The effectiveness of family-based treatment for full and partial adolescent anorexia nervosa in an independent private practice setting: Clinical outcomes

Mandy Goldstein[a], Stuart B. Murray[b], Scott Griffiths[c], Kathryn Rayner[a], Jessica Podkowka[a], Joel E. Bateman[c], Andrew Wallis[d], Christopher E. Thornton[a]

[a] The Redleaf Practice, 5 Redleaf Ave, Wahroonga, Sydney, NSW, Australia

[b] Department of Psychiatry, University of California, San Francisco, San Francisco, CA, USA

[c] Department of Psychology, University of Sydney, Sydney, Australia

[d] The Children's Hospital at Westmead, Sydney, NSW, Australia

Correspondence concerning this article should be addressed to Dr Mandy Goldstein, The Redleaf Practice, 5 Redleaf Ave, Wahroonga, Sydney, NSW, Australia; Tel: +61 2 9487 7799, Fax: +61 2 9487 7699; Email: mandy.goldstein@theredleafpractice.com

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Abstract

Objective: Anorexia nervosa (AN) is a severe psychiatric illness with little evidence supporting treatment in adults. Among adolescents with AN, family-based treatment (FBT) is considered first line outpatient approach, with a growing evidence base. However, research on FBT has stemmed from specialist services in research /public health settings. This study investigated the effectiveness of FBT in a case series of adolescent AN treated in a private practice setting. **Method**: Thirty-four adolescents with full or partial AN, diagnosed according to DSM-IV criteria, participated, and were assessed at pre- and post- treatment. Assessments included change in % Expected Body Weight, mood and eating pathology. **Results**: Significant weight gain was observed from pre- to post-treatment. 45.9% of the sample demonstrated full weight restoration and a further 43.2% achieved partial weight-based remission. Missing data precluded an examination of change in mood and ED psychopathology. **Discussion**: Effective dissemination across different service types is important to the wider availability of evidence-based treatments. These weight restoration data lend preliminary support to the implementation of FBT in real world treatment settings.

Keywords: eating disorders, anorexia nervosa, family-based treatment, adolescence, effective treatment.

The effectiveness of family-based treatment for full and partial adolescent anorexia nervosa in an independent private practice setting: Clinical outcomes

Anorexia nervosa (AN) is a severe and often chronic psychiatric illness with little evidence supporting its treatment in adulthood (1). Adolescents with restrictive eating disorders (EDs) demonstrate a greater propensity for full symptom remission, with current treatment guidelines advocating family involvement (2, 3). The most evaluated family therapy model is family-based treatment (FBT) (4).

While a number of randomised controlled trials (RCTs) have supported the efficacy of FBT (5-10), recent research has focused on the dissemination of FBT to broader clinical practice (11-16). However, to date, this has occurred in the context of tertiary university clinics, with most involving the support of a primary developer of FBT. No research has investigated the use of FBT in private practice settings, which typically lack the benefit of multidisciplinary teams and the supervision of primary developers of the model. The absence of these has been identified as an obstacle to the uptake of FBT (17). Furthermore, research continues to document a "gap" between effective ED treatment administered in RCTs and that in standard clinical practice (18, 19).

Thus, it is important that treatments developed in specialist centres are transported to a broader population of clinicians, and made more available to families accessing care. This preliminary study therefore investigated the effectiveness of FBT in a series of consecutive cases of full and partial adolescent AN, treated in a standalone private practice.

METHOD

Procedure

Consecutive adolescents presenting to a specialised private practice between 2011 and 2014 were offered FBT if diagnosed with a primary ED according to DSM-IV-TR criteria

(20). Measures of mood and ED pathology were obtained at pre- and post-treatment and every 5 sessions, as part of routine clinical care; comorbidity was assessed via clinical interview. Participants were invited to consent retrospectively to the use of their clinical data for research. Ethical approval for the use of clinical data was granted by the Macquarie University Human Research Ethics Committee (HREC). Permission to use the FBT treatment manual for research purposes was granted by Professors Lock and Le Grange.

