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Evidence-Based Psychosocial Treatments for Child and Adolescent Bipolar Spectrum Disorders

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Abstract

Objective—Pediatric bipolar spectrum disorders (BPSDs) are serious conditions associated with morbidity and mortality. Although most treatment research examined pharmacotherapy for pediatric BPSDs, growing literature suggests that psychosocial interventions are also important to: provide families with an understanding of symptoms, course, and treatment of BPSDs; teach youth and parents methods for coping with symptoms (e.g., problem-solving, communication, cognitive-behavioral skills); and prevent relapse.

Method—Thirteen psychosocial intervention trials for pediatric BPSDs were identified via a comprehensive literature search and evaluated according to the Task Force on the Promotion and Dissemination of Psychological Procedures guidelines. All interventions were examined adjunctive to pharmacotherapy and/or treatment as usual (TAU).

Results—No *well-established* or *questionably efficacious* treatments were identified. Family psychoeducation plus skill building was *probably efficacious* (i.e., Multi-Family Psychoeducational Psychotherapy, Family-Focused Treatment); cognitive-behavioral therapy (CBT) was *possibly efficacious*. Dialectical behavior therapy (DBT) and interpersonal and social rhythm therapy (IPSRT) were *experimental*. Limited research precluded subdivision of treatments by format and age. Only single- and multiple-family psychoeducation plus skill building and CBT were evaluated with children. Only single-family psychoeducation plus skill building and DBT, and individual (commonly with limited familial involvement) CBT and IPSRT were evaluated with adolescents.

Conclusions—Psychosocial interventions that involve families, psychoeducation, and skill building may offer added benefit to pharmacotherapy and/or other TAU. Limitations of current research include few outcome studies, small samples, and failure to use stringent control conditions or randomization. The review concludes with a discussion of mediators and moderators, recommendations for best practice, and suggestions for future research.

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Keywords

Evidence-based treatment; psychosocial treatment; bipolar disorder; family psychoeducation; skill building

Though once thought to be primarily a disorder of adulthood, recent research suggests that pediatric bipolar spectrum disorders (BPSDs) are prevalent and serious conditions associated with considerable morbidity and mortality. BPSDs include bipolar I and II disorders, cyclothymic disorder, and bipolar disorder not otherwise specified (NOS) and are characterized by presence of manic (e.g., elated and/or irritable mood, grandiosity, decreased need for sleep) and depressive (e.g., depressed and/or irritable mood, anhedonia, thoughts of death/suicide) symptoms of varying frequency, intensity, and duration (Diagnostic and Statistical Manual of Mental Disorders; American Psychiatric Association, 2000). While discussion of the diagnostic criteria, validity, phenomenology, and course of pediatric BPSDs is beyond the scope of this article, recent research offers review of these important issues (Axelson et al., 2006; Birmaher & Axelson, 2006; Kowatch, Youngstrom, Danielyan, & Findling, 2005; Sala, Axelson & Birmaher, 2009; Youngstrom, Birmaher, & Findling, 2008).

Epidemiological studies suggest that pediatric BPSDs are moderately common, with prevalence rates comparable to those reported in adult literature. For example, Merikangas et al. (2012) reported a lifetime prevalence of 2.5% for bipolar I or II disorders and 1.7% for mania only among adolescents. In addition, a recent meta-analysis including studies of children and adolescents suggests that the mean prevalence of pediatric BPSDs is 1.8% (Van Meter, Moreira, & Youngstrom, 2011). BPSDs in this study included bipolar I and II disorders, cyclothymic disorder, bipolar disorder NOS, mania, and hypomania.

Pediatric BPSDs are not only prevalent, but also serious public health concerns. For example, research suggests BPSDs in youth are associated with a host of negative outcomes, including: high rates of psychiatric comorbidity, especially disruptive behavior disorders (Axelson et al., 2006; Findling et al., 2001; Findling et al., 2010; Kowatch et al., 2005; Youngstrom, Youngstrom, & Starr, 2005); considerable global (Findling et al., 2010) and psychosocial (Goldstein et al., 2009; Keenan-Miller & Miklowitz, 2011) impairment; poor quality of life (Freeman et al., 2009); non-suicidal self-injury (Esposito-Smythers et al., 2010); and suicidality (Algorta et al., 2011; Goldstein et al., 2005). Given the significant impairment experienced by these youth and their families, research on efficacious interventions is crucial.

Reviews and practice parameters recommend pharmacotherapy and psychotherapy in treatment of pediatric BPSDs (Brown et al., 2008; Kowatch et al., 2005; Kowatch, Fristad, Findling, & Post, 2009; Kowatch, Strawn, & Sorter, 2009; McClellan, Kowatch, Findling, & the Work Group on Quality Issues, 2007). However, most treatment outcome research has focused on pharmacological interventions for pediatric BPSDs (see Kowatch et al., 2009 for current guidelines). Though medication is an important component of efficacious treatment, psychosocial interventions are also essential to help children and families learn to manage what is best conceptualized as a chronic illness, with a waxing and waning course, via

psychoeducation and symptom management skills. Although several articles have reviewed research on psychosocial treatments for youth with BPSDs (West & Pavuluri., 2009; Young & Fristad, 2007), a comprehensive review examining the evidence base for psychotherapeutic treatments in accord with the guidelines proposed by the Task Force on the Promotion and Dissemination of Psychological Procedures (Chambless et al., 1998; Chambless & Hollon, 1998; Chambless & Ollendick, 2001; Chambless et al., 1996; Silverman & Hinshaw, 2008; Southam-Gerow & Prinstein, 2013) has not been conducted.

Thus, the purpose of the present article is to review the evidence base for psychosocial interventions in the treatment of pediatric BPSDs. Remaining consistent with past reviews (Silverman & Hinshaw, 2008), the organization of this article is divided between studies of different methodological rigor and treatment type. To underscore the need for developmentally sensitive interventions tailored for different age groups, this review also comments on interventions used with children versus adolescents, and specific formats. Studies are first reviewed in accord with CONSORT guidelines (Moher, Schulz, & Altman, 2001) for evaluating clinical trials in general and Nathan and Gorman (2002) for evaluating psychotherapy trials in particular. In *A Guide to Treatments that Work*, Nathan and Gorman (2002) delineated criteria for six types of studies, ranging from the most methodologically rigorous clinical trials (Type 1 studies) to reports with marginal value (Type 6 studies). Type 1 studies are double-blind, randomized controlled trials (RCTs) that have a clear delineation of inclusion/exclusion criteria, state-of-the-art assessment and diagnostic procedures, adequate sample size, rigorous comparison groups, and appropriate data analytic procedures. Type 2 studies are clinical trials that lack some components of a Type 1 study. Type 3 studies present pilot data, typically from open or case-control trials. Type 4 studies use sophisticated techniques (e.g., meta-analyses) to conduct secondary data analyses. Type 5 studies are reviews that summarize the literature. Finally, Type 6 studies are case studies, essays, and opinion papers.

