

BRIEF REPORT

An Innovative Short-term, Intensive, Family-based Treatment for Adolescent Anorexia Nervosa: Case Series

Roxanne E. Rockwell¹, Kerri Boutelle^{1,2}, Mary Ellen Trunko¹, M. Joy Jacobs^{1,3} & Walter H. Kaye^{1*}

¹University of California, San Diego, Department of Psychiatry, La Jolla, CA, USA

²University of California, San Diego, Department of Pediatrics, La Jolla, CA, USA

³Private Practice, San Diego, CA, USA

Abstract

Objective: In order to improve the dissemination of new expert-based treatments for adolescents with anorexia nervosa, we have developed an innovative 1-week intensive family-based evaluation and treatment programme. Ages of the adolescents in the programme ranged from 10 to 18 years (mean = 15.0, SD = 2.1). We report the outcomes of the first 19 cases.

Method: Data were obtained from a retrospective chart review and a follow-up of cases at 52 to 738 days (mean = 278.4, SD = 193.8) post-treatment. The primary outcome measure was ideal body weight (IBW) percentage.

Results: At admission, the duration of illness ranged from less than 1 to 8 years (mean 2.1, SD = 1.7). Admission IBW ranged from 69.3 to 99.1% (mean = 84.3%, SD = 8.7). Follow-up IBW ranged from 84.4 to 134.6% (mean = 99.3%, SD = 11.8). All but one patient reported a sustained gain in weight post-treatment (mean = 15.0, SD = 14.5).

Discussion: These data provide further support for the notion that short-term family-based therapy may be useful for weight restoration and maintenance in some adolescents with anorexia nervosa. Copyright © 2011 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords

anorexia nervosa; behavioural family therapy; Maudsley therapy; eating disorders

*Correspondence

Walter H. Kaye, MD, Department of Psychiatry, University of California, San Diego, La Jolla, CA 92037, USA. Tel: (858) 534 3951; Fax: (858) 534 6727.

Email: wkaye@ucsd.edu

Published online 10 February 2011 in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/erv.1094

Introduction

Anorexia nervosa (AN) is a disorder with substantial morbidity and mortality. For many, AN becomes a chronic disorder, with symptoms lasting many years or even a lifetime (Steinhausen, 2002). The search for effective treatments that reverse the core symptoms of AN has met with limited success. Although inpatient or residential treatment is often considered necessary or even life saving, recent controlled treatment trials (Gowers et al., 2007; Halmi et al., 2005; McIntosh et al., 2005; Pike, Walsh, Vitousek, Wilson, & Bauer, 2003) suggest that therapies that we have relied upon in the past, such as cognitive behavioural therapy (CBT) or dietary counselling, tend to have limited efficacy. For those individuals who develop a chronic disorder, the readmittance rates are high (Lay, Jennen-Steinmetz, Reinhard, & Schmidt, 2002; Steinhausen, 2002; Strober, Freeman, & Morrell, 1997).

To date, the most consistent positive trial results for treatment of adolescent AN have occurred with a type of family therapy originated at the Maudsley Hospital in London (Eisler, 2005). More recent refinements of the Maudsley approach by Lock and le Grange (2001) suggest that it can be standardized for the treatment of adolescent AN and is a method acceptable to patients and families. As we began to consider innovative ways of utilizing this family-based therapy (FBT), two studies particularly framed our

thinking. One showed that early aggressive interventions can have beneficial effect on the course of AN (Eisler et al. 1997). The other demonstrated that a short-term, family-based treatment was as effective as a longer-term treatment (Lock & le Grange, 2005).

