

## Evidence-Based Treatment of Anorexia Nervosa

Christopher G. Fairburn, MD\*

### ABSTRACT

This paper addresses the question "Is evidence-based treatment of anorexia nervosa possible?" "Barely" is the conclusion drawn. New forms of treatment are needed for adults with anorexia nervosa,

and the true value of family-based treatment for adolescents has yet to be established. © 2005 by Wiley Periodicals, Inc.

**Keywords:** anorexia nervosa; treatment; family therapy

(*Int J Eat Disord* 2005; 37:526–530)

### Evidence-Based Treatment of Anorexia Nervosa

The task of this paper is to evaluate the evidence on the treatment of anorexia nervosa (AN) and address the question: "Is evidence-based treatment of anorexia nervosa possible?" This requires identifying and appraising relevant research findings, the studies of most interest being randomized controlled trials (RCTs) in which different interventions (or their absence) have been compared. As my main database I have used the recent systematic review conducted by the U.K. National Institute for Clinical Excellence.<sup>1</sup> I have not conducted a meta-analysis in light of the small number of studies available and their varied ways of representing treatment outcome.

### Treatment Options and Treatment Equivalence

In AN there is a range of treatment options. There are various treatment settings, the main ones being outpatient, day patient (partial hospitalization), and inpatient treatment; and within these settings a variety of interventions may be provided, pharmacological or psychological or both. To complicate matters, patients may move from one setting to another, and within any one setting often more than one treatment is employed.

There is limited empirical support for this plethora of options as there has been remarkably little research on the treatment of AN, and much of

what has been done has been inconclusive. The reasons for the lack of research are multiple and have been discussed elsewhere,<sup>2</sup> a major one being that AN is uncommon. A consequence of this is that researchers often conduct treatment trials with inappropriately small sample sizes with the result that there are frequently no statistically significant findings. This can tempt the researcher to conclude that the treatments in question were equivalent in their clinical effects, whereas the fact is that the sample size was too small to establish treatment equivalence.<sup>3,4</sup>

### Choice of Treatment Setting

There is no empirical evidence to support the use of any one treatment setting over any other in terms of AN patients' outcome. There has been just one attempt to randomize patients to different treatment settings,<sup>5</sup> and, unfortunately, the comparison was compromised by the unsurprising finding that many patients randomized to inpatient treatment did not want it.

### Inpatient Treatment

Inpatient treatment is used differently in different places; for example, it is common in some countries but unusual in others, and length of stay also varies markedly.<sup>6</sup> Such differences are intriguing but not evidence-based, as inpatient treatment has received scant research attention. As Vandereycken<sup>7</sup> has pointed out, even the most basic questions about inpatient treatment have not been adequately formulated, let alone addressed. For example, not only are the indications for hospitalization not established, but the specific goals are not agreed upon nor is it known how best to achieve them. Also, it is not clear whether the indications, goals, and treatments should differ for adolescents and adults. At best, there is modest evidence from cohort studies to support a focus on eating and an emphasis on weight regain.<sup>8</sup> Comparisons of flexible behavioral

Accepted 29 December 2004

Christopher G. Fairburn is supported by a Principal Research Fellowship (046386) from the Wellcome Trust.

\*Correspondence to: Professor Christopher Fairburn, Oxford University Department of Psychiatry, Warneford Hospital, Oxford OX3 7JX, United Kingdom.

From the Oxford University Department of Psychiatry  
Published online in Wiley InterScience

(www.interscience.wiley.com). DOI: 10.1002/eat.20112

© 2005 Wiley Periodicals, Inc.

programs with more rigid ones have either yielded no significant differences in the rate of weight regain<sup>9</sup> or have favored the more flexible regime.<sup>10</sup> A controlled evaluation of body warming yielded no significant differences.<sup>11</sup> There is no evidence from RCTs that drug treatment significantly enhances weight regain in hospital.<sup>12</sup>

### **Day Patient Treatment**

Even less is known about day patient treatment than inpatient treatment.<sup>13</sup> Again, the indications are not agreed upon, and the goals are not established. It is not clear whether day patient treatment is best viewed as a less expensive alternative to inpatient treatment, as an intensive form of outpatient treatment, or as a distinct modality with particular strengths and weaknesses.