Following examination of methodological rigor of trials, investigated treatments are evaluated for the extent to which each conforms to the Task Force on the Promotion and Dissemination of Psychological Procedures criteria (Chambless et al., 1998; Chambless & Hollon, 1998; Chambless & Ollendick, 2001; Chambless et al., 1996; Silverman & Hinshaw, 2008; Southam-Gerow & Prinstein, 2013). For an intervention to be deemed *well-established*, there must be at least two well-conducted, between-group design experiments demonstrating efficacy in one of the following ways: (a) superior to pill or psychological placebo or to another treatment; or (b) equivalent to an already-established treatment in experiments. Also, at least two different investigators or research teams must demonstrate intervention effects. Regarding methodological criteria, these experiments must be RCTs that: are conducted in accordance with a treatment manual; detail inclusion/exclusion criteria; include sufficient sample size; employ reliable and valid outcome assessment measures; and utilize appropriate data analyses. For an intervention to be classified *probably efficacious*, either (a) two experiments must demonstrate that the intervention is more effective than a no-treatment or waitlist control (WLC) group in improving functioning, or (b) the studies meet all criteria for a *well-established* treatment, except for the requirement that treatment effects are shown by two different research teams. These trials must also

demonstrate all aforementioned methodological criteria. *Possibly efficacious* treatments must (a) show the intervention to be superior to a no-treatment or WLC group in an RCT that employs all methodological criteria, or (b) demonstrate efficacy in two or more non-RCTs that enact all other methodological criteria. *Experimental* treatments have either (a) not yet been tested in an RCT, or (b) been tested in one or more studies not sufficient to meet *possibly efficacious* criteria. Finally, treatments of *questionable efficacy* have been tested in high quality group-design experiments and found to be inferior to other treatments and/or WLC. Following review of individual studies and evidence-based classification of treatments, we conclude by detailing limitations of current trials, commenting on mediators and moderators of treatment, discussing clinical implications and recommendations for best practice, and offering suggestions for future research.

Method

Studies were identified through a comprehensive search of online databases (e.g., PsycINFO, Medline). Search terms included: *pediatric* or *child* or *adolescent bipolar disorder; pediatric* or *child* or adolescent bipolar spectrum disorder; bipolar disorder or bipolar spectrum disorder treatment; bipolar disorder or bipolar spectrum disorder psychosocial treatment; bipolar disorder or *bipolar spectrum disorder psychotherapy*. Given the scarce amount of research on psychosocial treatments for pediatric BPSDs, we did not separate investigations by age group (children versus adolescents) or by treatment format (individual, single-family, or multiple-family), though we note these characteristics throughout the review. Similarly, we incorporated any studies that included youth with pediatric BPSDs or at-risk for developing BPSDs. Pharmacological studies were not reviewed except when a medication intervention was paired with a psychosocial treatment.

The below review is organized by Type 1 (see Table 1), Type 2 (see Table 2), and Type 3 (see Tables 3, 4, and 5) treatment studies. Type 4, Type 5 (e.g., West & Pavuluri, 2009; Young & Fristad, 2007), and Type 6 (e.g., Danielson, Feeny, Findling, & Youngstrom, 2004; Leffler, Fristad, & Klaus, 2010) studies were not reviewed, as no Type 4 studies were identified, Type 5 and Type 6 studies offer limited empirical data, and interventions examined via Type 6 studies were subsequently evaluated via Type 3 studies (and thus were reviewed in this article). Based on aforementioned criteria, a total of 13 psychosocial intervention trials were identified and included in this review.

Results

Review of Type 1 Randomized Controlled Trials

Three psychosocial treatment RCTs for pediatric BPSDs (1 with children, 1 with adolescents, and 1 with both age groups) met Type 1 criteria (Nathan & Gorman, 2002) based on their design features, which included random assignment, blind semi-structured assessment via clinical interviews with evaluators uninvolved with study treatment delivery, clear description of inclusion/exclusion criteria, sufficient statistical power, and state-of-the art assessment and data analytic methods (see Table 1; Fristad, Verducci, Walters, & Young, 2009; Miklowitz et al., 2008; Miklowitz et al., 2013). These studies examined single- and multiple-family psychoeducation plus skill building, adjunctive to TAU (Fristad et al., 2009)

or medication provided by study psychiatrists, using best known practices at the time (Miklowitz et al., 2008; Miklowitz et al., 2013). Family psychoeducation involved improving families' understanding of mood symptoms, course, and treatment, while skill building was comprised of symptom management techniques (e.g., problem-solving, communication).

Multi-Family Psychoeducational Psychotherapy (MF-PEP) is an adjunctive, manualized intervention for children with depressive and bipolar spectrum disorders and their parents that combines psychoeducation with family therapy and cognitive-behavioral therapy (CBT) techniques (i.e., behavioral activation and coping skills, cognitive restructuring; Fristad, Goldberg-Arnold, & Leffler, 2011). Treatment consists of 8 90-minute sessions with concurrent parent and child groups. Psychoeducation about mood and comorbid symptoms, course, and appropriate treatment, social support from other families, and symptom management strategies (e.g., problem-solving, communication, CBT, emotion regulation skills) are theorized to lead to a better understanding and management of the disorder and attainment of more effective treatment, which subsequently results in improved mood symptoms.

Fristad et al. (2009) conducted an RCT of MF-PEP+TAU versus WLC+TAU, with 165 children ages 8-11 with depressive (30%) or bipolar (70%) spectrum disorders. Children who immediately received MF-PEP+TAU had a significantly greater decrease in mood symptom severity compared with WLC+TAU over 1-year follow-up, with improvement maintained through 18-month follow-up. WLC+TAU showed a similar decrease in mood symptom severity one year later, following receipt of MF-PEP. Significant results were demonstrated with both treatment completers and the intent-to-treat cohort, though the effect was larger among those who completed MF-PEP.

Family-Focused Treatment for Adolescents with BPSDs (FFT-A) was adapted from FFT for adults and consists of 21 50-minute sessions over 9 months (12 weekly, 6 biweekly, and 3 monthly; Miklowitz et al., 2004). Psychoeducation, communication enhancement training, and problem-solving skills training are conducted with the adolescent, parents, and siblings. Goals of treatment are to: encourage adolescents and family members to develop a common understanding of symptoms, etiology, and course of BPSDs and precipitants for recurrence (e.g., stressful life events, family conflict); foster pharmacotherapy adherence; and develop a relapse prevention plan.

Miklowitz et al. (2008) evaluated FFT-A + pharmacotherapy versus enhanced care (EC – 3 50-minute family sessions focused on psychoeducation, medication adherence, family conflict, and relapse prevention) + pharmacotherapy in an RCT of 58 adolescents ages 12-17 with bipolar I or II disorder, or bipolar disorder NOS. Intent-to-treat analyses revealed no group differences in rates of recovery from the index episode over the course of the 2-year study; however, adolescents receiving FFT-A recovered from baseline depressive symptoms significantly faster than adolescents receiving EC. In addition, there was no difference in time to recurrence of depression or mania, but FFT-A adolescents spent significantly fewer weeks in acute states of depression than those receiving EC. FFT-A youth also spent significantly more time without depressive symptoms than EC youth, and FFT-A

adolescents had significantly greater overall reductions in mood severity scores and a more favorable trajectory of depressive symptoms over two years.

FFT for youth at high risk for bipolar disorder (FFT-HR; Miklowitz et al., 2011) was adapted from FFT-A (Miklowitz et al., 2008; Miklowitz et al., 2004) and consists of 12 acute-phase sessions (8 weekly, 4 biweekly) and monthly booster sessions as-needed with the youth, parents, and siblings. Similar to FFT-A, FFT-HR incorporates psychoeducation, communication enhancement training, and problem-solving skills training. Objectives of treatment include: recognizing prodromal symptoms; distinguishing mood dysregulation from developmentally appropriate reactivity; identifying triggers; enhancing family communication and problem-solving; and developing prevention plans.

Miklowitz et al. (2013) evaluated FFT-HR + as-needed pharmacotherapy versus family education control (FEC – 1-2 family sessions incorporating diagnostic feedback and mood monitoring and management skills) + as-needed pharmacotherapy in an RCT of 40 youth ages 9-17 at risk for developing bipolar disorder (i.e., with major depressive disorder, cyclothymic disorder, or bipolar disorder NOS, active mood symptoms in past 1-2 weeks, and first-degree relative with bipolar I or II disorder). Families in both groups could request additional crisis sessions or psychosocial treatment referrals. Intent-to-treat analyses revealed youth in FFT-HR had more rapid recovery from initial mood and depressive symptoms, more weeks in remission and less weeks in subthreshold states, and a more favorable trajectory of manic symptoms over 1 year than youth in FEC. Group differences were not explained by differences in initial clinical state, comorbid disorders, or pharmacotherapy. In addition, the treatment effect was greater among youth in families with high, versus low, expressed emotion. Thus, these Type 1 studies of FFT-HR, FFT-A, and MF-PEP provide evidence of efficacy for single- and multiple-family psychoeducation plus skill building in the treatment of pediatric BPSDs.