There are additional reasons to be optimistic about the future of treatment for adolescent AN. There is growing awareness that AN is a highly heritable disorder with a powerful neurobiological predisposition (Kaye, Fudge, & Paulus, 2009) and that certain childhood temperaments and personality traits increase susceptibility during adolescence (Kaye et al., 2009; Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006). Moreover, there is a better understanding of altered feeding behaviour and energy metabolism (Kaye, Gwirtsman, Obarzanek, & George, 1988; Wagner et al., 2008), which can aid in more effective nutritional restoration. Such advances allow for the development of psycho-educational tools and new medication strategies that can be useful adjunctive treatments (Bissada, Tasca, Barber, & Bradwejn, 2008).

Other therapies are also emerging in the treatment of eating disorders. For example, dialectical behaviour therapy (DBT) (Linehan et al., 2002), originally designed to treat patients with borderline personality disorder, has now been adapted for patients who have eating disorders (Palmer et al., 2003; Wisniewski & Kelly, 2003). DBT for patients with eating disorders combines standard cognitive behavioural techniques for emotion regulation and

reality testing with concepts of mindfulness, distress tolerance and acceptance, for a better tolerance of emotional dysregulation and a resulting reduction in eating disorder symptoms.

Another developing therapy is the cognitive remediation approach, which focuses on altered aspects of cognitive functioning in AN (Tchanturia, Davies, & Campbell, 2007; Treasure, Tchanturia, & Schmidt, 2005). Individuals with AN tend toward rigid thinking patterns in general. Cognitive remediation exercises help to improve mental flexibility by emphasizing strategies for moving between details and the bigger picture, using field independence/dependence tasks (Davies & Tchanturia, 2005). Treatment starts with simple tasks to illustrate how rigid, detailed thinking may be counterproductive for some purposes. For example, people with AN may find it difficult to switch between perspectives and, thus, may fail to grasp the essence of visual illusions.

Greater awareness has also been paid to the stress that adolescent AN imparts on family members of the patient. The Carers Program developed by Treasure (Sepulveda, Macdonald, & Treasure, 2008) addresses the ability of caregivers of patients with AN to support and take care of themselves. In the Carers Program, families gain greater understanding about natural tendencies and reactions to patients with eating disorders and learn how to channel that energy into effective management strategies. Light-hearted animal metaphors are used to describe these interactions, and families are encouraged to reflect on their own responses to the person with AN.

Although advances have been made in the model of treatment for adolescent AN, access is often limited to academic medical centres, and many families find themselves without a local therapist who is knowledgeable about these innovative treatments. Families may struggle with non-standardized treatment approaches or may be limited to medical inpatient options with limited therapy. Moreover, there may not be providers in the local community with sufficient expertise in the medical and pharmacologic evaluation and treatment of AN.

To address this gap in treatment delivery, we have developed a 1-week intensive family-based evaluation and treatment programme for adolescent AN based on the most promising and innovative treatments available today [Intensive Family Therapy (IFT)]. Whereas this program is weighted towards a Maudsley-Based approach for re-feeding, it also includes a range of other treatment strategies. The purpose of this article was to describe this model of treatment and the outcomes for the first 19 patients.

Methods

Description of treatment programme

Overview

The intent of this pilot programme was to evaluate and treat medically stable adolescents with AN in an outpatient setting over the course of a sequential 5-day period. We requested that parents, the patient and siblings take part in the programme, which occurred from Monday through Friday and involved approximately 40 hours of assessments and treatment. The intent was to evaluate and treat families who did not live locally in San Diego, CA. Evaluation and treatment was provided in our offices in La Jolla, CA, with families staying at a residential hotel near the

clinic. We treated patients with a range of illness severity, from those newly diagnosed to those with chronic symptoms and a history of several hospitalizations and residential admissions (Table 1). As this was a novel programme, considerations regarding admission ideal body weight (IBW), nutritional status, medical stability and other concerns were made on a case-by-case basis, using the American Psychiatric Association guidelines as a reference. It should be noted that a variety of treatment strategies were employed throughout the week; however, the guiding philosophy of FBT was maintained throughout the week by all treating providers. In terms of other treatments, we took the theoretical position that there is a powerful neurobiological contribution to AN that has a substantial role in causing certain personality and temperament traits. Thus, we selected components from a number of therapies that might be useful in helping adolescents and their families develop more effective and constructive coping strategies for these personality and temperament traits. Our treatment approach involved the following prime components.

