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Family-Based Interpersonal Psychotherapy (FB-IPT) for Depressed Preadolescents: Examining Efficacy and Potential Treatment Mechanisms

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Abstract

Objective—To conduct a randomized controlled trial to evaluate the preliminary efficacy of family-based interpersonal psychotherapy (FB-IPT) for treating depression in preadolescents (ages 7–12) as compared to child-centered therapy (CCT), a supportive and nondirective treatment that closely approximates the standard of care for pediatric depression in community mental health.

Method—Preadolescents with depression (N=42) were randomly assigned FB-IPT or CCT. Pre- and posttreatment assessments included clinician-administered measures of depression, parent- and child-reported depression and anxiety symptoms, and parent-child conflict and interpersonal impairment with peers.

Results—Preadolescents receiving FB-IPT had higher rates of remission (66.0% vs. 31%), a greater decrease in depressive symptoms from pre- to posttreatment, and lower depressive symptoms at posttreatment ($R^2=0.35$, $R^2 = 0.22$; $B = -8.15$, $SE = 2.61$, $t(37) = -3.13$, $p = 0.002$, $F^2 = 0.28$) than did preadolescents with depression receiving CCT. Furthermore, preadolescents in

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the FB-IPT condition reported significant reductions in anxiety and interpersonal impairment than did preadolescents in the CCT condition. Changes in social and peer impairment from pre- to posttreatment were associated with preadolescents' posttreatment depressive symptoms. There was a significant indirect effect for decreased social impairment accounting for the association between the FB-IPT and preadolescents' posttreatment depressive symptoms.

Conclusion—Findings indicate FB-IPT is an effective treatment for preadolescent depression and support further investigation of interpersonal mechanisms by which FB-IPT may reduce preadolescent depression.

Clinical trial registration information—Phase II Study of Family Based Interpersonal Psychotherapy (FB-IPT) for Depressed Preadolescents; <http://clinicaltrials.gov/show/NCT02054312>; NCT02054312.

Keywords

depression; preadolescent; randomized controlled trial; IPT; treatment

Introduction

Depression in children increases markedly during the transition from childhood to adolescence, and elevated depressive symptoms in preadolescent youth (ages 7–12) are strong predictors of adolescent depression¹. Although studies approximate that 0.4 to 2.5 percent of preadolescent children experience depression, they underestimate the number of preadolescents who do not meet full diagnostic criteria for major depressive disorder (MDD) but present for outpatient treatment with clinically significant depressive symptoms and functional impairment². As such, preadolescents with depressive disorders may be underdiagnosed and go untreated.

Because preadolescent depression occurs during a sensitive period of pubertal, social, and neural development, it may disrupt socio-affective processes and increase preadolescents' risk for recurring depression across adolescence and young adulthood³. Although longitudinal studies indicate that most children with depression recover within a 9-month period, the children remain at significant risk for having repeated and more severe episodes of depression within the subsequent 2-year period⁴. Longitudinal studies also reveal that compared to normal controls, preadolescents with depression continue to experience significantly more difficulties in interpersonal relationships with parents and peers after their symptoms remit⁵. Because symptom improvement does not always result in improved interpersonal functioning, residual impairment in preadolescents' interpersonal functioning may be a pathway for depression recurrence.

Prevention-of-depression research on offspring of parents with depression identifies poor parent and peer relationships as risk factors for adolescent depression⁶. Parental depression is associated with parent-child conflict and less frequent positive interactions with children⁷. In prospective longitudinal studies of school-aged children, higher levels of family conflict predict higher levels of depressive symptoms over a 1-year follow-up period⁸. Because parental depression is related to poor interpersonal communication, preadolescents may

model poor family communication and problem solving in other relationships, thereby increasing the likelihood of experiencing interpersonal stress and subsequent depression⁹. Peer stressors, such as peer exclusion and rejection, are also consistent predictors of depressive symptoms from middle childhood to early adolescence¹⁰; experiences of peer victimization in preadolescence are associated with suicidality and poor mental health outcomes in young adults¹¹. Peer stress may intensify preadolescents' depressive symptoms and increase social withdrawal. The high rates of comorbid anxiety disorders (up to 70% in clinically-referred youth)¹² may further impair their ability to engage in social situations¹³. Positive parent-child relationships may buffer preadolescents from the stress of peer relationships, and in doing so, may decrease their risk for depression in adolescence¹⁴.

To date, no psychosocial intervention has been established as the superior treatment for preadolescents diagnosed with depression¹⁵. While there is well-established support for the efficacy of cognitive-behavioral therapy (CBT) relative to no-treatment control conditions in treating community samples of preadolescents with elevated depressive symptoms¹⁵, no differences have been found in the few studies of preadolescents with depression randomized to CBT or relaxation training¹⁶ or to supportive, non-directed therapy¹⁷. Two CBT treatment protocols, Taking ACTION¹⁸ and Primary and Secondary Control Enhancement Training (PASCET)¹⁹, have demonstrated promise in effectively treating children with elevated depressive symptoms as compared to waitlist control groups, but have not been compared to active treatments. However, a recent efficacy trial found no differences between PASCET and supportive therapy in reducing depressive symptoms in preadolescents with irritable bowel disorder²⁰.

