to enhance FBT to address the patient's unmet needs. The most cited criticisms of FBT have been that the patient’s psychological distress is untreated and that parents do not have enough support (Conti et al., 2021; Krautter & Lock, 2004; Wufong et al., 2019). The adjunctive treatments included in this systematic review aimed to decrease psychological distress or increase parental support. Few studies examined the same adjunctive treatment, making understanding the potential for increased effectiveness of FBT challenging.

The adjunctive interventions examined in this systematic review focused on increasing parental support and skills specific to refeeding and abstinence from eating disorder behaviors and attending to the psychological distress of the patient. The adjunctive treatments that focused on increasing parental support included parent-group training (Eshkevari et al., 2022), patent-to-parent consultation (Rhodes et al., 2008), internet-based support (Binford et al., 2013), intensive parent coaching (Lock et al., 2015), EFFT (Robinson et al., 2015), emotion communication skills (Peterson et al., 2016), and guided self-help (Wade et al., 2022). These adjunctive treatments focused on increasing parental understanding of FBT and how to support their children. Overall, these adjunctive treatments were found to increase the parents' knowledge and skills in managing their child's eating disorder (Binford et al., 2013; Eshkevari et al., 2022; Wade et al., 2022). Parents found it particularly useful to connect with other families experiencing similar issues (Binford et al., 2013; Eshkevari et al., 2022) and learn other strategies and skills aimed at emotional attunement to their child (Peterson et al., 2016; Robinson et al., 2015).

Lock et al. (2015) and Rhodes et al. (2008) found that IPC and parent-to-parent consultation increased the rate of weight gain. Robinson et al. (2015) and Peterson et al. (2016), in single case studies, found that using EFFT and ECS as adjunctive treatments was beneficial in helping achieve remission by the end of treatment. Many of these adjunctive treatments produced positive treatment outcomes such as weight gain, reduction of eating disorder psychopathology, greater family functioning, and medical stabilization (Eshkevari et al., 2022; Lock et al., 2015; Peterson et al., 2016; Robinson et al., 2015; Wade et al., 2022). However, compared to other treatment conditions, these adjunctive treatments did not produce significant differences in adolescent BMI (Eshkevari et al., 2022; Rhodes et al., 2008).

The adjunctive treatments that focused on addressing the psychological distress of the patient included CBT-P (Hurst & Zimmer-Gembeck, 2015, 2019), CBT-E (Hurst et al., 2017), DBT (Peterson et al., 2020), and ABIE (Plasencia et al., 2019). The CBT-based interventions

focused on expanding the behavioral methods of FBT to include the examination of beliefs and cognitions, the development and maintenance of factors, and strategies to manage these impaired belief systems. Using CBT for perfectionism and CBT-E as adjunctive treatments were found to be effective and resulted in remission and abstinence, reduced eating disorder psychopathology, and reduction of perfectionism (Hurst & Zimmer-Gembeck, 2015; 2019; Hurst et al., 2017). The study that examined DBT as an adjunctive treatment focused on equipping patients with skills to manage psychological distress and successfully resulted in a reduction in eating disorder symptoms, weight gain, reduction of depressive symptoms, increase in adaptive skills, and reduction in maladaptive coping skills (Peterson et al., 2020). ABIE used disgust conditioning and distress tolerance skills as an adjunctive treatment to FBT to reduce the psychological distress associated with high disgust potential foods, such as calorically dense foods often used during the refeeding phase of FBT. The patient who received this treatment experienced weight gain and improvement in eating disorder psychopathology (Plasencia et al., 2019). Patients valued these adjunctive treatments due to the focus on the underlying issues, such as perfectionism, attention to their psychological distress, and being taught skills to manage their psychological distress (Hurst & Zimmer-Gembeck, 2015; 2019; Hurst et al., 2017; Peterson et al., 2020).

It is important to note that the number of studies that used an adjunctive treatment with FBT was scarce, which makes understanding the cumulative effect of using these specific adjunctive treatments challenging. Although these studies produced promising results, five studies contained a small sample size and used a case study design (Hurst et al., 2017; Hurst & Zimmer-Gembeck, 2015; Peterson et al., 2016; Plasencia et al., 2019; Robinson et al., 2015). Due to the low sample sizes of these studies, the results of adjunctive treatments need further replication.

Defining Remission

One of the secondary aims of this systematic review was to understand the definition of remission and abstinence being used in the literature to move toward a consensus in future research. This systematic review found that fifteen of the twenty-one studies defined remission for anorexia nervosa as achieving ≥95% EBW, mBMI, or IBW and EDE Global score within one standard deviation of the community sample norm. Of the four studies that reported a definition of remission or abstinence for patients with bulimia nervosa or EDNOS, the most common definition used abstinence from compensatory behaviors to determine overall recovery. Given the relatively small representation of studies examining bulimia nervosa and other eating disorders, this systematic review is unable to comment on the shared definition of abstinence in patients with one of these disorders.

Contributions

There are several contributions that this study can provide to mental health professionals, researchers, and those seeking treatment for a child or adolescent with an eating disorder.

Contributions for Clinicians

Mental health professionals report primarily not utilizing evidence-based treatment due to not receiving proper training or because the evidence-based treatment did not match their theoretical orientations (Von Ranson et al., 2012). This study provides a detailed description and helpful summary of the evidence regarding FBT and FBT with adjunctive treatment to provide clinicians with the information they need to seek training and select treatments based on research. In addition, this systematic review allows clinicians to understand the variables that impact treatment outcomes. Clinicians need to consider what variables make a patient more likely to benefit from FBT so they can appropriately select treatment for patients. Examining mediators, moderators, and predictors is valuable for better understating for whom FBT will work best and what variables will influence the course of treatment. Variables related to family

functioning, presentation, and involvement are specifically important when treating a child or adolescent with FBT. Given the importance of family functioning and participation, the clinician needs to focus on issues such as fathers' attendance, criticism, and applying FBT principles. The therapeutic alliance was found to impact treatment outcomes. Therefore, clinicians should ensure they check in with patients and their families about the therapeutic alliance and work to increase it. This systematic review provides a reference of all of the factors that clinicians should be mindful of when selecting FBT as the treatment for patients with an eating disorder and while using FBT.

Examining mediators, moderators, and predictors also allows for a better understanding of how to make treatment more effective. This systematic review highlights the specific components of FBT and predictors of further treatment success, such as early weight gain, that clinicians must be aware of. Clinicians can use this information to identify if a patient will likely succeed with FBT after just a few sessions. This information also allows clinicians to identify when to change treatment approaches.

One of the greatest contributions this study makes is understanding what the common criticisms of FBT are based on the experience of patients and families and identifying how to continue to advance treatment outcomes through understanding mediators, moderators, predictors of treatment, and adjunctive treatments that address these criticisms. One of the main criticisms of FBT is that this treatment does not attend adequately to the psychological distress of the patient. However, based on this review, evidence suggests that patients achieve a reduction in both eating disorder psychopathology and other comorbid conditions, such as depression and self-esteem (Accurso et al., 2014; Hughes et al., 2017; Le Grange et al., 2015; Lim et al., 2023; Wallis et al., 2017; Valenzuela et al., 2018). Therefore, it is important for clinicians to assess distress associated with other concerns and conditions beyond the eating disorder, and initiate conversations with clients to ensure these areas are adequately addressed. Another criticism of FBT is that parents did not feel supported. Clinicians can utilize

the information about adjunctive treatments to effectively supplement treatment to ensure the patient and family feel supported and to address the psychological distress of the patient more intentionally.

Contributions to Families Seeking Treatment

This systematic review seeks to increase the knowledge of the family and patient so they can make highly informed decisions when selecting a treatment. The first takeaway for patients and their families is the importance of family participation in treatment. This systematic review also found that fathers' involvement was essential to the father and treatment outcomes (Hughes et al., 2018; McMahon et al., 2022). Inconsistent with the FBT treatment manual, the involvement of siblings was less important to treatment and did not predict treatment outcomes (Ellison et al., 2012; Hughes et al., 2018). These findings emphasize who needs to be in the therapy room. The second takeaway is the variables that identify whether FBT is suitable for the individual and family. The third takeaway is understanding the common criticisms of FBT and clarifying myths based on these criticisms. The most common criticisms of FBT were that the family did not feel adequately supported and that the treatment did not address the psychological distress of the patient. As discussed previously, it is a myth that the psychological distress of the patient is untreated. While the principles of FBT do not target psychological distress explicitly, treatment outcomes demonstrated a reduction in eating disorder psychopathology and a reduction in comorbid symptoms such as depression and self-esteem. In addition, this systematic review highlights adjunctive treatments being used to address these criticisms of FBT. Families need to know what additional treatment options are available, especially for families that express a lack of support or need additional help implementing the principles and strategies of FBT. It is also essential to know that adjunctive treatments, such as guided self-help (Wade et al., 2022), can be implemented so a family may begin their journey to recovery while on a lengthy waitlist for treatment.

Contributions for Researchers and Recommendations for Future Research

The main contributions that this systematic review adds to continued research are identifying areas that have been well-researched, identifying continued areas of growth in the literature, and adding clarity and consensus to the definition used to understand remission and abstinence. FBT has been widely accepted as the first-line treatment for children and adolescents with anorexia nervosa. The current literature is increasingly aimed at identifying how to improve and expand FBT through augmentation and adjunctive treatment. While there is new and emerging data that expands FBT's original use, there remain many gaps that should be addressed in future research.

The largest areas for growth in the FBT literature are expanding treatment to other feeding and eating disorders, increasing cultural consideration, increasing the variety of treatment settings, and increasing the external validity of FBT and studies examining FBT. One prominent gap in the literature is the lack of diversity within both the sample populations and within the research settings and researchers. The selected studies in the present review primarily examined Caucasian females from intact families and do not adequately represent the population. This limitation in diversity is also apparent in the eating disorder literature as a whole (Egbert et al., 2022). The lack of diversity in the eating disorder literature is in part due to the belief that eating disorders impact what some researchers have coined "S.W.A.G": skinny, white, affluent girls (Halbeisen et al., 2022). However, eating disorders are prevalent across gender, age, ethnicity, socioeconomic status, and body composition (Halbeisen et al., 2022).

Furthermore, the lack of diversity has been cited as an issue in psychological research as a whole. The acronym W.E.I.R.D has been used to describe psychological research as applying specifically to Western, educated, industrialized, rich, and democratic societies, which makes the generalizability of psychological research problematic (Henrich et al., 2010). It is recommended that primary research studies seek to increase the diversity of participants to address the inadequate representation in psychological research. In addition, the authors James Lock and Daniel Le Grange are primary researchers in this literature. Either or both of

these researchers are listed as authors in the majority of studies (*n* = 33) selected for this systematic review (*N* = 52). While quality appraisal was conducted for each study included in this analysis, the current literature may be influenced by the limited diversity of researchers. In addition, most studies that examined mediators, moderators, and predictors of treatment used secondary data from one of the original RCTs conducted by Daniel Le Grange or James Lock. Unlike the broader eating disorder literature, the FBT-specific research appears to be more concentrated in academic medical centers, which limits the generalizability of the research and limits its accessibility to other settings such as private practice or community mental health. Since the majority of studies in the FBT literature have been conducted by a limited number of research institutes and researchers, studies should be replicated by other sources and in other settings to increase external validity.

Given this systematic review's scope, several articles that would be of interest in future studies were excluded. During the search and screening process, many studies applied FBT to other feeding and eating disorders, such as avoidant/restrictive food intake disorder (ARFID), and children at a higher risk for an eating disorder and childhood obesity. Future studies should also continue to examine the effects of FBT on eating disorders beyond anorexia nervosa, as there was limited data available on patients with bulimia nervosa, binge-eating disorder, and subtypes of these eating disorders. The current eating disorder literature is also dominated by research aimed at understanding anorexia nervosa and bulimia nervosa (Bullivant et al., 2020). Similar to the limited data available on eating disorders other than anorexia nervosa and bulimia nervosa in the FBT research that this systematic review identified, a systematic review by Bullivant et al. (2020) also identified this limited focus on anorexia nervosa and bulimia nervosa as a gap in the current eating disorder literature. In addition to altering the disorder treated with FBT, many studies augmented FBT by changing the number of sessions, the setting of FBT (i.e., inpatient, PHP, IOP, group, and virtual), who attends the FBT sessions (i.e., only the parent or caregiver (parent-focused treatment), the age of the individual being treated (i.e.,

young adults and adults) or the content of the FBT sessions. Future systematic reviews or meta-analyses could focus on the effectiveness of augmented or modified FBT.

Other recommendations for future studies include expanding the understanding of the perspective of those administering FBT, replication of studies, and continuing to enhance the effectiveness of FBT by applying mediators, moderators, and predictors of treatment and continued study of adjunctive and augmented treatment. While this study captured the perspective of patients and parents undergoing FBT, many studies that explored the perspective of the clinician administering FBT were also excluded. The perspective of the clinician would add valuable data to the literature. Other studies that were excluded that would be of interest to future research are examining the FBT principles and strategies more frequently used by patients and parents. While some included studies detailed the specific components of FBT and how they impacted outcomes, several studies described this data qualitatively and did not identify the impact on outcome measures. Future research and the future of FBT may benefit from greater exploration of these topics. The current literature was variable depending on whether FBT was assessed alone or compared to another treatment. To increase clarification, future studies should include comparison groups. Future research can also benefit from applying the examined mediators, moderators, and predictors from this systematic review to develop and further study adjunctive and augmented treatments to enhance the effectiveness of FBT.

Aside from identifying continued growth areas in the literature, this systematic review clarified confusion and drew consensus on the definition of remission. Understanding the most common definition of remission and abstinence has the potential to bring about consensus on how research on eating disorders examines the effectiveness of treatments. While the literature called for continuity in the definition of remission and abstinence, the literature demonstrated greater consistency than anticipated for the definition of remission. The definition of abstinence

was less consistent. However, this systematic review contained fewer studies examining abstinence and therefore produced less certainty with the definition of abstinence.

Limitations

Despite the numerous contributions, this systematic review had several limitations. The definition used for child or adolescent was a significant limitation of the present study. This systematic review used age 18 as the cut-off for adolescents due to the required family participation of FBT. However, many excluded studies classified adolescents until their early 20s. Researchers primarily define adolescence as the period that begins with puberty and ends with physiological maturity and achievement of the societal norms of independence from guardians, such as graduation from high school or meeting the age of majority (typically age 18 to 19; APA, 2018; Dahl, 2004; Lightfoot et al., 2018). However, researchers have expanded the definition of adolescence to include individuals ages 10 to 24 due to earlier onset of puberty and a better understanding of cognitive development and growth, as well as delayed transition to adulthood due to factors such as increased pursuit of post-secondary education, increased average age of marriage, and increased age of childbirth (Sawyer et al., 2018). Given these changes in the definition of adolescence, the typical age of onset of eating disorders (age 12; APA, 2022), and the primary role of the family in FBT, the use of a wider adolescent definition is warranted when studying treatments such as FBT.

Another limitation of the selected studies is the inclusion of participants with comorbid diagnoses. Comorbid conditions may alter the effectiveness of FBT or FBT with adjunctive treatment. However, while including comorbid conditions may impact the generalizability to specific diagnostic categories, it is perhaps a more accurate reflection of clinical settings. This review only selected studies that adhered to the FBT and FBT-BN treatment manuals, thus excluding many studies that modified FBT by dose, treatment location, or content. In addition, while examining qualitative data provided new insight into the experience of those being treated with FBT, the synthesis of both qualitative and quantitative studies only allows for a summary of

patterns related to the outcomes and effectiveness of FBT and not specific numeric interpretations that can be analyzed in a meta-analysis.

Several limitations were also specific to the studies included in this systematic review. Most studies reported a predominantly homogeneous sample of primarily Caucasian females, which threatens generalizability. Another threat to generalizability is the inconsistency between studies when describing and measuring outcome data. These inconsistencies include outcome measures selected and definitions of remission and abstinence. Another limitation of the current literature is the limited data examining FBT for the treatment of children and adolescents with binge eating disorder, bulimia nervosa, and the OSFED subtypes. The majority of current studies focus on the use of FBT with children and adolescents with anorexia nervosa. Due to this limitation, the results of this study may not fully be able to report the effectiveness of FBT and FBT with adjunctive treatments for the treatment of children and adolescents with binge eating disorder, bulimia nervosa, and the OSFED subtypes.

Conclusion

IFBT is effective in producing weight gain, positive changes in eating disorder psychopathology, and a reduction of other psychological symptoms. FBT also results in remission and abstinence and at faster rates than other treatments. However, the rate of remission and abstinence was variable and dependent on the definition of remission or abstinence used. When FBT was compared to other treatments, FBT produced more favorable outcomes with some exceptions, consistent with the findings from previous systematic reviews (Couturier et al, 2013; Schlegl et al., 2020). FBT resulted in a superior rate of weight gain and overall weight gain by the end of treatment, reduced cost of treatment, and reduced need for hospitalization during treatment. However, these results varied, with some studies not detecting a significant difference between weight gain or remission treatments. Beyond results from previous systematic reviews, this systematic review found that FBT was also effective with atypical anorexia nervosa and OSFED. No data was available in this systematic review to

understand the effectiveness of FBT when used with binge eating disorder or purging disorder. While the results from the selected studies are somewhat inconsistent, the majority of studies support the effectiveness of FBT.

The perspective of patients and their families going through FBT is critical in understanding how to modify treatment, as family involvement is immensely important to treatment outcomes. The involvement of fathers appears to be important and underutilized. Interestingly and contradictory to the FBT treatment manuals, the involvement of siblings did not drastically impact treatment outcomes. The biggest criticisms of FBT are that FBT does not adequately address the psychological distress of the patient and that the parents do not have adequate support to fulfill the substantial requirements of FBT. Studies have started to implement adjunctive treatments to address some of these common criticisms, such as increasing parental support and addressing the psychological distress of the patient. These adjunctive treatments demonstrate preliminary support, consistent with another systematic review examining augmented approaches to FBT (Richards et al., 2018). However, few studies have implemented these adjunctive treatments without compromising manualized FBT, and few studies have compared these adjunctive treatments to treatment as usual.

A wide range of factors influence the effectiveness of FBT. Baseline patient and parent characteristics and demographic variables, eating disorder type and severity, comorbid diagnoses, therapeutic alliance, early response to treatment, and adherence to specific principles of FBT were found to predict treatment outcomes. These results are consistent with and expand upon a previous systematic review that found early treatment response, parental criticism, and eating-related obsessionality impact treatment outcomes (Gorrell et al., 2022). The findings from this systematic review identified for whom FBT is most suited and what factors may impact treatment outcomes or could make treatment more effective. Taken together, FBT continues to be an effective treatment for children and adolescents with an eating

disorder, and understanding mediators, moderators, and predictors will help in furthering the effectiveness and tailoring FBT through the use of adjunctive treatments and alterations to FBT.

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APPENDIX A

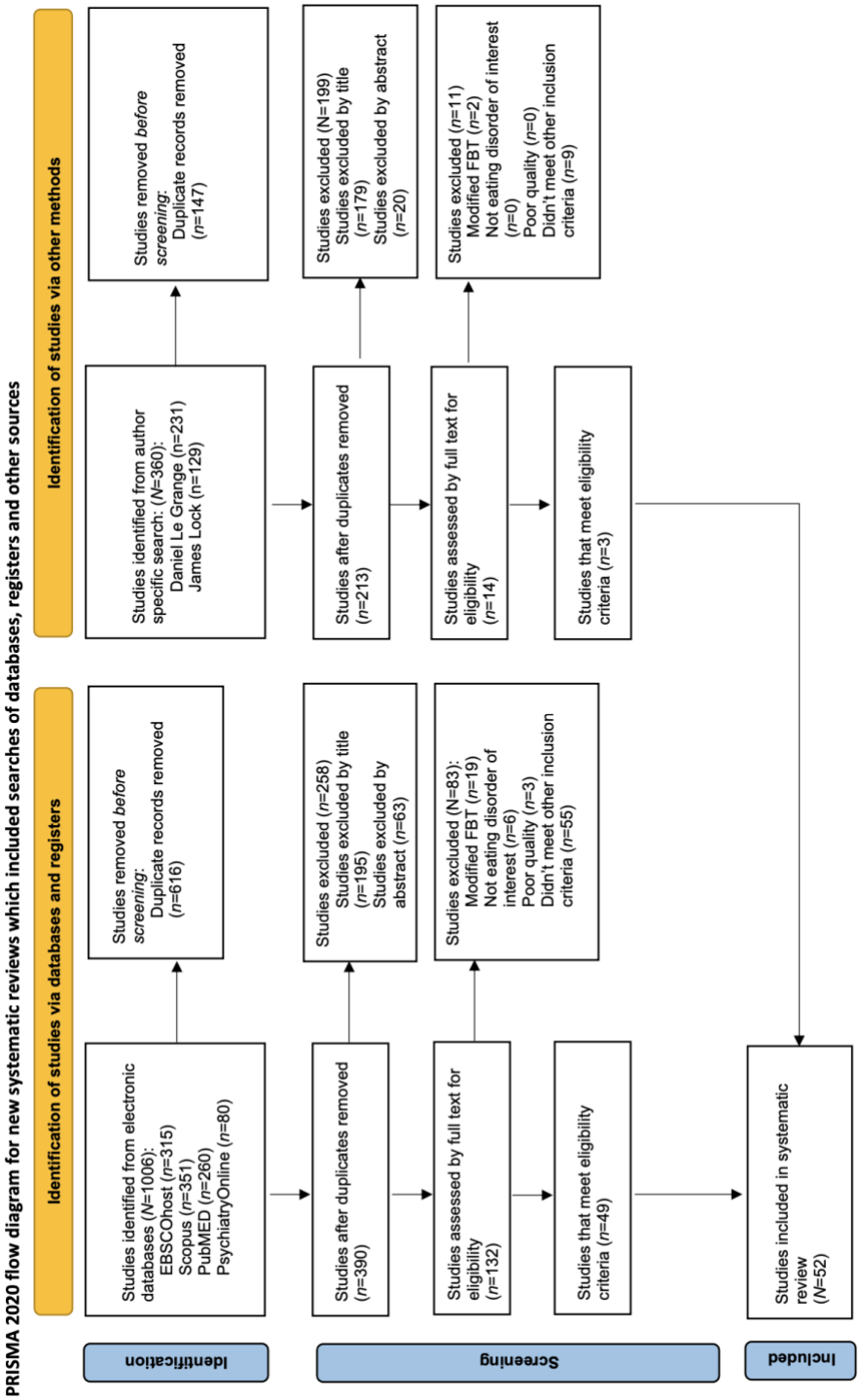
Search Terms

Search	Search Syntax	Field Searched	Dates	Publication type
01, 02, 04	Eating disorder OR ("eating disorder" OR "anorexia nervosa" OR "bulimia nervosa" OR "binge eating disorder" OR "other specified feeding and eating disorder" OR "atypical anorexia" OR "purging disorder") AND Family-based treatment OR (FBT OR "Maudsley method") AND Outcomes OR (Effectiveness OR Efficacy OR Findings)	All	2003-2023	Peer-reviewed articles only
01, 02, 03, 04	Eating disorder OR ("eating disorder" OR "anorexia nervosa" OR "bulimia nervosa" OR "binge eating disorder" OR "other specified feeding and eating disorder" OR "atypical anorexia" OR "purging disorder") AND Family-based treatment OR (FBT OR "Maudsley method") AND Adjunctive treatment OR ("additional treatment" OR "in addition to" OR "adjunctive family therapy" OR "FBT combined with adjunctive treatment" OR "emotion focused family therapy" OR EFFT" OR "parent coaching" OR "support groups" OR "dialectic behavior therapy" OR DBT) AND Outcomes OR (Effectiveness OR Efficacy OR Findings)	All	2003-2023	Peer-reviewed articles only

Note. FBT = Family Based Treatment, EFFT = Emotion Focused Family Therapy, DBT = Dialectic Behavior Therapy.