### **Outpatient Treatment**

Whatever the place of inpatient and day patient treatment, outpatient treatment is the mainstay of the treatment of AN. Outpatient treatment is the sole treatment for many patients, and even if patients receive inpatient or day patient treatment, it is usually preceded by and followed by outpatient treatment. The research on the effectiveness of outpatient treatment is therefore of particular importance and is the focus of the rest of this paper.

---

## **Outpatient Treatment**

### **Drug Treatment**

There has been one small study of the use of fluoxetine following inpatient treatment.<sup>14</sup> Its results suggested that outcome was improved, a finding that needs to be replicated.

### **Psychological Treatment of Adolescents**

It is widely thought that there is good evidence regarding the treatment of adolescents with AN, the assumption being that family-based treatment (FBT) has a strong body of empirical support. This is not the case.

There have been two comparisons of FBT with another form of treatment. In the first, Russell and colleagues compared one year of FBT with one year of supportive psychotherapy in 21 patients (mean age 16.6 years, mean duration of disorder 1.2 years) who had just been discharged from a specialist inpatient unit.<sup>15</sup> The FBT has since come to be known as the "Maudsley method".<sup>16</sup> The results favored FBT; at the end of treatment, six out of the 10 patients who received FBT were judged to

have a good outcome\* compared with one out of the 11 patients who received the comparison treatment. Five years later, although the patients in both conditions were found to have done well, the results continued to favor FBT.<sup>18</sup>

The second study involved a comparison of a treatment similar to the Maudsley method with a psychodynamically oriented treatment in which the adolescent patients were seen individually with occasional supportive sessions for their parents.<sup>19</sup> The outcome of both groups of patients (N = 19 and 18, respectively) was positive, both at the end of treatment and one year later. There was one statistically significant difference between them: in terms of increase in body mass index (BMI), the patients in the FBT condition did better. It is not possible to attribute this finding to differences between the two psychotherapies, however, as many patients were hospitalized during their treatment, and this was especially common among those receiving FBT.

In summary, only two studies have compared FBT with another form of treatment and the findings of the second are uninterpretable. Thus the case for favoring FBT over other forms of treatment rests on a study of 21 adolescent patients (just 10 of whom received FBT) who had recently been discharged from a specialist inpatient unit. This is a small body of data and one of questionable relevance to routine outpatient treatment. It is also worth noting that the superiority of FBT over supportive psychotherapy might not have been due to the involvement of the patient's family since there was another important difference between the two treatments: FBT placed great emphasis on getting patients to eat well and maintain a healthy weight, whereas there was nothing like the same focus on eating and weight in the supportive psychotherapy condition.

There have been two main comparisons of different forms of FBT. Their findings are also inconclusive. The first evaluated two ways of delivering the Maudsley method, one of which involved all the family being seen together whilst the other involved separate sessions for the patient and the parents.<sup>20</sup> In contrast with the Russell et al.<sup>15</sup> study, FBT was provided from the outset rather than after hospitalization. Forty patients (mean age 15.5 years, average duration of disorder just over one year) were randomized to the two approaches. Both groups of patients improved, with 37.5% achieving a good outcome and a further 25% improving substantially. Extensive testing for

---

\* Representing outcome in anorexia nervosa is not straightforward. In this paper the authors' definition of outcome has been accepted. In most cases, it has been derived from the Morgan-Russell scheme (1975).

differences between the treatments revealed few statistically significant findings. The second study involved a comparison of FBT with family education.<sup>21</sup> Both treatments occurred in the context of considerable additional input, including an initial period of inpatient treatment and continuing medical and nursing contact following discharge. Not surprisingly, given the amount of additional treatment and the small number of patients studied ( $N = 25$ ), the two treatment conditions did not differ significantly in their effects.