Review of Type 2 Randomized Controlled Trials

Two RCTs of psychosocial treatments for childhood BPSDs met criteria for Type 2 studies (Nathan & Gorman, 2002) because their designs were considered more rigorous than standard Type 3 trials but less stringent than those employed in Type 1 studies (see Table 2; Fristad, 2006; Fristad, Goldberg-Arnold, & Gavazzi, 2002, 2003; Goldberg-Arnold, Fristad, Gavazzi, 1999). Though these studies were RCTs, they met criteria for Type 2 (versus Type 1) classification because sample sizes were small and blinded outcome assessment was only employed in one trial (Fristad, 2006). Similar to Type 1 studies, these trials examined psychosocial interventions, single- and multiple-family psychoeducation plus skill building, adjunctive to TAU. Only child samples were used.

A Type 2 RCT of MF-PEP+TAU versus WLC+TAU with 35 children ages 8-11 with depressive (54%) or bipolar (46%) spectrum disorders analyzed intermediate outcomes of MF-PEP (Fristad et al., 2002, 3003; Goldberg-Arnold et al., 1999). Parents who immediately received MF-PEP+TAU demonstrated positive consumer evaluation at 2-month follow-up (i.e., improved knowledge, social support, attitudes, coping skills) and positive attitudinal shift at 6-month follow-up. MF-PEP+TAU parents also demonstrated significantly improved family interactions, knowledge of mood disorders, and ability to

obtain appropriate services compared with WLC+TAU by 6-month follow-up. MF-PEP +TAU children reported significant improvement in perceived social support from parents and non-significant improvement in perceived social support from peers compared to WLC +TAU at 6-month follow-up.

Individual-Family Psychoeducational Psychotherapy (IF-PEP) is a single-family adaptation of MF-PEP (Fristad, 2006; Fristad et al., 2011; Leffler et al., 2010). IF-PEP consists of 16-24 50-minute sessions alternating between parent- and child-only sessions (with parent check-ins). IF-PEP covers all content in MF-PEP. Unique features include focus on coordinating school and mental health treatment teams, school planning, sibling relationships, and healthy habits (i.e., sleep hygiene, nutrition, exercise). In addition, four "in the bank" sessions can be used to address crises at any time throughout treatment.

Fristad (2006) conducted a Type 2 RCT of IF-PEP+TAU versus WLC+TAU with 20 children ages 8-11 with BPSDs. Children's mood symptoms improved following treatment, with gains maintained through 12-month follow-up, but not to a significantly greater degree than WLC+TAU (effect sizes favoring IF-PEP+TAU were medium). Expressed emotion improved significantly more for IF-PEP+TAU versus WLC+TAU families. IF-PEP+TAU families also demonstrated non-significant improvement in service utilization. Both parents and children reported positive consumer evaluations. Thus, these Type 2 studies of IF-PEP and MF-PEP offer additional support for single- and multiple-family psychoeducation plus skill building in treatment of childhood BPSDs.

Review of Type 3 Studies

Eight trials of psychosocial treatments for pediatric BPSDs met criteria for Type 3 studies (Nathan & Gorman, 2002). These studies were mostly pilot trials employing open or historical matched control methodology. Two studies included children (MacPherson, Leffler, & Fristad, 2013; West et al., 2009), four studies included predominantly adolescents (Feeny, Danielson, Schwartz, Youngstrom, & Findling, 2006; Goldstein, Axelson, Birmaher, & Brent, 2007; Hlastala, Kotler, McClellan, & McCauley, 2010; Miklowitz et al., 2004), and two studies included both age groups (Miklowitz et al., 2011; Pavuluri et al., 2004). Some Type 3 studies examined single- or multiple-family psychoeducation plus skill building (see Table 3; MacPherson et al., 2013; Miklowitz et al., 2011; Miklowitz et al., 2004). Other intervention trials employed comparable components while more heavily emphasizing different aspects of treatment, such as single- and multiple-family CBT (see Table 4; Pavuluri et al., 2004; West et al., 2009), and individual CBT with limited familial involvement (Feeny et al., 2006). Finally, other studies utilized novel downward extension of approaches used with adults (see Table 5), including single-family dialectical behavior therapy (DBT; Goldstein et al., 2007) and individual interpersonal and social rhythm therapy for adolescents (IPSRT-A), with limited familial involvement (Hlastala et al., 2010). First, Type 3 studies that examined family psychoeducation plus skill building are reviewed, followed by CBT trials, then DBT and IPSRT-A investigations. Similar to Type 1 and Type 2 studies, Type 3 trials examined psychosocial interventions adjunctive to pharmacotherapy (typically managed by study psychiatrists or clinicians at specialty clinics) or TAU.

Studies of family psychoeducation plus skill building—Three Type 3 studies (1 with children, 1 with adolescents, and 1 with both age groups) examined single- (Miklowitz et al., 2011; Miklowitz et al., 2004) or multiple-family (MacPherson et al., 2013) psychoeducation plus skill building (see Table 3). Miklowitz et al. (2004) conducted an open trial of FFT-A + pharmacotherapy (managed by study-affiliated psychiatrists using available treatment guidelines) with 20 adolescents ages 13-17 with BPSDs. At 12-month follow-up, improvement was reported by adolescents in depressive and manic symptoms and by parents in problem behaviors, internalizing symptoms, and externalizing symptoms.

Miklowitz et al. (2011) conducted a 1-year open trial of FFT-HR with 13 youth ages 9-16 at risk for developing bipolar disorder (i.e., with major depressive disorder, cyclothymic disorder, or bipolar disorder NOS, active mood symptoms in past month, and parent with bipolar I or II disorder). Families continued any pre-treatment therapy and medication management as needed, administered by study psychiatrists (3 youth were not on medications at baseline). Clinicians delivered FFT-HR with fidelity and families were adherent to treatment. Children exhibited significant improvement in depressive and hypomanic symptoms, and global functioning at 12-month follow-up. During the study, one child with bipolar disorder NOS developed a manic episode, while two children with major depressive disorder had recurrences of major depressive episodes.

MacPherson et al. (2013) provided preliminary descriptive outcomes in an open implementation trial of MF-PEP+TAU in a community practice setting with 40 children ages 8-12 with depressive or bipolar spectrum disorders and 15 therapists who were briefly trained in and delivered MF-PEP. Parents, children, and therapists reported high acceptability with MF-PEP content, format, components/activities, and the overall treatment. MF-PEP therapists reported training methods (workbook, presentation) were *helpful* or *very helpful*, while referring clinicians reported families discussed MF-PEP in treatment and noted improvement in the therapeutic relationship, parent and child coping, and family climate and attitude. Other implementation outcomes (outlined by Proctor et al., 2011), were also demonstrated descriptively, including: adoption, appropriateness, feasibility, provider penetration, manageable costs, and sustainability. Finally, parental knowledge of mood disorders significantly improved post-treatment. Thus, though conducted less rigorously than Type 1 and Type 2 studies, pilot data from Type 3 open trials add to the evidence base for single- and multiple-family psychoeducation plus skill building in treatment of pediatric BPSDs in both research and practice settings.

Studies of cognitive-behavioral therapy—Three Type 3 studies (1 with children, 1 predominantly with adolescents, and 1 with both age groups) examined single-family (Pavuluri et al., 2004), multiple-family (West et al., 2009), and individual (with limited familial involvement; Feeny et al., 2006) CBT (see Table 4). Child- and Family-Focused CBT (CFF-CBT; Pavuluri et al., 2004) consists of 12 sessions that: integrate psychoeducational, cognitive-behavioral, and interpersonal techniques; focus on psychosocial factors influencing course of illness (e.g., expressed emotion, stressful life events); and teach coping, CBT, communication, and problem-solving skills. The maintenance phase includes psychosocial booster sessions and medication management

delivered in a systematic yet flexible way (weekly to once every three months; West, Henry, & Pavuluri, 2007).