APPENDIX B

PRISMA Flow Diagram



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/

APPENDIX C

Sample: Study Quality Appraisal Form

INDIVIDUAL STUDY QUALITY APPRAISAL FORM FOR SYSTEMATIC REVIEWS

Developed by Shelly P. Harrell, Ph.D., Pepperdine University

Author(s) and Year: _____ **Study ID#**_____

1. **Methodology:** Quantitative Qualitative Mixed Methods

2. **Specific Design/Inquiry Approach**: _____

RATING SCALE: Strong=3 Good/Adequate=2 Weak=1 Missing=0 N/A

3. **Strength of Literature Foundation and Rationale for Study:** _____
   (POSSIBLE CONSIDERATIONS: current and relevant references, background literature sufficiently comprehensive, Need/Rationale for study clearly stated, etc.)

4. **Clarity and specificity of Research Aims/Objectives/Questions/Hypotheses:** _____

5. **Quality of research design or methodological approach:** _____
   GENERAL CONSIDERATIONS: provides rationale for design chosen, appropriateness for research questions, clear description of design and methodological approach, strength of design characteristics utilized
   QUANTITATIVE CONSIDERATIONS: internal and external validity considered in design; potential confounds identified and addressed in some way, specific design-based "risk of bias" criteria considered such as randomization, blinding
   QUALITATIVE CONSIDERATIONS: consistent with specific practices relevant to the inquiry strategy (e.g., phenomenological study, case study, grounded theory, etc.), triangulation, audit trail

6. **Sample Selection and Characteristics:** _____
   GENERAL CONSIDERATIONS: detailed description of sample characteristics, adequacy of sample characteristics in the context of research aims, detailed description of recruitment and selection of participants; rationale provided for sample size; inclusion and exclusion criteria indicated as relevant
   QUANTITATIVE CONSIDERATIONS: representativeness of sample, adequacy of sample size in context of design, extent of selection or sample bias
   QUALITATIVE CONSIDERATIONS: sample size appropriate for inquiry strategy; rationale for purposeful sample characteristics

7. **Data Collection Tools (Scales, Observation, Interviews, etc.):** _____
   GENERAL CONSIDERATIONS: rationale for selection, appropriateness for assessing variables, development of study-specific tool or process clearly described, piloting, pretesting;
   QUANTITATIVE CONSIDERATIONS: psychometric properties (reliability, validity, utility) reported, adequacy of psychometric properties, normative or standardization data described
   QUALITATIVE CONSIDERATIONS: appropriateness for inquiry strategy and purpose; interview or other data collection process described clearly and comprehensively

8. **Data Collection Processes:** _____
   (POSSIBLE CONSIDERATIONS: data collection procedures clearly described in sufficient detail, intervention strategies and implementation described in detail, quality of data collected, design-specific considerations such as attrition in RCTs, saturation in grounded theory, etc.)

9. **Analysis and Presentation of Data: _____**
   GENERAL CONSIDERATIONS: appropriateness of analysis for research questions and type of data; results presented clearly and comprehensively; usefulness and clarity of any tables, graphs, and charts
   QUANTITATIVE CONSIDERATIONS: power and effect size reported; relevant statistics reported clearly; effective use of tables
   QUALITATIVE CONSIDERATIONS: textual data and/or direct quotes reported and used effectively; transparent description of the development of themes from raw data

10. **Discussion of Study Limitations: _____**
    GENERAL CONSIDERATIONS: identifies and discusses limitations in the context of design/strategy utilized
    QUANTITATIVE CONSIDERATIONS: addresses various forms of bias, internal validity, external validity (generalizability), ecological validity
    QUALITATIVE CONSIDERATIONS: transferability, credibility, transparency,

11. **Consideration of culture and diversity: _____**
    (POSSIBLE CONSIDERATIONS: attention to diversity within sample, includes culturally appropriate methods and tools, avoids biased language, uses appropriate terminology, etc.)

12. **OVERALL RATING:**	**EXEMPLARY** (e.g., all "3"s)	**STRONG** (e.g., mostly "3"s)	**GOOD/ADEQUATE** (e.g., mostly "2"s)	**WEAK** (e.g., mostly "1"s)

APPENDIX D

Sample Quality Appraisal Form for RCTs

JBI CRITICAL APPRAISAL CHECKLIST FOR RANDOMIZED CONTROLLED TRIALS

Reviewer_____Date_____

Author_____Year_____ Record Number_____

		Yes	No	Unclear	NA
1.	Was true randomization used for assignment of participants to treatment groups?	☐	☐	☐	☐
2.	Was allocation to treatment groups concealed?	☐	☐	☐	☐
3.	Were treatment groups similar at the baseline?	☐	☐	☐	☐
4.	Were participants blind to treatment assignment?	☐	☐	☐	☐
5.	Were those delivering treatment blind to treatment assignment?	☐	☐	☐	☐
6.	Were outcomes assessors blind to treatment assignment?	☐	☐	☐	☐
7.	Were treatment groups treated identically other than the intervention of interest?	☐	☐	☐	☐
8.	Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	☐	☐	☐	☐
9.	Were participants analyzed in the groups to which they were randomized?	☐	☐	☐	☐
10.	Were outcomes measured in the same way for treatment groups?	☐	☐	☐	☐
11.	Were outcomes measured in a reliable way?	☐	☐	☐	☐
12.	Was appropriate statistical analysis used?	☐	☐	☐	☐
13.	Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

Table 1

Included Studies

Author(s)	Year	Study Aim	Methodology	Outcome Measures	*N*	Gender	Age	Diagnosis	Intervention(s)	Summarized Results
Accurso et al.	2014	Examine weight gain as a predictor of psychological improvement (i.e., ED psychopathology, depressive symptoms, and self-esteem), while controlling for other potential predictors of change (i.e., adolescent age, sex, racial/ethnic minority, duration of illness, psychiatric comorbidity, AN subtype, intact family status, prior hospitalization, use of psychotropic medications, and treatment condition).	Quantitative. Used secondary data from RCT (Lock et al., 2010)	EDE (v12.0), weight (%EBW); demographic data (age, sex, racial/ethnic minority, duration of illness, AN subtype (AN-BP or AN-R), intact family status, prior psychiatric hospitalization, current use of psychotropic medications, and psychiatric comorbidity (K-SADS), BDI and RSES.	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 91.8%	$M = 14.4$, $SD = 1.6$	AN (excluding amenorrhea) AN-RT (82.6%) AN-BP (17.4%).	FBT and AFT	Weight gain was a predictor of improved ED psychopathology. Weight gain early in treatment improved ED psychopathology (EDE global scores, eating concerns, and dietary restraint). Most psychological symptoms significantly improved from EOT to 12-month follow-up in FBT and AFT. Depressive symptoms and EDE restraint subscale were most improved, EDE weight and shape concern subscales were least improved, and self-esteem was not significantly improved. Clinical variables that predicted psychological improvement: initial severity of eating disorder symptoms, duration of illness, and AN subtype. The rate of change in weight concerns, shape concerns, eating concerns, and dietary restrain were faster for adolescents with AN-BP. Depressive symptoms tended to reduce over time, regardless of weight gain.
Agras et al.	2014	Compared the outcomes of FBT and SyFT for adolescents with AN.	RCT	Weight (BW), EDE, K-SADS, BDI, State-Train Anxiety Inventory, CY-BOCS, RSE, YBC-EDS, Quality of Life Enjoyment and Satisfaction Questionnaire, treatment fidelity (6 raters)	$N = 164$ FBT: $n = 78$ SyFT: $n = 80$ $n = 158$ included in analysis	Female 89.2%	$M = 15.3$, $SD = 1.8$	AN (inclusion of amenorrhea)	FBT and SyFT	No significant differences in weight, ED psychopathology, or comorbid psychiatric disorders were detected between FBT and SyFT at EOT and 12-month follow-up. 33.1% of FBT patients achieved remission at EOT and 40.7% at follow-up. 25.3% of SyFT patients achieved remission at EOT and 39.0% at follow-up. Participants treated with FBT gained weight at a significantly greater rate, spent fewer days in the hospital, and spent less on treatment (mean treatment costs per individual FBT = $8963; SyFT = $18,003). Younger patients and patients with a shorter duration of illness gained more weight regardless of treatment type. Intact families and AN without binge eating or purging behaviors had higher remission rates regardless of the treatment used. Patients with higher CY-BOCS scores gained more weight with SyFT. There were no significant differences between groups seeking additional treatment during the follow-up period. 35.1% of FBT patients and 25.0% of SyFT patients received psychotherapy during the follow-up period.
Binford et al.	2013	Examine the feasibility and acceptability of a therapist-guided internet-based chat support group for parents engaging in FBT.	Quantitative	Baseline demographics (age, marital status, duration of child's eating disorder, length of time treated with FBT); Experience of Caregiving Inventory; EDSIS; Support Questionnaire, Before Chat Session Questionnaire, After Chat Session Questionnaire and Programme Evaluation.	$N = 13$ parents	Parents: Mothers: $n = 10$ Fathers: $n = 3$. Children: Female: $n = 8$ Male: $n = 2$	Children: Range 9 to 17 ($M = 13.3$, $SD = 2.3$) Parents: Range 38 to 56 ($M = 44.9$, $SD = 6.2$)	AN	FBT and Therapist-facilitated Internet-based support groups	Internet-based support groups are a feasible adjunctive treatment for FBT. Parents reported high satisfaction and generally found the group to be helpful. More specifically, parents reported that this group helped them implement FBT, feel less alone, and cope with their child's ED. The after-chat session questionnaire demonstrated that most parents were satisfied with the previous session and viewed the session as helpful. Parents reported that the chat was accessible, convenient, and easy to use. Most parents completed all 13 sessions, and reasons cited for dropout include that parents reported being helped by the group and did not need more support, belief that they received everyone they could and wanted from the group, and no response given. The main criticism of the group was that the computer format was "a bit impersonal" and did not facilitate getting to know the other participants well.
Byrne et al.	2015	Examined if increased parental or adolescent self-efficacy predicted subsequent weight gain in adolescents with AN who were enrolled in an RCT comparing FBT and AFT.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	Weight, EDE (12.0), PvA, General Self-Efficacy Scale, BDI, RSE, KSADS	$N = 121$	Female 90.9%	$M = 14.4$, $SD = 1.6$	AN (inclusion of amenorrhea)	FBT and AFT	Greater increase to parental self-efficacy over the course of FBT was predictive of adolescent weight gain at EOT. Parental-self efficacy was not predictive of weight gain in AFT. Increase in patient self-efficacy was not predictive of weight gain in either treatment condition.
Byrne et al.	2018	Examined the degree to which the rate of change in eating-related obsessionality was associated with the rate of change in weight over time in FBT and AFT.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	YB-CED and Weight.	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 90.9%	$M = 14.4$, $SD = 1.6$	AN (inclusive of amenorrhea). AN-BP (17%)	FBT and AFT	There was a significant negative correlation between eating-related obsessionality and weight, which indicates that a decrease in overall eating-related obsessionality is significantly associated with an increase in weight. This relationship was only observed in the FBT condition.
Ciao et al.	2015	Examined the relationship between family functioning and baseline clinical characteristics as well as changes in family functioning over the course of treatment (FBT and AFT).	Quantitative. Used secondary data from RCT (Lock et al., 2010)	Weight (%EBW), EDE Global scale, BDI, RSES, YBC-EDS, GSES, WSAS, Family Assessment Device (FAD), presence of comorbid psychiatric diagnosis, use of psychotropic medication, family status.	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 90.9%	$M = 14.4$, $SD = 1.6$	AN (inclusive of amenorrhea). AN-BP (17%)	FBT and AFT	Families reported some baseline impairment to family functioning that was slightly elevated compared to cutoff scores of impairments. Adolescents reported the greatest impairment in family functioning. In both FBT and AFT, improvement in several aspects of family functioning across family members was associated with full remission at the end of treatment. FBT demonstrated more substantial positive changes in perceived family functioning, specifically in communication and behavioral control. Regardless of treatment type, patient-perceived improvement in clarity about roles within the family, father-perceived improvement in problem-solving, and mother-perceived improvement in general family functioning were predictive of remission at EOT. General Functioning was not a significant predictor of baseline %EBW, prior psychiatric hospitalization, family status, medication status, or psychiatric comorbidity.
Conti et al.	2021	Examined the experience of individuals treated with FBT who dropped out or experienced continued psychological distress at EOT.	Qualitative	Experience of FBT patient.	$N = 14$	Not reported	Age at time of FBT (Range: 13 to 18); Age at time of interview (Range: 14 to 27)	AN	FBT	Participant responses were categorized into two main themes: therapeutic focus and identity negotiations. Participants felt that their psychological distress was overlooked, which was cited as a primary reason for dropout. Participants reported that the weight gain alone did not significantly reduce their psychological distress. In addition, participants also felt a loss of voice and autonomy in treatment, as their parents were expected to take control of their eating. The majority of participants viewed their parents taking control of their eating as relieving and were able to identify the support of their parents as vital to their treatment. However, some participants stated that family conflict increased in the form of angry outbursts physically expressed through parental restraint.
Couturier et al.	2010	Assess the dissemination of this FBT to a Canadian pediatric outpatient clinic and evaluate the effectiveness, fidelity, and acceptability.	Quantitative	Weight (BW), dropout rates, EDE (15th ed), EDI-3, all sessions videotaped to assess fidelity, parent and adolescent final satisfaction.	$N = 14$	Female: $n = 14$ (100%)	Range: 12 to 17 ($M = 14.0$, $SD = 1.5$)	AN, R=12 AN-BP=2	FBT	FBT was fidelity consistent and is effective and resulted in weight restoration, reduction of psychological symptoms, and was rated as acceptable by adolescents and parents. At EOT, weight significantly increased by an average of 7.8 kg and %BW also significantly improved to 95.7% at EOT. 8 of the 9 participants experiencing amenorrhea at baseline had regular menstruation at EOT. Psychopathology significantly improved over the course of treatment, specifically on the restraint subscale of the EDE and interoceptive deficits and maturity fears subscales of the EDI-3. Treatment fidelity was the greatest in phase 1 and then dropped in phases 2 and 3.
Darcy et al.	2013	Identify parent and patient behaviors in the first several sessions of FBT that may predict early weight gain.	Quantitative. Used secondary data from RCT (Agras et al., 2014)	Weight, EDE, RSE, K-SADS-PL, and behavioral observation	$N = 21$	Not reported	Range: 12 to 18. Early responders: $M = 14.62$, $SD = 1.30$ Non-early responders: $M = 15.36$, $SD = 1.68$	AN	FBT and SyFT	Patient and parental behavior in sessions 1 to 4 predict early treatment response. Patients who displayed fewer negative verbal behaviors and moved away from the table less in the first and family meal sessions were more likely to respond to treatment early. Parents who made less critical statements and who did not repeatedly present food during the family meal session were more likely to have adolescents with early responses to treatment. Parental behaviors observed in session 1 were predictive of early response to treatment: confidence/empowerment, positive physical encouragement, verbal encouragement, serving and presenting food, and modeling eating. Parents who were able to increase their positive physical behaviors from sessions 1 to 4 and increased neutral verbal behaviors were more likely to be from the early responders group.
Ellison et al.	2012	Identify whether or not five components of FBT (1. parental control, 2. externalization of the illness, 3. restructuring the family, 4. parental consistency. 5. sibling support) and therapeutic alliance predict weight gain and dropout.	Quantitative	CTOCRS, WAI, EDI-3, %BW, Dropout	$N = 59$ Completed: $n = 50$ Dropout $n = 9$	Female: $n = 59$ (94.02%) Male: $n = 3$ (5.08%)	$M = 14.57$, $SD = 1.46$	AN	FBT	Four (parental control, externalization of the illness, restructuring the family, and parental consistency) of the five core components of FBT predicted weight gain at EOT. Parental control was the strongest predictor. Sibling support did not predict weight gain. High maternal therapeutic alliance scores were also predictive of weight gain. Significant weight gain was achieved by session 20, with an average of 87.61% IBW. 84.7% ($n = 50$) reached at least 85% IBW, and 40.7% ($n = 24$) reached 95% of IBW by session 20. The length of hospitalization before starting FBT was not a significant predictor of weight gain. The dropout rate was 15.25%. Dropout was predicted by high maternal-therapeutic alliance, low maternal-therapeutic alliance, and low parental control.

