Randomized Clinical Trial of Family-Based Treatment and Cognitive-Behavioral Therapy for Adolescent Bulimia Nervosa

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Objective: There is a paucity of randomized clinical trials (RCTs) for adolescents with bulimia nervosa (BN). Prior studies suggest cognitive-behavioral therapy adapted for adolescents (CBT-A) and family-based treatment for adolescent bulimia nervosa (FBT-BN) could be effective for this patient population. The objective of this study was to compare the relative efficacy of these 2 specific therapies, FBT-BN and CBT-A. In addition, a smaller participant group was randomized to a nonspecific treatment (supportive psychotherapy [SPT]), whose data were to be used if there were no differences between FBT-BN and CBT-A at end of treatment.

Method: This 2-site (Chicago and Stanford) randomized controlled trial included 130 participants (aged 12–18 years) meeting *DSM-IV* criteria for BN or partial BN (binge eating and purging once or more per week for 6 months). Outcomes were assessed at baseline, end of treatment, and 6 and 12 months posttreatment. Treatments involved 18 outpatient sessions over 6 months. The primary outcome was defined as abstinence from binge eating and purging for 4 weeks before assessment, using the Eating Disorder Examination.

Results: Participants in FBT-BN achieved higher abstinence rates than in CBT-A at end of treatment (39% versus 20%; $p = .040$, number needed to treat [NNT] = 5) and at 6-month follow-up (44% versus 25%; $p = .030$, NNT = 5). Abstinence rates between these 2 groups did not differ statistically at 12-month follow-up (49% versus 32%; $p = .130$, NNT = 6).

Conclusion: In this study, FBT-BN was more effective in promoting abstinence from binge eating and purging than CBT-A in adolescent BN at end of treatment and 6-month follow-up. By 12-month follow-up, there were no statistically significant differences between the 2 treatments.

Clinical Trial Registration Information—Study of Treatment for Adolescents With Bulimia Nervosa; http://clinicaltrials.gov/; NCT00879151.

Key Words: bulimia nervosa, family-based treatment, cognitive-behavioral therapy, adolescent medicine, eating disorders

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Bulimia nervosa (BN) is a serious eating disorder among adolescents, with a prevalence of more than 1% and another 2% to 3% presenting with clinically significant bulimic symptoms.[1,2] BN among adolescents is associated with medical sequelae such as hypokalemia, esophageal tears, gastric disturbances, dehydration, orthostasis, cardiac arrhythmias, and death.[3] Psychiatric complications include depression, personality disorders, anxiety, and substance use disorders.[4,5]

Several randomized controlled trials (RCTs) have now tested a range of treatments for adults with BN.[6-9] Overall, results suggest that cognitive-behavioral therapy (CBT) is the most efficacious approach and therefore the first-line treatment for adults with this disorder.[6] However, despite the fact that bulimic behaviors typically have an onset during adolescence, there is a paucity of studies evaluating treatments in this age group. Several case series of bulimic adolescents suggest that family therapy[10,11] or CBT adapted for adolescents (CBT-A)[12] is feasible and leads to clinical improvements. Two relatively modest RCTs for adolescents with BN have been published with somewhat equivocal results.[13,14] Schmidt et al[13] found no difference at the end of treatment (EOT) or at 6-month follow-up in rates of achieving abstinence from binge eating and purging between adolescents randomized to either a self-help version of CBT or family therapy (about 40% in both groups at follow-up), although some advantages were achieved for CBT in terms of secondary outcomes. Le Grange *et al.*[14] found that participants randomized to receive a specific form of family therapy (family-based treatment for adolescent bulimia nervosa [FBT-BN]) achieved higher abstinence rates at EOT (40%) compared to those who received a nonspecific therapy (supportive psychotherapy [SPT]; 20%), but abstinence rates for both groups dropped at the 6-month follow-up mark. Taken together, these studies suggest that both FBT-BN and CBT-A are likely effective treatments for adolescents with BN.

FBT-BN and CBT-A are conceptually distinct. FBT-BN encourages parental control and management of eating disorder behaviors with no emphasis on changing pathological thinking related to shape and weight; CBT-A is

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primarily an individual therapy that focuses on reducing dieting and changing distorted behaviors and cognitions related to shape and weight. FBT has a substantial evidence base documenting its effectiveness for adolescent anorexia nervosa (AN),[15-17] whereas CBT has a preponderance of evidence supporting its use in adults with BN.[6-9] Hence, an adequately powered RCT of these 2 specific approaches for adolescents with BN could shed light not only on which treatment is more effective but potentially on the benefits of these different strategies on differing patient groups (moderators). Based on the evidence supporting FBT for adolescents with AN, we hypothesized that FBT-BN would be superior to CBT-A for this age group, but expected that age, individual psychopathology, and family pathology would moderate the achievement of abstinence.

Although our design was powered for a comparison between 2 specific treatments (FBT-BN and CBT-A), as a condition of funding, a third, nonspecific treatment, namely supportive psychotherapy (SPT), was added to the design to allow an exploratory comparison of whether there were no differential treatment effects between the specific treatments by the EOT. Although this third condition was included in the RCT, recruitment to this arm was designed to be at a lower rate and was not sufficiently powered for a statistically valid comparison with the other treatments. Instead, if there were no difference at the EOT between FBT-BN and CBT-A, a comparison to SPT would generate hypotheses for future studies.

METHOD

Study Design

In this 2-site (The University of Chicago and Stanford University) study, 130 participants were randomized to FBT-BN, CBT-A, or SPT. To limit the number of participants in the nonspecific therapy (SPT) group,[18] given our primary hypothesis, randomization was done in

FIGURE 1 Consolidated Standards of Reporting (CONSORT) diagram. Note: CBT = cognitive-behavioral therapy; FBT = family-based therapy; SPT = supportive psychotherapy.