A primary limitation of existing CBT models may be the lack of parental involvement in treating children with depression. Because they are embedded in a family context, parental involvement in treatment for preadolescent depression is a critical developmental concern²¹. Multi-family psychoeducation therapy (MF-PEP) has been found to be an effective augmentation strategy to treatment as usual in children between the ages of 8 and 12 with a diagnosed depressive or bipolar disorder as compared to treatment as usual alone²². In addition, small, uncontrolled treatment development trials involving a family-focused CBT intervention (N = 9)²³ and a contextual emotion regulation therapy for conjoint parent-child delivery (N = 20)²⁴ have demonstrated promise in reducing depressive symptoms but have not examined parent-child conflict and social impairment, pathways that may sustain poor interpersonal functioning in preadolescents with depression.

To date, there are very few controlled treatment studies for preadolescent depression, and a clear need exists for treatments that actively involve parents and address interpersonal impairment in these preadolescents. Interpersonal psychotherapy for depressed adolescents (IPT-A)²⁵ is an effective, time-limited, psychosocial treatment for depression in adolescents that focuses on the relationship between interpersonal stressors and depressive symptoms and aims to decrease depressive symptoms by improving adolescents' interpersonal functioning^{26,27}. Treatment is structured around 1 of 4 "problem areas" temporally associated with the onset of depressive symptoms (loss, role disputes, role transitions, and interpersonal deficits). Family-based interpersonal psychotherapy (FB-IPT) is an adaptation of IPT-A that actively involves parents in weekly sessions and directly addresses parent-

child conflict and interpersonal impairment, two domains that may contribute to preadolescents' depression. In an open-treatment trial²⁸, Dietz et al. demonstrated the feasibility and acceptability of FB-IPT with high rates of treatment compliance and significant reductions in depressive and anxiety symptoms in preadolescents from pre- to posttreatment.

The current study examined the efficacy of FB-IPT in a sample of 42 treatment-seeking preadolescents (ages 7–12) who met *DSM-IV* criteria for a depressive disorder. Preadolescents with depression were randomized to FB-IPT or child-centered therapy (CCT), a supportive and nondirective treatment that closely approximates the standard of care for pediatric depression in community mental health²⁹. We hypothesized preadolescents receiving FB-IPT would evidence higher rates of remission, endorse fewer depressive symptoms at posttreatment, and demonstrate a greater reduction in depressive symptoms from pre- to posttreatment than those receiving CCT. We also hypothesized parent-child conflict, anxiety, and interpersonal impairment would significantly decrease in the FB-IPT condition compared to CCT (see Figure 1, path A), and that decreases in these domains would be correlated with lower posttreatment depression severity scores (Figure 1, path B). Lastly, we hypothesized that changes in parent-child conflict, anxiety, and interpersonal impairment with peers would have significant indirect effects on the association between FB-IPT and preadolescents' posttreatment depression scores, as compared to CCT (Figure 1, path C).

Method

Sample and Recruitment

Children presenting for a psychiatric assessment at a specialty clinic for youth depression were eligible for this study if they were 1) between 7 and 12 years old, 2) diagnosed with a current depressive disorder (MDD, dysthymia, depressive disorder not otherwise specified [NOS]), and 3) provided informed consent to be contacted about ongoing research. All diagnoses were made by masters-level clinicians and attending psychiatrists employed by the outpatient clinic as part of their routine assessment of youth with depression; none of these clinicians were affiliated with this study. Preadolescents with diagnoses of bipolar disorder, pervasive developmental disorder (PDD), posttraumatic stress disorder, and obsessive-compulsive disorder were excluded from participation. Preadolescents on a stable dose of selective serotonin reuptake inhibitor (SSRI) medication for at least 2 months were included in the study, providing they met diagnostic criteria and would remain on the same stable dose of SSRI (n=2). Preadolescents with comorbid attention-deficit/hyperactivity disorder (ADHD) were included in this study, providing they met diagnostic criteria and were on a stable dose of stimulant medication for at least 1 month (n=12). This study was approved by the institutional review board of the University of Pittsburgh School of Medicine.

Procedure

A 2:1 randomization strategy was used to maximize the number of preadolescents treated with FB-IPT, and sex, minority status, and comorbid anxiety disorders were stratified across

treatment conditions. All preadolescents received up to 14 sessions of outpatient psychotherapy. Pretreatment diagnoses and pretreatment scores on the Children's Depression Rating Scale, Revised (CDRS-R) were obtained from data collected during preadolescents' psychiatric assessment. The majority of posttreatment CDRS-R interviews were conducted by a trained independent evaluator (IE) who was blind to treatment condition (60%; ICC>0.70); however, study therapists administered and coded posttreatment CDRS-R interviews to 40% of participants. There were no significant differences in posttreatment CDRS-R scores obtained from the IE and clinicians, nor was there a significant treatment condition x rater (1=IE, 0=study therapist) association with posttreatment CDRS-R scores. Preadolescents and their parents were asked to complete pre- and posttreatment measures of depressive symptoms, parent-child conflict, anxiety, and interpersonal impairment.