Author(s)	Year	Study Aim	Methodology	Outcome Measures	*N*	Gender	Age	Diagnosis	Intervention(s)	Summarized Results
Eshkevari et al.	2022	Evaluate the use of group skills training for parents of children/adolescents with AN as an adjunctive treatment to FBT	Quantitative - Uncontrolled case series	Parental well-being (Level of Expressed Emotion Scale), DASS-21, EDSIS, EC/GI, BMI of child, program feedback, perceived outcome of the group.	*N* = 22 Parents *n* = 16 Children/ adolescents	Parents: Mothers: *n* = 15; Fathers: *n* = 6, stepmother: *n* = 1); Children: Female: *n* =13 Male: *n* = 3)	Children: *M* = 14.8, *SD* = 1.3	AN: *n* = 14 AAN: *n* = 2	FBT and Parent Group Training	The 2-day intensive group format was preferred by parents and resulted in significant perceived improvements in understanding, knowledge, skills, and confidence in managing the ED. According to parent feedback, it is helpful to have the opportunity to express personal experience, receive information on how to manage eating disorders, have group participation and discussion, and meet other parents. No significant results related to change in parental wellbeing or BMI were found. The weekly group format demonstrated improvement to a healthier BMI range over the 3-month period and the 2-day intensive format maintained BMI in a healthy range over the 3-month period.
Forsberg et al.	2013	Examined the relationship between therapeutic alliance and treatment outcome, specifically remission status in FBT and AFT for adolescents with AN.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	WAI, EDE, and weight	*N* = 78. Sample restricted to participants with tapes and audible recordings of therapy at Sessions 3, 4, or 5, and who completed EOT assessment. From original study sample *N* = 121 (FBT: *n* = 61; AFT: *n* = 60)	Female 91%	*M* = 14.4, *SD* = 1.6	AN (exclusion of amenorrhea)	FBT and AFT	Therapeutic alliance was not a predictor of full remission at EOT in either treatment. However, therapeutic alliance was a non-specific predictor of partial remission at EOT. Therapeutic alliance was significantly higher in AFT. High therapeutic alliance in FBT did not improve treatment outcomes compared to low therapeutic alliance in FBT.
Forsberg et al.	2014	Explore the role of therapeutic alliance for both parents and adolescents on treatment outcomes of FBT and AFT.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	WAI, EDE, BMI	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 91.8%	*M* = 14.4, *SD* = 1.6	AN (excluding amenorrhea) AN-R (82.6%) AN-BP (17.4%).	FBT and AFT	Parental therapeutic alliance scores were significantly greater than adolescent therapeutic alliance scores early in treatment. Parents in the FBT treatment developed greater therapeutic alliance early in treatment. Parental therapeutic alliance was not a predictor of remission at EOT.
Forsberg et al.	2017	Explore parental symptoms of anxiety, depression, hostility, and obsessions and compulsions (OC) as predictors, moderators and mediators of treatment outcomes in AFT and FBT. Another aim was to examine the change in parent symptoms across treatment and at 1-year follow up in both interventions (AFT and FBT).	Quantitative. Used secondary data from RCT (Lock et al., 2010)	EDE, weight and height; YBOCS, SCL-90-R, and the BDI-II	*N* = 121 adolescents Fathers: *n* = 107 Mothers: *n* = 117	Adolescents: female 91%	Range: 12 to 18 (*M* = 14.4)	AN (exclusion of amenorrhea)	FBT and AFT	Parental symptoms did not negatively impact treatment outcomes. Both treatments resulted in reduced parental psychological symptoms at EOT. Higher maternal symptoms at baseline and improvement in maternal symptoms were found to be a nonspecific predictor of adolescent weight at EOT and the 12-month follow-up. Maternal depression was found to be a moderator of adolescent weight at EOT in the FBT condition. Paternal symptomology was not predictive of weight at EOT. Parental symptomology was not predictive of remission status at EOT or follow-up.
Goldstein et al.	2016	Examine the effectiveness of FBT for full and partial AN treated in a private practice.	Quantitative - Case series design.	Weight (%EBW), DASS-21, EDE-Q, comorbid anxiety and depression, patient age, illness severity (indicated by duration of illness or hospital admission prior to FBT)	*N* = 37	Female: *n* = 34 Male: *n* = 3	*M* = 15.57, *SD* = 1.79	AN (73%) EDNOS-AN (27%)	FBT	FBT was effective when disseminated to the private practice setting. Significant weight gain was achieved by patients, with a majority achieving full (45.9%) or partial (43.2%) remission according to weight. Comorbid anxiety, depression, age, and illness severity were found to be predictors of weight related recovery.
Gorrell et al.	2019	Evaluated the effects of FBT-BN and CBT-A on attitudinal and behavioral outcomes. Specifically, this study examined motivation for change in obsessive-compulsive features of ED symptoms.	Quantitative. Used secondary data from RCT (Le Grange, et al., 2015)	ED pathology (EDE), weight, OC (YBC-EDS)	*N* = 110 FBT-BN: *n* = 58 CBT-A: *n* = 52	Female 93.6%	Range: 12 to 18	BN and EDNOS-BN	FBT-BN and CBT-A	Adolescents with BN who are more motivated to change OC-ED behaviors at the start of treatment (FBT-BN or CBT-A) are more likely to demonstrate improvements in cognitions, but not behaviors associated with EDs, at EOT.
Hughes et al.	2017	Examine engagement (i.e., dose of treatment, completion rate) and outcomes (i.e., eating disorder symptoms, depressive symptoms, self-esteem, obsessive compulsiveness, weight, and menstrual function) of FBT for adolescents with AAN. In addition, the need for additional medical treatment was also examined.	Quantitative	BMI, menstrual status, self-report of presence of binging and purging in the past week, EDE (child and parent versions), MINI, YBC-EDS, CY-BOCS, CDI, RSE;	*N* = 42	Female: *n* = 37 (88%)	Range: 12 to 18 (*M* = 15.4, *SD* = 1.4)	AAN	FBT	At EOT, there were significant improvement in ED pathology and depressive symptoms. There was also a significant reduction in the prevalence of amenorrhea and irregular menstruation. There was no significant improvement in self-esteem or obsessive compulsiveness at EOT. While there was change recorded in weight (kg) from baseline to EOT, the change in %nBMI was not significant. The individual variation in weight change from baseline to EOT ranged from a loss of 10.4kg to a gain of 13.7kg. Remission rates fell between 38 to 52% depending on the remission criteria applied. Engagement and completion of FBT was high (83%). Most patients did not require additional medical interventions during treatment.
Hughes et al.	2018	Describe the participation of mothers, fathers, and siblings in FBT and examine differences in attendance related to family characteristics (i.e., intact vs. non-intact, same-sex siblings vs. opposite-sex siblings, sibling age difference), and treatment structure. In addition, this study aimed to investigate whether greater attendance by family members predicted better outcomes at EOT.	Quantitative - Retrospective chart review	Attendance, weight and height of patient, and EDE.	*N* = 198 families Mothers: *n* = 194 Fathers: *n* = 175 Siblings: *n* = 165 FBT: *n* = 138 PFT: *n* = 64	Siblings: Female: *n* = 82	Mothers: *M* = 45, *SD* = 5.7 Fathers: *M* = 48.5, *SD* = 5.9 Siblings: *M* = 14.1, *SD* = 5.1	AN and EDNOS-AN type	FBT	Greater paternal attendance was found to be associated with better patient outcomes. Specifically, greater attendance by fathers predicted higher weight, lower ED symptoms, and remission at EOT. Maternal and sibling attendance did not significantly predict weight or ED symptoms at EOT. Maternal and sibling attendance were not significant predictors of remission. Over the course of treatment, maternal attendance was fairly consistent (94%), fathers' attendance declined (72%), and attendance by sibling(s) declined rapidly (20%). No significant differences were found for mothers and siblings based on family characteristics or treatment structure. Fathers from non-intact families attended significantly fewer sessions than fathers from intact families, and fathers from families who were participating in the RCT attended significantly more sessions than fathers from families who were not participating in the RCT.
Hurst, K., Read, S. & Holtham, T.	2017	Examined is CBT-E is an effective adjunctive treatment to FBT for the treatment of adolescents with BN.	Mixed Methods	EDE, self-reported binge and purge episodes, weight	*N* = 2	Female: *n* = 2	15	BN	FBT-BN and CBT-E	Both treatments resulted in full remission based on abstinence from binge and purge episodes and a significant reduction in scores obtained on the EDE. In addition, parents reported the FBT-BN-specific content increased their knowledge, helped prepare them for future issues, and increased overall family cohesion. Patients reported that having their parents take control of their food in FBT-BN was a relief. The parents and patients in the FBT+CBT condition reported the formulation session as important in understanding maintaining factors. Patients reported that the CBT element helped increase their cognitive ability to challenge ED beliefs.
Hurst, K & Zimmer-Gembeck, M.	2015	Examine the use of a CBT module for perfectionism as an adjunctive treatment to FBT.	Mixed Methods - Case study	EDE, weight, CAPS, CFI	*N* = 3	Female 100%	Range: 16-17	AN	FBT and CBT-P	The addition of the CBT perfectionism module was an effective adjunctive treatment, especially for patients with perfectionism as a maintaining factor for their ED. One patient obtained full remission, and the other two obtained partial remission at EOT. All participants demonstrated reduced self-oriented perfectionism and socially prescribed perfectionism at EOT. Patients with low cognitive flexibility demonstrated improvement on this measure at EOT. Patients and parents reported the following aspects of CBT as the most helpful: behavioral experiments to target dichotomous thinking to challenge strongly held beliefs about weight and shape, identification of high standards and the impact on sense of self, and shifting focus to achievement-oriented tasks.
Hurst, K. & Zimmer-Gembeck, M.	2019	Evaluate change in symptoms of adolescents with AN receiving FBT combined with CBT module on perfectionism.	Quantitative - Intent to treat	%EBW, EDI-3, EDE-Q, fidelity of sessions (5% reviewed), CAPS, MPS.	*N* = 21 *n* = 2 dropout *n* = 1 hospitalized	Female: *n* = 21	Range: 12 to 17 (*M* = 14.9, *SD* = 1.2)	AN	FBT and CBT-P	There were significant differences from T1 to T2 in weight, ED symptoms, perfectionism, and self-oriented perfectionism. Greater improvements in ED symptoms were correlated with greater improvement in measures of perfectionism, except for socially prescribed perfectionism. By EOT, 57% of the patients reached full remission, and 43% achieved partial remission.

Author(s)	Year	Study Aim	Methodology	Outcome Measures	*N*	Gender	Age	Diagnosis	Intervention(s)	Summarized Results
Isserlin, L. & Couturier, J.	2012	Examined the role of therapeutic alliance on outcomes and retention in FBT.	Quantitative	Weight, EDE, remission, drop out, SOFTA-O, ETP, and SSP.	$N = 14$	Female 100%	Range: 12 to 17 ($M = 14.0$, $SD = 1.5$)	AN AN-R: $n = 12$ AN-BP: $n = 2$	FBT	Therapeutic alliance had an impact on weight gain and ED psychopathology. All of the adolescents treated with FBT gained weight. The percentage of IBW at the final session was 99.9% in those who completed treatment and 89.9% in those who dropped out of treatment. Percent IBW at EOT was related to the parental therapeutic alliance (ETP) during the family meal (session 2). Adolescents with EDE scores within 2 SD of typical adolescents demonstrated higher ETP scores at sessions 2 and 3. Greater SSP scores in session 1 were associated with lower EDE scores at EOT. Dropout was not significantly related to scores on SSP. Families who completed treatment demonstrated greater parental ETP scores midway through treatment and at EOT. SSP and ETP scores did not change significantly from session 1 to EOT.
Knutter, T. & Lock, J.	2004	Assess the experience of families treated FBT for adolescents with AN.	Mixed Methods	OES	$N = 34$ families $n = 32$ adolescents	Parents: Mothers: $n = 3$ Fathers: $n = 32$) Adolescent: Females: $n = 32$	Range: 12 to 18 ($M = 14.6$)	AN	FBT	Families reported FBT to be effective and acceptable. 70% of participants reported positive changes in family functioning that included increased family closeness, communication, openness/honesty, problem-solving skills, parental understanding, awareness/attention to feelings, family support, patience, parental cooperation, appreciation for one another, overall happiness, and decreased arguing and criticism/blame. One mother perceived a negative change in family dynamics, and three mothers, four fathers, and four adolescents perceived both positive and negative changes. The main criticism of FBT was that other psychological issues and distress were not addressed. Other criticisms included FBT not including a follow-up plan after treatment, no group therapy, and no parent support group or parental therapy. Some families suggested that individual or family therapy would be helpful to address issues other than AN.
Lebow et al.	2019	Examined the trajectories of weight gain in a group of adolescent patients with AN or AAN receiving FBT. This study also examined the relationship between patient characteristics at baseline (i. e. age, diagnosis, weight suppression, %BMI, and eating pathology) and weight gain.	Quantitative	Demographic (i.e., age and gender) and clinical information (i.e., duration of illness and psychotropic medication use), Weight and Height (BMI), EDE-Q	$N = 153$	Female 88.9%	Range: <18. ($M = 14.73$, $SD = 2.28$)	AN or EDNOS with a weight gain goal (AAN). AN ($n = 84$, 54.9%) AAN ($n = 69$, 45.1%).	FBT	5 distinct weight gain trajectories were found. Class 1, "slow and steady gains," was characterized by a low baseline %IBMI that improved slowly and steadily (48.4% of participants). Class 2, "moderate gains with mid-treatment maintenance," was characterized as moderate initial weight gain that slowly plateaued to maintenance by 3 months into FBT (24.8% of participants). Class 3, "dramatically rapid early gains that stabilize at the 65th percentile," was characterized as substantial weight gain from below the 5th %ile to the 80th %ile within 6 sessions, followed by weight loss to the 60th %ile by 3 months and stabilization at the 65th %ile at 6 months (2.6% of participants). Class 4, "maintenance at the 60th %ile," was characterized as baseline %IBMI above 60 with a steady weight gain to initial %IBMI by 3 months (18.3% of participants). Class 5, "rapid gains with early stabilization," was characterized as early rapid weight gains that peak at session 6 and remain stable (5.9% of participants). Early responders (weight gain of $\geq$ 6.5lbs by session 4) were significantly associated with classes 3, 5, and 2. Age was predictive of weight trajectory, younger patients were likelier to be in class 3. The diagnosis was also predictive of weight trajectory, such that AAN was associated with class 4. ED psychopathology was also related to weight trajectory. High EDE-Global scores and Weight Concern subscale scores were associated with class 4. Gender, duration of illness, psychotropic medications, or number of sessions was not related to weight gain trajectory.
Le Grange et al.	2005	Evaluate the effectiveness of FBT on weight restoration and resumption of menses.	Quantitative - Case series design.	Weight and height (IBW), EDE (14th ed), RSE, BDI, patient report of menstrual cycle, Morgan-Russell outcome categories	$N = 45$	Female: $n = 39$ (87%)	Range: 9 to 18 ($M = 14.5$, $SD = 2.3$)	AN	FBT	According to the Morgan-Russell outcome categories, 56% had a good outcome (>85% IBW and menses), 33% had an intermediate outcome (>85% IBW and menses intermittent), 11% responded poorly (<85% IBW and no menses). There was no difference in outcome between the younger (ages 9–14) and the older patients (ages 15-18). 71% of patients received 20 or fewer treatment sessions, and the remaining 29% of patients received >20 treatment sessions. On average, patients completed 17 sessions over 9.7 months. Most families (87.8%) remained in treatment until it was mutually decided by the parents and therapist. There were no significant differences in outcome for patients treated by the senior therapist compared with the group of trainee therapists.
Le Grange et al.	2012	Identify treatment moderators and mediators of remission at EOT and 6- and 12-month follow-up in FBT and AFT for adolescents with AN.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	Weight (BMI), EDE-Global score and restraint subscale, prior hospitalization for an eating disorder, YBC-ED, YBC-ED, GSES, use of psychiatric medications, gender, duration of AN, AN type (restricting or binge-eating/purging), K-SADS, BDI, WSAS, family status, parental education, EE, SCFI, PvA	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 91.8%	$M = 14.4$, $SD = 1.6$	AN (excluding amenorrhea) AN-R 82.6%) AN-BP (17.4%)	FBT and AFT	Patients with more severe ED psychopathology (YBC-EDS and EDE) had better outcomes in the FBT treatment condition. Patients with AN-BP had better long-term remission status after receiving FBT. No other moderators were found to have an effect on long-term outcomes. No variables were found to be mediators of treatment effect. Several non-specific predictors of change were found in remission status at EOT. Individuals with a history of prior hospitalization, older age, and a longer duration of illness were less likely to be in remission at EOT.
Le Grange et al.	2014a	Determine whether early weight gain predicts full remission at the EOT and at follow-up for both FBT and AFT. In addition, this study examined the rate of weight change during treatment and the follow-up period.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	Weight, remission status, sociodemographic data (parental education, gender)	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 90.9%	$M = 14.4$, $SD = 1.6$	AN (exclusion of amenorrhea)	FBT and AFT	Early weight gain was found to be a predictor of remission at EOT. However, early weight gain was not predictive of remission at follow-up. The earliest predictor of remission at EOT was a gain of 5.8 pounds (2.65 kg) by session 3 in FBT and 7.1 pounds (3.20 kg) by session 4 in AFT. There were no significant differences between treatments in remission rates at EOT (FBT = 42% and AFT = 23%). However, at the 6-month (FBT = 40%, AFT = 18%) and 12-month (FBT = 49%, AFT = 23%) follow-up, FBT demonstrated significantly greater remission rates than AFT. Patients in the FBT condition also achieved 95% EBW sooner than patients in the AFT condition.
Le Grange et al.	2014b	Explored rates of relapse and remission during a 4-year follow-up period who participated in a study using FBT or AFT to treat adolescents with AN.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	Weight (BMI), EDE Global score, BDI, YBC-ED, RSES, relapse, and remission status.	2-year follow-up: $n = 37$ 3-year follow-up: $n = 50$ 4-year follow-up: $n = 52$	Not reported	Range 12 to 18	AN (exclusive of amenorrhea)	FBT and AFT	Treatment outcomes appear stable once remission is achieved, regardless of treatment type. No significant differences between FBT and AFT in relapse or new remission during the long-term follow-up. Relapse rate at 1-year follow-up: FBT = 4.5%, AFT = 9.1%. New remission at 1-year follow-up: FBT: $n = 1$, AFT, $n = 9$. At the long-term follow-up, 2 participants met the criteria for BN (FBT: $n = 1$, AFT: $n = 1$), and 5 met the criteria for EDNOS (FBT: $n = 1$, AFT: $n = 4$).
Le Grange et al.	2015	Compare the efficacy of FBT-BN and CBT-A.	RCT	EDE, frequency of binge-eating and purging, %EBW, age, gender, duration of illness, minority status, pretreatment medication, intact family, family income, parental education, parental age, BDI, FES, CY-BOCS, YBC-EDS, K-SADS-PL, RSE	$N = 130$	Female 94%	Range: 12–18 ($M = 15.8$, $SD = 1.5$)	BN or partial BN	FBT-BN and CBT-A	Patients in the FBT-BN condition achieved a higher rate of abstinence from binge-eating and purging behaviors at EOT (FBT-BN = 39.4%; CBT-A = 19.7%) and 6-month follow-up (FBT-BN = 44.0%; CBT-A = 25.4%). Differences between treatments were not significantly different at the 12-month follow-up (FBT-BN = 48.5%; CBT-A = 32.0%). Patients in the FBT-BN condition achieved lower scores on the BDI at EOT. There were no significant differences between treatment types on EDE, CY-BOCS, YBS-EDS, and %EBW scores. More patients in the CBT-A condition were hospitalized during treatment for psychiatric reasons. Patients with lower scores on the FES Conflict subscale responded better to FBT-BN. Gender, YBC-EDS total score, FES Cohesion, intellectual-cultural orientation, active recreation orientation, and organization subscales at baseline were non-specific predictors of abstinence at EOT. Males, low YBC-EDS total, and high FES subscales were associated with greater rates of abstinence at EOT regardless of treatment type.

Author(s)	Year	Study Aim	Methodology	Outcome Measures	*N*	Gender	Age	Diagnosis	Intervention(s)	Summarized Results
Lim et al	2023	Compare patients with and without a comorbid mental health disorders in terms of their presenting symptoms, treatment engagement, and treatment outcome.	Quantitative	Service use (start and end date, number of hospitalizations), BMI, ROM, HoNOSCA, CGAS, and SDQ. Sociodemographic information (age and gender) and clinical characteristics (primary ED diagnosis and comorbid diagnosis)	$N = 78$	Female (84.6%) Male (15.4%)	Range: 8 to 18 ($M = 14.21$, $SD = 1.89$)	Eating Disorder: AN ($n = 66$) BN ($n = 4$) OSFED ($n = 7$) AAN ($n = 3$) Comorbid: Anxiety disorder ($n = 27$), OCD ($n = 10$); Depressive disorder ($n = 5$), ASD ($n = 2$), Mixed dep. and anx. disorders ($n = 2$), ADHD ($n = 1$)	FBT	Patients with comorbid mental health disorders experienced similar recovery rates to those without comorbidities. Those with comorbidities experienced a longer length of treatment. There were no significant differences between the groups on number of hospitalizations during treatment, and changes to psychological and physical symptoms, such as BMI.
Lock et al.	2010	Examine the efficacy of FBT and AFT for adolescents with AN.	RCT	Weight (BMI), EDE, rate of remission and partial remission, and retention/dropout, K-SADS	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 91%	Range: 12 to 18 ($M = 14.4$, $SD = 1.6$)	AN (inclusion of amenorrhea)	FBT and AFT	There was no significant difference between FBT and AFT on full remission at EOT (FBT = 42%; AFT = 23%). FBT demonstrated significantly greater remission rates at the 6- (FBT = 40%; AFT = 18%) and 12-month (FBT = 49%; AFT = 23%) follow-up. FBT also demonstrated significantly greater rates of partial remission, improvement of scores on the EDE, and an increase in %BMI at EOT. However, these differences were no longer observed at the 6- or 12-month follow-up. At the 12-month follow-up, 10% of FBT patients and 40% of AFT patients who were in full remission at EOT reported relapse. More participants were hospitalized during treatment in the AFT condition (AFT = 37%; FBT = 15%).
Lock et al.	2015	Examine the use as Intensive Parental Coaching (IPC) as an adjunctive treatment to FBT. Specifically, the feasibility, acceptability, and effect on early poor responders. In addition, this study examined changes in parental self-efficacy in FBT and FBT+IPC.	RCT with unbalanced design	Recruitment and attrition rates, height and weight (recorded at each time point), TSPE, EDE, K-SADS-PL, YBC-EDS, CY-BOCS, RSE, BDI, HRQ, and PvA	N=45 FBT: $n = 10$ FBT+IPC: $n = 35$ Dropout: n=9	Female: $n = 42$ Male: $n = 3$	Range: 12 to 18 ($M = 14.6$, $SD = 1.4$)	AN (inclusion of amenorrhea)	FBT and IPC	IPC did not add to the outcomes of FBT. However, IPC was found to be a feasible addition to FBT for patients who fail to gain sufficient weight by session 4, as IPC resulted in significant improvements in the rate of weight gain for early poor responders to a level comparable to those considered early responders. There were no significant differences between groups in recovery rate, weight, BMI, and %EBW. Differences in the scores obtained on the PvA were observed between mothers of early responders and non-early responders, which suggests that parents of early responders view themselves as self-efficacious. However, scores on the PvA significantly improved in the IPC group, and there were no longer differences between early and non-early responders, which suggests that IPC increased parental self-efficacy. There were no significant differences between groups in attrition and parental and patient rating of suitability.
Lock et al.	2016	Examine the effects of hospitalization during FBT and identify predictors and moderators of the use of hospitalization in adolescents with AN.	Quantitative. Used secondary data from RCT (Agras et al., 2014)	BMI, attrition, EDE, YBC-ED, RSE, BDI, CY/BOCS, KSADS, MPS; Hospital days, timing of hospital usage (early - first 5 weeks) or late (after 5 weeks of Treatment)	$N = 158$ FBT: $n = 78$ SyFT $n = 80$	Female 89.2%	Range: 12 to 18 ($M = 15.8$, $SD = 1.8$)	AN (inclusion of amenorrhea)	FBT and SyFT	There were no significant differences in hospitalizations between FBT and AFT during the first 5 weeks of treatment. Hospital admissions continued to increase in the AFT condition after week 5. The majority (73%) of hospitalizations occurred early in treatment (first 5 weeks). Hospitalized FBT patients spent fewer days in the hospital than AFT patients (FBT: $M = 8.3$ days, AFT: $M = 21$ days per hospitalization). Comorbid mental health disorders were a predictor of hospitalization before week 5 in both FBT and AFT. Hospitalization in both treatments was predicted by ED-related obsessive-compulsive symptoms, low self-esteem, perfectionism, depressive symptoms, and psychiatric comorbidity. Higher levels of eating-related obsessions and depression were found to moderate hospitalization rates. Patients in both treatment conditions with low baseline scores on the BDI, YBCED, MPS, RSE, and low rates of compensatory behaviors and comorbid psychiatric conditions were less likely to be hospitalized.
Loeb et al.	2007	Examined the feasibility and effectiveness of disseminating FBT for adolescent AN spectrum presentations in a clinical research setting.	Quantitative	%IBW, menstrual status, EDE (v12), and CDRS-R.	$N = 20$	Female 95%	Range: 12-17 ($M = 4.85$, $SD = 0.6$)	AN or subthreshold AN (SAN) AN (65%) AN-BP (15%)	FBT	FBT demonstrated significant clinical improvements in ED psychopathology in the clinical research setting. There was a significant increase in %IBW from baseline (82.30) to EOT (93.61). Significant improvements were demonstrated on the EDE restraint and eating concern subscales. No significant improvement was observed in the EDE shape concern or weight concern and CDRS-R. There was a significant increase in the resumption of menstruation at EOT (11% baseline vs. 67% EOT). All participants who met the criteria for SAN met the Morgan-Russel criteria for good outcome at EOT. 75% completed a full course of treatment. The mean number of sessions for treatment completers was 22.1. Incomplete treatment (<20) predicted lower body weight relative to typical treatment intensity, but extended treatment (>20) did not differ from typical intensity.
Lo Tempio et al	2013	Examined the relationship between characteristics of adolescents with AN and therapeutic alliance in FBT and AFT.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	Weight (BMI), EDE, YBC-EDS, WAI-observers' rater's version, K-SADS-P, duration of illness, previous hospitalization, expectancy for success (patient self-report), age, gender, intact family status, and years of parent education.	$N = 83$	Female 92%	$M = 14.5$, $SD = 1.6$	AN (inclusion of amenorrhea)	FBT and AFT	Therapeutic alliance was established even in the presence of high ED psychopathology. High baseline YBC-EDS and a comorbid diagnosis predicted greater alliance scores in both FBT and AFT. EDE weight concerns, eating concerns, and the presence of comorbid mental health diagnoses at baseline predicted high alliance scores in FBT. Higher baseline EDE scores predicted higher alliance scores in the FBT group. No baseline characteristics in the AFT condition were significantly correlated with alliance. Socioeconomic variables were not predictive of alliance in either treatment condition.
Mathson et al	2020	Replicate and extend findings that found early response to treatment in adolescent BN as predictive of treatment outcomes.	Quantitative. Used secondary data from RCT (Le Grange, et al., 2015)	EDE, binge-eating and purging frequency, weight, and session number	$N = 70$	Female 93%	15.69	BN or partial BN	FBT-BN and CBT-A	Reduction in ED psychopathology early in treatment was predictive of better treatment outcomes for adolescents with BN in both treatments. Reduction in purging behaviors by session 2 and binge-eating by session 4 was related to abstinence of symptoms at EOT in both treatments. Change in binge eating by session 8 and purging behaviors by session 9 were the greatest predictors of abstinence at the 6-month follow-up. Change in binge eating was related to abstinence at the 12-month follow-up. Reduction in binge-eating and purging behaviors was achieved sooner in FBT-BN.
McMahon, K., Stoddart, K. & Harris, F.	2022	Understand the experience of fathers and the impact of their involvement on the outcomes of FBT. This study also examined what factors increase or decrease paternal involvement in FBT.	Qualitative - Classic grounded theory	Purposive of fathers (interview) and COREQ checklist	$N = 15$	Fathers: male: $n = 15$ Adolescents: female: $n = 13$ male: $n = 2$	Range: 11 to 17	AN	FBT	Fathers made a large contribution to FBT and valued being involved in treatment. Fathers' contributions were identified in 4 main categories: being on the outside, finding a way in, finding a way to be, and finding a way to let go, and one core category describes the change in their role as a father. Initially, fathers described feeling on the outside and needing to find a way to understand and overcome feeling overwhelmed and inadequate. Fathers reported feeling judged and scrutinized during the family meal, which made it challenging to engage with FBT fully. FBT therapists who were collaborative helped fathers take an active role in treatment and increased their confidence. Fathers who were from separated families especially valued the opportunity to be more involved in treatment and with their child. Fathers tended to feel more confident and engaged in treatment when weight gain was achieved early in treatment and experienced self-blame, inadequacy, and a lack of support when weight gain was slow or when weight loss occurred. Fathers reported experiencing receiping, which was described as finding a way to be by keeping their child in mind while taking action to manage the effects of the ED and identifying they have contributions to make.
Peterson et al.	2016	Explore if adding emotion communication skills training (ECS) for parents to FBT will reduce emotion distress and target parental emotion validation skills effectively.	Qualitative: Case study	Weight, self-reported ED symptomology, and self-reported mood.	$N = 1$	Male 100%	14	AN-RT	FBT and ECSs	By EOT, the patient was considered to be in full remission due to weight restoration and reduction of ED symptomology. The patient no longer met malnutrition, bradycardia, and POTS criteria. The patient also reported an increase in his overall mood, and his parents reported being more engaged with his family.

