Relapse From Remission at Two- to Four-Year Follow-Up in Two Treatments for Adolescent Anorexia Nervosa

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Objective: Long-term follow-up studies documenting maintenance of treatment effects are few in adolescent anorexia nervosa (AN). This exploratory study reports relapse from full remission and attainment of remission during a 4-year open follow-up period using a convenience sample of a subgroup of 65% (n = 79) from an original cohort of 121 participants who completed a randomized clinical trial comparing family-based therapy (FBT) and adolescent-focused individual therapy (AFT). **Method:** Follow-up assessments were completed up to 4 years posttreatment (average, 3.26 years). Available participants completed the Eating Disorder Examination as well as self-report measures of self-esteem and depression at 2 to 4 years posttreatment. **Results:** Two participants (6.1%) relapsed (FBT: n = 1, 4.5%; AFT: n = 1, 9.1%), on average 1.98 years (SD = 0.14 years) after remission was achieved at 1-year follow-up. Ten new participants (22.7%) achieved remission (FBT: n = 1, 5.9%; AFT: n = 9, 33.3%). Mean time to remission for this group was 2.01 years (SD = 0.82 years) from 1-year follow-up. There were no differences based on treatment group assignment in either relapse from full remission or new remission during long-term follow-up. Other psychopathology was stable over time. **Conclusion:** There were few changes in the clinical presentation of participants who were assessed at long-term follow-up. These data suggest that outcomes are generally stable posttreatment regardless of treatment type once remission is achieved. Clinical trial registration information—Effectiveness of Family-Based Versus Individual Psychotherapy in Treating Adolescents With Anorexia Nervosa; http://www.clinicaltrials.gov/; NCT00149786. J. Am. Acad. Child Adolesc. Psychiatry, 2014;53(11):1162–1167. **Key Words:** anorexia nervosa, adolescence, long-term follow-up, family-based treatment, adolescent-focused treatment

Despite high rates of morbidity and mortality for adolescents with anorexia nervosa (AN),[1] relatively few randomized controlled trials (RCTs) for this patient population have been conducted.[2-8] Even fewer studies have examined the long-term maintenance of treatment effects in RCTs.[9-11]

Using a relatively low standard for remission (weight >85% of expected body weight [EBW]), colleagues at the Maudsley Hospital in London demonstrated that the remission rate for family therapy was stable over time at 90% for both 1-year and 5-year follow-up assessment.[9] In contrast, they showed that the remission rate for individual therapy significantly improved from 18% at 1-year follow-up to 60% at 5-year follow-up. Nonetheless, the remission rate in family therapy remained superior over that of individual therapy. Another 4-year follow-up study that compared 2 doses of family therapy found no differences in remission rates by dose. Using various standard definitions of remission, rates ranged from 60% to 90%.[11] A study that compared conjoint family therapy to separated family therapy found no differences in remission at 4-year follow-up (78% and 90% respectively, using Morgan Russell Categories).[10] Taken together, these studies suggest that longer-term outcome in adolescents who were successfully treated in family therapy are likely to be maintained at follow-up regardless of the definition of remission used.[12,13]

This article is discussed in an editorial by Dr. Kamryn T. Eddy on page 1150.

The current study examined relapse from remission, with the latter defined as ≥ 95% EBW for age, height, and gender, and a global Eating Disorder Examination (EDE) score within 1 SD of the community mean of 1.54 for adolescents. The sample was drawn from the original cohort of 121 participants in an RCT that compared 2 manual-based treatments, family-based treatment (FBT) and adolescent-focused therapy (AFT).[6] Based on the findings from previous studies showing stability in outcomes over time, we predicted that those who were remitted at 1-year follow-up were likely to remain so at longer-term follow-up regardless of treatment type received.