Treatment Conditions

Treatment was delivered by three clinicians, two of whom are authors (L.J.D. and R.B.W.), all with advanced degrees in clinical psychology and training in empirically supported psychotherapies for youths with depression.

Family-Based Interpersonal Psychotherapy (FB-IPT)—FB-IPT included the preadolescent and one parent in a 14-session treatment, although it was not uncommon for 2 parents or the preadolescent's second parent to attend at least 1 treatment session. Treatment was divided into 3 phases (initial, middle, and termination).

Initial Phase (sessions 1–5): Therapists met individually with the preadolescent (25 minutes) and then met with the parent (25 minutes). In meetings with preadolescents, therapists linked changes in preadolescents' depressive symptoms to negative experiences in family and peer relationships and guided preadolescents in constructing the Closeness Circle, an interactive mapping of preadolescents' relationships, and the Interpersonal Inventory. Parent meetings focused on psychoeducation about depression, ways to help preadolescents maintain routines and reasonable expectations for their performance, and parenting strategies for responding to preadolescents with depression ("Parenting Tips").

Middle Phase (sessions 6–10): Therapists met individually with the preadolescent (25 minutes) and then with the parent-child dyad (25 minutes). In meetings with preadolescents, therapists introduced and role-played communication skills relevant to the identified problem area. During dyadic sessions, preadolescents and parents role-played communication skills and/or engaged in problem solving as facilitated by therapists to help parent-child dyads negotiate solutions. Dyadic sessions also focused on increasing preadolescents' positive experiences with peers. Preadolescents were coached to initiate social experiences with peers, and rehearsed communication skills for approaching peers with both therapists and parents. Parents engaged in problem solving with preadolescents regarding how to increase opportunities for peer interaction; with preadolescents' approval, parents were enlisted to help initiate social activities with peers.

Termination Phase (sessions 11–14): Therapists met individually with preadolescents (35 minutes) and then with the dyad (25 minutes) to consolidate skills, discuss maintenance strategies, and establish a plan for depression recurrence.

Child-Centered Therapy (CCT)—CCT is based on a Rogerian model of treatment, whereby changes in children’s mood and behavior are initiated through their experience of a therapeutic relationship marked by unconditional positive regard, empathic understanding, and therapeutic genuineness. Specific techniques included listening and attending skills, and demonstrating acceptance through reflection, clarification, paraphrasing, and summarizing statements. CCT therapists also used nondirective problem solving, helping children to consider alternative responses to a problem without making specific recommendations or offering solutions. Although parents did not participate in sessions, they were invited to join the first 10 minutes of each session to check in about their preadolescents’ symptoms. CCT has been successfully employed as a manualized comparison treatment in efficacy studies of youth depression^{20,30}.

Treatment Fidelity

Each therapy session was reviewed in hour-by-hour supervision with the primary investigator (L.J.D) to ensure that session content was covered and to monitor for any clinical concerns for all participants receiving FB-IPT or CCT. In addition, therapy sessions were audiotaped, and 20% of each therapist’s sessions were scored by two of three authors (L.J.D., R.B.W) using ratings of treatment fidelity to FB-IPT or CCT. Fidelity to FB-IPT was determined by how therapists structured sessions, made connections between interpersonal events and changes in preadolescents’ mood, and adhered to content/tasks specific for that phase of treatment. Fidelity to CCT was indicated by demonstrating active listening, asking open-ended questions, and communicating positive regard and support. Global ratings of fidelity to both FB-IPT and CCT were calculated on a 5-point Likert-like scale, with scores ≥ 3 indicating “satisfactory” treatment fidelity. Ninety-five percent (95%) of audiotaped sessions were rated as at least “satisfactory” on FB-IPT and CCT checklists of treatment fidelity.

Outcome Measures

Depressive Symptoms—Depressive symptoms in children were measured by the CDRS-R³¹. This scale integrates information from multiple sources (parent, child, clinical observations) and has demonstrated high internal consistency ($\alpha=0.85$) and good test-retest reliability ($r=0.92$), in addition to being sensitive to treatment effects in psychotherapy research. Posttreatment CDRS-R scores ≥ 28 were used to create a dichotomous index of remission³². Depressive symptoms were also measured using the Mood Feeling Questionnaire, Child and Parent Versions (MFQ-C/P)³³. The MFQ has high internal consistency ($\alpha=0.90$) and test-retest reliability³⁴. Total scores for child- and parent-report of preadolescents’ depressive symptoms were calculated and analyzed separately.

Parent-Child Conflict—Parent-child conflict was measured by the Conflict Behavior Questionnaire, Child and Parent versions (CBQ-C/P)³⁵, a questionnaire with high internal consistency ($\alpha=0.90$),³⁶ test-retest reliability, and validity in discriminating between

distressed and nondistressed families. Total scores for child- and parent-report of parent-child conflict were calculated and analyzed separately.

Anxiety—The Self-Report for Childhood Anxiety Related Emotional Disorders, Child and Parent Versions (SCARED-C/P)³⁷ was used to assess anxiety symptoms in preadolescents. The SCARED-C/P has demonstrated good internal consistency ($\alpha=0.90$ for total score) and good test-retest reliability. Total scores for child- and parent-report of preadolescents' anxiety were calculated and analyzed separately.