Author(s)	Year	Study Aim	Methodology	Outcome Measures	*N*	Gender	Age	Diagnosis	Intervention(s)	Summarized Results
Peterson et al.	2020	Examine DBT skills group as an adjunctive treatment to FBT for adolescents with restrictive eating disorders	Quantitative. Pilot study.	EDE-Q, DBT-WCCL, CDI-2:SR[S]; DBT diary cards (DBT adaptive skills used, DBT dysfunctional coping, DBT blaming coping), EBW	$N = 18$	Female 100%	Range 13 to 18 ($M = 15.3$, $SD = 1.64$)	AN-RT: $n = 11$ AN-BP: $n = 2$ AAN: $n = 4$ OSFED: $n = 1$	FBT and DBT Skills group	There was a reduction in ED and depressive symptoms at EOT. A large effect size was found at EOT for increase in adaptive skills (i.e., emotion regulation and distress tolerance) and decrease in general dysfunctional coping strategies. A small to medium effect size was found for decrease in objective binge eating episode and increase in %EBW. In addition, there was a small effect size found in reduction of scores obtained on the EDE-Q global and restrain scales and CDI scores.
Plasencia et al.	2019	Examined the effectiveness of ABIE as an adjunctive treatment to FBT. Specifically, does ABIE increase the ability to consume meals that evoke disgust?	Mixed Methods: Case study	YEDE-Q global and all sub-scales, weight, BMI, calories consumed at meals, DSR	$N = 1$	Female	16	AN-R	FBT and ABIE	ABIE may be beneficial adjunctive treatment during the weight restoration phase of FBT, as it provides the patient with distress tolerance skills and exposure to foods with high disgust potential. At EOT, the patient demonstrated increased weight and a reliable change in YEDE-Q scores on the global, restraint, weight concerns, and shape concerns sub-scales.
Rienecke et al.	2016	Examined the relation between baseline parental expressed emotion (EE) and treatment outcomes (weight and ED psychopathology) among adolescents participating in a FBT or AFT for adolescents with AN, as well as the impact of EE on family functioning.	Quantitative. Used secondary data from RCT (Lock et al., 2010)	EDE, FAD, SCFI	$N = 121$ FBT: $n = 61$ AFT: $n = 60$	Female 91.8%	$M = 14.4$, $SD = 1.6$	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%)	FBT and AFT	Parental EE was not significantly related to weight restoration at EOT. Parental EE was found to impact ED cognitions and family functioning. Baseline parental criticism was predictive of lesser improvement in ED symptoms at EOT. There was a significant relationship between maternal hostility and treatment, such that mothers with greater hostility experienced a greater increase in %EBW in AFT compared to FBT. None of the maternal EE subscales significantly predicted improved ED pathology at EOT. Maternal criticism was also predictive of premature dropout. The presence of paternal critical comments predicted less improvement in ED psychopathology at EOT. No other parental EE subscale predicted improved ED psychopathology at EOT. Maternal hostility was predictive of overall impaired family functioning and communication at EOT. No other facet of parental EE significantly predicted other aspects of family functioning (i.e., affective response, affective involvement, roles, behavior control, or problem-solving) or improvement in %EBW at EOT.
Rhodes et al.	2008	Explores the use of parent-to-parent consultation as an adjunctive treatment to FBT.	RCT	%EBW, PvA, and DASS.	$N = 20$ families FBT: $n = 10$ FBT+parent-to-parent consultation: $n = 10$)	Female: $n = 20$	Range: 12 to 16	AN	FBT and Parent-to-parent consultation	Parent-to-parent consultation initially resulted in a significant increase in the rate of weight gain compared to the standard treatment group. However, no differences in %BMI were found between groups at EOT. A small treatment effect was found in the rate of weight gain in the parent-to-parent group. No significance was found between parent-to-parent consultation and parental efficacy.
Robinson et al.	2015	Examines emotion-focused therapy (EFT) principles and techniques as an adjunctive to FBT for the treatment of AN.	Qualitative: Case Study	Weight, parental feedback, ability to complete developmental tasks	$N = 1$	Female	<18 (no specific age given)	AN	FBT and EFFT	The patient achieved weight restoration, medical stability, and remission at EOT, except for bone mass. Per parental report, EFFT added value to FBT and helped the family be able to help their daughter recover after struggling to achieve remission before this treatment. The parents specifically cite the principles of EFFT as instrumental in achieving remission. At the 3-year follow-up, the patient maintained gains made in treatment and achieved typical developmental growth such as graduation from high school, ability to live independently at college, development, and maintenance of appropriate social relationships, and appropriate use of social support.
Sadeh-Sharvit et al.	2018	Assess the role of parental self-efficacy and familial perceptions of flexibility during FBT and SyFT. This study also explored parental self-efficacy as a mediator of the effects of treatment on early weight gain.	Quantitative. Used secondary data from RCT (Agras et al., 2014)	FACES, GSE, and weight	$N = 158$ FBT: $n = 78$ SyFT $n = 80$	Female 89.2%	Range: 12 to 18 ($M = 15.8$, $SD = 1.8$)	AN (exclusion of amenorrhea)	FBT and SyFT	Parental self-efficacy significantly increased for mothers and fathers early in treatment for the FBT condition. An increase in maternal self-efficacy by session 8 was a mediator of short-term weight gain (session 10). Perceived changes in family flexibility were not predictive of weight gain in either treatment condition.
Springall et al.	2022	Investigate the long-term psychological health of former patients who received FBT for AN during adolescence. A secondary aim was to understand how former patients managed the COVID-19 pandemic compared to a healthy control.	Quantitative	EDE-Q, CES, DASS, COVID-19 Impact (non-validated questionnaire) - includes sub-scales about limiting, excluding, binging, body image concerns, exercise importance, exercising more, sleeping trouble, moody, worry, hope.	$N = 65$ Former FBT: $n = 36$ Healthy control: $n = 29$	Former FBT: Female (94%) Healthy control: Female (75%)	Age reported is age of current study. Former FBT ($M = 24.2$, $SD = 2.4$) Healthy control ($M = 27.7$, $SD = 5.8$)	AN	FBT	There were no significant differences between groups in eating and exercise behaviors (EDE-Q and CES). The former patients experienced significantly greater levels of depression, anxiety, and stress than the control group. The COVID-19 pandemic equally impacted both group with the exception of former FBT patients reporting the COVID-19 restrictions as a potential trigger for ED attitudes and behaviors and endorsed some changes to body image and eating.
Valenzuela et al.	2018	Examined the effect of FBT-BN and CBT-A on depressive symptoms and self-esteem in adolescents with BN.	Quantitative. Used secondary data from RCT (Le Grange, et al., 2015)	EDE, BDI, RSE	$N = 110$ FBT-BN: $n = 58$ CBT-A: $n = 52$	Female 93.6%	Range: 12 to 18	BN and EDNOS-BN	FBT-BN and CBT-A	Depressive symptoms and self-esteem significantly improved in both treatments. BDI scores reduced by 36.9% in the FBT-BN group and 24.5% in the CBT-A group. The difference in BDI scores continued to improve at the 12-month follow-up, with a 46.9% reduction in the FBT-BN group and a 46.4% reduction in the CBT-A group. Self-esteem scores measured by the RSE returned to a mean level found in healthy adolescents by the 12-month follow up for both treatment groups.
Van Langenberg et al.	2016	Explore the psychosocial well-being of siblings of adolescents with AN being post FBT treatment.	Quantitative	SDQ, Parents, patients, and siblings rating of their expectation of the impact of treatment on the sibling's wellbeing (at diagnosis) and their perception of the impact of treatment of the sibling's well-being (following treatment)	$N = 89$ families	Female 90%	$M = 15.1$, $SD = 1.8$	AN and EDNOS	FBT	The psychosocial well-being of siblings did not significantly change at EOT. Before treatment, siblings endorsed higher levels of emotional difficulties, hyperactivity/inattention, and total difficulties. Mothers reported that siblings had lower levels of conduct problems and lower levels of prosocial behaviors. Fathers also reported lower levels of sibling conduct problems compared with norms. According to parent, patient, and sibling reports, siblings of patients who were medically hospitalized before FBT had lower emotional difficulties, lower hyperactivity/inattention, as self-reported by siblings, and total difficulties. There were no significant changes at EOT. Longer duration of illness was associated with greater sibling emotional difficulties, poor problems, lower prosocial behaviors, and total difficulties.
Wade et al	2022	Examine if GSH is a feasible adjunctive treatment to FBT while families are on the waitlist for FBT.	Mixed Methods	Acceptability (engagement, adherence, acceptability, adverse events), Child Mood and Behaviors Related to Eating Disorders, BMI, Carer quality of live (EQ-5D), carer confidence in managing the eating disorder (self-report of knowledge, skills, confidence, understanding, child's adherence to meal plan, and support).	$N = 16$ (completed baseline measures) n = 13 completed GSH	Not reported	Range 13-14 ($M = 13.92$, $SD = .86$)	AN and AAN	FBT and GSH	This study reported a low recruitment rate, with only 13% of eligible families interested in GSH and only 7% of the eligible families completing the program. GSH was reported as acceptable and beneficial, resulting in increased parental knowledge, skills, and confidence in managing the ED. Parents reported improved ED behaviors, weight gain (approximately 6kg of weight gain over 12 weeks), and improved mood and behaviors of their children.
Wallis et al.	2017	Understand the impact of FBT on family relationships.	Qualitative	Interviews, EDE Global, %EBW	Adolescent: $N = 16$ Parents: $N = 28$	Female 100%	Range: 12 to 18 ($M = 14.52$, $SD = 1.38$)	AN	FBT	Changes to the family dynamic reported throughout FBT include improved communication, closer family relationships, and intrapersonal change for adolescents and parents. Before FBT, parents identified themes of conflict and disconnect, and adolescents reported that their relationship with their parents was strained, tense, and stressed, which led to isolation and reduced confidence. During FBT, the therapeutic process was important for building relational containment. The structured and supportive approach of FBT was reported to create stability and reduce uncertainty. The FBT interventions that were most helpful were the initial focus on parental management of ED symptoms, the importance of parental alliance, the role of sibling(s), and externalizing the ED. Parents reported increased trust and security through greater understanding, reduction of criticism, and learning to provide support. After FBT, adolescents reported improved closeness and communication with their parents, and parents reported similar changes. Parents also reported a stronger and closer connection with their partners and an overall change in their parenting style. Adolescents reported an increased sense of self and confidence.

Author(s)	Year	Study Aim	Methodology	Outcome Measures	*N*	Gender	Age	Diagnosis	Intervention(s)	Summarized Results
Welch et al.	2022	Examine the role of baseline perfectionism in response to treatment, specifically eating-related psychopathology and weight.	Quantitative. Used secondary data from RCT (Agras et al., 2014)	EDE, YBOCS, FMPS, height and weight collected at each time point.	*N* = 158 FBT: *n* = 78 SyFT: *n* = 80	Female 89.2%	Range: 12 to 18 (*M* = 15.3, *SD* = 1.8)	AN	FBT and SyFT	Maladaptive perfectionism at baseline significantly predicted ED pathology (EDE global score) but not BW at EOT, 6-month, and 12-month follow-up. This relationship was strengthened when obsessive-compulsive symptoms were also high. Obsessive-compulsive symptoms also predicted ED pathology at EOT and 6-month follow-up. Perfectionism scores did not change during treatment in either treatment.
Williams, L., Wood, T. & Plath, D.	2020	Examined parents' experiences of FBT for the treatment of adolescents with AN.	Qualitative	Experience of parents engaging in FBT	Parents: *n* = 9 FBT: *n* = 6 Non-manualized systemic family interventions: *n* = 3 Children: *n* = 7	Parents: fathers: *n* = 3 mothers *n* = 6 Adolescents: female *n* = 6 male *n* = 1	Range: 13 to 17	AN	FBT and Systemic family interventions	Four prominent themes were identified: fear of denial, living with the foe, making sense of the struggle in treatment, and the quest for meaning. These themes highlight parental feelings of shock and guilt when identifying the ED, feeling dismissed by healthcare professionals, family conflict and challenges at mealtimes, changes to occupational, financial, and social resources, reliance on religion, spirituality, and other belief systems to manage emotions, and strengths and weaknesses of the treatments. Some of the main challenges reported by parents were the amount of time required for FBT, resulting in changes to occupational and social functioning. In addition, some parents reported FBT as "demanding and impersonal." Specific to the techniques of FBT, parents reported mixed feelings about the family meal, with some stating it was "force-feeding," and others reported that it supported them to do challenging things. One parent described the FBT clinician as "saying what they were trained to say…without eating" and reported the clinician's inflexibility as a reason for premature dropout. Parents expressed mixed thoughts about conjoint sessions, with some stating that it "disrupted" their relationship and others stating that transparency helped them maintain a relationship with their child and assisted in developing strategies to build trust in their relationship. The externalization of the illness was reported as one of the most helpful elements of FBT in helping parents move past self-blame and guilt and move toward recovery. Neither treatment was regarded as more favorable than the other.
Wufong, E. Rhodes, P. & Conti, J.	2019	Understand parental experience of FBT in cases that the family dropped-out of treatment or report continued psychological distress and ED psychopathology post treatment.	Qualitative	Parental experience of FBT/MFT	*Parents*: *n* = 13 parents Adolescents: n = 11	*Mothers*: *n* = 9 Fathers: *n* = 4 Female adolescents: n = 11	Range: 11 to 17	AN	FBT (Maudsley Family Therapy)	Three themes emerged: A map for therapy, negotiating guilt and responsibility, and navigating uncertainty. Parents initially experienced FBT as relief and felt comforted by finding a professional who specialized in AN treatment. Parents were disappointed with the lack of focus on addressing psychological distress due to the focus on eating related behaviors. Parents stated that FBT "sounds easy in principle" and identified the re-feeding process in phase 1 as distressing. Externalization of the illness was viewed as helpful, as it allowed parents to focus their frustration on fighting the illness. Parents continued to experience guilt related to the etiology of AN and when weight gain was not sufficient during the refeeding phase. Parents reported struggling handing control of eating and exercise back to the adolescent in phase 2. Parents felt helpless when the adolescent did not gain weight. Parents continued to feel anxious about the future for their child, especially when ED psychopathology or other mental health issues persisted.

Notes. ABIE = Acceptance-Based Interoceptive Exposure (Disgust Conditioning). BMI = Body Mass Index, CAPS = Child-Adolescent Perfectionism Scale, CBT = Cognitive Behavior Therapy, CBT-A = CBT for adolescents CBT-E = Cognitive Behavior Therapy-Enhanced, CBT-P = Cognitive Behavior Therapy for Perfectionism; CDRS-R = Children's Depression Rating Scale-Revised, CES = Commitment to Exercise Scale, CFI = Cognitive Flexibility Inventory, CGAS = Children's Global Assessment Scale, CTOCRS = The Core Treatment Objectives Clinician Rating Scale, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, DBT = Dialectical Behavior Therapy; DBT-WCCL = The DBT Ways of Coping Checklist, EDSIS = The Eating Disorder Symptom Impact Scale, DASS = Depression Anxiety and Stress Scale, DSR = Disgust Scale-Revised, EBW = Estimated Body Weight, ECGI = Experience of Care Giving Inventory, EDE = Eating Disorder Examination, EDE-Q = Eating Disorder Examination-Questionnaire, EDI-3 = Eating Disorder Inventory-3, ED-SQ = Carer Quality of Life, EE = Expressed Emotion, ECS = Emotion Communication Skills, ETP = Engagement in the Therapeutic Process, FACES = Family Adaptability and Cohesion Evaluation, FAD = Family Assessment Device, FBT = Family Based Treatment, FES = Family Environment Scale, FMPS = The Frost Multidimensional Perfectionism Scale, GSES = General Self-Efficacy Scale, GSH = Guided Self-Help; HoNOSCA = Health of the Nation Outcome Scales Children and Adolescent Mental Health, HRQ = Helping Relationships Questionnaire, IPC = Intensive Parental Coaching, K-SADS-PL = Schedule for Affective Disorder and Schizophrenia for School-Age Children, MMPS = Multidimensional Perfectionism Scale, OES = Outpatient Effectiveness Survey, PvA = Parents versus Anorexia Scale, ROM = Routine outcome measures, RSES = Rosenberg Self-Esteem Scale, SCFI = Standardized Clinical Family Interview, SDQ = Strengths and Difficulties Questionnaire, SCFI = Standardized Clinical Family Interview, SCL-90-R = Symptom Checklist-90-Revised, SOFTA-O = System for Observing Family Therapy Alliances-Observational, SSP = Shared Sense of Purpose, TSPE = Therapy Suitability and Patient Expectancy, WSAS = Work and Social Adjustment Scale, YBC-EDS = Yale-Brown-Cornell Eating Disorder Scale, YBOCS = Yale-Brown Obsessive Compulsive Scale.

