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Journal

Eating Disorders, 23(4)

ISSN

1064-0266

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[et al.](#)

Publication Date

2015-08-08

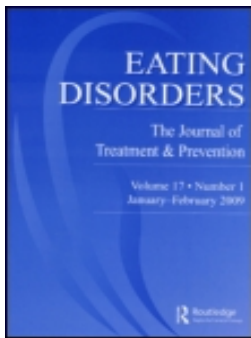
DOI

10.1080/10640266.2015.1044345

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Peer reviewed



Eating Disorders

The Journal of Treatment & Prevention

ISSN: 1064-0266 (Print) 1532-530X (Online) Journal homepage: <http://www.tandfonline.com/loi/uedi20>

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To cite this article: Stuart B. Murray, Leslie K. Anderson, Anne Cusack, Tiffany Nakamura, Roxanne Rockwell, Scott Griffiths & Walter H. Kaye (2015) Integrating Family-Based Treatment and Dialectical Behavior Therapy for Adolescent Bulimia Nervosa: Preliminary Outcomes of an Open Pilot Trial, *Eating Disorders*, 23:4, 336-344, DOI: [10.1080/10640266.2015.1044345](https://doi.org/10.1080/10640266.2015.1044345)

To link to this article: <http://dx.doi.org/10.1080/10640266.2015.1044345>



Published online: 26 May 2015.



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Integrating Family-Based Treatment and Dialectical Behavior Therapy for Adolescent Bulimia Nervosa: Preliminary Outcomes of an Open Pilot Trial

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Adolescent bulimia nervosa (BN) remains relatively understudied, and the complex interaction between core eating psychopathology and emotional regulation difficulties provides ongoing challenges for full symptom remission. In an open pilot trial, we aimed to investigate the efficacy of a program integrating family-based treatment (FBT) and dialectical behavior therapy (DBT) in treating adolescent BN, without exclusion criteria. Participants were 35 adolescents who underwent partial hospital treatment for BN, and outcomes included measures of core BN pathology and emotional regulation difficulties, as well as parental measures of self-efficacy, completed at intake and discharge. Results indicate significant improvements in overall eating disorder pathology, $t(68) = 4.52$, $p = .002$, and in core BN symptoms, including objective binge episodes, $t(68) = 2.01$, $p = .041$, and self-induced vomiting, $t(68) = 2.90$, $p = .005$. Results also illustrated a significant increase in parental efficacy throughout the course of treatment, $t(20) = .081$, $p = .001$, although no global improvement in difficulties in emotion regulation was noted, $t(68) = 1.12$,

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p = .285. These preliminary findings support the utility of this integration of FBT and DBT, although raise interesting questions as to the mechanism of symptom remission.

Bulimia nervosa (BN) is broadly characterized by recurrent episodes of binge eating, engagement in compensatory behaviors to prevent weight gain, and an overvaluation of weight and shape. While approximately 1% to 2% of adolescents may suffer from BN, an additional 2% to 3% may present with clinically significant sub-threshold BN (Smink, van Hoeken, & Hoek, 2012), and of those afflicted, up to 40% may experience significant psychiatric comorbidity (Thompson-Brenner & Westen, 2005). Of note, presentations of BN are often inclusive of deficient self-regulatory control (Kaye, Bulik, Thornton, Barbarich, & Master, 2004; Marsh et al., 2011), as evidenced at the behavioral level by the loss of control during binge episodes, and at the neural level by reduced prefrontal and increased mesolimbic responses and impaired frontalstriatal responses (Berner & Marsh, 2014). This neural vulnerability for disturbed self-regulation may also predispose those with BN towards an array of alternate dysregulated behavioral patterns which span beyond the context of maladaptive eating behaviors, but which may be both precursory and exacerbatory of BN behaviors (Anestis, Selby, Fink, & Joiner, 2007). As such, BN treatment may benefit significantly from an equal focus on (a) core disordered eating behavior, and (b) the emotional dysregulation which may be linked to their maintenance.

With emerging evidence highlighting equally stark medical risks and rates of mortality in BN to the more widely documented dangers of anorexia nervosa (AN; Crow et al., 2009), concerted attempts to avert such medical comorbidities have swung the focus of treatment towards earlier intervention (Treasure & Russell, 2011). However, a dearth of controlled treatment trials in adolescent BN has stymied treatment advances, despite the widely accepted notion that our treatments must do better (Lock, 2015).

As such, our group has recently integrated the principles of family-based treatment (FBT; Le Grange & Lock, 2009) and dialectical behavior therapy (DBT; Linehan, 2014) for the treatment of adolescent BN. To date, FBT has demonstrated promise in alleviating the core behavioral symptoms of adolescent BN (Le Grange, Crosby, Rathouz, & Leventhal, 2007), whilst DBT has been adapted for BN presentations to specifically address the core emotional regulation difficulties (Safer, Telch, & Chen, 2009). However, with both treatment modalities generating independent evidence of efficacy, little evidence exists in indexing the efficacy of an integrated approach that encapsulates both FBT and DBT principles. Thus, we assessed the preliminary efficacy of an integrated FBT/DBT approach to the treatment of adolescent BN (Anderson, Murray, Ramirez, Rockwell, & Kaye, 2015), which was recently conceptually outlined but has yet to undergo empirical evaluation. With such

strong correlations between core BN symptomatology and wider emotional dysregulation, we hypothesized that an integration of FBT and DBT may augment treatment outcomes, simultaneously addressing the core behavioral features of BN, in addition to the wider emotional dysregulation difficulties.