Pre-admission psychological evaluation

Prior to admission, each family underwent a comprehensive telephone assessment of symptoms and behaviours, involving both the ill child and his or her parents, conducted by experienced psychologists. This assessment provided insight about Axes I and II diagnoses, parental and child history, individual character traits, motivations, strengths and weaknesses that helped our mental health professionals hone in on the most appropriate treatment strategies to utilize for a particular family. A written report was circulated to all members of the treatment team prior to the arrival of the family.

Admission evaluation

On the morning of the first day of the programme, the patients underwent a comprehensive medical history and physical examination by a paediatrician in the University of California, San Diego, Department of Adolescent Medicine with expertise in the treatment of AN. This evaluation was deferred if the patient had been seen and deemed medically stable by their own paediatrician within the prior week. The families then completed treatment consents and received an orientation to the programme that included limits of confidentiality. All families (parents and children) met with one of our psychiatrists, who evaluated historic and current eating disorder symptoms and co-morbid disorders. The treatment team met on the morning of day 2 to finalize the case conceptualization and treatment planning in order to tailor the week to meet the unique needs of the family.

Treatment

Family-based therapy. The treatment programme was partially based on the Maudsley approach, described in the Introduction. Of note, several of our therapists had been extensively trained in FBT as part of the Research Interventions for Anorexia Nervosa (MH076286-03) multisite collaborative study. On day 1, the family was introduced to the method by one of these therapists, who then supervised a family meal. Parent coaching was employed throughout and following the meal, and individual psychotherapy for the adolescent and his or her siblings were

Table 1 Intake and outcome clinical information for each individual

ID	Diagnosis	Age at onset (years)	Number of months inpatient/residential treatment	Age at admission (years)	Admission IBW (%)	Discharge medication	Days post-follow-up	Follow-up IBW (%)	Change	Hospitalization since IFT
1	AN	12	0	15	69.3	Escitalopram 10 mg/day	297	84.4	15.2	No
2	AN	12	0.5	13	72.0	Olanzapine 3.75 mg/day, citalopram 10 mg/day	285	112.1	40.1	No
3	AN	13	8	17	74.2	Citalopram 40 mg/day, olanzapine 5 mg/day	255	91.4	17.3	No
4	AN		0	17	77.2	None	393	107.1	29.9	No
5	AN	12	2.5	13	77.4	Risperidone 0.25 mg b.i.d.	182	107.6	30.2	No
6	AN/BN	12	4	15	80.2	Sertaline 100 mg/day, olanzapine 5 mg/day, trazodone 25 mg q.h.s. p.r.n.	66	89.1	8.9	No
7	AN	14	0	16	80.9	None	190	89.6	8.7	No
8	AN	11	1	15	82.3	Olanzapine 2.5 mg/day	451	90.2	7.9	No
9	AN	14	0	16	82.6	Aripiprazole 2.5 mg/day	738	134.6	52.0	No
10	NOS	9	0	10	83.5	olanzapine 1.25 mg/day	87	98.2	14.7	No
11	AN	11	0	12	86.7	None	52	99.5	12.8	No
12	AN	11	2.5	16	87.9	None	157	92.6	4.7	No
13	AN	11	0	12	88.9	Fluoxetine 30 mg/day	129	100.2	11.3	No
14	AN	13	0.75	15	89.0	None	591	102.6	13.6	Yes
15	AN/BN	9	0.2	17	93.2	None	241	86.6	-6.6	No
16	AN	15	0	16	94.9	None	353	97.2	2.2	No
17	NOS	17	0	18	98.0	Fluoxetine 10 mg/day	58	101.0	3.0	No
18	NOS	13	0	16	99.1	Fluoxetine 40 mg/day	486	103.8	4.7	No
Mean		12.3	1.1	15.0	84.3	-	278.4	99.3	15.0	
SD		2.0	2.1	2.1	8.7	-	193.8	99.3	14.5	