Table 2

Remission

Author(s)	Year	Diagnosis	Intervention(s)	Summarized Results
Agras et al.	2014	AN (exclusion of amenorrhea)	FBT and SyFT	33.1% of FBT patients achieved remission at EOT and 40.7% at follow-up. 25.3% of SyFT patients achieved remission at EOT and 39.0% at follow-up. Intact families and AN without binge eating or purging behaviors had higher remission rates regardless of the treatment used.
Ciao et al.	2015	AN (exclusion of amenorrhea) AN-BP (17%)	FBT and AFT	In both FBT and AFT, improvement in several aspects of family functioning across family members was associated with full remission at the end of treatment. Regardless of treatment type, patient-perceived improvement in clarity about roles within the family, father-perceived improvement in problem-solving, and mother-perceived improvement in general family functioning were predictive of remission at EOT.
Goldstein et al.	2016	AN (73%) EDNOS-AN (27%)	FBT	FBT was effective when disseminated to the private practice setting. Significant weight gain was achieved by patients, with a majority achieving full (45.9%) or partial (43.2%) remission according to weight.
Hughes et al.	2017	AAN	FBT	Remission rates fell between 38 to 52% depending on the remission criteria applied.
Le Grange et al.	2005	AN	FBT	According to the Morgan-Russell outcome categories, 56% had a good outcome (>85% IBW and menses), 33% had an intermediate outcome (>85% IBW and menses intermittent), 11% responded poorly (<85% IBW and no menses).
Le Grange et al.	2014a	AN (exclusion of amenorrhea)	FBT anf AFT	There were no significant differences between treatments in remission rates at EOT (FBT = 42% and AFT = 23%). However, at the 6-month (FBT = 40%, AFT = 18%) and 12-month (FBT = 49%, AFT = 23%) follow-up, FBT demonstrated significantly greater remission rates than AFT. Patients in the FBT condition also achieved 95% EBW sooner than patients in the AFT condition.
Le Grange et al.	2014b	AN (exclusion of amenorrhea)	FBT and AFT	Treatment outcomes appear stable once remission is achieved, regardless of treatment type. No significant differences between FBT and AFT in relapse or new remission during the long-term follow-up. Relapse rate at 1-year follow-up: FBT = 4.5%, AFT = 9.1%. New remission at 1-year follow-up: FBT: n = 1, AFT, n = 9. At the long-term follow-up, 2 participants met the criteria for BN (FBT: n = 1, AFT: n = 1), and 5 met the criteria for EDNOS (FBT: n = 1, AFT: n = 4).
Le Grange et al.	2015	BN or partial BN	FBT-BN and CBT-A	Patients in the FBT-BN condition achieved a higher rate of abstinence from binge-eating and purging behaviors at EOT (FBT-BN = 39.4%; CBT-A = 19.7%) and 6-month follow-up (FBT-BN = 44.0%; CBT-A = 25.4%). Differences between treatments were not significantly different at the 12-month follow-up (FBT = 48.5%; CBT = 32.0%).
Lock et al.	2010	AN (exclusion of amenorrhea)	FBT and AFT	There was no significant difference between FBT and AFT on full remission at EOT (FBT = 42%; AFT = 23%). FBT demonstrated significantly greater remission rates at the 6- (FBT = 40%; AFT = 18%) and 12-month (FBT = 49%; AFT = 23%) follow-up. FBT also demonstrated significantly greater rates of partial remission at EOT. However, these differences were no longer observed at the 6- or 12-month follow-up. At the 12-month follow-up, 10% of FBT patients and 40% of AFT patients who were in full remission at EOT reported relapse.
Loeb et al.	2007	AN or subthreshold AN (SAN) AN (65%) AN-BP (15%)	FBT	All participants who met the criteria for SAN met the Morgan-Russel criteria for good outcome at EOT. 75% completed a full course of treatment.
Matheson et al.	2022	BN or partial BN	FBT-BN and CBT-A	Reduction in purging behaviors by session 2 and binge-eating by session 4 was related to abstinence of symptoms at EOT in both treatments. Change in binge eating by session 8 and purging behaviors by session 9 were the greatest predictors of abstinence at the 6-month follow-up. Change in binge eating was related to abstinence at the 12-month follow-up.

Notes. AFT = Adolescent Focused Therapy, AN = anorexia nervosa, BN = bulimia nervosa, EDNOS = eating disorder not otherwise specified, EOT = end of treatment, FBT = Family Based Treatment, IBW = ideal body weight, SyFT = Systemic family therapy.

Table 3

Weight Related Outcomes

Author(s)	Year	Diagnosis	Intervention(s)	Summarized Results
Agras et al.	2014	AN (exclusion of amenorrhea)	FBT and SyFT	No significant differences in weight was detected between FBT and SyFT at EOT and 12-month follow-up. Participants treated with FBT gained weight at a significantly greater rate. Younger patients and patients with a shorter duration of illness gained more weight regardless of treatment type.
Couturier et al.	2010	AN AN-R: n = 12 AN-BP: n = 2	FBT	At EOT, weight significantly increased by an average of 7.8 kg and %IBW also significantly improved to 95.7% at EOT.
Ellison et al.	2012	AN	FBT	Significant weight gain was achieved by session 20, with an average of 87.61% IBW. 84.7% (n = 50) reached at least 85% IBW, and 40.7% (n = 24) reached 95% of IBW by session 20.
Goldstein et al.	2016	AN (73%) EDNOS-AN (27%)	FBT	FBT was effective when disseminated to the private practice setting. Significant weight gain was achieved by patients, with a majority achieving full (45.9%) or partial (43.2%) remission according to weight.
Hughes et al.	2017	AAN	FBT	While there was change recorded in weight (kg) from baseline to EOT, the change in %mBMI was not significant. The individual variation in weight change from baseline to EOT ranged from a loss of 10.4kg to a gain of 13.7kg.
Isserlin, L. & Couturier, J.	2012	AN AN-R: n = 12 AN-BP: n = 2	FBT	All of the adolescents treated with FBT gained weight. The percentage of IBW at the final session was 99.9% in those who completed treatment and 89.9% in those who dropped out of treatment. Percent IBW at EOT was related to the parental therapeutic alliance (ETP) during the family meal (session 2).
Lebow et al.	2019	AN or EDNOS (AAN). AN (n = 84, 54.9%) AAN (n = 69, 45.1%)	FBT	5 distinct weight gain trajectories were found. Class 1, "slow and steady gains," was characterized by a low baseline %BMI that improved slowly and steadily (48.4% of participants). Class 2, "moderate gains with mid-treatment maintenance," was characterized as moderate initial weight gain that slowly plateaued to maintenance by 3 months into FBT (24.8% of participants). Class 3, "dramatically rapid early gains that stabilize at the 65th percentile," was characterized as substantial weight gain from below the 5th %ile to the 80th %ile within 6 sessions, followed by weight loss to the 60th %ile by 3 months and stabilization at the 65th %ile at 6 months (2.6% of participants). Class 4, "maintenance at the 60th %ile," was characterized as baseline %BMI above 60 with a steady weight gain to initial %BMI by 3 months (18.3% of participants). Class 5, "rapid gains with early stabilization," was characterized as early rapid weight gains that peak at session 6 and remain stable (5.9% of participants).
Le Grange et al.	2005	AN	FBT	56% achieved >85% IBW and menses, 33% achieved >85% IBW and menses intermittent, 11% achieved <85% IBW and no menses.
Le Grange et al.	2014a	AN (exclusion of amenorrhea)	FBT anf AFT	Patients in the FBT condition also achieved 95% EBW sooner than patients in the AFT condition.
Le Grange et al.	2015	BN or partial BN	FBT-BN and CBT-A	There were no significant differences between treatment types on %EBW scores.
Lim et al	2023	AN (n = 64) BN (n = 4) OSFED (n = 7) AAN (n = 3)	FBT	There were no significant differences between the groups on changes to BMI.
Lock et al.	2010	AN (exclusion of amenorrhea)	FBT and AFT	FBT also demonstrated significantly greater rates of increase in %BMI at EOT. However, these differences were no longer observed at the 6- or 12-month follow-up. At the 12-month follow-up.
Loeb et al.	2007	AN or subthreshold AN (SAN) AN (65%) AN-BP (15%)	FBT	There was a significant increase in %IBW from baseline (82.30) to EOT (93.61).

Notes. AFT = Adolescent Focused Therapy, AN = anorexia nervosa, AN-BP = anorexia nervosa, binge-purge type, AN-R = anorexia nervosa, restricting type, BMI = body mass index, BN = bulimia nervosa, EBW = estimated body weight, EDNOS = eating disorder not otherwise specified, EOT = end of treatment, FBT = Family Based Treatment, IBW = ideal body weight, OSFED = other specified feeding or eating disorder, SyFT = Systemic family therapy.

Table 4

Eating Disorder Psychopathology Outcomes

Author(s)	Year	Outcome Measures	Diagnosis	Intervention(s)	Summarized Results
Accurso et al.	2014	EDE (v12.0), weight (%EBW); demographic data (age, sex, racial/ethnic minority, duration of illness, AN subtype (AN-BP or AN-R), intact family status, prior psychiatric hospitalization, current use of psychotropic medications, and psychiatric comorbidity (K-SADS), BDI and RSES.	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%)	FBT and AFT	Weight gain early in treatment improved ED psychopathology (EDE global scores, eating concerns, and dietary restraint). Most psychological symptoms significantly improved from EOT to 12-month follow-up in FBT and AFT. EDE restraint subscale were most improved, EDE weight and shape concern subscales were least improved, and self-esteem was not significantly improved. The rate of change in weight concerns, shape concerns, eating concerns, and dietary restraint were faster for adolescents with AN-BP.
Couturier et al.	2010	Weight (IBW), dropout rates, EDE (15th ed), EDI-3, all sessions videotaped to assess fidelity, parent and adolescent final satisfaction.	AN-R: n = 12 AN-BP: n = 2	FBT	8 of the 9 participants experiencing amenorrhea at baseline had regular menstruation at EOT. Psychopathology significantly improved over the course of treatment, specifically on the restraint subscale of the EDE and interoceptive deficits and maturity fears subscales of the EDI-3.
Hughes et al.	2017	BMI, menstrual status, self-report of presence of binging and purging in the past week, EDE (child and parent versions), MINI (child and parent versions), YBC-EDS, CY-BOCS, CDI, RSES	AAN	FBT	At EOT, there were significant improvement in ED pathology. There was also a significant reduction in the prevalence of amenorrhea and irregular menstruation.
Le Grange et al.	2005	Weight and height (IBW), EDE (14th ed), RSE, BDI, patient report of menstrual cycle, Morgan-Russell outcome categories	AN	FBT	56% achieved return of menses.
Le Grange et al.	2015	EDE, frequency of binge-eating and purging, %EBW, age, gender, duration of illness, minority status, pretreatment medication, intact family, family income, parental education, parental age, BDI, FES, CY-BOCS, YBC-EDS, K-SADS-PL, RSES	BN or partial BN (defined as binge eating and purging for more than once/week in last 6 months)	FBT-BN and CBT-A	There were no significant differences between treatment types on EDE and YBC-EDS scores.
Lim et al	2023	Service use (start and end date, number of hospitalization), BMI, ROM, HoNOSCA, CGAS, and SDQ, Sociodemographic information (age and gender) and clinical characteristics (primary ED diagnosis and comorbid diagnosis)	AN (n = 64) BN (n = 4) OSFED (n = 7) Atypical AN (n = 3)	FBT	There were no significant differences between the groups on changes to psychological symptoms.
Lock et al.	2010	Weight (BMI), EDE, rate of remission and partial remission, and retention/dropout, K-SADS	AN (exclusion of amenorrhea)	FBT and AFT	FBT also demonstrated significantly greater rates of improvement of scores on the EDE at EOT. However, these differences were no longer observed at the 6- or 12-month follow-up. At the 12-month follow-up.
Loeb et al.	2007	%IBW, menstrual status, EDE (v12), and CDRS-R.	AN or subthreshold AN (SAN) AN (65%) AN-BP (15%)	FBT	FBT demonstrated significant clinical improvements in ED psychopathology in the clinical research setting. Significant improvements were demonstrated on the EDE restraint and eating concern subscales. No significant improvement was observed in the EDE shape concern or weight concern. There was a significant increase in the resumption of menstruation at EOT (11% baseline vs. 67% EOT).
Springall et al.	2022	EDE-Q, CES, DASS, COVID-19 Impact (non-validated questionnaire) - includes sub-scales about limiting, excluding, binging, body image concerns, exercise importance, exercising more, sleeping trouble, moody, worry, hope.	AN	FBT	There were no significant differences between groups in eating and exercise behaviors (EDE-Q and CES). The COVID-19 pandemic equally impacted both group with the exception of former FBT patients reporting the COVID-19 restrictions as a potential trigger for ED attitudes and behaviors and endorsed some changes to body image and eating.

Notes. AAN = atypical anorexia nervosa, AFT = Adolescent Focused Therapy, AN = anorexia nervosa, AN-BP = anorexia nervosa, binge-purge type, AN-R = anorexia nervosa, restricting type, BDI = Beck Depression Inventory, BMI = body mass index, BN = bulimia nervosa, CDI = Child Depression Inventory, CDRS-R = Child Depression Rating Scale-Revised, CES = Commitment to Exercise Scale, CGAS = Children's Global Assessment Scale, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, DASS = Depression Anxiety and Stress Scale, EBW = estimated body weight, EDE-Q = Eating Disorder Examination-Questionnaire, EDI-3 = Eating Disorder Inventory (3rd ed.), EDNOS = eating disorder not otherwise specified, EOT = end of treatment, FBT = Family Based Treatment, FES = Family Environment Scale, HoNOSCA = Health of the Nation Outcome Scales Children and Adolescent Mental Health, IBW = ideal body weight, OSFED = other specified feeding or eating disorder, ROM = Routine outcome measure, RSE = Rosenberg Self-Esteem Scale, YBC-EDS=Yale-Brown-Cornell Eating Disorder Scale.

Table 5

Other Mental Health Outcomes

Author(s)	Year	Outcome Measures	Diagnosis	Intervention(s)	Summarized Results
Accurso et al.	2014	EDE (v12.0), weight (%EBW); demographic data (age, sex, racial/ethnic minority, duration of illness, AN subtype (AN-BP or AN-R), intact family status, prior psychiatric hospitalization, current use of psychotropic medications, and psychiatric comorbidity (K-SADS), BDI and RSES.	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%).	FBT and AFT	Most psychological symptoms significantly improved from EOT to 12-month follow-up in FBT and AFT. Depressive symptoms were most improved and self-esteem was not significantly improved. Depressive symptoms tended to reduce over time, regardless of weight gain.
Hughes et al.	2017	BMI, menstrual status, self-report of presence of binging and purging in the past week, EDE (child and parent versions), MINI (child and parent versions), YBC-EDS, CY-BOCS, CDI, RSES	AAN	FBT	At EOT, there were significant improvement in depressive symptoms. There was no significant improvement in self-esteem or obsessive compulsiveness at EOT.
Le Grange et al.	2015	EDE, frequency of binge-eating and purging, %EBW, age, gender, duration of illness, minority status, pretreatment medication, intact family, family income, parental education, parental age, BDI, FES, CY-BOCS, YBC-EDS, K-SADS- PL, RSES	BN or partial BN (defined as binge eating and purging for more than once/week in last 6 months)	FBT-BN and CBT-A	Patients in the FBT-BN condition achieved lower scores on the BDI at EOT. There were no significant differences between treatment types on CY-BOCS scores.
Lim et al.	2023	Service use (start and end date, number of hospitalization), BMI, ROM, HoNOSCA, CGAS, and SDQ, Sociodemographic information (age and gender) and clinical characteristics (primary ED disgnosis and comorbid diagnosis)	AN (n = 64), BN (n = 4), OSFED (n = 7), Atypical AN (n = 3) Comorbid: Anxiety disorder (n = 27), OCD (n = 10), Depression related disorder (n = 5), ASD (n = 2), Mixed depression and anxiety disorders (n = 2), ADHD (n = 1)	FBT	Patients with comorbid mental health disorders experienced similar recovery rates to those without comorbidities. Those with comorbidities experienced a longer length of treatment. There were no significant differences between the groups on number of hospitalizations during treatment, and changes to psychological and physical symptoms, such as BMI.
Loeb et al.	2007	%IBW, menstrual status, EDE (v12), and CDRS-R.	AN or subthreshold AN (SAN) AN (65%), AN-BP (15%)	FBT	No significant improvement was observed on the CDRS-R.
Springall et al.	2022	EDE-Q, CES, DASS, COVID-19 Impact (non-validated questionnaire) - includes sub-scales about limiting, excluding, binging, body image concerns, exercise importance, exercising more, sleeping trouble, moody, worry, hope.	AN	FBT	The former patients experienced significantly greater levels of depression, anxiety, and stress than the control group.
Valenzuela et al.	2018	EDE, BDI, RSE	BN and EDNOS-BN	FBT-BN and CBT-A	Depressive symptoms and self-esteem significantly improved in both treatments. BDI scores reduced by 36.9% in the FBT-BN group and 24.5% in the CBT-A group. The difference in BDI scores continued to improve at the 12-month follow-up, with a 46.9% reduction in the FBT-BN group and a 46.4% reduction in the CBT-A group. Self-esteem scores measured by the RSE returned to a mean level found in healthy adolescents by the 12-month follow up for both treatment groups.
Wallis et al.	2017	Interviews, EDE Global, %EBW	AN	FBT	Adolescents reported an increased sense of self and confidence.

Notes. AAN = atypical anorexia nervosa, ADHD = attention deficit/hyperactivity disorder, AFT = Adolescent Focused Therapy, AN = anorexia nervosa, AN-BP = anorexia nervosa, binge-purge type, AN-R = anorexia nervosa, restricting type, ASD = autism spectrum disorder, BDI = Beck Depression Inventory, BMI = body mass index, BN = bulimia nervosa, CDI = Child Depression Inventory, CDRS-R = Child Depression Rating Scale-Revised, CES = Commitment to Exercise Scale, CGAS = Children's Global Assessment Scale, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, DASS = Depression Anxiety and Stress Scale, EBW = estimated body weight, EDE-Q = Eating Disorder Examination-Questionnaire, EDI-3 = Eating Disorder Inventory (3rd ed.), EDNOS = eating disorder not otherwise specified, EOT = end of treatment, FBT = Family Based Treatment, FES = Family Environment Scale, HoNOSCA = Health of the Nation Outcome Scales Children and Adolescent Mental Health, IBW = ideal body weight, OCD = obsessive compulsive disorder, OSFED = other specified feeding or eating disorder, ROM = Routine outcome measure, RSE = Rosenberg Self-Esteem Scale, SDQ = Strengths and Difficulties Questionnaire, YBC-EDS = Yale-Brown-Cornell Eating Disorder Scale.

Table 6

Family Functioning Outcomes

Author(s)	Year	Diagnosis	Summarized Results
Ciao et al.	2015	AN AN-BP (17%)	Families reported some baseline impairment to family functioning that was slightly elevated compared to cutoff scores of impairments. Adolescents reported the greatest impairment in family functioning. In both FBT and AFT, improvement in several aspects of family functioning across family members was associated with full remission at the end of treatment. FBT demonstrated more substantial positive changes in perceived family functioning, specifically in communication and behavioral control.
Krautter, T. & Lock, J.	2004	AN	70% of participants reported positive changes in family functioning that included increased family closeness, communication, openness/honesty, problem-solving skills, parental understanding, awareness/attention to feelings, family support, patience, parental cooperation, appreciation for one another, overall happiness, and decreased arguing and criticism/blame. One mother perceived a negative change in family dynamics, and three mothers, four fathers, and four adolescents perceived both positive and negative changes.
Wallis et al.	2017	AN	Changes to the family dynamic reported throughout FBT include improved communication, closer family relationships, and intrapersonal change for adolescents and parents. Before FBT, parents identified themes of conflict and disconnect, and adolescents reported that their relationship with their parents was strained, tense, and stressed, which led to isolation and reduced confidence. After FBT, adolescents reported improved closeness and communication with their parents, and parents reported similar changes. Parents also reported a stronger and closer connection with their partners and an overall change in their parenting style.

Notes. AFT = Adolescent Focused Therapy, AN = anorexia nervosa, AN-BP = anorexia nervosa, binge-purge type.

Table 7

Experience of Patients and Families

Author(s)	Year	Diagnosis	Summarized Results
Conti et al.	2021	AN	Participant responses were categorized into two main themes: therapeutic focus and identity negotiations. Participants felt that their psychological distress was overlooked, which was cited as a primary reason for dropout. Participants reported that the weight gain alone did not significantly reduce their psychological distress. In addition, participants also felt a loss of voice and autonomy in treatment, as their parents were expected to take control of their eating. The majority of participants viewed their parents taking control of their eating as relieving and were able to identify the support of their parents as vital to their treatment. However, some participants stated that family conflict increased.
Hughes et al.	2018	AN and EDNOS-AN type	Greater paternal attendance was found to be associated with better patient outcomes. Specifically, greater attendance by fathers predicted higher weight, lower ED symptoms, and remission at EOT. Maternal and sibling attendance did not significantly predict weight or ED symptoms at EOT. Maternal and sibling attendance were not significant predictors of remission. Over the course of treatment, maternal attendance was fairly consistent (94%), fathers' attendance declined (72%), and attendance by sibling(s) declined rapidly (20%). No significant differences were found in attendance of mothers and siblings based on family characteristics or treatment structure. Fathers from non-intact families attended significantly fewer sessions than fathers from intact families, and fathers from families who were participating in the RCT attended significantly more sessions than fathers from families who were not participating in the RCT.
Krautter, T. & Lock, J.	2004	AN	Families reported FBT to be effective and acceptable. 70% of participants reported positive changes in family functioning that included increased family closeness, communication, openness/honesty, problem-solving skills, parental understanding, awareness/attention to feelings, family support, patience, parental cooperation, appreciation for one another, overall happiness, and decreased arguing and criticism/blame. One mother perceived a negative change in family dynamics, and three mothers, four fathers, and four adolescents perceived both positive and negative changes. The main criticism of FBT was that other psychological issues and distress were not addressed. Other criticisms included FBT not including a follow-up plan after treatment, no group therapy, and no parent support group or parental therapy. Some families suggested that individual or family therapy would be helpful to address issues other than AN.
McMahon, K., Stoddart, K. & Harris, F.	2022	AN	Fathers made a large contribution to FBT and valued being involved in treatment. Initially, fathers described feeling on the outside and needing to find a way to understand and overcome feeling overwhelmed and inadequate. Fathers reported feeling judged and scrutinized during the family meal, which made it challenging to engage with FBT fully. FBT therapists who were collaborative helped fathers take an active role in treatment and increased their confidence. Fathers who were from separated families especially valued the opportunity to be more involved in treatment and with their child. Fathers tended to feel more confident and engaged in treatment when weight gain was achieved early in treatment and experienced self-blame, inadequacy, and a lack of support when weight gain was slow or when weight loss occurred. Fathers reported experiencing "rescripting," which was described as finding a way to be by keeping their child in mind while taking action to manage the effects of the ED and identifying they have contributions to make.
Sadeh-Sharvit et al.	2018	AN	Parental self-efficacy significantly increased for mothers and fathers early in treatment for the FBT condition.
Van Langenberg et al.	2016	AN and EDNOS AN (36%)	The psychosocial well-being of siblings did not significantly change at EOT. Before treatment, siblings endorsed higher levels of emotional difficulties, hyperactivity/inattention, and total difficulties. Mothers reported that siblings had lower levels of conduct problems and lower levels of prosocial behaviors. Fathers also reported lower levels of sibling conduct problems compared with norms. According to parent, patient, and sibling reports, siblings of patients who were medically hospitalized before FBT had lower emotional difficulties, lower hyperactivity/inattention, as self-reported by siblings, and total difficulties. There were no significant changes at EOT. Longer duration of illness was associated with greater sibling emotional difficulties, peer problems, lower prosocial behaviors, and total difficulties.
Wallis et al.	2017	AN	The structured and supportive approach of FBT was reported to create stability and reduce uncertainty. The FBT interventions that were most helpful were the initial focus on parental management of ED symptoms, the importance of parental alliance, the role of sibling(s), and externalizing the ED. Parents reported increased trust and security through greater understanding, reduction of criticism, and learning to provide support. After FBT, adolescents reported improved closeness and communication with their parents, and parents reported similar changes. Parents also reported a stronger and closer connection with their partners and an overall change in their parenting style. Adolescents reported an increased sense of self and confidence.
Williams, L., Wood, T. & Plath, D.	2020	AN	Four prominent themes were identified: fear of denial, living with the foe, making sense of the struggle in treatment, and the quest for meaning. These themes highlight parental feelings of shock and guilt when identifying the ED, feeling dismissed by healthcare professionals, family conflict and challenges at mealtimes, changes to occupational, financial, and social resources, reliance on religion, spirituality, and other belief systems to manage emotions, and strengths and weaknesses of the treatments. Some of the main challenges reported by parents were the amount of time required for FBT, resulting in changes to occupational and social functioning. In addition, some parents reported FBT as "demanding and impersonal." Specific to the techniques of FBT, parents reported mixed feelings about the family meal, with some stating it was "force-feeding," and others reported that it supported them to do challenging things. One parent described the FBT clinician as "saying what they were trained to say…without caring" and reported the clinician's inflexibility as a reason for premature dropout. Parents expressed mixed thoughts about conjoint sessions, with some stating that it "disrupted" their relationship and others stating that transparency helped them maintain a relationship with their child and assisted in developing strategies to build trust in their relationship. The externalization of the illness was reported as one of the most helpful elements of FBT in helping parents move past self-blame and guilt and move toward recovery. Neither treatment was regarded as more favorable than the other.
Wufong, E. Rhodes, P. & Conti, J.	2019	AN	Parents initially experienced FBT as relief and felt comforted by finding a professional who specialized in AN treatment. Parents were disappointed with the lack of focus on addressing psychological distress due to the focus on eating related behaviors. Parents stated that FBT "sounds easy in principle" and identified the re-feeding process in phase 1 as distressing. Externalization of the illness was viewed as helpful, as it allowed parents to focus their frustration on fighting the illness. Parents continued to experience guilt related to the etiology of AN and when weight gain was not sufficient during the refeeding phase. Parents reported struggling handing control of eating and exercise back to the adolescent in phase 2. Parents felt helpless when the adolescent did not gain weight. Parents continued to feel anxious about the future for their child, especially when ED psychopathology or other mental health issues persisted.