Interpersonal Impairment: The *Social Adjustment Scale-Self Report (SAS-SR)*³⁸ is a 23-item questionnaire that assesses children's interpersonal impairment in school, social activities, and in family and peer relationships ($\alpha=0.88$)³⁹. Scores on the SAS-SR have been found to discriminate between individuals with and without depression³⁸ and have been shown to be sensitive to treatment effects in an efficacy study of IPT-A²⁶. Two subscales of the SAS-SR, social impairment and peer impairment, were calculated per scoring protocol³⁸ and were analyzed separately.

Participants

Figure 1 outlines the recruitment of participants for this study. Data was censored for 4 participants: 2 did not receive treatment after randomization, and 2 had diagnoses of PDD confirmed in sessions 1–4 of treatment. All of the remaining 38 participants were included in the between-group analyses of FB-IPT (n=25) and CCT (n=13). Preliminary analyses revealed no differences in the demographic and clinical characteristics of preadolescents in each treatment condition (see Table 1), nor in pretreatment indices of depression, parent-child conflict, anxiety, or in social or peer impairment (see Table 2). At the request of their parents, six preadolescents (n=6) started an SSRI trial in weeks 1–4 of the study. Although not significant (Fisher's exact test [FET], $p=0.06$), a higher percentage of preadolescents in the CCT condition initiated adjunctive treatment with an SSRI than did those in the FB-IPT condition (67% [n=4] as compared to 33% [n=2], respectively). Across treatment conditions, SSRI augmentation was correlated with higher pretreatment scores on the CDRS-R ($r=0.26$, $p=0.11$), MFQ-P ($r=0.27$, $p=0.10$), and MFQ-C ($r=0.28$, $p=0.10$). Because pretreatment depression severity may have differed between groups, all analyses controlled for adjunctive SSRI treatment.

Data Analyses

Multiple imputation was employed to account for missing posttreatment data for 21% of participants that terminated treatment unexpectedly and did not complete the posttreatment assessment (n=8; range of sessions attended, 3–10). Data was imputed using the fully conditional specification (FCS) or chained equations imputation algorithm through SPSS (IBM SPSS Statistics, IBM Corporation; Predictive Analytics Software [PASW] 22) to create 5 imputed datasets. Results of pooled analyses are subsequently reported. Chi-square was calculated to determine differences in posttreatment remission rates (dummy coded 0=not remitted, 1=remitted) by treatment condition (dummy coded 0=CCT, 1=FB-IPT). Linear regressions, controlling for pretreatment scores and SSRI augmentation, were conducted to assess differences between treatment conditions on posttreatment indices of

depression. Linear regressions using change scores (post - pretreatment scores) examined differences between groups on changes in depression, parent-child conflict, anxiety, social impairment, or peer impairment across treatment. Effect sizes were calculated using Cohen's F^2 because of unequal participants in each treatment condition (values of 0.10, 0.20, and 0.40 represent small, medium, and large effect sizes, respectively)⁴⁰. Linear regressions were used to test the effects of treatment condition on changes in parent-child conflict, anxiety, and interpersonal impairment (see Figure 1, path A), and the effects of changes in parent-child conflict, anxiety, and interpersonal impairment on preadolescents' posttreatment CDRS-R scores (see Figure 1, path B). An indirect effects model was tested if there was a: 1) a significant relationship between treatment condition and changes in the proposed mediator (path A); 2) a significant relationship between changes in the proposed mediator and posttreatment CDRS-R scores (path B)⁴¹. The "product of coefficients" method was used to test the significance of the indirect effect of the proposed mediator on the association between treatment condition and outcome measure (see Figure 1, path C'). Indirect effects were estimated by calculating the product of the unstandardized betas from regression equations that represent path A and path B. Approximate z-scores for each indirect effect were calculated by dividing the product of the unstandardized betas from paths A and B by the product of the standard error (SE) from the regression equations that represent path A and B, where $SE(\text{path A} * \text{path B})^2 = (\text{SE of the unstandardized beta from path A})^2 * (\text{unstandardized beta from path B})^2 + (\text{SE of the unstandardized beta from path B})^2 * (\text{unstandardized beta from path A})^2$. Z-scores above 1.96 indicate a statistically significant indirect effect ($p < 0.05$). Analyses testing a priori hypotheses were conducted without adjusting for multiple comparisons.

Results

Treatment Condition and Clinical Response (path C)

Preadolescents in the FB-IPT condition were more likely to achieve remission at posttreatment than those in CCT (16 [66%] vs. 4 [31%], $X^2[1, n=38]=4.17, p=0.04$). Preadolescents in the FB-IPT group had significantly lower posttreatment CDRS-R scores ($R^2=0.35, R^2=0.22; B=-8.15, SE=2.61, t[37]=-3.13, p=0.002, F^2=0.28$), parent-reported MFQ scores ($R^2=0.32, R^2=0.15; B=-5.23, SE=2.12, t[37]=-2.47, p=0.01, F^2=0.18$), and preadolescent-reported MFQ scores ($R^2=0.22, R^2=0.11; B=-7.54, SE=2.77, t[37]=-2.72, p=0.007, F^2=0.12$) than preadolescents in the CCT group. Preadolescents receiving FB-IPT exhibited a greater decrease in CDRS-R scores from pre- to posttreatment compared to those receiving CCT, as depicted in Figure 2 ($R^2=0.18, R^2=0.12; B=-6.98, SE=3.15, t[37]=-2.21, p=0.03, F^2=0.22$).