IBW, ideal body weight; IFT, intensive family therapy; AN, anorexia nervosa; BN, bulimia nervosa; NOS, not otherwise specified, SD, standard deviation.

conducted after a brief break. Although individual psychotherapy is not consistent with the theoretical model of FBT, this individual time was utilized to allow the adolescent an opportunity to debrief with a neutral therapist. Furthermore, this time allowed an introduction to contracting and the processing of rewards and consequences. During the week, there were a total of three Maudsley-based family therapy sessions and three supervised family meals.

Systemic family therapy. In conjunction with FBT, we employed a systemic approach (Pote et al., 2001; Pote, Stratton, Cottrell, Shapiro, & Boston, 2003; Stierlin & Weber, 1989) in which families were led to understand the patterns of behaviour, beliefs or stories that have defined functioning both with each other and within the wider context in which they live. Through the discussion of these patterns, therapists introduced new information to help families develop alternative perceptions and actions useful in tackling difficulties both currently and after weight restoration has been achieved. Typically, families attended three systemic family therapy sessions with a trained therapist. Systemic family therapy principles were employed with careful attention to maintain the overall FBT philosophical approach.

Parent coaching. Many families feel helpless in addressing eating disorder symptoms (Eisler, 2005). A series of parent-coaching sessions focused on empowering the parents to accept a primary role in the treatment of their child, as well as providing specific

strategies for refeeding. Typically, the parents attended three parent-coaching sessions immediately following the family meals. Video footage from the meals was often used to allow the parents to observe and reflect on their own styles.

Psycho-education. Our psychiatrists provided three 1-hour sessions covering basic information about aetiology, course, outcome, existing treatment options and physiological effects of starvation and medical consequences of AN, as well as more advanced topics including the link between eating disorders, temperament and premorbid traits, the biology of feeding behaviour and caloric needs, and altered reward and cognitive inhibitory control in AN (Kaye et al., 2009). With the entire family in attendance, the dual purpose was the arming of parents with important health information and the providing of adolescents with AN with an opportunity to better understand their symptoms.

Behavioural contract. A significant portion of the week was focused on assisting the family in developing a contract used to increase positive behaviours and decrease negative behaviours related to the adolescent's eating disorder. Families attended four 1-hour behavioural contracting sessions on days 2 through 5, in order to ensure that the family left with a specific contract and discharge plan in place.

Coping and distress tolerance training. Several treatment sessions introduced cognitive remediation strategies aimed at the

malnourished adolescent, as well as core CBT and DBT skills that the parents could utilize to better manage traits that often persist in AN patients after weight restoration has been achieved. Most families attended two CBT sessions, with an additional 1 to 2 hours of affect regulation and distress tolerance training sessions. Other components of the programme included skill building in relaxation, stress reduction and communication.

Other advanced anorexia nervosa therapies. Finally, the parents were involved in a separate carers track. This two-session programme was adapted from *Skills-based Learning for Caring for a Loved One with an Eating Disorder: The New Maudsley Method* (Treasure, Smith, & Crane, 2007). The goals of this programme were as follows: (i) to educate about behavioural and emotional responses of parents toward their child with an eating disorder and encourage parents to discuss their own responses; (ii) to discuss collaborative problem solving among parents and identify strategies for improving communication and teamwork; (iii) to enlighten parents about common stressors related to caring for a child with an eating disorder; and (iv) to identify stressors particular to those parents and discuss strategies for managing these stressors while practising collaborative problem solving in session.

Medication. The patients were evaluated by a psychiatrist for core AN and co-morbid symptoms, including anxiety, obsessions, compulsions, depression and other behaviours and mood states, for which medication might be beneficial.