Notes. AN = anorexia nervosa, ED = eating disorder, EOT = end of treatment, FBT = Family-Based Treatment, RCT = randomized controlled trial.

Table 8

Experience of FBT Specific Components

Author(s)	Year	Diagnosis	Summarized Results
Conti et al.	2021	AN	The majority of participants viewed their parents taking control of their eating as relieving and were able to identify the support of their parents as vital to their treatment.
Couturier et al.	2010	AN-R: n = 12 AN-BP: n = 2	FBT was fidelity consistent and is effective. Treatment fidelity was the greatest in phase 1 and then dropped in phases 2 and 3.
Darcy et al.	2013	AN	Patient and parental behavior in sessions 1 to 4 predict early treatment response. Patients who displayed fewer negative verbal behaviors and moved away from the table less in the first and family meal sessions were more likely to respond to treatment early. Parents who made less critical statements and who did not repeatedly present food during the family meal session were more likely to have adolescents with early responses to treatment. Parental behaviors observed in session 1 were predictive of early response to treatment: confidence/empowerment, positive physical encouragement, verbal encouragement, serving and presenting food, and modeling eating. Parents who were able to increase their positive physical behaviors from sessions 1 to 4 and increased neural verbal behaviors were more likely to be from the early responders group.
Ellison et al.	2012	AN	Four (parental control, externalization of the illness, restructuring the family, and parental consistency) of the five core components of FBT predicted weight gain at EOT. Parental control was the strongest predictor. Sibling support did not predict weight gain.
Forsberg et al.	2014	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%).	Parental therapeutic alliance scores were significantly greater than adolescent therapeutic alliance scores early in treatment. Parents in the FBT treatment developed greater therapeutic alliance early in treatment. Parental therapeutic alliance was not a predictor of remission at EOT.
Krautter & Lock	2004	AN	One mother perceived a negative change in family dynamics, and three mothers, four fathers, and four adolescents perceived both positive and negative changes. The main criticism of FBT was that other psychological issues and distress were not addressed. Other criticisms included FBT not including a follow-up plan after treatment, no group therapy, and no parent support group or parental therapy. Some families suggested that individual or family therapy would be helpful to address issues other than AN.
Le Grange et al.	2005	AN	There was no difference in outcome between the younger (ages 9–14) and the older patients (ages 15-18). 71% of patients received 20 or fewer treatment sessions, and the remaining 29% of patients received >20 treatment sessions. On average, patients completed 17 sessions over 9.7 months. Most families (87.8%) remained in treatment until it was mutually decided by the parents and therapist. There were no significant differences in outcome for patients treated by the senior therapist compared with the group of trainee therapists.
Lo Tempio et al	2013	AN (exclusion of amenorrhea)	Therapeutic alliance was established even in the presence of high ED psychopathology. Higher baseline EDE scores predicted higher alliance scores in the FBT group. No baseline characteristics in the AFT condition were significantly correlated with alliance.
Wallis et al.	2017	AN	The therapeutic process was important for building relational containment. The structured and supportive approach of FBT was reported to create stability and reduce uncertainty. The FBT interventions that were most helpful were the initial focus on parental management of ED symptoms, the importance of parental alliance, the role of sibling(s), and externalizing the ED. Parents reported increased trust and security through greater understanding, reduction of criticism, and learning to provide support.
Williams, L., Wood, T. & Plath, D.	2020	AN	Specific to the techniques of FBT, parents reported mixed feelings about the family meal, with some stating it was "force-feeding," and others reported that it supported them to do challenging things. One parent described the FBT clinician as "saying what they were trained to say…without caring" and reported the clinician's inflexibility as a reason for premature dropout. Parents expressed mixed thoughts about conjoint sessions, with some stating that it "disrupted" their relationship and others stating that transparency helped them maintain a relationship with their child and assisted in developing strategies to build trust in their relationship. The externalization of the illness was reported as one of the most helpful elements of FBT in helping parents move past self-blame and guilt and move toward recovery.
Wufong, E. Rhodes, P. & Conti, J.	2019	AN	Parents felt comforted by finding a professional who specialized in AN treatment. Parents identified the re-feeding process in phase 1 as distressing. Externalization of the illness was viewed as helpful, as it allowed parents to focus their frustration on fighting the illness. Parents continued to experience guilt related to the etiology of AN and when weight gain was not sufficient during the refeeding phase. Parents reported struggling handing control of eating and exercise back to the adolescent in phase 2.

Notes. AFT = Adolescent Focused Therapy, AN = anorexia nervosa, AN-BP = anorexia nervosa, binge-purge type, AN-R = anorexia nervosa, restricting type, ED = eating disorder, EOT = end of treatment, FBT = Family-Based Treatment.

Table 9

FBT Compared to Other Treatments

Author(s)	Year	*N*	Gender	Age	Diagnosis	Intervention(s)	Outcome Measures	Summarized Results
Accurso et al.	2014	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 91.8%	*M* = 14.4, *SD* = 1.6	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%).	FBT and AFT	EDE, weight (%EBW), demographic data, intact family status, prior psychiatric hospitalization, current use of psychotropic medications, and psychiatric comorbidity, BDI and RSES.	Most psychological symptoms significantly improved from EOT to 12-month follow-up in both FBT and AFT. Of the psychological improvement, depressive symptoms and the restraint subscale of the EDE were most improved and weight and shape concern subscales of the EDE were least improved and self-esteem was not significantly improved at all.
Agras et al.	2014	*N* = 164 FBT: *n* = 78 SyFT: n = 80 *n* = 158 included in analysis	Female 89.2%	*M* = 15.3, *SD* = 1.8	AN (exclusion of amenorrhea)	FBT and SyFT	Weight (IBW), EDE, K-SADS, BDI, State-Train Anxiety Inventory, CY-BOCS, RSE, YBC-EDS, Quality of Life Enjoyment and Satisfaction Questionnaire, treatment fidelity (6 raters)	No significant differences in weight, ED psychopathology, or comorbid psychiatric disorders were detected between FBT and SyFT at EOT and 12-month follow-up. 33.1% of FBT patients achieved remission at EOT and 40.7% at follow-up. 25.3% of SyFT patients achieved remission at EOT and 39.0% at follow-up. Participants treated with FBT gained weight at a significantly greater rate, spent fewer days in the hospital, and spent less on treatment (mean treatment costs per individual FBT=$8963; SyFT=$18,005). Younger patients and patients with a shorter duration of illness gained more weight regardless of treatment type. Intact families and AN without binge eating or purging behaviors had higher remission rates regardless of the treatment used. Patients with higher CY-BOCS scores gained more weight with SyFT. There were no significant differences between groups seeking additional treatment during the follow-up period. 35.1% of FBT patients and 25.0% of SyFT patients received psychotherapy during the follow-up period.
Byrne et al.	2015	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 90.9%	*M* = 14.4, *SD* = 1.6	AN (exclusion of amenorrhea)	FBT and AFT	Weight, EDE (12.0), PvAN, General Self-Efficacy Scale, BDI, RSE, KSADS	Greater increase to parental self-efficacy over the course of FBT was predictive of adolescent weight gain at EOT. Parental-self efficacy was not predictive of weight gain in AFT. Increase in patient self-efficacy was not predictive of weight gain in either treatment condition.
Byrne et al.	2018	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 90.9%	*M* = 14.4, *SD* = 1.6	AN (exclusive of the amenorrhea criteria. AN-BP (17%)	FBT and AFT	YB-CED and Weight.	There was a significant negative correlation between eating-related obsessionality and weight, which indicates that a decrease in overall eating-related obsessionality is significantly associated with an increase in weight. This relationship was only observed in the FBT condition.
Ciao et al.	2015	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 90.9%	*M* = 14.4, *SD* = 1.6	AN (exclusive of the amenorrhea criteria. AN-BP (17%)	FBT and AFT	Weight (%EBW), EDE Global scale, BDI, RSES, YBC-EDS, GSES, WSAS, FAD), presence of comorbid psychiatric diagnosis, use of psychotropic medication, family status.	Families reported some baseline impairment to family functioning, however, it was slightly elevated compared to cutoff scores of impairment. Adolescents reported the greatest impairment to family functioning. In both FBT and AFT, improvement in several aspects of family functioning across family members was associated with full remission at the end of treatment. FBT demonstrated more substantial positive changes in perceived family functioning, specifically in communication and behavioral control. Regardless of treatment type, patient-perceived improvement in clarity about roles within the family, father perceived improvement in problem solving, and mother-perceived improvement in general family functioning was predictive of remission at EOT. General Functioning was not a significant predictor of baseline % EBW, prior psychiatric hospitalization, family status, medication status, or psychiatric comorbidity.
Darcy et al.	2013	*N* = 21	Not reported	Range: 12 to 18 (Early responders: *M* = 14.62; Non-early responders: *M* = 15.36)	AN	FBT and SyFT	Weight, EDE, RSE, K-SADS-PL, and behavioral observation	Patient and parental behavior in sessions 1 to 4 are predictive of early response to treatment. Patients who displayed fewer negative verbal behaviors and who moved away from the table less in the first session and family meal session were more likely to respond to treatment early. Parents who made less critical statements and who did not repeatedly present food during the family meal session were more likely to have adolescents with early response to treatment. In addition, the following parental behaviors observed in session 1 were predictive of early response to treatment: confidence/empowerment, positive physical encouragement, verbal encouragement, serving and presenting food and modelling eating. Parents who were able to increase their positive physical behaviors from session 1 to 4 and increased neural verbal behaviors were more likely to be from the early responders group.
Forsberg et al.	2013	*N* = 78 (Original study sample: *N* = 121)	Female 91%	M = 14.4, *SD* = 1.6	AN (exclusion of amenorrhea)	FBT and AFT	WAI, EDE, and weight	Therapeutic alliance was not found to be a predictor of full remission at EOT in either treatment. However, therapeutic alliance was found to be a non-specific predictor of partial remission at EOT. Therapeutic alliance was significantly higher in AFT. High therapeutic alliance in FBT did not improve treatment outcomes when compared to low therapeutic alliance in FBT.
Forsberg et al.	2014	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 91.8%	*M* = 14.4, *SD* = 1.6	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%)	FBT and AFT	WAI, EDE, BMI	Parental therapeutic alliance scores were significantly greater than adolescent therapeutic alliance scores early in treatment. Parents in the FBT treatment developed greater therapeutic alliance early in treatment. Parental therapeutic alliance was not a predictor of remission at EOT.
Forsberg et al.	2017	*N* = 121 adolescents fathers: n = 107 mothers: *n* = 117	Adolescents: female 91%	Range: 12 to 18 (*M* = 14.4)	AN (exclusion of amenorrhea)	FBT and AFT	EDE, weight and height; YBOCS, SCL-90-R, and the BDI-II	Parental symptoms did not negatively impact treatment outcomes. Both treatments resulted in reduced parental psychological symptoms at EOT. Maternal depression was found to be a moderator of adolescent weight at EOT in the FBT condition.
Gorrell et al.	2019	*N* = 110 FBT-BN: *n* = 58 CBT-A: *n* = 52	Female 93.6%	Range: 12 to 18	BN and EDNOS-BN	FBT and CBT-A	EDE, weight, YBC-EDS	Greater motivation for change in OC-ED behavior was associated with improved attitudinal features of ED at EOT in both FBT and CBT-A.
Le Grange et al.	2012	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 91.8%	*M* = 14.4, *SD* =1.6	AN (excluding amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%)	FBT and AFT	Weight (BMI), EDE-Global score and restraint subscale, prior hospitalization for an eating disorder, YBC-ED, YBC-ED, GSES, use of psychiatric medications, gender, duration of AN, AN type (restricting or binge-eating/purging), K-SADS, BDI, WSAS, family status, parental education, EE, SCFI, PvAS	Patients with more severe ED psychopathology, as measured by the YBC-ED and EDE, had better outcomes in the FBT treatment condition. The type of AN emerged as a moderator during both follow-up periods, such that individuals with AN-BP had better long-term remission status after receiving FBT. No other moderators were found to have an effect on long-term outcomes. No variables were found to be mediators of treatment effect. Several non-specific predictors of change were found in remission status at EOT. Individuals with a history of prior hospitalization, older age, and a longer duration of illness were less likely to be in remission at EOT.
Le Grange et al.	2014a	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 90.9%	*M* = 14.4, *SD* = 1.6	AN (exclusion of amenorrhea)	FBT anf AFT	Weight, remission status, sociodemographic data (parental education, gender)	Early weight gain was found to be a predictor of remission at EOT. However, early weight gain was not predictive of remission at follow-up. The earliest predictor of remission at EOT was a gain of 5.8 pounds (2.65 kg) by session 3 in FBT, and a gain of 7.1 pounds (3.20 kg) by session 4 in AFT. There were no significant differences between treatments in remission rates at EOT (FBT = 42% and AFT = 23%). However, at the 6-month (FBT = 40%, AFT=18%) and 12-month (FBT = 49%, AFT = 23%) follow-up, FBT demonstrated significantly greater rates of remission than AFT. Patient's in the FBT condition also achieved 95% EBW sooner than patient's in the AFT condition.
Le Grange et al.	2014b	2-year follow-up: *n* = 37 3-year follow-up: *n* = 50 4-year follow-up: *n* = 52	Not reported	Range 12 to 18	AN (exclusion of amenorrhea)	FBT and AFT	Weight (BMI), EDE Global score, BDI, YBC-ED, RSES, relapse, and remission status.	Treatment outcomes appear stable once remission is achieved, regardless of treatment type. No significant differences between FBT and AFT in relapse or new remission during the long-term follow-up. Relapse rate at 1-year follow-up: FBT = 4.5%, AFT = 9.1%. New remission at 1-year follow-up: FBT: n = 1, AFT, n = 9. At the long-term follow-up, 2 participants met the criteria for BN (FBT: *n* = 1, AFT: *n* = 1), and 5 met the criteria for EDNOS (FBT: *n* = 1, AFT: *n* = 4).

Author(s)	Year	*N*	Gender	Age	Diagnosis	Intervention(s)	Outcome Measures	Summarized Results
Le Grange et al.	2015	*N* = 130	Female 94%	Range: 12–18 (*M* = 15.8, *SD* = 1.5)	BN or partial BN (defined as binge eating and purging for more than once/week in last 6 months)	FBT and CBT-A	EDE, frequency of binge-eating and purging, %EBW, age, gender, duration of illness, minority status, pretreatment medication, intact family, family income, parental education, parental age, BDI, FES, CY-BOCS, YBC-EDS, K-SADS-PL, RSES	Patients in the FBT-BN condition achieved a higher rate of abstinence from binge-eating and purging behaviors at EOT (FBT-BN = 39.4%; CBT-A = 19.7%) and 6-month follow-up (FBT-BN = 44.0%; CBT-A = 25.4%). Differences between treatments were not significantly different at the 12-month follow-up (FBT = 48.5%; CBT = 32.0%). Patients in the FBT-BN condition achieved lower scores on the BDI at EOT. There were no significant differences between treatment types on EDE, CY-BOCS, YBS-EDS, and %EBW scores. More patients in the CBT-A condition were hospitalized during treatment for psychiatric reasons. Patients with lower scores on the FES Conflict subscale responded better to FBT-BN. Gender, YBC-EDS total score, FES Cohesion, intellectual-cultural orientation, active recreation orientation, and organization subscales at baseline were non-specific predictors of abstinence at EOT. Males, low YBC-EDS total, and high FES subscales were associated with greater rates of abstinence at EOT regardless of treatment type.
Lock et al.	2010	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 91%	Range: 12 to 18 (*M* = 14.4, *SD* = 1.6)	AN (exclusion of amenorrhea)	FBT and AFT	Weight (BMI), EDE, rate of remission and partial remission, and retention/dropout, K-SADS	There was no significant difference between FBT and AFT on full remission at EOT (FBT = 42%; AFT = 23%). However, FBT demonstrated a significantly greater rate of remission at the 6- (FBT = 40%; AFT = 18%) and 12-month (FBT = 49%; AFT = 23%) follow up. FBT also demonstrated significantly greater rates of partial remission, improvement of scores on the EDE, and increase in %BMI at EOT. However, these differences were no longer observed at the 6- or 12-month follow-up. At the 12-month follow-up, 10% of FBT patients and 40% of AFT patients who were in full remission at EOT reported relapse. More participants were hospitalized during treatment in the AFT condition (AFT = 37%; FBT = 15%).
Lock et al.	2016	*N* = 158 FBT: *n* = 78 SyFT: *n* = 80	Female 89.2%	Range: 12 to 18 (*M* = 15.8, *SD* = 1.8)	AN (exclusion of amenorrhea)	FBT and SyFT	BMI, attrition, EDE, YBC-ED, RSE, BDI, CYBOCS, K5ADS, MPS; Hospital days, timing of hospital usage (early - first 5 weeks) or late (after 5 weeks of Treatment)	There were no significant differences in hospitalizations between FBT and AFT during the first 5 weeks of treatment. However, hospital admissions continued to increase in the AFT condition after week 5. The majority (73%) of hospitalization occurred early in treatment (first 5 weeks). Hospitalized FBT patients spent fewer days in the hospital than AFT patients (FBT: *M* = 8.3 days, AFT: *M* = 21 days per hospitalization). Comorbid mental health disorders was a predictor of hospitalization before week 5 in both FBT and AFT. Hospitalization in both treatments was predicted by ED related obsessive compulsive symptoms, low self-esteem, perfectionism, depressive symptoms, and psychiatric comorbidity. Higher levels of eating related obsessions and depression was found to moderate hospitalization rates. On addition, patients in both treatment conditions with low baseline scores on the BDI, YBCED, MPI, RSE, and low rates of compensatory behaviors and comorbid psychiatric conditions were less likely to be hospitalized.
Lo Tempio et al	2013	*N* = 83	Female 92%	*M* = 14.5 (*SD* = 1.6)	AN (exclusion of amenorrhea)	FBT and AFT	Weight (BMI), EDE, YBC-EDS, WAI- observer/ rater's version, K-SADS-P, duration of illness, previous hospitalization, expectancy for success (patient self-report), age, gender, intact family status, and years of parent education.	High baseline YBC-EDS and a comorbid diagnosis predicted greater alliance scores in both FBT and AFT. EDE weight concerns, eating concerns, and the presence of comorbid mental health diagnoses at baseline predicted high alliance scores in FBT. Higher baseline EDE scores predicted higher alliance scores in the FBT group. No baseline characteristics in the AFT condition were significantly correlated with alliance.
Matheson et al	2020	*N* = 70	Female 93%	15.69	BN or partial BN (defined as binge eating and purging for more than once/week in last 6 months)	FBT and CBT-A	EDE, binge-eating and purging frequency, weight, and session number	Reduction in ED psychopathology early in treatment was predictive of better treatment outcomes for adolescents with BN in both treatments. Reduction in purging behaviors by session 2 and binge-eating by session 4 was related to abstinence of symptoms at EOT in both treatments. Change in binge eating by session 8 and purging behaviors by session 9 were the greatest predictors of abstinence at the 6-month follow-up. Change in binge eating was related to abstinence at the 12-month follow-up. Reduction in binge-eating and purging behaviors was achieved sooner in FBT-BN.
Rienecke et al.	2016	*N* = 121 FBT: *n* = 61 AFT: *n* = 60	Female 91.8%	*M* = 14.4 (*SD* = 1.6)	AN (excluding criterion amenorrhea criteria) AN-RT (82.6%) AN-BP (17.4%)	FBT and AFT	EDE, FAD, Standardized Clinical Family Interview	There was a significant relationship between maternal hostility and treatment, such that mothers with greater hostility experienced a greater increase in %EBW in AFT compared to FBT.
Sadeh-Sharvit et al.	2018	*N* = 158 FBT: *n* =78 SyFT: *n* = 80	Female 89.2%	Range: 12 to 18 (*M* = 15.8, *SD* = 1.8)	AN (exclusion of amenorrhea)	FBT and SyFT	FACES, GSE, weight	Parental self-efficacy significantly increased for mothers and fathers early in treatment in the FBT condition. Increase in maternal self-efficacy by session 8 was found to be a mediator of short-term weight gain (session 10). Perceived changes in family flexibility was not predictive of weight gain in either treatment condition.
Valenzuela et al.	2018	*N* = 110 FBT-BN: *n* = 58 CBT-A: *n* = 52	Female 93.6%	Range: 12 to 18	BN and EDNOS-BN	FBT and CBT-A	EDE, BDI, RSE	Depressive symptoms and self-esteem significantly improved in both treatments. BDI scores reduced by 36.9% in the FBT-BN group and 24.5% in the CBT-A group. The difference in BDI scores continued to improve at the 12-month follow-up, with a 46.9% reduction in the FBT-BN group and a 46.4% reduction in the CBT-A group. Self-esteem scores measured by the RSE returned to a mean level found in healthy adolescents by the 12-month follow up for both treatment groups.
Welch et al.	2022	*N* = 158 FBT: *n* = 78 SyFT: *n* = 80	Female 89.2%	Range: 12 to 18 (*M* = 15.3, *SD* = 1.8)	AN	FBT and SyFT	EDE, YBOCS, FMPS, height and weight	Perfectionism scores did not change during treatment in either treatment.
Williams, L., Wood, T. & Plath, D.	2020	Parents: *n* = 9 FBT: *n* = 6 parents Non-manualized systemic family interventions: *n* = 3 Children: *n* = 7	Parents (fathers: *n* = 3; mothers: *n* = 6), Adolescent (female: *n* = 6, male: *n* = 1)	Range: 13 to 17	AN	FBT and Systemic family interventions	Experience of parents engaging in FBT	Neither treatment was regarded as more favorable than the other. Some of the main challenges reported by parents were the amount of time required for FBT, resulting in changes to occupational and social functioning. Parents reported FBT as "demanding and impersonal." Specific to the techniques of FBT, parents reported mixed feelings about the family meal, with some stating it was "force-feeding," and others reported that it supported them to do challenging things. One parent described the FBT clinician as "saying what they were trained to say…without caring" and reported the clinician's inflexibility as a reason for premature dropout. Parents expressed mixed thoughts about conjoint sessions, with some stating that it "disrupted" their relationship and others stating that transparency helped them maintain a relationship with their child and assisted in developing strategies to build trust in their relationship. The externalization of the illness was reported as one of the most helpful elements of FBT in helping parents move past self-blame and guilt and move toward recovery. Neither treatment was regarded as more favorable than the other.