Pavuluri et al. (2004) conducted an open trial of acute CFF-CBT + pharmacotherapy (managed by study psychiatrists) with 34 youth ages 5-17 with BPSDs. CFF-CBT was feasible and resulted in significant improvements in attention-deficit/hyperactivity disorder (ADHD), aggression, mania, psychosis, depression, sleep disturbance, and global functioning post-treatment. Participation in the CFF-CBT maintenance phase was associated with preservation of improvements in symptoms and functioning over 3-year follow-up (West et al., 2007).

A multiple-family adaptation of CFF-CBT consisting of 12 concurrent parent and child group sessions was examined in an open trial with 26 children ages 6-12 with BPSDs and their families (West et al., 2009). Youth received standardized pharmacotherapy at a specialty pediatric mood disorders clinic. Multiple-family CFF-CBT was feasible and acceptable to parents. CFF-CBT was also associated with significant improvement in children's manic symptoms and psychosocial functioning, and non-significant improvement in parents' knowledge and perceived self-efficacy in coping.

CBT for adolescents with BPSDs consists of 12 weekly sessions of acute-phase treatment (i.e., individual therapy, 2-4 parent and child sessions, 1 parent session) followed by 6-10 biweekly sessions and biannual booster sessions (Danielson et al., 2004). Treatment involves psychoeducation about symptoms and course of BPSDs, medication compliance, mood monitoring, anticipating stressors and problem-solving, identifying and modifying unhelpful thinking, sleep regulation and relaxation, family communication and assertiveness, and relapse prevention, with optional modules for substance abuse, social skills, anger management, and contingency management.

A pilot study compared 8 youth ages 10 -17 with BPSDs who received acute CBT with 8 matched historical controls. CBT retention was high. There were no significant between-group differences post-treatment or 8-week follow-up; between-group effect sizes favored CBT for depressive and manic symptoms. The CBT group reported non-significant improvement in depression and mania at both time points. Parents of CBT adolescents also reported significant post-treatment improvement in youth's depression and mania; however, significant improvements were only maintained for depression. Though CBT has not been studied as rigorously as family psychoeducation plus skill building, growing research suggests that single- and multiple-family CBT, and individual CBT with limited familial involvement, may be effective in psychosocial treatment of pediatric BPSDs.

Studies of dialectical behavior therapy and interpersonal and social rhythm therapy—Two Type 3 studies with adolescents examined single-family DBT (Goldstein et al., 2007) and individual IPSRT-A (with limited familial involvement; Hlastala et al., 2010; see Table 5). DBT consists of 24 weekly and 12 bimonthly 60-minute sessions alternating between family skills training and individual therapy, with as-needed telephone coaching. Family skills training includes psychoeducation about BPSDs and the biosocial model and teaches mindfulness, distress tolerance, emotion regulation, interpersonal effectiveness, and

walking the middle path skills. Individual therapy addresses target behaviors outlined in the DBT hierarchy (i.e., life-threatening, treatment-interfering, and quality-of-life interfering behavior; skills development) by employing problem-solving strategies within a validating environment.

Goldstein et al. (2007) conducted an open trial of 1-year of DBT + pharmacotherapy (managed by psychiatrists following treatment guidelines at a specialty outpatient clinic) for 10 adolescents ages 14-18 with BPSDs. DBT completion rate and parent/youth satisfaction were high. Adolescents demonstrated significant post-treatment improvement in suicidality, emotion dysregulation, and depression, and non-significant improvement in non-suicidal self-injury. There were no significant improvements in mania or interpersonal functioning, and no differences in number of medications prescribed.

IPSRT-A consists of 16-18 sessions delivered over 20 weeks, most of which are with the adolescent alone, aside from 2-3 family psychoeducation sessions and familial involvement as needed (Hlastala & Frank, 2006). Primary targets of IPSRT-A include medication non-adherence, interpersonal stress, and circadian rhythm dysregulation. Hlastala et al. (2010) conducted a pilot open trial of IPSRT-A + pharmacotherapy for 12 adolescents ages 13-17 with BPSDs. Pharmacotherapy was managed by youths' regular psychiatrists or medical providers; 11 youth were on medication during the trial. IPSRT-A was feasible, and adolescent-rated satisfaction was high. Both statistically and clinically significant improvements in manic, depressive, and general psychiatric symptoms, and global functioning were noted post-treatment. Thus, although the majority of research supports use of family psychoeducation plus skill building in treatment of pediatric BPSDs, Type 3 studies of single-family DBT and individual IPSRT-A (with limited familial involvement) for adolescents indicate preliminary positive findings.

Evidence-Based Status of Psychosocial Treatments for Pediatric Bipolar Spectrum Disorders

Table 6 summarizes the classification of psychosocial interventions for pediatric BPSDs. Based on this review, no interventions are *well-established* or of *questionable efficacy*. At present, the most thoroughly examined intervention, family psychoeducation plus skill building, meets the requirements for designation as a *probably efficacious* psychological intervention based on findings from three RCTs conducted by Fristad et al. (2009) of MF-PEP+TAU versus WLC+TAU, Miklowitz et al. (2008) of FFT-A + pharmacotherapy versus EC + pharmacotherapy, and Miklowitz et al. (2013) of FFT-HR + as-needed pharmacotherapy versus FEC + as-needed pharmacotherapy. CBT is *possibly efficacious*, as two open trials (Pavuluri et al., 2004; West et al., 2009) and one study with matched historical controls (Feeny et al., 2006) demonstrated positive findings (although significant between-group differences were not observed in the latter trial, effect sizes favored CBT, as did measures completed solely by the CBT group). Both DBT (Goldstein et al., 2007) and IPSRT-A (Hlastala et al., 2010) are *experimental* treatments, as one open study each evaluated and demonstrated promising preliminary results.

Specific classifications regarding format (individual, single-family, or multiple-family delivery) and age groups (children versus adolescents) were not made, as limited research

precluded further subdivision of studies. Of trials that included children, only three studies of multiple-family psychoeducation plus skill building (MF-PEP – Fristad et al., 2002, 2003; Fristad et al., 2009, Goldberg-Arnold et al., 1999; MacPherson et al., 2013), one trial of single-family psychoeducation plus skill building (IF-PEP – Fristad, 2006), and one trial of multiple-family CBT (CFF-CBT – West et al., 2009) were conducted. For adolescents, only a single-family format was employed for two studies of FFT-A (Miklowitz et al., 2008; Miklowitz et al., 2004) and one study of DBT (Goldstein et al., 2007). One study each was conducted with CBT (Feeny et al., 2006) and IPSRT-A (Hlastala et al., 2010), both of which consisted primarily of individual therapy with limited familial involvement. Finally, of trials that included both age groups, only two trials of single-family psychoeducation plus skill building (FFT-HR – Miklowitz et al., 2011; Miklowitz et al., 2013) and one trial of single-family CBT (CFF-CBT – Pavuluri et al., 2004; West et al., 2007) were conducted. Though aforementioned classifications of treatments are likely to change as research continues, current findings are promising and have both practical and empirical implications.

Discussion

Considerable progress has been made in psychosocial treatment of pediatric BPSDs. However, it is important to consider shortcomings of studies and evaluate how and for whom interventions work when drawing conclusions. Thus, we close by discussing limitations, summarizing mediator and moderator findings, offering recommendations for best practice, and suggesting areas of future research.