Discharge planning. Discharge planning began prior to each family's arrival and continued throughout the week that the adolescent was in treatment with their family. The primary goal was to equip parents with the tools and education necessary to fight the illness and instil confidence that they were part of the solution rather than part of the problem. Families left the programme with a solid behavioural contract to employ once they had returned home. Still, follow-up with medical, psychiatric and psychological providers was emphasized, and attempts were made to find local providers who would work with the family in their efforts to use a family-based approach. If the family had existing treatment providers, we performed direct consultation.

Staffing

Our clinic was staffed by three psychiatrists with considerable experience in the treatment of eating disorders. One psychiatrist had treated AN for more than 30 years and another for greater than 15 years. In addition, the third was boarded in both psychiatry and internal medicine. The therapy staff included two licenced psychologists, a predoctoral fellow, a postdoctoral fellow, two psychology interns and several social workers, all of whom had eating disorders expertise. We reasoned that the experience of our staff made it possible to safely perform evaluations and therapies in an outpatient setting.

Case series methods

Data were obtained from a retrospective chart review of consecutive patients seen in the IFT programme. The permission

to use de-identified data in this report was obtained from the institutional review board at the University of California, San Diego. Families from across the USA, Canada and Mexico had participated in the programme. Follow-up from the first 19 sequential families is presented. One family was lost to follow-up, so only the data for 18 patients are presented.

Measurements

Patients' weights (in street clothes without shoes) and heights were obtained in our clinic on admission. We relied upon family self-report for weight and height measurements at follow-up. IBW was calculated using the Centers for Disease Control and Prevention weight charts (CDC, 2002).

Data analysis

All descriptive data were analysed using SPSS version 11.0 (SPSS Inc., Chicago, IL, USA) for WINDOWS (Microsoft Corp., Redmond, WA, USA).

Results

Patients

All patients were female (Table 1). Diagnoses of eating disorders and co-morbid conditions were made based on clinical interviews by experienced psychologists using the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, criteria and were confirmed during psychiatric evaluations. Sixty-eight per cent ($n=13$) were diagnosed with AN-restricting type, 11% ($n=2$) were diagnosed with AN-purging type, and 11% ($n=2$) with eating disorder not otherwise specified. The remaining patients were diagnosed with bulimia nervosa ($n=1$) and feeding disorder not otherwise specified ($n=1$). Age of onset ranged between 9 and 17 years (mean = 12.3, SD = 2.0).

Follow-up

Self-report data were obtained on all patients and families between 52 and 738 days (mean = 278) post-treatment. Follow-up was conducted via emails, phone interviews and faxed or mailed questionnaires. Most patients reported a sustained gain in weight post-treatment. Only one patient (case 15) lost weight. Of the 19 adolescents, one individual with four previous hospitalizations required an additional admission at another facility. Thirty-seven percent ($n=7$) of the adolescents continued or began outpatient therapy, and the remaining families reported no additional treatment after IFT.

Treatment course

Upon initial assessment, one patient was considered medically unstable by the paediatrician and was admitted briefly to San Diego Children's Hospital. The patient and her family subsequently completed the programme. All other families attended the full 5-day programme.

Medication

Eight patients were taking medication at the time of admission. Four of these were on selective serotonin reuptake inhibitor (SSRI) monotherapy, and no changes were made during the week aside from a modest increase in dose for one patient. The other

four patients were on atypical antipsychotic medication. In three instances, the type or dose of antipsychotic medication was changed, and in the fourth, an SSRI was added. Three patients who were not taking medication at admission were started on atypical antipsychotics during the program. The most common medication intervention consisted of adding or increasing the dose of an atypical antipsychotic to target symptoms of severe anxiety with eating, sometimes manifested as aggressive or threatening behaviour. In other cases, antidepressants were titrated to better treat co-morbid depression and anxiety disorders. Some parents were reluctant to have their child start or change medication during the week, and we instead made recommendations and consulted with their prescribers at home following discharge. In all, 11 of the patients were discharged on medication, generally an SSRI (4), atypical antipsychotic (4) or both (3). When assessed at follow-up, we found no significant difference in amount of weight gain for those taking medication (olanzapine alone, any atypical medication or any combination of medications) compared with those not taking these medications.