Notes. AN = anorexia nervosa, AFT = Adolescent-Focused Therapy, BDI = Beck depression inventory, BMI = Body Mass Index, BN = bulimia nervosa, CBT-A = CBT for adolescents, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, EDE = Eating Disorder Examination, EOT = end of treatment, FACES = Family Adaptability and Cohesion Evaluation, FAD = Family Assessment Device, FBT = Family-Based Treatment, MPS = Multidimensional Perfectionism Scale, RSE = Rosenberg Self-Esteem Scale, SyFT = Systemic Family Therapy, WAI = Working Alliance Inventory, YBOCS = Yale-Brown Obsessive Compulsive Scale.

Table 10

Mediators of Treatment Outcomes

Author(s)	Year	Outcome Measures	Mediators
Byrne et al.	2018	YB-CED and Weight.	Assessed but no significant mediators found.
Darcy et al.	2013	Weight, EDE, RSE, K-SADS-PL, and behavioral observation	N/A. Not able to be assessed due to sample size.
Le Grange et al.	2012	Weight (BMI), EDE-Global score and restraint subscale, prior hospitalization for an eating disorder, YBC-ED, YBC-ED, GSES, use of psychiatric medications, gender, duration of AN, AN type (restricting or binge-eating/purging), K-SADS, BDI, WSAS, family status, parental education, EE, SCFI, PvA	Assessed BDI, RSES, GSES, PvA, and %BMI as potential mediators but none were significant.
Rhodes et al.	2008	%IBW, PvA, DASS.	Parental self-efficacy was not a significant mediator of %IBW. The relationship between parent-to-parent consultation and parental self-efficacy was not significant.
Sadeh-Sharvit et al.	2018	FACES, GSE, and weight	Improvement in maternal self-efficacy by session 8 mediated the effect of treatment on short-term weight gain. The change in maternal self-efficacy from baseline to session 8 of treatment was a significant mediator of weight gain at session 10. The interaction of treatment type and change in parental self-efficacy predicted early weight gain, such that parents in the FBT condition reported significantly greater self-efficacy early in treatment.

Notes. BDI = Beck depression inventory, DASS = Depression Anxiety and Stress Scale, EDE = Eating Disorder Examination, FACES = Family Adaptability and Cohesion Evaluation, IBW = PvA = Parents versus Anorexia Scale, RSE = Rosenberg Self-Esteem Scale. SCFI = Standardized Clinical Family Interview, WSAS = Work and Social Adjustment Scale, YBC-EDS=Yale-Brown-Cornell Eating Disorder Scale.

Table 11

Moderators of Treatment Outcomes

Author(s)	Year	Outcome Measures	Moderators
Agras et al.	2014	Weight (IBW), EDE, K-SADS, BDI, State-Train Anxiety Inventory, CY-BOCS, RSE, YBC-EDS, Quality of Life Enjoyment and Satisfaction Questionnaire, treatment fidelity (6 raters)	The CY-BOCS total score at baseline moderated the effect of treatment on the IBW, such that patients with greater obsessive-compulsive psychopathology gained significantly more weight in the SyFT condition by EOT.
Byrne et al.	2018	YB-CED and Weight.	Treatment type was found as a moderator of the effects of obsessive–compulsive disorder behavior and weight gain, such that patients in the FBT condition who experienced a decrease in obsessive–compulsive disorder behavior gained significantly more weight.
Forsberg et al.	2017	EDE, weight and height, YBOCS, SCL-90-R, and the BDI-II	Maternal depression (BDI) was found to be a moderator of adolescent weight (%EBW) at EOT, such that mothers with low or no depressive symptomology had children with better weight outcomes at EOT in the FBT condition.
Gorrell et al.	2019	EDE, objective and subjective report of binge-eating and purging, weight (BMI), YBC-EDS MC subscale	Motivation for change in OC-ED behaviors was assessed and not significant.
Le Grange et al.	2012	Weight (BMI), EDE-Global score and restraint subscale, prior hospitalization for an eating disorder, YBC-ED, YBC-ED, GSES, use of psychiatric medications, gender, duration of AN, AN type (restricting or binge-eating/purging), K-SADS, BDI, WSAS, family status, parental education, EE, SCFI, PvA	Eating related obsessionality (YBC-EDS-Total), and ED psychopathology (EDE-Global) were found to be moderators of remission at EOT. ED subtype ANBP also emerged as a moderator of outcome at the 12-month follow-up, such that participants with ANBP did better in the FBT condition.
Le Grange et al.	2015	EDE, frequency of binge-eating and purging, %EBW, age, gender, duration of illness, minority status, pretreatment medication, intact family, family income, parental education, parental age, BDI, FES, CY-BOCS, YBC-EDS, K-SADS-PL, RSES	FES Conflict was identified as a moderator, such that patients with lower FES Conflict scores responses better to FBT-BN.
Lock et al.	2016	BMI, attrition, EDE, YBC-ED, RSE, BDI, CY-BOCS, KSADS, MPS; Hospital days, timing of hospital usage (early - first 5 weeks) or late (after 5 weeks of Treatment)	None of the baseline variables were found to be moderators of treatment effect on hospitalization. However, when Type 1 error rate was relaxed to an alpha of 0.10, baseline YBC-EDS and BDI scores emerged as moderators of hospitalization.
Lo Tempio et al	2013	Weight (BMI), EDE, YBC-EDS, WAI- observers' rater's version, K-SADS-P, duration of illness, previous hospitalization, expectancy for success (patient self-repot), age, gender, intact family status, and years of parent education.	The EDE Global score emerged as a moderator of alliance, with higher baseline EDE scores predicting higher alliance scores in the FBT condition.
Rienecke et al.	2016	EDE, FAD, and Standardized Clinical Family Interview	Treatment did not moderate the effect of maternal hostility on weight outcomes at EOT. Parental EE was not found to be a moderator of remission.

Notes. AN-BP = anorexia nervosa, binge-purge type, BDI = Beck depression inventory, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, EDE = Eating Disorder Examination, EE = expressed emotion, FAD = Family Assessment Device, FES = Family Environment Scale, IBW = ideal body weight, OC-ED = obsessive compulsive eating disorder, PvA = Parents versus Anorexia Scale, RSE = Rosenberg Self-Esteem Scale. SCFI = Standardized Clinical Family Interview, WAI = Working Alliance Scale, WSAS = Work and Social Adjustment Scale, YBC-EDS = Yale-Brown-Cornell Eating Disorder Scale.

Table 12

Predictors of Treatment Outcomes

Author(s)	Year	Outcome Measures	Predictors
Accurso et al.	2014	EDE, weight (%EBW); demographic data (age, sex, racial/ethnic minority, duration of illness, AN subtype (AN-BP or AN-R), intact family status, prior psychiatric hospitalization, current use of psychotropic medications, and psychiatric comorbidity (K-SADS), BDI and RSES.	Weight gain (%IBW) was found to be a predictor of improved eating concerns, dietary restraint, and global ED symptoms at EOT. However, these impacts diminished over time. Clinical baseline variables that predicted psychological improvement: severity of ED symptoms, duration of illness, and AN subtype. Patients with greater overall ED psychopathology and longer duration of illness at baseline had faster reductions in depressive symptoms, while adolescents with ANBP had faster improvements in dietary restraint and weight, shape, and eating concerns. Prior psychiatric hospitalization and psychiatric comorbidity were also predictive of faster improvement (bivariate analyses only). Predictors of change in depressive symptoms (bivariate analyses) included change in %EBW, age, duration of illness, psychiatric comorbidity, and global EDE at baseline.
Agras et al.	2014	Weight (IBW), EDE, K-SADS, BDI, State-Train Anxiety Inventory, CY-BOCS, RSE, YBC-EDS, Quality of Life Enjoyment and Satisfaction Questionnaire, treatment fidelity (6 raters)	Age and duration of illness emerged as predictors of weight gain, regardless of treatment type. Patients who were younger and those with a shorter duration of illness gained more weight. Intact families and AN without binge eating or purging behaviors had higher rates of remission in both FBT and SyFT.
Byrne et al.	2015	Weight, EDE, PvA, General Self-Efficacy Scale, BDI, RSE, KSADS	Increased parental self-efficacy predicted greater weight gain in the FBT condition. Increased adolescent self-efficacy was not found to predict weight gain in either treatment.
Ciao et al.	2015	Weight (%EBW), EDE Global scale, BDI, RSES, YBC-EDS, GSES, WSAS, FAD, presence of comorbid psychiatric diagnosis, use of psychotropic medication, family status.	In both FBT and AFT, improvement in several aspects of family functioning across family members was associated with full remission at the end of treatment. Regardless of treatment type, patient-perceived improvement in clarity about roles within the family, father-perceived improvement in problem-solving, and mother-perceived improvement in general family functioning were predictive of remission at EOT. General Functioning was not a significant predictor of baseline %EBW, prior psychiatric hospitalization, family status, medication status, or psychiatric comorbidity.
Darcy et al.	2013	Weight, EDE, RSE, K-SADS-PL, and behavioral observation	Adolescent behaviors predictive of early response to treatment: lower observed negative verbal behavior during session 1 and more eating and non-nutritive drinking (i.e., diet soda, water, etc.), less moving away from the table during the family meal session were associated with early response. Increase in neutral verbal statements and negative verbal behavior from session 1 to 4 was associated with early response to treatment. Parental behaviors predictive of early response to treatment: Greater parental confidence/empowerment and lower positive parental physical behaviors at session 1, lower levels of verbal criticism and verbal warmth, and parental increase in positive physical behaviors from session 1 to 4 were predictive of early treatment response. Parental behaviors predictive of non-early response to treatment: more serving food, presenting food, putting food on plates and utensils, and modelling eating during the family meal session.
Ellison et al.	2012	CTOCRS, WAI, EDI-3, %IBW, Dropout	The core interventions of parental control, unity, not criticizing the patient, and externalization predicted greater weight gain. Therapist assessment of the degree of parental achievement of the core interventions of FBT (CTOCRS) was predictive of weight gain. Sibling support was not found to be a predictor of weight gain. Maternal therapeutic alliance predicted greater weight gain. However, paternal therapeutic alliance was found to predict significantly less weight gain. Total working alliance score (maternal and paternal) did not predict weight gain. Maternal therapeutic alliance and low parental control were predictive of dropout. Length of hospital stay prior to FBT was not a predictor of weight gain.
Forsberg et al.	2013	WAI, EDE, and weight	Therapeutic alliance was not a predictor of full remission at EOT in either treatment. However, therapeutic alliance was a non-specific predictor of partial remission at EOT.
Forsberg et al.	2014	WAI, EDE, BMI	The difference between mothers' and fathers' alliance scores were not predictive of recovery at EOT. The combined parental therapeutic alliance scored did not predict recovery at EOT. The difference between parent and adolescent therapeutic alliance scores was not predictive of recovery at EOT. Early recovery was predictive of recovery at EOT.
Forsberg et al.	2017	EDE, weight and height, YBOCS, SCL-90-R, and the BDI-II	Higher maternal symptoms at baseline and improvement in maternal symptoms was found to be a nonspecific predictor of adolescent weight at EOT and the 12-month follow-up. Paternal symptomology was not predictive of weight at EOT. Parental symptomology was not predictive of remission status at EOT or follow-up.
Goldstein et al.	2016	Weight (%EBW), DASS-21, EDE-Q, comorbid anxiety and depression, patient age, illness severity (indicated by duration of illness or hospital admission prior to FBT)	Comorbid anxiety, depression, patient age, illness severity (duration and prior hospital admission) were not for to be predictors of weight.
Gorrell et al.	2019	EDE, objective and subjective report of binge-eating and purging, weight (BMI), YBC-EDS MC subscale	Motivation to change obsessive-compulsive features (YBC-EDS MC subscale) of BN was found to be a predictor of cognitive recovery (EDE Global scores) at EOT, regardless of treatment assignment.
Hughes et al.	2018	Attendance, weight and height of patient, EDE	Greater attendance by fathers predicted higher post-treatment weight gain, lower ED psychopathology (EDE Global Score), and remission. Attendance of mothers and siblings did not significantly predict post-treatment weight gain, ED psychopathology (EDE Global Score), or remission.
Isserlin, L. & Couturier, J.	2012	Weight, EDE, remission, drop out, SOFTA-O, ETP, and SSP	Parental ETP during the family meal (session 2) was associated with weight gain at EOT. Adolescent ETP score at session 2 and 3 were predictive of EDE scores at EOT, such that adolescents with higher ETP scores demonstrated lower EDE scores at EOT. Higher SPP scores at session 1 were associated with lower EDE scores at EOT. SSP was not a predictor of remission at EOT. Adolescent ETP was not a predictor of dropout. There were no significant relationships between final %IBW and SSP or with adolescent ETP throughout treatment.

Lebow et al.	2019	Demographic (i.e., age and gender) and clinical information (i.e., duration of illness and psychotropic medication use), Weight and Height (BMI), EDE-Q	Predictors of weight gain trajectory class included age, diagnosis, and ED psychopathology. Significantly younger participants were predictive of class 3 ("dramatically rapid early gains that stabilize at the 65th percentile"). Individuals with AAN were more likely to belong to class 4 ("maintenance at the 60th percentile"). Global EDE-Q and weight concern subscale scores were predictive of class 4 ("maintenance at the 60th percentile"). Classes 3 (dramatically rapid early gains that stabilize at the 65th percentile"), 5, and 2 were associated with early response to treatment. Gender, duration of illness, use of atypical antipsychotics, and number of treatment sessions were not predictive of weight trajectory.
Le Grange et al.	2012	Weight (BMI), EDE-Global score and restraint subscale, prior hospitalization for an eating disorder, YBC-ED, YBC-ED, GSES, use of psychiatric medications, gender, duration of AN, AN type (restricting or binge-eating/purging), K-SADS, BDI, WSAS, family status, parental education, EE, SCFI, PvA	Baseline variables found to be non-specific predictors of remission at EOT: prior hospitalization, duration of illness, and age. Patients who were previously hospitalized, experienced a longer duration of treatment, or who were older were less likely to be in remission by EOT, regardless of treatment type. Baseline variables were found to be non-specific predictors of change in remission status during the follow-up period (EOT to 6-month to 12-month follow-up): Prior hospitalization, age, and baseline weight. Patients with prior hospitalization demonstrated improved remission status at a higher rate than those without prior hospitalization. Older patients demonstrated lower increases in remission status during this period compared to the younger patients. Patients with relatively higher weight at baseline were less likely to change remission status during the follow-up period.
Le Grange et al.	2014a	Weight, remission status, sociodemographic data (parental education, gender)	Early weight gain is predictive of weight restoration to 95% EBW at EOT in both treatments. Early weight gain was not predictive of remission at 12m follow up in either treatment. FBT weight gain at sessions 3–8 was significantly associated with EOT remission status. Weight gain of >5lbs by session 3 and >11lbs by session 8 of FBT predicted remission at EOT. Weight restoration at EOT predicts long-term recovery. Variables that predicted achievement of 95% EBW within 6 months (timely response): male gender, greater family disadvantages, and engaging in purging.
Le Grange et al.	2015	EDE, frequency of binge-eating and purging, %EBW, age, gender, duration of illness, minority status, pretreatment medication, intact family, family income, parental education, parental age, BDI, FES, CY-BOCS, YBC-EDS, K-SADS-PL, RSES	Gender, YBC-EDS total score, FES Cohesion, Intellectual-Cultural Orientation, Active Recreational Orientation, and Organization (at baseline) were found to be non-specific predictors of treatment, such that males, lower YBC-EDS total scores, and higher scores on the above FES subscales demonstrated greater rates of abstinence at EOT.
Lim et al	2023	Service use (start and end date, number of hospitalization), BMI, ROM, HoNOSCA, CGAS, and SDQ, Sociodemographic information (age and gender) and clinical characteristics (primary ED disgnosis and comorbid diagnosis)	Comorbid conditions was predictive of increased time in treatment. However, comorbid conditions was not predictive of psychological and physical symptoms at EOT.
Lock et al.	2016	BMI, attrition, EDE, YBC-ED, RSE, BDI, CYBOCS, KSADS, MPS; Hospital days, timing of hospital usage (early - first 5 weeks) or late (after 5 weeks of Treatment)	In both treatments, hospitalization during treatment was predicted by eating related obsessive compulsive symptoms (YBC-ED), lower self-esteem (RSE), higher perfectionism (MPS) depressive symptoms (BDI), and greater psychiatric comorbidity (KSADS). In both treatments, early hospitalization was a negative predictor for weight change.
Lo Tempio et al	2013	Weight (BMI), EDE, YBC-EDS, WAI- observers' rater's version, K-SADS-P, duration of illness, previous hospitalization, expectancy for success (patient self-repot), age, gender, intact family status, and years of parent education.	EDE weight concern and eating concern subscales were found to be predictors of therapeutic alliance in FBT. The YBC-EDS emerged as a nonspecific predictor of therapeutic alliance, such that higher baseline scores on the YBC-EDS predicted higher therapeutic alliance scores, regardless of treatment. The presence of a comorbid diagnosis also predicted higher alliance scores in both treatment conditions. Higher treatment expectancy, duration of illness, and socio-economic variables were not found to be a predictor of higher treatment alliance in either treatment condition.
Matheson et al	2020	EDE, binge-eating and purging frequency, weight, and session number	Reduction of binge eating at sessions 2-5, 9, and 10 were associated with abstinence at EOT, with session 4 as the strongest predictor. Reduction in purging at sessions 2, 3, and 4 were associated with abstinence at EOT, with session 2 as the strongest predictor. Symptom reduction later in treatment (reduction of binge eating at session 8 and purging at session 9) was predictive of abstinence at the 6-month follow-up. Reduction of binge eating at session 9 was predictive of abstinence at the 12-month follow-up.
Rienecke et al.	2016	EDE, FAD, and Standardized Clinical Family Interview	Maternal hostility was predictive of impaired family functioning and communication at EOT. No other measures of parental EE (i.e., affective response, affective involvement, roles, behavior control, or problem solving) predicted other aspects of family functioning at EOT. The presence of paternal criticism predicted less improvement in ED psychopathology at EOT. None of the remaining paternal EE subscales predicted improved ED psychopathology at EOT. None of the paternal EE subscales predicted improved %EBW at EOT. None of the maternal EE subscales predicted improved ED psychopathology at EOT.
Sadeh-Sharvit et al.	2018	FACES, GSE, and weight	Perceived changes in family flexibility was not predictive of early weight gain.
Welch et al.	2022	EDE, YBOCS, FMPS, height and weight	Perfectionism significantly predicted eating-related psychopathology and weight status at EOT and follow-up. Higher levels of maladaptive perfectionism predicted treatment response for eating-related psychopathology regardless of treatment type. The strength of this prediction increases when OCD symptoms were also high. However, the combination of perfectionism and YBC scores did not predict IBW at EOT or follow-up. Obsessive compulsive symptoms also predicted ED pathology at all timepoints except 12-month follow-up. Higher levels of maladaptive perfectionism did not predict weight status at EOT or follow-up.