Limitations of Psychosocial Treatment Outcome Studies

Although results from reviewed studies are promising, limitations should be noted, as they restrict both the generalizability and interpretability of findings. The first set of shortcomings relate to the small amount of research, samples, and settings. Though growing, the literature on psychosocial treatments for pediatric BPSDs is scarce, which makes it difficult to draw broad conclusions about efficacy of treatment types, especially when trying to examine treatment subdivisions by format and age group. Most samples were small (aside from Type 1 RCTs) and consisted predominantly of White males. This limits generalizability of findings, as results may differ with predominantly female or racially diverse populations. For example, adolescent females have higher rates of depression (Cyranowski, Frank, Young, & Shear, 2000) and higher rates of depression within BPSDs (Duax, Youngstrom, Calabrese, & Findling, 2007), which may affect outcome. Similarly, all studies included samples of youth with a range of bipolar (and sometimes depressive) spectrum disorders, and with varying current mood episodes and severity. Though variability is not surprising, given the episodic nature of BPSDs, such designs create heterogeneous samples, some of which may be more responsive to interventions than others. Also, most studies were conducted in university medical centers or specialty outpatient clinics with highly trained therapists. Though one study provided preliminary support for the transport of MF-PEP to practice settings (MacPherson et al., 2013), it is unclear whether efficacy trial results conducted under stringent conditions will generalize in community clinics.

Additional limitations are related to control comparisons and methodological rigor. For example, the three Type 1 and two Type 2 RCTs utilized a WLC+TAU (Fristad, 2006; Fristad et al., 2002, 2003; Fristad et al., 2009; Goldberg-Arnold et al., 1999), EC + study pharmacotherapy (Miklowitz et al., 2008), or FEC + as-needed study pharmacotherapy (Miklowitz et al., 2013) control instead of psychological placebo or other active treatment. Thus, it cannot be ruled out that significant changes were due to nonspecific or other factors unrelated to MF-PEP, FFT-A, or FFT-HR. Similarly, Type 3 studies were predominantly open trials; thus, improvements may have been due to nonspecific therapeutic factors, the passage of time, or other unrelated reasons. Also, all trials allowed for continuation of TAU or pharmacotherapy; however, these interventions were often not controlled or reported. Thus, differences in other interventions or adherence to regimens, rather than the psychosocial interventions, may account for improvements. Also, adjunctive pharmacotherapy in most trials was provided by highly trained study psychiatrists following algorithms or practice parameters. Psychosocial treatments may not demonstrate the same positive effects if uncoupled from stringently managed pharmacotherapy.

Finally, studies employed various assessment techniques, ranging from parent, child, and therapist report, to semi-structured clinician interview (gold standard for evaluating mood disorders in youth). Self-report data may be tainted by biases, poor insight, or lack of awareness of mood or other symptoms. Despite these limitations, findings from trials of psychosocial interventions for pediatric BPSDs are promising, have important clinical implications, and offer directions for future research.

Mediators, Predictors, and Moderators of Treatment Response

Only the Type 1 RCTs have begun to examine mediators, predictors, and moderators of treatment. Mediator analyses have only been evaluated in the Type 1 MF-PEP RCT (Fristad et al., 2009). Specifically, participation in MF-PEP significantly improved quality of services utilized, mediated by parents' beliefs about treatment, and participation in MF-PEP also significantly improved severity of children's mood symptoms, mediated by quality of services used (Mendenhall, Fristad, & Early 2009). Thus, MF-PEP helps parents become better consumers of mental health services, and access to higher-quality services results in decreased mood symptom severity (Fristad et al., 2009).

Predictors and moderators of treatment response have been evaluated to some extent in all Type 1 RCTs of MF-PEP RCT (Fristad et al., 2009), FFT-A (Miklowitz et al., 2008), and FFT-HR (Miklowitz et al, 2013). Regarding the MF-PEP RCT, predictors of treatment response (regardless of group assignment) were lower global functioning (i.e., greater impairment) and higher levels of stress/trauma in youth, and parents with lower levels of Cluster B personality disorder symptoms (MacPherson, Algorta, Mendenhall, Fields, & Fristad, in press). Children's global functioning also moderated the treatment effect of MF-PEP, as evidenced via a treatment by baseline predictor by time interaction. Specifically, MF-PEP had a smaller impact on mood symptoms for children who at baseline were higher functioning, albeit still within the clinical range. MF-PEP had the strongest effect on mood symptoms for the most severely impaired youth. Children's demographic status, cognitive abilities, anxiety symptoms, disruptive behavior symptoms, and mood diagnosis, parents'

general psychiatric and mood symptoms, and familial expressed emotion did not affect the treatment response of mood symptoms in either group (Boylan, MacPherson, & Fristad, in press; Cummings & Fristad, 2012; MacPherson et al., in press). MF-PEP was associated with small to moderate improvements in disruptive behavior, but not anxiety. In the FFT-A RCT, adolescents in families with high levels of expressed emotion demonstrated more mood symptom improvement in FFT-A than EC (Miklowitz et al., 2009). Similarly, in the FFT-HR RCT high expressed emotion predicted worse outcome (i.e., longer time to recovery and symptomatic for longer), and the effects of FFT-HR were more pronounced among youth in families with high, versus low, expressed emotion (Miklowitz et al., 2013). However, this RCT was underpowered to identify potential moderators of treatment.

Such mediator, predictor, and moderator findings are informative because they indicate how and for whom interventions work. Specifically, findings suggest that MF-PEP effects change by equipping parents with skills for accessing and coordinating services, while psychoeducational treatments such as MF-PEP and FFT-A may be especially impactful for functionally impaired youth from negative familial environments. Such findings offer important practical recommendations for treatment and inform future research.

Clinical Implications and Recommendations for Best Practice

Based on findings from the current review, several clinical recommendations can be made. As family psychoeducation plus skill building has the most empirical support and is the only *probably efficacious* treatment, these interventions should be considered first line psychosocial interventions for pediatric BPSDs. However, it is important to recognize similarities in therapeutic approaches among all treatments with accruing empirical support (including CBT, DBT, IPSRT-A). The common, apparently active ingredients of these treatments should be incorporated into clinical practice. Thus, treatment of pediatric BPSDs should include: family involvement; psychoeducation about etiology, symptoms, course, medications, risk and protective factors, and effective treatment of BPSDs; skill building (especially communication, problem-solving, CBT, and emotion regulation skills); and relapse prevention.

Findings from mediator, predictor, and moderator analyses in MF-PEP (Fristad et al., 2009), FFT-A (Miklowitz et al., 2008), and FFT-HR (Miklowitz et al., 2013) also have important clinical implications. Specifically, clinicians should focus on improving parents' knowledge of mood disorders and beliefs about treatment, and equipping them with skills to be effective advocates and coordinators of services for their child, as attainment of optimal services was responsible for improved mood outcomes in MF-PEP (Mendenhall et al., 2009). Also, clinicians should implement family psychoeducation plus skill building interventions with youth who are most impaired, or come from negative familial environments. High functioning youth without stress/trauma history and with parents with Cluster B personality disorder symptoms may require additional or different interventions than family psychoeducation plus skill building. Though current findings offer valuable clinical recommendations, future research will considerably improve the evidence base and offer more definitive support for efficacious treatments.

Future Directions

Though recently more research has been devoted to psychosocial treatment of pediatric BPSDs, there is still much work to be done. Currently, there are no *well-established* psychosocial interventions for youth with BPSDs. Thus, more rigorous RCTs with diverse samples that examine existing and novel interventions compared with psychological placebos or other active treatments, while employing semi-structured clinician-rated outcomes, are needed. In addition, studies should examine whether treatment format or age impacts outcome, and delineate what specific aspects of treatment should differ based on age. As more RCTs are completed, predictor, moderator, mediator, and dismantling analyses will be important, as such findings will indicate variables associated with treatment response, for whom interventions are most impactful, mechanisms of change, and essential treatment components. For example, as most studies included diagnostically diverse samples, examination of mood and other comorbid diagnoses would be informative to examine in secondary predictor and moderator analyses.