Discussion

Many families who have an adolescent with AN do not have access to a local expert or an eating disorder treatment facility. Here, we present a new programme, *Intensive Family Therapy for Adolescents with Anorexia Nervosa*, which allows families to travel from distant locations for a brief period and gain access to the more recent developing treatments. Although families were in treatment for only 1 week, the implications of the programme were longstanding. Our outcome data suggest substantial success in terms of weight restoration and maintenance during at least 9 months post-treatment. In fact, of the 18 consecutive patients followed up in this case series, all gained weight except one. Given the findings of these cases along with previous research conducted with a family-based approach, we believe that intensive programmes could be used to guide many families through the process of providing care at home. This approach may benefit not only the ill child but also the entire family, with improved understanding, communication and capacity for growth and change.

Why is it important to make the family a key ally in the treatment of AN? As noted, considerable evidence suggests that powerful neurobiologically mediated behaviours contribute to feeding, mood, impulse control and decision-making symptoms in eating disorders. For example, there is evidence that individuals with AN have a disturbance of appetite regulatory centres in the brain (Kaye et al., 2009). Even though adolescents with AN are malnourished, their brains do not appear to provide an accurate signal that they should be hungry and need to eat and gain weight. Moreover, the adolescent with AN may be hypermetabolic during weight restoration and thus require extraordinary amounts of caloric intake to gain weight. Therefore, it is important that families understand that adolescents with AN cannot self-regulate eating behaviours and need their help to provide the structure necessary for nutritional rehabilitation. For adolescents with recidivist AN, residential or inpatient admissions have been the standard treatment. The average cost of treatment using the highest remission/recovery thresholds (weight greater than 95% of expected and eating disorder examination within

1 SD of normal) is estimated at \$83 736 (Lock, Couturier, & Agras, 2008). However, it has been shown that patients tend to relapse after they leave structured settings (Gowers, Norton, Halek, & Crisp, 1994). Moreover, many insurance companies in the USA do not cover the costs of these prolonged and recurring treatments, which place enormous financial burdens on the family (Kaye, Kaplan, & Zucker, 1996). In addition, because of the cost, many people with AN do not access treatment. Whereas for some adolescents inpatient or residential stays for weight restoration may be necessary or even life saving, it remains uncertain whether such treatment reduces chronicity of symptoms. It is important to emphasize that just getting people with AN to a normal body weight is not enough to 'cure' this disorder. That is because behaviours and symptoms (such as anxious, obsessional focus on weight loss) and physiological disturbances (such as increased metabolism) often persist after weight restoration. Even after successful treatment, it is common that adolescents with AN remain anxious, obsessional and perfectionistic, with continued body image distortions. Our data suggest improved outcome if families understand the chronicity of such phenomena and are given the tools necessary to manage their child with AN at home.

It is important to note that this treatment programme may be particularly effective for some but not all families. That is, we think that successful outcome is related to having a family that is motivated and has the time, energy, stability and communication ability to attend a week-long treatment and the persistence needed to employ these tactics at home. Furthermore, our clinical anecdotes suggest that this intensive programme works best with younger adolescents who may be more amenable to parental direction.