Participants

Participants were 75 consecutive patients and their families attending the practice. Five families declined to consent and consent data were missing for a further five families. Seven patients with bulimia nervosa or binge eating disorder or their subclinical variants were excluded from the analyses. Data were excluded from a further 21,because their percentage of expected body weight (%EBW) at the start of treatment was above 95%. Clinically, these participants present similarly to those more underweight; indeed, it is well-established that teens can develop signs of medical severity at higher weights (21). However, as the key outcome variable in this study was %EBW, inclusion of these participants' data may confound analyses. The post-exclusion sample included 34 females and 3 males with an average age of 15.57 years (*SD* = 1.79). Participants were diagnosed with AN (73%) or Eating Disorder Not Otherwise Specified[1] (EDNOS; 27%), had an average duration of illness of 1 year, and a mean %EBW of 82.72% (*SD* = 7.28%) at pre-treatment. Most had a co-morbid diagnosis (54.1%), an intact family (78.4%), and siblings involved in treatment (70.4%). A minority of participants were hospitalised for medical stabilization during the course of treatment (24.3%). Hospitalisation was for medical stabilisation, if required. Length of admission was variable, but patients discharged to resume weight gain via outpatient FBT once medically stable. The average number of treatment sessions was 14.14 (*SD* = 9.19) over approximately a year, and treatment dropout was 27.8%. The last-known %EBW was carried

forward for participants who dropped out of treatment, and their data included all analyses, providing a holistic examination of the effectiveness of the treatment.

Measures

Demographic Data

Demographic data collected included age, sex, diagnosis, length of illness, weight and height. %EBW was calculated using Center for Disease Control charts for age, height and gender, according to the 50th percentile body mass index (BMI). Weight-related remission was defined as EBW ≥95%; partial remission was considered EBW >85%, but <95%; EBW <85% was considered not recovered.

The Depression Anxiety Stress Scales (DASS-21; 22)

The DASS measures general psychopathology on three subscales (Depression, Anxiety, and Stress), and demonstrates good internal consistency and convergent validity

Eating Disorder Examination-Questionnaire (EDE-Q; 23)

The EDE-Q measures ED psychopathology providing a global score and four subscales: restraint, eating concern, weight concern, shape concern, and demonstrates good psychometric properties (23) (24).

Treatment

Manualised FBT was administered in each case (4), provided by five psychologists. All were experienced in the treatment of EDs, with a mean of 3.5 years' experience in the delivery of FBT (*SD* = 3.23). All families had a family meal and patients were weighed sessionally in adherence to the manual. Treatment fidelity was ensured via fortnightly supervision of case material by AW, a qualified FBT supervisor with more than 10 years' experience in FBT.

RESULTS

Statistical analyses

SPSS (Version 21) was used for all analyses. A repeated-measure ANOVA was conducted to determine whether patients' weight-related outcomes improved during treatment. Two time points were assessed, treatment start and end, with patient %EBW entered as the outcome variable. Subsequent analyses aimed to identify potential non-specific predictors of treatment outcome, i.e. %EBW. Repeated-measures ANOVAs were conducted with potential predictors included as co-variates, wherein a significant interaction would have been indicative of an effect. Potential variables examined included ED subtype (AN/EDNOS), co-morbidity (yes/no), family type (intact/separate), illness duration, hospitalisation during treatment (yes/no), and age. Insufficient data were available to examine other predictors, including patient sex.

Finally, a series of chi-square tests of independence were conducted to determine whether patient variables had a significant influence treatment dropout. For the potential moderator analyses and chi-square tests, missing data were handled using listwise deletion. A considerable amount of missing EDE-Q and DASS-21 data precluded an analysis of change in ED cognitions, behaviour or mood over time. As such, only weight-related change is presented here.