Indirect effects of changes in parent-child conflict on the association between treatment condition and treatment response

There were no differences between the FB-IPT and CCT groups in the rate of change in parent-child conflict from pre- to posttreatment (path A), although a nonsignificant trend suggested a greater decrease in parental report of the CBQ from pre- to posttreatment for preadolescents treated with FB-IPT compared to preadolescents treated with CCT ($R^2=0.17, R^2=0.13; B=-2.74, SE=1.61, t[37]=-1.70, p=0.09$). Because there were no significant

associations between changes in parent-child conflict and posttreatment CDRS-R scores (path B), criteria for testing indirect effects were not satisfied, and further analyses were not conducted.

Indirect effects of changes in preadolescent anxiety on the association between treatment condition and treatment response

Preadolescents in the FB-IPT condition evidenced a greater decrease in self-reported anxiety symptoms from pre- to posttreatment as compared to those in the CCT condition ($R^2=0.14$, $R^2=0.13$; $B=-14.65$, $SE=6.28$, $t[37]=-2.33$, $p=0.02$, $F^2=0.15$). Although approaching statistical significance ($R^2=0.29$, $R^2=0.19$; $B=-0.14$, $SE=0.07$, $t[37]=1.86$, $p=0.06$), there was not a significant relationship between change in preadolescents' anxiety symptoms across treatment and posttreatment depression scores (path B). Hence, the criteria for testing indirect effects were not satisfied, and further analyses were not conducted.

Indirect effects of changes in interpersonal impairment on the association between treatment condition and treatment response

Preadolescents in the FB-IPT condition had a significantly greater decrease in social impairment ($R^2=0.36$, $R^2=0.22$; $B=-6.32$, $SE=1.92$, $t[37]=-3.30$, $p=0.001$, $F^2=0.28$), and peer impairment ($R^2=0.34$, $R^2=0.15$; $B=-4.36$, $SE=1.71$, $t[37]=-2.55$, $p=0.01$, $F^2=0.18$) from pre- to posttreatment than did preadolescents in the CCT condition. Furthermore, significant associations between posttreatment CDRS-R scores and changes in preadolescents' report of social impairment ($R^2=0.19$, $R^2=0.18$; $B=0.71$, $SE=0.22$, $t[37]=3.31$, $p=0.001$, $F^2=0.22$) and peer impairment ($R^2=0.28$, $R^2=0.27$; $B=0.68$, $SE=0.30$, $t[37]=2.24$, $p=0.03$, $F^2=0.37$) were found, indicating that lower depression scores at posttreatment were associated with greater decreases in preadolescents' social and peer impairment across treatment (path B). Indirect effects models were tested for preadolescents' social impairment and peer impairment as mediators of the association between FB-IPT and posttreatment CDRS-R scores. Results yielded a significant effect for changes in social impairment ($z=-2.30$, $p<0.05$), accounting for the association between FB-IPT and preadolescents' depressive symptoms at posttreatment.

Discussion

Preadolescents receiving FB-IPT had higher rates of remission, lower scores of depressive symptoms at posttreatment by clinician interview and parent and child-reported measures, and a greater decrease in depressive symptoms from pre- to posttreatment than did preadolescents with depression receiving CCT. These findings provide strong support for FB-IPT as an effective treatment for preadolescent depression with medium to larger effect sizes. Preadolescents receiving FB-IPT also evidenced a greater reduction in anxiety symptoms and interpersonal impairment across treatment course than did those receiving CCT. Of these variables, only changes in social and peer impairment were associated with preadolescents' posttreatment depressive symptoms. There was a significant indirect effect for decreased social impairment mediating the association between the FB-IPT and preadolescents' posttreatment depressive symptoms. This may suggest that reducing social

impairment is one mechanism by which FB-IPT may decrease preadolescents' depressive symptoms.

Findings from this study must be understood in light of several limitations. First, both FB-IPT and CCT were delivered by the same therapists in order to assure equivalence across treatment groups in therapist characteristics and experience. However, this strategy may increase the likelihood of cross-treatment contamination. Although therapists were adherent to CCT techniques, their case conceptualizations of participants may have been contaminated by FB-IPT, possibly increasing the efficacy of CCT. Because therapists were not blinded to treatment condition or study hypotheses, they may have been biased towards the FB-IPT condition when coding posttreatment CDRS-R measures for 40% of the sample. However, given the similar patterns of results found using preadolescent- and parent-rated depression ratings at posttreatment, the potential for therapist bias in rating the CDRS-R is low. Another limitation of the current study is the lack of blinding in the fidelity coding for both treatments. Because the first author (L.J.D.) has developed and piloted FB-IPT, she served as the primary evaluator of therapists' treatment fidelity in this first efficacy trial of FB-IPT. This study used a broad criterion for determining treatment fidelity across groups and did not specifically measure treatment contamination. Still, it is likely that deviations from therapeutic stance would likely be reflected in fidelity ratings because of how FB-IPT and CCT differed in content and structure. In addition, the strategy of randomization may have been less effective than using a matched control group for this small sample. Although we controlled for SSRI augmentation, our low statistical power may have limited our ability to detect significant pretreatment differences between FB-IPT and CCT. Although high in external validity, pretreatment diagnoses and CDRS-R scores obtained by "real world" mental health professionals before preadolescents were enrolled in the study precluded our ability to obtain reliability estimates of these measures. Lastly, findings from indirect effects analyses must be considered exploratory as measures of hypothesized mediators were collected at the same time as pre- and posttreatment outcome measures. Adequately powered future studies are needed to confirm our findings, suggesting that decreased social impairment may mediate the effects of FB-IPT on preadolescents' depressive symptoms.