There are a number of strengths and weaknesses to this study that deserve mention. First and foremost, this is the first case series to describe a novel intensive treatment programme for adolescents with AN, with relatively optimistic outcomes. In addition, on self-report evaluations given at the end of the 5-day treatment, many families found the programme to be of much benefit. This was intended as a pilot case design to investigate short-term treatment for families that lived at some distance and did not have a local expert or an eating disorders treatment programme. In terms of weaknesses, there likely was a powerful self-selection factor inherent in the families who chose this treatment involving a significant commitment of time, effort and resources by the parents. The addition of medication did not appear to make a significant difference in weight restoration but needs to be tested in a large, controlled trial. In addition, the small number of families included in this case series and the retrospective nature of the data should be noted. Of interest, we found that for some families, a 5-day programme was too condensed. For example, there was only limited time to evaluate medication responses. There were several other patients whom we were unable to admit because of very low weight or potential medical instability.

Acknowledgements

We would like to thank the Peterson Foundation, the Price Foundation, and the Davis and Wismer Foundations for their support.

References

- Bissada, H., Tasca, G., Barber, A., & Bradwejn, J. (2008). Olanzapine in the treatment of low body weight and obsessive thinking in women with anorexia nervosa: A randomized, double-blind, placebo-controlled trial. *The American Journal of Psychiatry*, *165*, 1281–1288.
- CDC. (2002). *CDC growth charts for the United States: Development and methods*. Atlanta, GA: Centers for Disease Control and Prevention.
- Davies, H., & Tchanturia, K. (2005). Cognitive remediation therapy as an intervention for acute anorexia nervosa: A case report. *European Eating Disorders Review*, *13*, 311–316.
- Eisler, I. (2005). The empirical and theoretical base of family therapy and multiple family day therapy for adolescent anorexia nervosa. *Journal of Family Therapy*, *27*, 104–131.
- Eisler, I., Dare, C., Russell, G. F., Szukler, G., le Grange, D., & Dodge, E. (1997). Family and individual therapy in anorexia nervosa. A 5-year follow-up. *Archives of General Psychiatry*, *54*, 1025–1030.
- Gowers, S., Clark, A., Roberts, C., Griffiths, A., Edwards, V., Bryan, C., et al. (2007). Clinical effectiveness of treatments for anorexia nervosa in adolescents. *The British Journal of Psychiatry*, *191*, 427–435.
- Gowers, S., Norton, K., Halek, C., & Crisp, A. H. (1994). Outcome of outpatient psychotherapy in a random allocation treatment study of anorexia nervosa. *The International Journal of Eating Disorders*, *15*, 165–177.
- Halmi, K., Agras, W. S., Crow, S., Mitchell, J., Wilson, G., Bryson, S., et al. (2005). Predictors of treatment acceptance and completion in anorexia nervosa. *Archives of General Psychiatry*, *62*, 776–781.
- Kaye, W., Fudge, J., & Paulus, M. (2009). New insight into symptoms and neurocircuit function of anorexia nervosa. *Nature Reviews. Neuroscience*, *10*, 573–584.
- Kaye, W., Gwirtsman, H., Obarzanek, E., & George, D. (1988). Relative importance of calorie intake needed to gain weight and level of physical activity in anorexia nervosa. *The American Journal of Clinical Nutrition*, *47*, 987–994.
- Kaye, W., Kaplan, A., & Zucker, M. (1996). Treating eating-disorder patients in a managed care environment. Contemporary American issues and a Canadian response. *The Psychiatric Clinics of North America*, *19*, 793–810.
- Lay, B., Jennen-Steinmetz, C., Reinhard, I., & Schmidt, M. (2002). Characteristics of inpatient weight gain in adolescent anorexia nervosa: Relation to speed and relapse and readmission. *European Eating Disorders Review*, *10*, 22–40.