Results

Examining the full sample, there was a significant improvement in patient %EBW from a mean of 82.72% to 93.20%, $F(1, 37) = 83.70$, $p < .001$, $\eta_p^2 = .70$ (a large effect size). The analyses conducted to ascertain potential predictors of change in %EBW revealed no significant interactions (all $p > .05$). Thus, the present study was unable to detect any significant predictors of weight-related treatment outcome. Further, no significant pattern of difference emerged in exploring characteristics of participants who dropped out of the study compared to treatment completers. At the conclusion of treatment, 45.9% of patients had

achieved full weight restoration (>95% EBW), 43.2% achieved partial weight-based remission (85% < EBW < 95%), and 10.8% had not achieved 85% EBW.

DISCUSSION

This study aimed to conduct the first-known investigation of the effectiveness of FBT in a non-tertiary, independent, private treatment setting. Our findings demonstrated that FBT resulted in significant weight gain, with the majority of the sample achieving full or partial weight-based remission . Notably, just 10.8% did not achieve at least 85%EBW by the end of treatment. With regard to weight restoration, these outcome data are comparable to those reported in larger empirical trials carried out in controlled and specialised research settings (5, 25), and lend provisional support to the successful implementation of FBT in real world treatment environments.

Of the potential non-specific predictors evaluated, none demonstrated an impact on weight-related recovery, suggesting that neither comorbid anxiety, depression, patient age, nor illness severity (indicated by duration of illness or hospital admission prior to FBT) emerged as negatively impacting treatment outcome. Also in line with previous findings, separated families appear to have responded as well to treatment as intact families.

To our knowledge, this is the first study to show that using FBT effectively in a private practice setting is feasible without the clinical involvement of the developers of FBT or the onsite multidisciplinary team found in most specialist tertiary ED treatment units. Importantly, our experience was that the absence of these supports need not be seen as a barrier to the uptake of FBT, but certainly provided some unique challenges, such as managing team splits, informing local medical practitioners about the tenets of FBT (26), and liaison with specialist services when required. A strength of the study lies in the use of manualized treatment, and clinicians trained and supervised in FBT.

However, several limitations are noted. Our use of DSM-IV criteria (in adhering to the framework at the commencement of data collection) likely underestimated the prevalence of those meeting AN criteria in DSM-5. Further, interpretation of the present findings must be tempered by the absence of data reporting change on the cognitive/behavioural symptoms of AN. Given recent findings suggest that weight gain is a significant predictor of cognitive symptom remission (27), it is likely that the present outcomes will continue to hold clinical value. However, the presentation of weight data alone limits the generalizability of findings; future research stands to add to these by exploring the impact of FBT on full recovery from AN.

It is noteworthy that families in the current study appeared to have a poor response rate for the completion of questionnaires during treatment and at follow-up. This raises questions about the feasibility of undertaking clinical research in private treatment settings without additional infrastructure to support it. The higher rate of drop out from treatment might be similarly be attributed to differences in service delivery, in that fee-paying families may be more likely to make decisions impacting length of treatment based on their own financial commitment or restrictions secondary to government or private funding limits. This again may impact research methodology and represent challenges for future research endeavours in private settings.

The efficacy of FBT has been well-established; however, effectiveness studies are required to confirm whether an efficacious treatment can be used effectively in real world settings. The present findings provide encouraging preliminary support to show that FBT undertaken in a private practice can yield similar outcomes to studies conducted in tertiary and research settings on indices of weight. This represents an important step towards answering this question.

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Footnote

[1] Those with EDNOS evidenced restrictive behaviours, but typically did not meet the amenorrhea criterion which has since been withdrawn from diagnostic nomenclature (28) so are likely to meet current diagnostic criteria for AN. Clinically they presented similarly in terms of severity and levels of distress and impact to functioning as those with full-blown AN. They were included in the analyses as one of the primary intentions of this study was to document the efficacy of FBT in real-world clinical settings, without the strict exclusion criteria imposed by more controlled studies.

Competing interests

CET is the Director of The Redleaf Practice; MG, SBM, KR and JP were employed by The Redleaf Practice during the study. All participants paid for services received at The Redleaf Practice.

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