Also important to consider are adjunctive pharmacotherapy and TAU employed in studies. Most trials had study or specialty clinic psychiatrists managing medication, typically following an algorithm or practice parameter. As such specialized medication management is difficult to obtain in practice settings, more trials of purely adjunctive psychosocial interventions would indicate which treatments can be readily implemented in the community, adjunctive to TAU, and which may require specialized pharmacotherapy. In addition, future research should standardize reporting and use of other interventions in outcome trials, to more clearly delineate the effects of psychosocial interventions.

Also, more preventative efforts should be conducted, such as those initiated by Miklowitz et al. (2011) and Miklowitz et al. (2013), in attempts to inhibit or alter the course of BPSDs. Indeed, findings from the MF-PEP RCT suggest that psychoeducational interventions may protect youth with transient manic symptoms from converting to a BPSD (Nadkarni & Fristad, 2010). Finally, once more rigorous RCTs have identified *well-established* or *probably efficacious* interventions, additional research should examine effectiveness and implementation of treatments in practice settings, to determine if interventions are transportable to the community, and to identify processes involved in facilitating their widespread dissemination. Thus, although much more research is needed, this review indicates that the literature on psychosocial treatments for pediatric BPSDs is both growing and promising.

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Table 1

Review of Type 1 Randomized Controlled Trials of Family Psychoeducation Plus Skill Building for Pediatric Bipolar Spectrum Disorders

Investigators	Sample	Source, Measures, and Frequency	Setting, Therapists	Treatment Conditions	Results
Fristad, Verducci, Walters, & Young (2009)	*N* = 165 children ages 8-11 73% male 90.9% White, Non-Hispanic, 6.7% African American, 1.8% mixed race, 0.6% White, Hispanic BP I (38%), BP II (13%), BP NOS (18%), substance-induced mood disorder (1%), MDD (23%), DD (3%), MDD + DD (3%), or mood disorder NOS (1%) IQ > 70	Clinician: MSI Baseline, 6-, 12-, and 18-month follow-up	University medical center 2 LCPs, 1 LISW, 2 postdoctoral trainees, 1 advanced doctoral student, 12 graduate students (child group co-therapists)	MF-PEP (8 90-minute parent and child multiple-family groups) + TAU (*n* = 78) WLC + TAU (*n* = 87)	MF-PEP + TAU associated with significantly greater symptom improvement at 1-year follow-up (*d* = 0.53, *M* MSI decrease of 6.48 points more in MF-PEP + TAU vs. WLC + TAU); similar decrease in MSI scores 1 year later following MF-PEP for WLC + TAU (MSI decrease = 3.24 units/6 months in immediate treatment group; 3.50 units/6 months in WLC + TAU)
Miklowitz et al. (2008)	*N* = 58 adolescents ages 12-17 56.9% female 89.7% White, 5.2% Biracial, 1.7% African American, 1.7% Native American, 1.7% Asian/Pacific Islander BP I (65.5%), BP II (10.3%), or BP NOS (24.1%) Mood episode in prior 3 months	Clinician: K-SADS DRS and MRS; A-LIFE Every 3 months for first year and 6 months for second year	Specialty outpatient clinic Therapist status not reported	FFT-A (21 50-minute sessions with adolescent, parents, and siblings) + study pharmacotherapy (*n* = 30) EC (3 weekly 50 minute single-family sessions) + study pharmacotherapy (*n* = 28)	No group differences in rates of recovery from index episode (FFT-A = 14.4 weeks; EC = 22.3 weeks) or time to recurrence of episode; FFT-A youth recovered faster from baseline depressive symptoms than EC (10.2 vs. 14.1 weeks), spent fewer weeks in acute depressive episodes (3.3 vs. 5 weeks), spent more time without depressive symptoms (52.6 vs. 48.3 weeks), and had a more favorable trajectory of depressive symptoms over 2 years
Miklowitz et al. (2013)	*N* = 40 youth ages 9-17 57.5% male 90% White, 10% Nonwhite, 5% Hispanic Ethnicity MDD (42.5%), cyclothymic disorder (7.5%), or BP NOS (50%) Current mood symptoms (YMRS > 11 for 1 week or CDRS-R > 29 for 2 weeks) ≥ 1first-degree relative with BP I or II	Clinician: YMRS; CDRS-R; A-LIFE PSR; FMSS Baseline, 4-, 8-, and 12-month follow-up	Specialty outpatient clinic Therapist status not reported	FFT-HR (8 weekly + 4 biweekly sessions with adolescent, parents, and siblings) + as-needed study pharmacotherapy, crisis sessions, referrals (*n* = 21) FEC (1-2 single-family sessions) + as-needed study pharmacotherapy, crisis sessions, referrals (*n* = 19)	FFT-HR vs. FEC youth had significantly more rapid recovery from initial mood (13 vs. 21.25 weeks) and depressive (9.2 vs. 21.38 weeks) symptoms, more weeks in remission (26.8 vs. 19.5 weeks) and less weeks in subthreshold states, and a more favorable trajectory of manic symptoms (*d* = 0.49) over 1 year; effects of FFT-HR were greater among youth in high-EE vs. low-EE families for time to recovery (non-significant) and weeks in remission (significant) and subthreshold states (significant); group differences were not explained by differences in initial clinical state, comorbid disorders, or pharmacotherapy

Note. BP = Bipolar Disorder; NOS = Not Otherwise Specified; MDD = Major Depressive Disorder; DD = Dysthymic Disorder; MSI = Mood Severity Index (combines scores from the Young Mania Rating Scale and the Children's Depression Rating Scale – Revised); LCP = Licensed Clinical Psychologist; LISW = Licensed Independent Social Worker; MF-PEP = Multi-Family Psychoeducational Psychotherapy; TAU = Treatment as Usual; WLC = Waitlist Control; K-SADS = Kiddie Schedule for Affective Disorders and Schizophrenia for School-Age Children; DRS = Depression Rating Scale; MRS = Mania Rating Scale; A-LIFE = Adolescent Longitudinal Interval Follow-up Evaluation; FFT-A = Family Focused Treatment for Adolescents; EC = Enhanced Care; YMRS = Young Mania Rating Scale; CDRS-R = Children's Depression Rating Scale – Revised; A-LIFE = Adolescent Longitudinal Interval Follow-up Evaluation; PSR = Psychiatric Status Rating; FMSS = Five-Minute Speech Sample; FFT-HR = Family Focused Treatment for youth at high risk for bipolar disorder; FEC = Family Education Control; EE = Expressed Emotion..

Table 2

Review of Type 2 Randomized Controlled Trials of Family Psychoeducation Plus Skill Building for Pediatric Bipolar Spectrum Disorders

Investigators	Sample	Source, Measures, and Frequency	Setting, Therapists	Treatment Conditions	Results
Fristad, Goldberg-Arnold, & Gavazzi (2002, 2003); Goldberg-Arnold, Fristad, & Gavazzi (1999)	*N* = 35 children ages 8-11 77% male 88.5% White, Non-Hispanic, 2.9% White, Hispanic, 2.9% African American, 2.9% Southeast Asian, 2.9% Native American BP I (12%), BP II (34%), DD (17%), or MDD (37%) IQ > 70	Parents: UMDQ; EEAC Child: SSS Clinician: CASA Baseline, 2- and 6-month follow-up	University medical center 1 LCP, 1 LISW, 1 postdoctoral trainee, 1 advanced doctoral student (child group co-therapist)	MF-PEP (6 75- minute parent and child multiple-family groups) + TAU (*n* = 18) WLC + TAU (*n* = 17)	MF-PEP + TAU parents demonstrated positive consumer evaluation at 2-month follow-up, more improvement in family interactions and knowledge of mood disorders than WLC + TAU at 2- and 6-month follow-up, improved ability to obtain appropriate services than WLC + TAU at 6-month follow-up, and positive attitudinal shift at 6-month follow-up; MF-PEP + TAU children reported greater improvement in perceived social support from parents (but not peers) compared to WLC + TAU at 6-month follow-up
Fristad (2006)	*N* = 20 children ages 8-11 85% male 90% White BP I (40%), BP II (35%), or BP NOS (25%)	Parent: EEAC Parent + Child: Therapy Evaluation Form Clinician: Service Provider and Medication Usage Grids; MSI Baseline, 6-, 12-, and 18-month follow-up	University medical center 1 postdoctoral trainee	IF-PEP (16 50-minute individual sessions alternating between parent and child) + TAU (*n* = 10) WLC + TAU (*n* = 10)	IF-PEP + TAU children's mood symptoms improved following treatment (*d* = 0.45), with gains maintained through 12-month follow-up (*d* = 0.60), but not significantly more than WLC + TAU; expressed emotion improved significantly more for IF-PEP + TAU than WLC + TAU families; non-significant improvement in service utilization among IF-PEP + TAU families; positive consumer evaluations from parents and children following treatment