### *Psychological Treatment of Adults*

There has been somewhat more research on the outpatient psychological treatment of adults with AN. There have been seven studies of outpatient treatment in the absence of prior hospitalization. Hall and Crisp<sup>22</sup> compared nutritional counseling with psychotherapy (individual and family) in 30 outpatients comprising both adolescents and adults. Channon and colleagues<sup>23</sup> compared cognitive behavior therapy (CBT), behavior therapy (BT), and a low-contact control condition in 24 adult patients. Crisp and colleagues<sup>5</sup> compared one-to-one and group ways of delivering the combination of individual and family psychotherapy, and Treasure and colleagues<sup>24</sup> compared cognitive analytic therapy (CAT) with BT in 30 adult patients. In all four studies, no statistically significant findings of note emerged. The fifth study, which was of CBT, was inconclusive because none of the patients in the nutritional counseling comparison condition completed treatment.<sup>25</sup>

The sixth study was larger than its predecessors in that 84 patients were studied.<sup>26</sup> In common with most adult samples, the patients differed markedly from their adolescent counterparts; they were considerably older (mean age 26.3 years), and their disorder was well established (mean duration 6.3 years). The patients were randomized to four treatments, resulting once again in small groups being compared. The four treatments were focal psychoanalytic psychotherapy, CAT, FBT of the Maudsley style, and routine outpatient treatment involving brief sessions with a trainee psychiatrist. No statistically significant differences were found between the three psychotherapies, but all three were more effective than the routine treatment. Across the three psychotherapies, 13.8% of the patients achieved a good outcome and a further 18.5% improved substantially; recall that the comparable figures for the same group's adolescent sample were 37.5% and 25%, respectively. Although the authors attribute the difference between the psychotherapies and the routine treatment to the fact that these were "specialized psychotherapies," it seems

just as plausible that it could have been due to the low "dose" of the routine treatment which involved less than half the therapist-patient contact. In addition, it may also have been relevant that the psychiatrists who delivered the treatment were trainees who changed every six months.

The most recent study is an intriguing one. Thirty-three women with AN (ignoring the amenorrhea criterion) plus 23 with subthreshold "AN" (BMI 17.5-19.0) were randomized to 20 sessions of CBT, interpersonal psychotherapy (IPT), or supportive clinical management.<sup>27</sup> At post-treatment the results favored the clinical management condition over the two specific psychotherapies, although none of the treatments was particularly effective. These findings are difficult to interpret for a number of reasons. First, a substantial proportion of the sample had a higher pretreatment BMI than many of the patients in other trials have had after treatment. This makes their outcome difficult to evaluate. Second, the forms of CBT and IPT used were, perhaps, unusually focused and rigid, especially when compared with the clinical management condition. Third, the absence of follow-up data means that the results must be considered interim. This is especially true of those for the IPT condition, given its slow action in bulimia nervosa.<sup>28</sup>

Finally, there have been two studies of post-hospitalization psychological treatment. The first was an arm of Russell et al.'s<sup>15</sup> comparison of FBT with supportive psychotherapy. In addition to including adolescents, the study also included two groups of adults. In contrast with the adolescent findings, and hardly surprisingly given the small sample sizes, no statistically significant differences emerged. In the second study, 33 patients were randomized to receive 12 months of CBT or nutritional counseling.<sup>29</sup> Survival analysis showed that the patients who received CBT remained in treatment longer, and there was a trend for their relapse rate to be lower. In addition, significantly fewer of the CBT patients dropped out of treatment, and more met conventional criteria for a good outcome. Interestingly, seven of the eight CBT patients who had a good outcome were also receiving antidepressant medication compared with four of the 10 who did not. There was no suggestion of a medication effect within the nutritional counseling group. Thus the superiority of CBT over nutritional counseling could have been due in part to a synergism between CBT and antidepressant medication. One other point is also of note. As Vitousek<sup>30</sup> has highlighted, nutritional counseling is neither a demanding comparison condition nor a particularly informative one for psychological treatments for AN.