METHOD

Participants and Procedures

The design of the original 2-site RCT (The University of Chicago and Stanford University) was described in detail in our main report.[6] Briefly, 121 adolescents with *DSM-IV* AN,[14] except for the amenorrhea criterion, were randomized to either FBT or AFT. Participants were enrolled if they were 12 to 18 years of age, lived with parents or legal guardians, and were medically stable for outpatient treatment.[15] Written informed consent was obtained after a study coordinator provided a description of the study to the participants and their parents. The institutional review boards of the 2 clinical sites provided approval for the study. The participants in the current study are a convenience sample who agreed to provide follow-up at 2, 3, and 4 years posttreatment after the original study was completed. Participant outcomes at the end of treatment and 1-year follow-up have been previously reported.[6]

Treatments

The 2 manual-based treatments (AFT and FBT) used in the original study are described in detail by Fitzpatrick et al.[16] and Lock and Le Grange[17]). Briefly, AFT is an individual therapy and focuses on amending eating disorder symptoms in the context of examining common themes in adolescent development. FBT, on the other hand, is family focused and leverages parental support of eating-related behaviors in their child. Participants were seen as outpatients for 24 contact hours over a 1-year period.

Assessments

For the present study, independent assessors not involved in treatment delivery conducted assessments at 2, 3, and 4 years posttreatment. Using the last available data point from 2- to 4-year follow-up, mean time to long-term follow-up from the end of treatment for the full sample was 3.26 years (SD = 1.29; range, 0.87–5.40). Mean follow-up time was comparable between FBT (mean = 3.30, SD = 1.33) and AFT (mean = 3.21, SD = 1.26). Variables examined at these various time points included the following: weight (percentile body mass index [BMI] using Centers for Disease Control and Prevention [CDC] norms for age and gender);[18] eating disorder psychopathology (EDE-Global score);[19] depressive symptoms (Beck Depression Inventory [BDI]);[20] self-esteem (Rosenberg Self-Esteem Scale [RSES]);[21] obsessive-compulsive features of eating symptoms and behaviors (YBC-ED);[22] and use of psychiatric medications.

Our main outcome of interest is relapse (defined as meeting study entry weight criteria of 87% of expected mean BMI for age, height, and gender) from full remission (defined as weight greater than or equal to 95% of expected BMI for age, height, and gender and an EDE-Global score within 1 SD of community means (i.e., 1.54), and new remissions using these same criteria. Secondary outcomes of interest are changes in eating pathology, depressive symptoms, self-esteem, and obsessive-compulsive symptoms. The prevalence of other eating disorder diagnoses, mood disorders, and anxiety disorders were also examined at long-term follow-up.

Statistical Analyses

SPSS Version 19.0 was used for all analyses. Independent t and χ^2 tests were used to compare individuals with and without missing data. Evaluating time to relapse and remission from 1-year follow-up was performed using survival analyses,[23,24] with time calculated as the difference between the assessment date at 1-year follow-up and the assessment date at which the event (i.e., relapse or remission) occurred. For the survival curve of time to relapse (27.3%, n = 33), participants with missing data (23.1%, n = 28) and those who were not remitted (49.6%, n = 60) at 1-year follow-up were excluded. Participants with no follow-up data and those who remained recovered at all measured follow-up time points were treated as "censored" observations, indicating that relapse did not occur before termination of the measurement period. For the survival curve of time to remission (49.6%, n = 60), participants with missing data (23.1%, n = 28) and those who had remitted (27.3%, n = 33) at 1-year follow-up were excluded. Participants with no follow-up data and those who remained nonremitted at all measured follow-up time points were treated as "censored" observations, indicating that remission did not occur before termination of the measurement period.

Indicator variables, coded as −0.5 and +0.5, were created to represent treatment group and treatment center. Baseline (i.e., age, duration of illness, psychiatric comorbidity, psychotropic medication use, prior hospitalization, %EBW, EDE global score, YBC-ED score, and BDI score) and end of treatment (i.e., EDE global score, YBC-ED score, or BDI score, %EBW) predictors were examined in separate survival analyses, controlling for the effects of treatment group and center. A