Note. BP = Bipolar Disorder; DD = Dysthymic Disorder; MDD = Major Depressive Disorder; IQ = Intellectual Quotient; UMDQ = Understanding Mood Disorders Questionnaire; EEAC = Expressed Emotion Adjective Checklist; SSS = Social Support Scale; CASA = Child and Adolescent Services Assessment; LCP = Licensed Clinical Psychologist; LISW = Licensed Independent Social Worker; MF-PEP = Multi-Family Psychoeducational Psychotherapy; TAU = Treatment as Usual; WLC = Waitlist Control; NOS = Not Otherwise Specified; MSI = Mood Severity Index (combines scores from the Young Mania Rating Scale and the Children's Depression Rating Scale – Revised); IF-PEP = Individual-Family Psychoeducational Psychotherapy.

Table 3

Review of Type 3 Studies of Family Psychoeducation Plus Skill Building for Pediatric Bipolar Spectrum Disorders

Investigators	Design	Sample	Source, Measures, and Frequency	Setting, Therapists	Treatment	Results
Miklowitz et al. (2004)	Open trial	*N* = 20 adolescents ages 13-17 55% male BP I (80%), BP II (5%), or BP NOS (15%)	Parent: CBCL Clinician: K-SADS DRS and MRS Every 3 months for 1 year	Specialty outpatient clinic Therapist status not reported	FFT-A (21 50-minute sessions with adolescent, parents, and siblings) + study pharmacotherapy	Adolescents experienced an average of 38% improvement in depression symptoms (*d* = 0.65) and 46% improvement in manic symptoms (*d* = 0.79) at 12-month follow-up; improvements in problem behaviors (*d* = 1.70), internalizing symptoms (*d* = 1.30), externalizing symptoms (*d* = 1.46) at 12-month follow-up
Miklowitz et al. (2011)	Open trial	*N* = 13 youth ages 9-16 69.2% female 84.6% White, 15.4% Hispanic; 1 was also Mixed Race MDD (62%), cyclothymic disorder (8%), or BP NOS (30%) Mood symptoms in past month (YMRS > 11 or CDRS-R > 29) Parent with BP I or II	Clinician: A-LIFE; YMRS; CDRS-R Pre-treatment and every 4 months for 1 year (Primary Outcome, A-LIFE, yielded weekly ratings)	Specialty outpatient clinic Therapist status not reported	FFT-HR (8 weekly + 4 biweekly sessions with adolescent, parents, and siblings, with monthly booster sessions as needed) + any pre-treatment therapy and as-needed study pharmacotherapy	Clinicians delivered FFT-HR with fidelity and families were adherent to FFT-HR (*M* = 11.85, *SD* = 5.18 sessions attended; 85% completed ≥ 9 sessions); FFT-HR yielded significant improvement in depressive symptoms (*d* = 0.63 to 1.77), hypomanic symptoms (*d* = 0.51 to 1.15), global functioning (*d* = 1.42) at 12-month follow-up; 1 child with BP NOS developed a manic episode, 2 children with MDD had recurrences of major depressive episodes
MacPherson, Leffler, & Fristad (2013)	Open trial	*N* = 40 children ages 8-12 53% male 77% White, 13% Biracial, 7% African American, 3% Asian Depressive or BP spectrum disorder diagnosis from referring therapist (specific diagnoses not collected)	Parent: UMDQ; Parent Group Evaluation Form Child: Child Group Evaluation Form Therapist: MF-PEP Therapist Session Evaluation Survey; MF-PEP Therapist Post-Group Feedback Survey; MF-PEP Referring Clinician Questionnaire Pre- and post-treatment (also observation)	Community outpatient clinic 15 Community therapists (93% female; 53% LISW, 27% LCP, 13% psychology interns, 7% social work practicum students) who participated in 1-2 day MF-PEP training workshop	MF-PEP (8 90-minute parent and child multiple-family groups) + TAU	Parents, children, and community therapists reported high acceptability with MF-PEP; implementation outcomes of adoption, appropriateness, feasibility, penetration, costs, sustainability were demonstrated descriptively; parental knowledge of mood disorders improved significantly post-treatment (*d* = 0.60)

Note. BP = Bipolar Disorder; NOS = Not Otherwise Specified; CBCL = Child Behavior Checklist; K-SADS = Kiddie Schedule for Affective Disorders and Schizophrenia for School-Age Children; DRS = Depression Rating Scale; MRS = Mania Rating Scale; FFT-A = Family Focused Treatment for Adolescents; MDD = Major Depressive Disorder; YMRS = Young Mania Rating Scale; CDRS-R = Children's Depression Rating

Scale – Revised; A-LIFE = Adolescent Longitudinal Interval Follow-up Evaluation; FFT-HR = Family Focused Treatment for youth at high risk for bipolar disorder; UMDQ = Understanding Mood Disorders Questionnaire; MF-PEP = Multi-Family Psychoeducational Psychotherapy; TAU = Treatment As Usual; LISW = Licensed Independent Social Worker; LCP = Licensed Clinical Psychologist.

Table 4

Review of Type 3 Studies of Cognitive-Behavioral Therapy for Pediatric Bipolar Spectrum Disorders

Investigators	Design	Sample	Source, Measures, and Frequency	Setting, Therapists	Treatment	Results
Pavuluri et al. (2004); West, Henry, & Pavuluri (2007)	Open trial	*N* = 34 youth ages 5-17 71% male 68% White, 23% African American, 6% Latino, 3% Asian BP I (82%), BP II (9%), or BP NOS (9%) Score of 15-20 on YMRS IQ > 70 Living with parent/ guardian Medications supervised by clinician	Parent: Satisfaction Survey Clinician: CGI-BP; CGAS Pre- and post-treatment, following each session, 1-, 2-, and 3-year follow-up	Specialty outpatient clinic Board-certified child and adolescent psychiatrist for acute CFF-CBT LISW, advanced practice nurse, child psychiatrist for maintenance CFF-CBT	CFF-CBT (12 weekly sessions with youth, parent, and family) + study pharmacotherapy Maintenance CFF-CBT (booster sessions 1/week to 1/3 months, based on child's mental status, functioning, access to clinic) + study pharmacotherapy	CFF-CBT was feasible (i.e., 100% treatment integrity by acute phase therapist, high treatment adherence and satisfaction by parents); significant improvements in ADHD, aggression, mania, psychosis, depression, sleep disturbance, global functioning post-treatment, with preservation of gains over 3-year follow-up
West et al. (2009)	Open trial	*N* = 26 children ages 6-12 58% male 54% White, 12% African American, 19% Latino, 16% multi-ethnic BP I (39%), BP II (4%), BP NOS (46%), or not reported by parents (11%) Medications supervised by clinician	Parent: CMRS-P; SDQ; PSS; TOPS; Treatment Expectancy Questionnaire; Satisfaction Survey Child: CDI; SDQ Pre- and post-treatment	Specialty outpatient clinic Therapist status not reported	CFF-CBT (12 weekly multiple-family sessions with concurrent parent and child groups) + standardized pharmacotherapy at pediatric mood disorders clinic	Multiple-Family CFF-CBT was feasible (70% completion rate) and acceptable (high parental expectancies and satisfaction); significant improvements in children's mania, children's psychosocial functioning; non-significant improvement in parents' knowledge and perceived self-efficacy in coping; increased parental knowledge and self-efficacy significantly associated with decreased parent and child conduct problems and children's emotional symptoms, total difficulties, hyperactivity; lower parental stress associated with children's increased prosocial behaviors
Feeny, Danielson, Schwartz, Youngstrom, & Findling (2006)	Open trial with matched historical control	*N* = 16 youth ages 10-17 56% female 100% White BP I (75%), BP II (19%), or cyclothymic disorder (6%) ≥ 1 mood episode in past 6 months and stabilized pharmacotherapy	Parent: GBI (CBT group only) Child: GBI (CBT group only) Clinician: YMRS; IDS Pre- and post-treatment, 8-week follow-up	Specialty outpatient clinic Two master's level clinical psychology graduate students and LCP specializing in CBT and manualized treatment of mood and anxiety	CBT (12 weekly sessions – 9 individual, 2 family, 1 parent) + stabilized prior treatment or study pharmacotherapy in randomized trial Matched Historical Control = participants in medication clinical	CBT retention was high (78%); no significant between-group differences post-treatment or 8-week follow-up; between-group effect sizes favored CBT post-treatment (depression *d* = 0.90; mania *d* = 0.62) and 8-week