## Concluding Remarks

First, one general observation is worth making. This is that treatment outcome among adolescents with AN is generally good whereas that among adults is poor. This may be more an inherent property of the disorder in these two age groups than any reflection of the potency of the treatments used. The adolescents studied tend to have had AN for a very short time—often little more than a year—whereas adults with AN have generally had the disorder for five or more years and often have been recipients of prior attempts at treatment. It is not unlikely that the explanation for adolescent AN being more treatment-responsive than adult AN is that many of the maintaining mechanisms that obstruct change in more enduring cases are not operating in younger patients.

Turning to research priorities, three questions seem particularly pressing. First, in adolescents it needs to be established that FBT has a specific beneficial effect for it is not clear that the effects of the treatment are due to its involvement of the family or indeed to any property of the treatment. The changes could simply reflect the good prognosis of AN in adolescence. Alternative treatment approaches (which will obviously involve the family to some extent) need to be tested and their short and long-term outcome compared with that of FBT. Second, in adults two interesting findings have emerged from the post-hospitalization studies, one being that CBT appears to be more effective than nutritional counseling, a difference that may have been due in part to a synergism between CBT and antidepressant medication, and the other being that fluoxetine may reduce the rate of relapse. Large-scale studies of the effects of CBT, fluoxetine, and their combination are needed and, indeed, are well underway. Third, and perhaps most importantly, there is a pressing need to develop more effective treatments for adults with AN because their outcome is poor. It is my view that, until promising new treatments have been developed (with preliminary data to support them), it would be premature to embark upon further costly and time-consuming RCTs.

Finally, returning to the question "*Is evidence-based treatment of anorexia nervosa possible?*", the answer must be "*Barely*", a disquieting conclusion given the seriousness of the disorder.

---

## Acknowledgments

I am grateful to Zafra Cooper, Helen Doll, and Sarah Squire for their thoughts on this paper.

---

## References

1. National Collaborating Centre for Mental Health. Eating disorders: core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders. London: British Psychological Society and Royal College of Psychiatrists; 2004.
2. Agras WS, Brandt HA, Bulik CM, et al. Report of the National Institutes of Health workshop on overcoming barriers to treatment research in anorexia nervosa. *Int J Eat Disord* 2004;35:509.
3. Altman DG, Bland JM. Absence of evidence is not evidence of absence. *BMJ* 1995;311:485.
4. Greene WL, Concato J, Feinstein AR. Claims of equivalence in medical research: are they supported by the evidence? *Ann Intern Med* 2000;132:715.
5. Crisp AH, Norton K, Gowers S, et al. A controlled study of the effect of therapies aimed at adolescent and family psychopathology in anorexia nervosa. *Br J Psychiatry* 1991;159:325.
6. Maguire S, Surgenor LJ, Abraham S, et al. An international collaborative database: its use in predicting length of stay for inpatient treatment of anorexia nervosa. *Aust N Z J Psychiatry* 2003;37:741.
7. Vandereycken W. The place of inpatient care in the treatment of anorexia nervosa: questions to be answered. *Int J Eat Disord* 2003;34:409.
8. Herzog T, Hartmann A, Falk C. The short-term effects of psychodynamic inpatient treatment of anorexia nervosa with and without an explicit focus on eating pathology—a controlled study. *Psychotherapie Psychosomatik Medizinische Psychologie* 1996;46:11.
9. Touyz SW, Beumont PJV, Glaun D, Phillips T, Cowie I. A comparison of lenient and strict operant conditioning programmes in refeeding patients with anorexia nervosa. *Br J Psychiatry* 1984;144:517.
10. Vandereycken W, Pieters G. Short-term weight restoration in anorexia nervosa through operant conditioning. *Scand J Behav Ther* 1978;7:221.
11. Birmingham CL, Gutierrez E, Jonat L, Beumont P. Randomized controlled trial of warming in anorexia nervosa. *Int J Eat Disord* 2004;35:234.
12. de Zwaan M, Roerig J. Pharmacological treatment of eating disorders. In: Maj M, Halmi K, Lopez-Ibor JJ, et al., editors. *Eating disorders*. Chichester: Wiley; 2003. p 223.
13. Zipfel S, Reas DL, Thornton C, et al. Day hospitalization programs for eating disorders: a systematic review of the literature. *Int J Eat Disord* 2002;31:105.
14. Kaye WH, Nagata T, Weltzin TE, et al. Double-blind placebo-controlled administration of fluoxetine in restricting- and restricting-purging-type anorexia nervosa. *Biol Psychiatry* 2001; 49:644.
15. Russell GFM, Szmukler GI, Dare C, et al. An evaluation of family therapy in anorexia nervosa and bulimia nervosa. *Arch Gen Psychiatry* 1987;44:1047.
16. Lock J, le Grange D, Agras WS, et al. *Treatment manual for anorexia nervosa: A family-based approach*. New York: Guilford Press; 2001.
17. Morgan HG, Russell GFM. Value of family background and clinical features as predictors of long-term outcome in anorexia nervosa: four-year follow-up study of 41 patients. *Psychol Med* 1975;5:355.
18. Eisler I, Dare C, Russell GFM, et al. Family and individual therapy in anorexia nervosa: a 5-year follow-up. *Arch Gen Psychiatry* 1997;54:1025.
19. Robin AL, Siegel PT, Moye AW, et al. A controlled comparison of family versus individual therapy for adolescents with anorexia nervosa. *J Am Acad Child Adolesc Psychiatry* 1999; 38:1482.