Our results support the efficacy of FB-IPT in increasing the likelihood of remission and reducing preadolescents' depressive symptoms over the course of treatment, and suggest a genuine advantage of FB-IPT over supportive therapy. Preadolescents in the FB-IPT condition demonstrated significant decreases in anxiety and in interpersonal impairment as compared to preadolescents receiving CCT, suggesting that FB-IPT was effective in changing constructs hypothesized to be treatment mechanisms. However, it remains to be established whether this result was due to increased parental involvement in treatment or techniques specific to the FB-IPT intervention. Results also provide preliminary support for decreases in preadolescents' social impairment as a specific treatment mechanism of FB-IPT in reducing depressive symptoms. Given the lack of temporal precedence in our hypothesized mediator measures, it may be possible that decreases in depressive symptoms accounted for the decreases in preadolescents' social impairment in the FB-IPT group. It is likely that low statistical power obscured our detection of significant changes in parent-child conflict between treatment groups.

Psychosocial intervention for preadolescents with depression presents an opportunity to reduce family and interpersonal risk factors that may increase the likelihood of recurrent depression in adolescence. The results of this trial suggest that FB-IPT is an efficacious psychosocial intervention for increasing remission and decreasing preadolescents' anxiety and interpersonal impairment. Given the results of this preliminary efficacy trial, future research studies should test the effectiveness and transportability of FB-IPT, as well as longitudinal outcomes of preadolescents with depression treated with FB-IPT.

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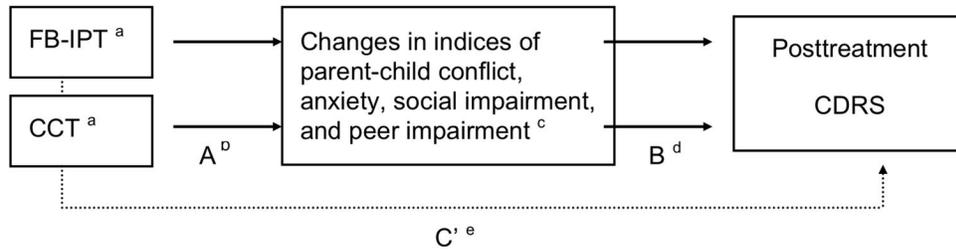


Figure 1.

An illustration of planned analyses for hypotheses testing. Note: CCT = child-centered therapy; CDRS = Children's Depression Rating Scaled; FB-IPT = family-based interpersonal psychotherapy. ^a Each treatment condition is represented by a dummy-coded variable: FB-IPT=1, CCT=0. ^b Path A represents the association between treatment condition and changes in hypothesized mediators, parent-child conflict, anxiety, social impairment, and peer impairment. ^c Parent-child conflict, indexed by the Conflict Behavior Questionnaire, Child and Parent Report (CBQ-C/P), anxiety, as indexed by the Self-Report for Childhood Anxiety Related Emotional Disorders, Child and Parent Versions (SCARED-C/P), and social impairment and peer impairment, as indexed by subscales on the Social Adjustment Scale – Self-Report (SAS-SR), were assessed before and after treatment. ^d Path B represents the association between changes in hypothesized mediators, parent-child conflict, anxiety, social impairment, and peer impairment on posttreatment depression severity as indexed by the CDRS-Revised (R). ^e Path C' (the apostrophe denotes an indirect path) represents the indirect effects of treatment condition on posttreatment CDRS-R scores through changes in hypothesized mediators, parent-child conflict, anxiety, social impairment, and peer impairment.