Notes. AN = anorexia nervosa, AN-BP = anorexia nervosa, binge-purge type, AN-R = anorexia nervosa, restricting type, BDI = Beck Depression Inventory, BMI = Body Mass Index, BN = bulimia nervosa, CTOCRS = Core Treatment Objectives Clinician Rating Scale, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, DASS = Depression Anxiety and Stress Scale, EBW = Estimated Body Weight, EDE = Eating Disorder Examination, EDE-Q = Eating Disorder Examination-Questionnaire, EDI-3 = Eating Disorder Inventory (3rd ed), EE = expressed emotion, EOT = end of treatment, ETP = Engagement in the Therapeutic Process, FACES = Family Adaptability and Cohesion Evaluation, FAD = Family Assessment Device, FBT = Family-based treatment, GSES = GSES=General Self-Efficacy Scale, IBW = ideal body weight, PvA = Parents versus Anorexia Scale, RSE = Rosenberg Self-Esteem Scale, SCL-90-R = Symptom Checklist-90-Revised, SOFTA-O = System for Observing Family Therapy Alliances-Observational, SSP = Shared Sense of Purpose, SyFT = Systemic Family Therapy, WAI = Working Alliance Inventory, WSAS = Work and Social Adjustment Scale, YBC-EDS = Yale-Brown-Cornell Eating Disorder Scale.

Table 13

Adjunctive Treatments

Author(s)	Year	N	Diagnosis	Intervention(s)	Outcome Measures	Description of Intervention(s)	Summarized Results
Binford et al.	2013	*N* = 13 parents	AN	FBT and Therapist-facilitated Internet-based support groups	Baseline demographics (age, marital status, duration of child's eating disorder, length of time treated with FBT); Experience of Caregiving Inventory; EDSIS; Support Questionnaire, Before Chat Session Questionnaire, After Chat Session Questionnaire and Programme Evaluation.	FBT as manualized. Internet-based support: Support groups were at fixed times for 15 (90-minute) sessions. Groups were facilitated by a licensed clinical psychologist trained in FBT. Groups were 'open,' meaning participants could join at any time, allowing for parents at various stages of FBT. Having parents at various stages of FBT allowed parents at later stages to provide parents at the beginning of FBT to share advice, hope, and encouragement. Sessions were used to encourage and support parental efforts to help their child overcome an ED. In addition, sessions provided parents with an opportunity to express both positive and negative feelings associated with the caregiving process, including sharing stories about past treatment experiences (i.e., residual feelings of being left out of treatment and/or being blamed for causing or contributing to the eating disorder).	Internet-based support groups are a feasible adjunctive treatment for FBT. Parents reported high satisfaction and generally found the group to be helpful. More specifically, parents reported that this group helped them implement FBT, feel less alone, and cope with their child's ED. The after-chat session questionnaire demonstrated that most parents were satisfied with the previous session and viewed the session as helpful. Parents reported that the chat was accessible, convenient, and easy to use. Most parents completed all 15 sessions, and reasons cited for dropout include that parents reported being helped by the group and did not need more support, belief that they received everyone they could and wanted from the group, and no response given. The main criticism of the group was that the computer format was "a bit impersonal" and did not facilitate getting to know the other participants well.
Eshkevari et al.	2022	*N* = 22 (parents) *n* = 16 (childen/ adolescents)	AN: *n* = 14 AAN: *n* = 2	FBT and Parent Group Training	Outcome measures assessed at end of group protocol and 3 month follow-up. Level of Expressed Emotion Scale, DASS-21, EDSIS, ECGI, BMI of child, program feedback, perceived outcome of the group.	FBT as manualized. Parent Group Training: offered in 2 formats: weekly sessions for 6 weeks or a 2-day intensive program. The groups did not differ in content. Content included psychoeducation about EDs and medical complications and myths; the impact of the ED on the family and recognition of parents' responses, using your strengths; understanding change and motivational principles; communication skills; effective meal planning and re-feeding; exploring maintaining behaviors.	The 2-day intensive group format was preferred by parents and resulted in significant perceived improvements in understanding, knowledge, skills, and confidence in managing the ED. According to parent feedback, it is helpful to have the opportunity to express personal experience, receive information on how to manage eating disorders, have group participation and discussion, and meet other parents. No significant results related to change in parental wellbeing or BMI were found. The weekly group format demonstrated improvement to a healthier BMI range over the 3-month period and the 2-day intensive format maintained BMI in a healthy range over the 3-month period.
Hurst, K & Zimmer-Gembeck, M.	2015	*N* = 3	AN	FBT and CBT-P	EDE, weight, CAPS, CFI	FBT as manualized. CBT Perfectionism: The nine Perfectionism in Perspective modules included information, worksheets, and suggested exercises or activities to be completed in session and/or at home. Behavioral experiments are utilized to test out declarative beliefs by altering behavior, observing the results and reflecting on the implications for the belief. The focused CBT modules were administered after the completion of FBT Phase 1 and in parallel to the implementation of FBT Phase 2.	The addition of the CBT perfectionism module was an effective adjunctive treatment, especially for patients with perfectionism as a maintaining factor for their ED. One patient obtained full remission, and the other two obtained partial remission at EOT. All participants demonstrated reduced self-oriented perfectionism and socially prescribed perfectionism at EOT. Patients with low cognitive flexibility demonstrated improvement on this measure at EOT. Patients and parents reported the following aspects of CBT as the most helpful: behavioral experiments to target dichotomous thinking to challenge strongly held beliefs about weight and shape, identification of high standards and the impact on sense of self, and shifting focus to achievement-oriented tasks.
Hurst, K., Read, S. & Hotham, T.	2017	*N* = 2	BN	FBT-BN and CBT-E	EDE, self-reported binge and purge episodes, weight.	FBT-BN as manualized. CBT-E as manualized FBT+CBT-E: Phase one of the adjunctive treatment included phase one of FBT and stages one and two of CBT-E. FBT-BN was delivered as manualized, which included assisting parents in taking control of food and decreasing binge and purge episodes, the family meal, and externalization of the ED. The CBT phases focused on psychoeducation about the ineffectiveness of dietary restraint and compensatory behaviors, formulation of the eating disorder, identification of positive and negative consequences of the ED, regular eating as a foundation for change, and self-monitoring of eating and compensatory behavior was also introduced by keeping food records. Phase two of the adjunctive treatment included phase two of FBT-BN and stage three of CBT-E. In the FBT-BN phase two, the patient is supported in resuming developmentally appropriate control over food and exercise. In the CBT stages, the formulation was adjusted and examined for additional maintaining factors to be addressed in therapy (i.e., core low self-esteem, perfectionism, interpersonal issues, and mood-related issues). Phase three of the adjunctive treatment includes phase three of FBT-BN and stage four of CBT-E. In FBT-BN, this phase focuses on maintaining gains made in the previous phases and addressing developmentally appropriate issues. In CBT-E, this phase focuses on challenging rigid or distorted thoughts and other maintaining factors of the ED and highlighting improvements made throughout treatment.	Both treatments resulted in full remission based on abstinence from binge and purge episodes and a significant reduction in scores obtained on the EDE. In addition, parents reported the FBT-BN-specific content increased their knowledge, helped prepare them for future issues, and increased overall family cohesion. Patients reported that having their parents take control of their food in FBT-BN was a relief. The parents and patients in the FBT+CBT condition reported the formulation session as important in understanding maintaining factors. Patients reported that the CBT element helped increase their cognitive ability to challenge ED beliefs.
Hurst, K. & Zimmer-Gembeck, M.	2019	*N* = 21 (*n* = 2 dropout; *n* = 1 hospitalized)	AN	FBT and CBT-P	%EBW, EDI-3, EDE-Q, fidelity of sessions (5% reviewed), CAPS, MPS	FBT as manualized. CBT-P: The "Perfectionism in Perspective" modules included the following content: What is Perfectionism, Costs and Benefits; Development of Perfectionism; Managing and Reducing Perfectionist Behaviors; What Maintains Perfectionism, Challenging Perfectionist Thinking, Adjusting Unhelpful Rules and Assumptions; Re-Evaluating the Importance of Achievement and Self-Worth; and Developing an Adaptive Model of Appropriate Self-Standards.	There were significant differences from T1 to T2 in weight, ED symptoms, perfectionism, and self-oriented perfectionism. Greater improvements in ED symptoms were correlated with greater improvement in measures of perfectionism, except for socially prescribed perfectionism. By EOT, 57% of the patients reached full remission, and 43% achieved partial remission.
Lock et al.	2015	*N* = 45 FBT: *n* = 10 FBT+IPC: *n* = 35 Dropout: *n* = 9	AN	FBT and IPC	Recruitment and attrition rates, height and weight (recorded at each time point), TSPE, EDE, K-SADS-PL, YBC-EDS), CY-BOCS, RSE, BDI, HRQ, and PvA	FBT as manualized. FBT+IPC: 3 sessions were added to standard FBT after session 4. These sessions focused on mealtime coaching for families whose children had not gained 2.3 kg (4.8 lbs) by session 4. Session 1 focused on identifying the failure to meet the weight goal as a crisis and helping the family make necessary behavioral changes. Session 2 focuses on what the parents view as interfering with progress. Session 3 is a second family meal with more direct coaching by the therapist to address the issues parents identified in the previous session.	IPC did not add to the outcomes of FBT. However, IPC was found to be a feasible addition to FBT for patients who fail to gain sufficient weight by session 4, as IPC resulted in significant improvements in the rate of weight gain for early poor responders to a level comparable to those considered early responders. There were no significant differences between groups in recovery rate, weight, BMI, and %EBW. Differences in the scores obtained on the PvA were observed between mothers of early responders and non-early responders, which suggests that parents of early responders view themselves as self- efficacious. However, scores on the PvA significantly improved in the IPC group, and there were no longer differences between early and non-early responders, which suggests that IPC increased parental self-efficacy. There were no significant differences between groups in attrition and parental and patient rating of suitability.
Peterson et al.	2016	*N* = 1	AN-R	FBT and ECS	Weight, self-reported ED symptomology, and self-reported mood	FBT as manualized. Emotion Communication Skills (delivered concurrently): Parents were taught active listening, emotional support, and emotion coaching. The specific skills include active listening through nonverbal behavior (e.g., eye contact, body posture, tone of voice), reflection, and maintaining a child focus instead of parent focus in conversation, focused and helpful questions directed toward understanding patient's emotions and perspective. These sessions involved a didactic component and role-playing with the therapist to practice the skills. Number of sessions specific to ECS was not reported.	By EOT, the patient was considered to be in full remission due to weight restoration and reduction of ED symptomology. The patient no longer met malnutrition, bradycardia, and POTS criteria. The patient also reported an increase in his overall mood, and his parents reported being more engaged with his family.
Peterson et al.	2020	*N* = 18	AN-R: *n* = 11 AN-BP: *n* = 2 AAN: *n* = 4 OSFED: *n* = 1	FBT and DBT skills group	EDE-Q, DBT-WCCL, CDI-2:SR[S]; DBT diary cards (DBT adaptive skills used, DBT dysfunctional coping, DBT blaming coping), EBW	FBT as manualized. The DBT skills group followed Marsha Linehan's 24-week standard adult DBT skills training schedule. All received a binder of the DBT skills workbook. Schedule of skills: introduction to DBT and review of group rules; 2 weeks of mindfulness, 6 weeks of distress tolerance, 2 weeks of mindfulness, 7 weeks of emotion regulation, 2 weeks mindfulness, 5 weeks interpersonal effectiveness.	There was a reduction in ED and depressive symptoms at EOT. A large effect size was found at EOT for increase in adaptive skills (i.e., emotion regulation and distress tolerance) and decrease in general dysfunctional coping strategies. A small to medium effect size was found for decrease in objective binge eating episode and increase in %EBW. In addition, there was a small effect size found in reduction of scores obtained on the EDE-Q global and restrain scales and CDI scores.

Author(s)	Year	N	Diagnosis	Intervention(s)	Outcome Measures	Description of Intervention(s)	Summarized Results
Plasencia et al.	2019	*N* = 1	AN-RT	FBT and ABIE	YEDE-Q global and all sub-scales, weight, BMI, calories consumed at meals, and DSR.	FBT as manualized. ABIE: over 6 sessions, the client is taught to tolerate distress and visceral sensations associated with disgust during exposures. The session included exposure to physical sensations that occurred while drinking a milkshake. Session 1: Psychoeducation and acceptance-based interoceptive exposures. Session 2: mindfulness: observing and describing acceptance-based interoceptive exposures. Session 3: mindfulness: present moment and acceptance-based interoceptive exposures. Session 4: willingness to experience discomfort and acceptance-based interoceptive exposures. Session 5: positive coping and acceptance-based interoceptive exposures. Session 6: active acceptance and acceptance-based interoceptive exposure	ABIE may be beneficial adjunctive treatment during the weight restoration phase of FBT, as it provides the patient with distress tolerance skills and exposure to foods with high disgust potential. At EOT, the patient demonstrated increased weight and a reliable change in YEDE-Q scores on the global, restraint, weight concerns, and shape concerns sub-scales.
Rhodes et al.	2008	*N* = 20 families FBT: *n* = 10 FBT+parent-to-parent-consultation: *n* = 10	AN	FBT and Parent-to-parent consultation	%IBW, parental efficacy PvA, and DASS.	FBT as manualized. Patent-to-parent consultation: Parents who had completed the Maudsley treatment met with new parents once (between sessions 3 and 5). Therapists conducted a structured interview, allowing the veteran parent to share their experience in FBT and how they helped their child recover. The interview included parents describing their child, their life before, during, and after FBT, how the parents brought about recovery in their child, and allowed for questions.	Parent-to-parent consultation initially resulted in a significant increase in the rate of weight gain compared to the standard treatment group. However, no differences in %BMI were found between groups at EOT. A small treatment effect was found in the rate of weight gain in the parent-to-parent group. No significance was found between parent-to-parent consultation and parental efficacy.
Robinson et al.	2015	*N* = 1	AN	FBT and EFFT	Weight, parental feedback, ability to complete developmental tasks Baseline, EOT, 3year follow up	FBT as manualized. EFFT: During phase 1 of FBT, the EFFT phase 1 "Going Back' focused on educating the parents and the patient about the EDs function in avoiding/managing uncomfortable emotions, teaching parents to become emotion coaches (i.e., identifying and responding to emotions by labeling and providing validation and other responses such as soothing for sadness, protection for fear, and appropriate boundaries with anger). Parental blocks are also identified to help remove barriers to treatment. During phase 2 of FBT, the EFFT phase 2 "Getting Back on Track," focused on assisting parents to continue to develop their abilities as their child's emotion coach, including learning skills such as enhanced empathy, 'speaking the unspoken,' and acknowledging their responsibility for past injuries and losses to 'free' the child from self-blame. During phase 3 of FBT, the EFFT "Moving Forward" focused on helping parents respond to the child's emotions and soothe them as the child continues to develop their ability to self-soothe. The therapist also supports parents in processing their emotional reactions to the child's individuation and identity development.	The patient achieved weight restoration, medical stability, and remission at EOT, except for bone mass. Per parental report, EFFT added value to FBT and helped the family be able to help their daughter recover after struggling to achieve remission before this treatment. The parents specifically cite the principles of EFFT as instrumental in achieving remission. At the 3-year follow-up, the patient maintained gains made in treatment and achieved typical developmental growth such as graduation from high school, ability to live independently at college, development, and maintenance of appropriate social relationships, and appropriate use of social support.
Wade et al	2022	oeline measures); *n*	AN and AAN	FBT and GSH	Acceptability (engagement, adherence, acceptability, adverse events), Child Mood and Behaviors Related to Eating Disorders, BMI, Carer quality of live (EQ-5D), carer confidence in managing the eating disorder (self-report of knowledge, skills, confidence, understanding, child's adherence to meal plan, and support).	12-week online course with short videos of a clinician outlining FBT principles, readings from "Help your teenager beat an eating disorder" by Lock and Le Grange, and homework asking caregivers to track strategies used. 30-minute weekly Zoom support was available to help parents implement the strategies and principles discussed in the videos. These therapists provided no additional interventions.	This study reported a low recruitment rate, with only 13% of eligible families interested in GSH and only 7% of the eligible families completing the program. GSH was reported as acceptable and beneficial, resulting in increased parental knowledge, skills, and confidence in managing the ED. Parents reported improved ED behaviors, weight gain (approximately 6kg of weight gain over 12 weeks), and improved mood and behaviors of their children.

Notes. ABIE = Acceptance-Based Interoceptive Exposure Therapy, AN = anorexia nervosa, AAN = atypical anorexia nervosa, BMI = Body Mass Index, CAPS = Child-Adolescent Perfectionism Scale, CBT-E = Enhanced CBT, CBT-P = CBT for Perfectionism, CDI-2-SR = Children's Depression Rating Scale-Revised, CFI = Cognitive Flexibility Inventory, CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale, DASS = Depression Anxiety and Stress Scale, DBT-WCCL = DBT Ways of Coping Checklist, DSR = Depression Rating Scale, EBW = estimated body weight, ECGI = Experience of Care Giving Inventory, ECS = Emotion Communication Skills, EDE-Q = Eating Disorder Examination-Questionnaire, EDSIS = Eating Disorder Symptom Impact Scale, EFFT = emotion focused family therapy, EOT = end of treatment, FBT = Family-Based Treatment, GSH = guided self-help, HRQ = Helping Relationships Questionnaire, PvA = Parents versus Anorexia Scale, RSE = Rosenberg Self-Esteem Scale, YBC-EDS = Yale-Brown-Cornell Eating Disorder Scale, YEDE-Q = Youth Eating Disorder Examination-Questionnaire.

Table 14

Definitions of Remission and Abstinence

Author(s)	Year	DSM-5-TR Diagnosis	Definition of Remission
Accurso et al.	2014	AN (excluding criterian D)	≥95% EBW and scoring within 1 SD of norms on the global EDE
Agras et al.	2014	AN (excluding criterian D)	Remission: >95% of the IBW
Byrne et al.	2018	AN (excluding criterian D)	Full remission ≥95 % EBW plus scores within 1 SD of established norms on the EDE Global scale; Partial remission >85%EBW
Forsberg et al.	2013	AN (excluding criterian D)	≥95 % EBW plus scores within 1 SD of established norms on the EDE Global scale
Forsberg et al.	2014	AN (excluding criterian D)	≥95 % EBW and achieving a score on the EDE within 1 SD of globally published norms (M = 1.59)
Forsberg et al.	2017	AN	≥95% EBW and global EDE within 1 SD of community norms
Goldstein et al.	2016	AN and EDNOS	Full remission: EBW ≥95%; Partial remission was considered EBW >85%, but <95%; EBW <85%
Gorrell et al.	2019	BN	Abstinence was calculated by summing both subjective and objective binge eating episodes, as well as all compensatory behaviors included in the DSM-5
Hurst, K., Read, S. & Holtham, T.	2017	BN	Cessation of bingeing and compensatory behavior
Hurst, K & Zimmer-Gembeck, M.	2015	AN	Full Remission: ≥95 % EBW and scores within 1 SD of the global mean EDE published norms. Partial remission was defined as a weight >85% EBW < 95% or more, or weight >95% EBW but with elevated EDE scores
Hurst, K. & Zimmer-Gembeck, M.	2019	AN	Full Remission: ≥95% EBW for gender, age, and height and scores within 1 SD of the global mean EDE published norms. Partial Remission: >85% and <95% EBW, and or an elevated EDE score at the end of treatment
Hughes et al.	2017	Atypical AN	Measued in 2 ways: 1) ≥95%mBMI and EDE Global Score within 1 SDof community norms. 2) According to diagnostic status (DSM-5) based on the parent and adolescent reports on the EDE
Hughes et al.	2018	AN	≥95% mBMI and have an EDE Global Score within 1 SD of community norms
Isserlin, L. & Couturier, J.	2012	AN	Final weight >85% IBW. Remission on the EDE was defined as a global EDE score within 2 SDs of normal adolescent scores
Le Grange et al.	2005	AN	Morgan-Russell outcome categories: Good (normal weight and menses), intermediate (normal weight or menses), or poor (below normal weight and no menses as well as binge/purge symptoms). Normal weight was defined as ≥85% of ideal body weight (IBW). After 1 year of outpatient treatment
Le Grange et al.	2012	AN (excluding criterian D)	Remission was defined as ≥95 % IBW plus within 1SD of the EDE norms
Le Grange et al.	2014a	AN (excluding criterian D)	≥95 % EBW and EDE score within 1 SD of community mean of 1.54 for adolescents
Le Grange et al.	2014b	AN	≥95 % EBW and scoring within 1 SD of community norms on the EDE
Le Grange et al.	2015	BN and EDNOS (Bulimia with low frequency)	Abstinence rate was the proportion of participants who achieved abstinence from binge eating and purging for 4 weeks before the assessment
Lock et al.	2010	AN (excluding criterian D)	Full remission: IBW of ≥95% and EDE global score within 1 SD of com-munity norms. Par-tial remission: ≥85% IBW and changes in EDE score
Loeb et al.	2007	AN (excluding criterian D) and Atypical AN	Morgan Russell criteria for AN outcome, with good outcome defined as weight restoration (985% IBW) plus resumption or onset of menses, intermediate outcome defined as weight restoration in the absence of menses, and poor outcome defined as neither weight restoration nor resumption or onset of menses
Lo Tempio et al	2013	AN (excluding criterian D)	Achieving both normal weight (≥95 % EBW) and a global EDE score within 1 standard deviation (SD) of published norms (1.59)
Matheson et al	2020	BN and EDNOS (Bulimia with low frequency)	Abstinence rate was the proportion of participants who achieved abstinence from binge eating and purging for 4 weeks before the assessment
Rienecke et al.	2016	AN (excluding criterian D)	≥95 % EBW and global scores on the EDE within 1 SD of published norms
Wallis et al.	2017	AN	≥95% EBW and global EDE within 1 SD of community norms

Notes. AN = anorexia nervosa, BN = bulimia nervosa, EBW = estimated body weight, EDE = Eating Disorder Examination, EDNOS = eating disorder not otherwise specified, SD = standard deviation.