20. Eisler I, Dare C, Hodes M, et al. Family therapy for adolescent anorexia nervosa: the results of a controlled comparison of two family interventions. *J Child Psychol Psychiatry* 2000;41:727.
21. Geist R, Heinmaa M, Stephens D, et al. Comparison of family therapy and family group psychoeducation in adolescents with anorexia nervosa. *Can J Psychiatry* 2000;45:173.
22. Hall A, Crisp AH. Brief psychotherapy in the treatment of anorexia nervosa: outcome at one year. *Br J Psychiatry* 1987; 151:185.
23. Channon S, de Silva P, Hemsley D, et al. A controlled trial of cognitive-behavioural and behavioural treatment of anorexia nervosa. *Behav Res Ther* 1989;27:529.
24. Treasure J, Todd G, Brolly M, et al. A pilot study of a randomized trial of cognitive analytical therapy vs. educational behavioral therapy for adult anorexia nervosa. *Behav Res Ther* 1995;33:363.
25. Serfaty MA, Turkington D, Heap M, et al. Cognitive therapy versus dietary counselling in the outpatient treatment of anorexia nervosa: effects of the treatment phase. *Eur Eat Disord Rev* 1999;7:334.
26. Dare C, Eisler I, Russell G, et al. Psychological therapies for adults with anorexia nervosa: randomised controlled trial of out-patient treatments. *Br J Psychiatry* 2001;178:216.
27. McIntosh VVW, Jordan J, Carter FA, et al. Three psychotherapies for anorexia nervosa: a randomized controlled trial. *Am J Psychiatry* (in press).
28. Fairburn CG, Jones R, Peveler RC, et al. Psychotherapy and bulimia nervosa: the longer-term effects of interpersonal psychotherapy, behaviour therapy and cognitive behaviour therapy. *Arch Gen Psychiatry* 1993;50:419.
29. Pike KM, Walsh BT, Vitousek K, et al. Cognitive behavior therapy in the posthospitalization treatment of anorexia nervosa. *Am J Psychiatry* 2003;160:2046.
30. Vitousek KM. Cognitive-behavioral therapy for anorexia nervosa. In: Fairburn CG, Brownell KD, editors. *Eating disorders and obesity*. New York: Guilford Press; 2002. p 308.

Copyright of International Journal of Eating Disorders is the property of John Wiley & Sons Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.