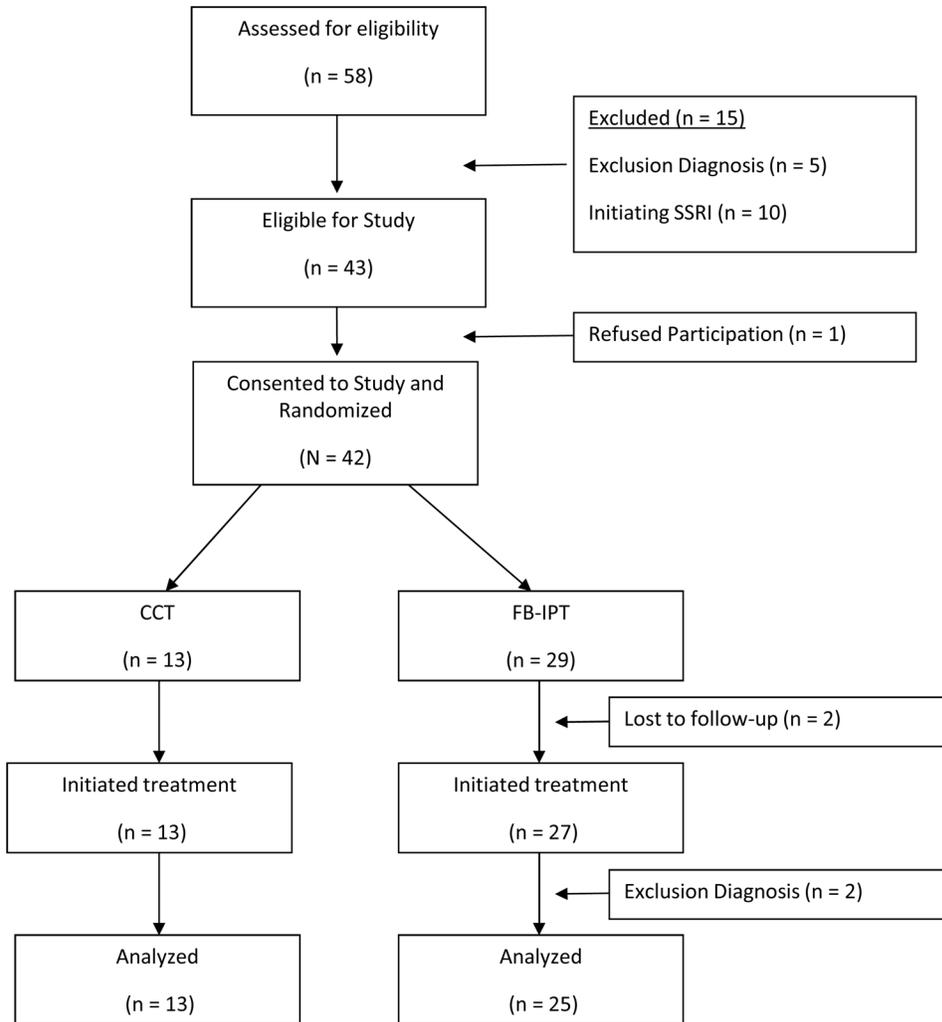


Figure 2. Flowchart of recruitment, participant randomization, and engagement in the clinical trial. Note: CCT = child-centered therapy; FB-IPT = family-based interpersonal psychotherapy; SSRI = selective serotonin reuptake inhibitor.

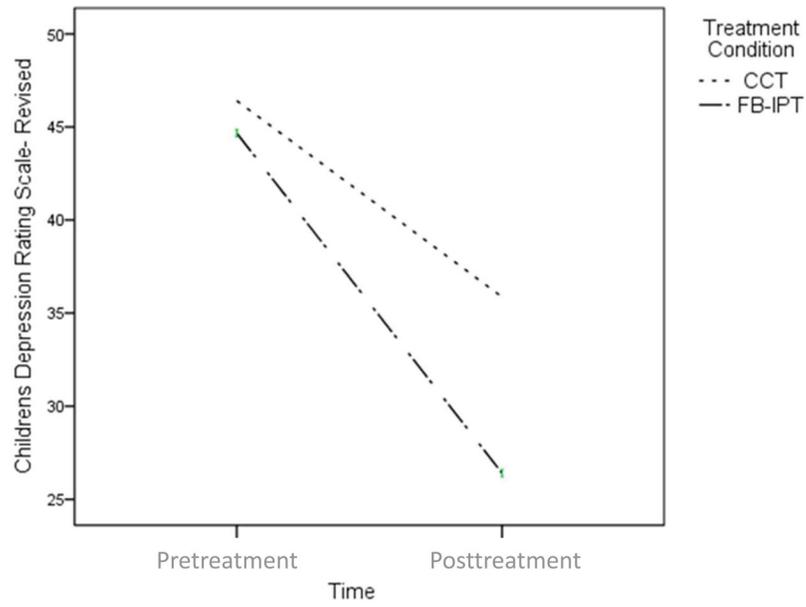


Figure 3. Preadolescents receiving family-based interpersonal psychotherapy (FB-IPT) evidence significantly greater decreases in depressive symptoms across treatment compared to those receiving child-centered therapy (CCT).