Investigators	Design	Sample	Source, Measures, and Frequency	Setting, Therapists	Treatment	Results
		(no medication changes in past 3 months)			trials at specialty clinics who were on stabilized medication	follow-up (depression *d* = 1.60; mania *d* = 0.00); CBT adolescents reported non-significant improvement in mood post-treatment (depression *d* = 1.09; mania *d* = 0.79) and 8-week follow-up (depression *d* = 1.13; mania *d* = 0.25); parents of CBT youth reported significant post-treatment improvement in depression (*d* = 1.25) and mania (*d* = 1.12) – significant improvements maintained for depressive (*d* = 3.53) but not manic (*d* = 1.29) symptoms at 8-week follow-up

Note. BP = Bipolar Disorder; NOS = Not Otherwise Specified; YMRS = Young Mania Rating Scale; IQ = Intellectual Quotient; CGI-BP = Clinical Global Impressions Scale for Bipolar Disorder; CGAS = Children's Global Assessment Scale; CFF-CBT = Child- and Family-Focused Cognitive-Behavioral Therapy; LISW = Licensed Independent Social Worker; ADHD = Attention-Deficit/Hyperactivity Disorder; CMRS-P = Child Mania Rating Scale – Parent; SDQ = Strengths and Difficulties Questionnaire; PSS = Parental Stress Scale; TOPS = Therapy Outcomes Parents Scale; CDI = Children's Depression Inventory; GBI = General Behavior Inventory; CBT = Cognitive-Behavioral Therapy; IDS = Inventory of Depressive Symptoms; LCP = Licensed Clinical Psychologist.

Table 5

Review of Type 3 Studies of Dialectical Behavior Therapy and Interpersonal and Social Rhythm Therapy for Pediatric Bipolar Spectrum Disorders

Investigators	Design	Sample	Source, Measures, and Frequency	Setting, Therapists	Treatment	Results
Goldstein, Axelson, Birmaher, & Brent (2007)	Open trial	*N* = 10 adolescents ages 14-18 80% female 60% White, 30% Multiracial, 10% African American BP I (70%), BP II (20%), or BP NOS (10%) Acute manic, mixed, or depressive episode in past 3 months Engaged in study pharmacotherapy	Parent: Children's Affective Lability Scale; MESSY; Treatment Satisfaction Questionnaire Child: MESSY; Treatment Satisfaction Questionnaire Clinician: K-SADS DRS and MRS; MSSI Pre-treatment and every 3 months for 1 year	Specialty outpatient clinic LCP with extensive training in DBT and work with youth with BP	DBT (24 weekly then 12 bimonthly 60-minute sessions alternating family skills training and individual therapy; telephone coaching as needed) + study pharmacotherapy	DBT completion rate (90%, *M* = 33.2, *SD* = 7.5 total sessions attended) and satisfaction with treatment frequency, length, approach, and improvements were high; significant post-treatment improvements in suicidality (*d* = 0.9 to 1.2), emotion dysregulation (*d* = 0.3), depression (*d* = 0.7); non-significant improvement in NSSI (*d* = 0.8) post-treatment; no significant improvements in manic symptoms (*d* = 0.1) or interpersonal functioning (*d* = 0.2 to 0.4); no differences in number of medications prescribed (*d* = −0.2)
Hlastala, Kotler, McClellen, & McCauley (2010)	Open trial	*N* = 12 adolescents ages 13-17 50% female 58% White, 17% African American, 17% Hispanic, 8% Asian BP I (42%), BP II (33%), or BP NOS (25%) Current depressed, manic, or mixed episode, or clinically significant symptoms for ≥ 2 weeks (for BP NOS youth)	Child: BDI; Treatment Satisfaction Scale Clinician: BPRS-C; CGAS; YMRS Pre-treatment and every 4 weeks for 20 weeks (CGAS – only pre- and post-treatment)	Specialty outpatient clinic Two LCPs	IPSRT-A (16-18 sessions over 20 weeks, mostly with adolescent alone) + as needed pharmacotherapy managed by youths' regular psychiatrists or medical providers (11 youth were taking medication)	IPSRT-A was feasible (11 of 12 participants completed treatment, 97% of scheduled sessions attended), adolescent-rated satisfaction scores were high (i.e., likely to recommend IPSRT-A, SRM-A was helpful for regulating social and sleep patterns, IPSRT-A helped them to feel better and understand symptoms and causes of bipolar disorder); statistically and clinically significant improvements in manic (*d* = −0.95) and depressive (*d* = −0.77) symptoms, general psychiatric symptoms (*d* = −1.50), and global functioning (*d* = 1.70) post-treatment

Note. BP = Bipolar Disorder; NOS = Not Otherwise Specified; MESSY = Matson Evaluation of Social Skills with Youngsters; K-SADS = Kiddie Schedule for Affective Disorders and Schizophrenia for School-Age Children; DRS = Depression Rating Scale; MRS = Mania Rating Scale; MSSI

= Modified Scale for Suicidal Ideation; LCP = Licensed Clinical Psychologist; DBT = Dialectical Behavior Therapy; NSSI = Non-Suicidal Self-Injury; BDI = Beck Depression Inventory; BPRS-C = Brief Psychiatric Rating Scale for Children; CGAS = Children's Global Assessment Scale; YMRS = Young Mania Rating Scale; IPSRT-A = Interpersonal and Social Rhythm Therapy for Adolescents; SRM-A = Social Rhythm Metric for Adolescents.

Table 6

Classification of Psychosocial Interventions for Pediatric Bipolar Spectrum Disorders

Psychosocial Treatment	Citation for Evidence
Well-Established Treatments	
None	N/A
Probably Efficacious Treatments	
Family Psychoeducation Plus Skill Building	Fristad, Verducci, Walters, & Young (2009)
	Miklowitz et al. (2008)
	Miklowitz et al. (2013)
Possibly Efficacious Treatments	
Cognitive-Behavioral Therapy	Pavuluri et al. (2004); West, Henry, & Pavuluri (2007)
	West et al. (2009)
	Feeny, Danielson, Schwartz, Youngstrom, & Findling (2006)
Experimental Treatments	
Dialectical Behavior Therapy	Goldstein, Axelson, Birmaher, & Brent (2007)
Interpersonal and Social Rhythm Therapy	Hlastala, Kotler, McClellan, & McCauley (2010)
Treatments of Questionable Efficacy	
None	N/A