- Lilenfeld, L., Wonderlich, S., Riso, L. P., Crosby, R., & Mitchell, J. (2006). Eating disorders and personality: A methodological and empirical review. *Clinical Psychology Review*, *26*, 299–320.
- Linehan, M., Dimeff, L., Reynolds, S., Comtois, K., Welch, S., Heagerty, P., et al. (2002). Dialectical behavior therapy versus comprehensive validation therapy plus 12-step for the treatment of opioid dependent women meeting criteria for borderline personality disorder. *Drug and Alcohol Dependence*, *67*, 13–26.
- Lock, J., & Le Grange, D. (2001). Can family-based treatment of anorexia nervosa be manualized? *The Journal of Psychotherapy Practice and Research*, *10*, 253–261.
- Lock, J., & le Grange, D. (2005). Family-based treatment of eating disorders. *The International Journal of Eating Disorders*, *37*, S64–S67.
- Lock, J., Couturier, J., & Agras, W. (2008). Costs of remission and recovery using family therapy for adolescent anorexia nervosa: A descriptive report. *Eating Disorders*, *16*, 322–330.
- McIntosh, V., Jordan, J., Carter, F., Luty, S., McKenzie, J., Bulik, C., et al. (2005). Three psychotherapies for anorexia nervosa: A randomized control trial. *The American Journal of Psychiatry*, *162*, 741–747.
- Palmer, R., Birchall, H., Damani, S., Gatward, N., McGrain, L., & Parker, L. (2003). A dialectical behavior therapy program for people with an eating disorder and borderline personality disorder—description and outcome. *The International Journal of Eating Disorders*, *33*, 281–286.
- Pike, K., Walsh, B., Vitousek, K., Wilson, G., & Bauer, J. (2003). Cognitive behavior therapy in the posthospitalization treatment of anorexia nervosa. *The American Journal of Psychiatry*, *160*, 2046–2049.
- Pote, H., Stratton, P., Cottrell, D., Boston, P., Shapiro, D., & Hanks, H. (2001). *Systemic family therapy manual*. Leeds, West Yorkshire: The Family Therapy Research Center, University of Leeds.
- Pote, H., Stratton, P., Cottrell, D., Shapiro, D., & Boston, P. (2003). Systemic family therapy can be manualized: Research process and findings. *Journal of Family Therapy*, *25*, 236–262.
- Sepulveda, A. R., Lopez, C., Macdonald, P., & Treasure, J. (2008). Feasibility and acceptability of DVD and telephone coaching-based skills training for carers of people with an eating disorder. *The International Journal of Eating Disorders*, *41*, 318–325.
- Steinhausen, H. C. (2002). The outcome of anorexia nervosa in the 20th century. *The American Journal of Psychiatry*, *159*, 1284–1293.
- Stierlin, H., & Weber, G. (1989). *Unlocking the family door: A systemic approach to the understanding and treatment of anorexia nervosa*. New York, NY: Brunner/Mazel.
- Strober, M., Freeman, R., & Morrell, W. (1997). The long-term course of severe anorexia nervosa in adolescents: Survival analysis of recovery, relapse, and outcome predictors over 10–15 years in a prospective study. *The International Journal of Eating Disorders*, *22*, 339–360.
- Tchanturia, K., Davies, H., & Campbell, I. (2007). Cognitive remediation therapy for patients with anorexia nervosa: Preliminary findings. *Annals of General Psychiatry*, *6*, 14.
- Treasure, J., Smith, G., & Crane, A. (2007). *Skills-based learning for caring for a loved one with an eating disorder. The new Maudsley method*. East Sussex: Routledge, p. 228.
- Treasure, J., Tchanturia, K., & Schmidt, U. (2005). Developing a model of the treatment of eating disorder: Using neuroscience research to examine the how rather than the what of change. *Counseling and Psychotherapy Research*, *5*, 1–12.
- Wagner, A., Aizenstein, H., Frank, G. K., Figurski, J., May, J. C., Putnam, K., et al. (2008). Altered insula response to a taste stimulus in individuals recovered from restricting-type anorexia nervosa. *Neuropsychopharmacology*, *33*, 513–523.
- Wisniewski, L., & Kelly, E. (2003). The application of dialectical behavior therapy to the treatment of eating disorders. *Cognitive and Behavioral Practice*, *10*, 131–138.