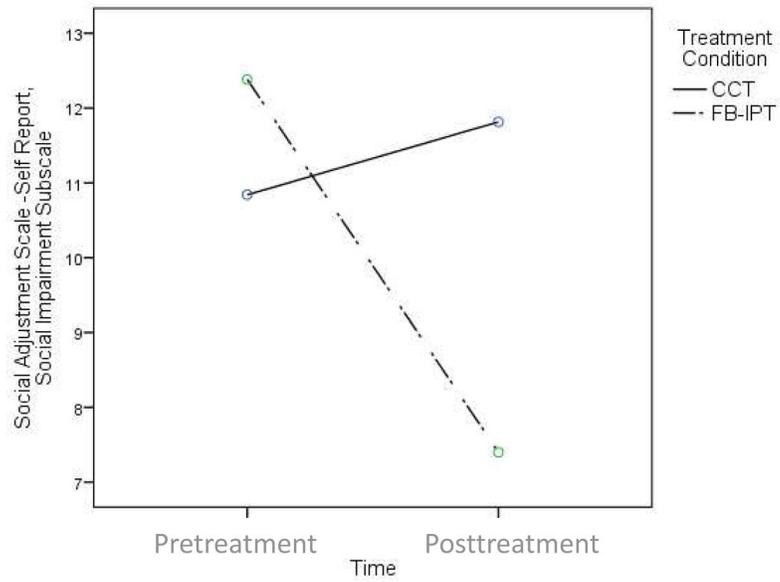


Figure 4. Preadolescents receiving family-based interpersonal psychotherapy (FB-IPT) evidence significantly greater decreases in social impairment across treatment than do those receiving child-centered therapy (CCT).

Table 1

Demographic and Clinical Characteristics of Randomized Sample

	FB-IPT (n= 29)	CCT (n= 13)	Statistic	p
Age (Mean, SD)	10.6 (1.2)	11.1 (1.1)	F(1, 41) = 1.54	.22
Female (n, %)	18 (62.1)	10 (76.9)	FET	.49
Ethnic/Racial Minority (n, %)	6 (20.7)	3 (23.13)	FET	1.00
Two-Parent Family (n, %)	13 (44.8)	7 (53.8)	X ² (n =42, df = 1) = 0.29	.59
Medical Assistance (n, %)	5 (17.2)	3 (23.1)	FET	.69
Diagnosis			X ² (n =42, df = 1) = 0.06	.81
Major Depressive Disorder (n, %)	19 (65.5)	9 (69.2)		
Depressive Disorder NOS (n, %)	10 (34.5)	4 (30.8)		
Suicidal Ideation (n, %)	21 (72.4)	11 (84.6)	FET	.47
Non-Suicidal Self-Injury (n, %)	6 (20.7)	4 (30.8)	FET	.70
SSRI augmentation	2 (33.3)	4 (66.7)	FET	.06
Comorbid ADHD	9 (31.0)	3 (23.1)	FET	.72
Comorbid Anxiety Disorder	15 (51.7)	7 (53.8)	X ² (n =42, df = 1) = 0.02	.90
Number of Sessions Attended (Mean, SD)	10.9 (3.5)	9.0 (3.9)	t (37) = -1.51	0.13

Note: ADHD = attention-deficit/hyperactivity disorder; CCT = child-centered therapy; FB-IBT = family-based interpersonal psychotherapy; FET = Fischer's exact test; NOS = not otherwise specified; SSRI = selective serotonin reuptake inhibitor.

Table 2

Descriptive Statistics for Pre- and Posttreatment Measures in Family-Based Interpersonal Psychotherapy (FB-IPT) and Child-Centered Therapy (CCT)

Measures	FB-IPT (n = 25)	CCT (n = 13)	t-statistic	p
Pretreatment Measures (Mean, SE)				
CDRS-R	44.3 (1.4)	47.2 (2.6)	1.07	0.28
MFQ-P	19.8 (2.2)	26.9 (3.6)	1.78	0.08
MFQ-C	24.9 (4.5)	23.6 (4.6)	-0.19	0.85
SCARED-P	25.3 (4.0)	21.8 (2.6)	0.78	0.44
SCARED-C	28.2 (3.7)	26.3 (4.9)	-0.30	0.76
CBQ-P	9.4 (1.0)	9.7 (1.3)	0.17	0.86
CBQ-C	5.3 (0.9)	8.2 (1.6)	1.70	0.09
SAS-SR, Peer Impairment ^a	10.3 (1.2)	10.6 (1.3)	0.20	0.84
SAS-SR, Social Impairment ^a	12.1 (1.3)	11.6 (1.4)	-0.26	0.80
Posttreatment Measures (Mean, SE)				
CDRS-R	26.7 (1.1)	34.5 (2.8)	3.01	0.003
MFQ-P	5.8 (1.1)	11.4 (1.6)	2.90	0.004
MFQ-C	5.6 (1.2)	12.1 (2.9)	2.49	0.01
SCARED-P	14.7 (2.3)	19.1 (2.9)	1.14	0.25
SCARED-C	12.7 (2.8)	23.1 (4.7)	2.00	0.05
CBQ-P	6.5 (0.9)	8.8 (1.4)	1.49	0.14
CBQ-C	3.9 (0.8)	5.4 (1.6)	0.98	0.33
SAS-SR, Peer Impairment ^a	6.8 (0.9)	9.7 (1.7)	1.74	0.08
SAS-SR, Social Impairment ^a	7.7 (0.9)	11.6 (1.6)	2.25	0.03

Note: CBQ-P/C = Conflict Behavior Questionnaire, Parent or Child Report; CDRS-R = Childhood Depression Rating Scale-Revised; MFQ-P/C = Mood and Feelings Questionnaire, Parent or Child Report; SAS-SR = Social Adjustment Scale, Self-Report; SCARED-P/C = Self-Report for Childhood Anxiety-Related Emotional Disorders, Parent or Child Versions.

^aLower scores indicate less impairment.