METHOD

Participants

Participants were 40 consecutive referrals of adolescent females with a primary diagnosis of BN, who underwent treatment in a partial hospital eating disorders treatment program at the University of California, San Diego, between November of 2012 and January of 2015. In keeping with the clinical nature of this treatment trial, no exclusion criteria were imposed on the sample, allowing for a sample representative of clinical practice. The average age of participants was 15.7 years ($SD = 1.11$; range = 14.0–17.0 years). Most participants were Caucasian (63.8%), followed by Hispanic (14.5%), Asian (2.9%), Black (2.9%), and “other” (15.9%). Patients were predominantly from intact families (68%). Five patients’ data were not included in this study, two of whom did not provide consent, and three of whom were discharged and admitted to a higher level of care based on imminent medical danger or suicidal ideation.

At intake, patients’ mean body mass index (BMI) was 26.3 ($SD = 2.34$), although patients’ mean global Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994) score was 4.18 ($SD = 1.80$), which fell within the clinical range. More specifically, patients’ mean frequency of objective binge episodes over the preceding month was 4.03 ($SD = 6.690$), and the mean frequency of purging behaviors was 10.82 ($SD = 11.567$), which when taken alongside mean global EDE-Q scores indicated advanced BN symptomatology in our sample.

Clinical Treatment

Our clinical program was based on the theoretical integration of FBT and DBT outlined in a recent review (Anderson et al., 2015), and as such, only a brief overview of the structure of our program will be provided. Our program comprised an amalgamation of individual, family, multi-family, and parent-only components, which were delivered up to 6 days a week, for 3–10 hours per day, depending on illness severity. Individual sessions comprised of diary card review, with chain analyses of behaviors that were highest on the DBT hierarchy. Family therapy sessions focused on mobilizing parents towards an effective stance in the resolution of BN symptoms, and implementing behavioral contingencies aimed at curbing eating disordered and other unwanted behaviors, as well as assisting families in more skillfully

expressing and responding to emotional distress. The parent-only group component centered largely on assisting parents in implementing contingencies around behaviors, whilst reinforcing pro-social behavior. Lastly, the multi-family program component involved multi-family DBT skills training sessions, and multi-family meals, in which families implemented core skills in the context of mealtimes. The mean length of treatment was 77.18 days ($SD = 38.91$), with the mean number of days spent at 10-hour/6 days a week partial program being 28 days ($SD=11.87$), 6-hour/6 days a week partial program 22.36 days ($SD = 22.17$), and 3-hour intensive outpatient program/5 days a week 26.4 days ($SD = 20.48$).

Measures

Once informed consent was obtained, all patients completed measures of eating disorder psychopathology and emotional regulation difficulty both at intake and at discharge from treatment.

Eating Disorder Examination—Questionnaire (EDE-Q). The EDE-Q (Fairburn & Beglin, 1994) is a 36-item self-report questionnaire, which indexes the core behavioral and attitudinal features of eating disorders as experienced over the previous 28 days. The EDE-Q shows psychometric properties, and in the present study, demonstrated good internal consistency (Cronbach's $\alpha = .89$).

Difficulties in Emotional Regulation Scale (DERS). The DERS (Gratz & Roemer, 2004) is a 36-item self-report questionnaire designed to assess a range of clinically relevant difficulties in emotional regulation. The DERS shows sound psychometric properties in both adults (Gratz & Roemer, 2004) and adolescents (Weinberg & Klonsky, 2009), and in the present study demonstrated good internal consistency (Cronbach's $\alpha = .93$).

Parents Versus Anorexia scale (PVA). The PVA (Rhodes, Bailie, Brown, & Madden, 2005) is a 7-item self-report scale that indexes self-perceived efficacy of parents in assisting their child with their eating disorder symptoms. Since the scale was originally developed for those undergoing FBT for AN, we modified it to replace AN with BN. The PVA has shown good psychometric properties (Rhodes et al., 2005), and in the present study demonstrated sound internal consistency (Cronbach's $\alpha = .87$).

Statistical Analyses

Initial analyses were conducted to determine whether integrated treatment of FBT and DBT had been effective for treating patients' bulimia nervosa. Paired samples *t*-tests were conducted to evaluate admit and discharge data in patients' BMI, Global EDE-Q, EDE-Q subscale scores, binge frequency, purge frequency, secretive eating frequency, and all DERS scores.

All paired samples *t*-tests were two-tailed tests with a *p* value of .05 for significance. This study was conducted under IRB approval from the University of California, San Diego.

RESULTS

Significant improvements between intake ($N = 35$) and discharge ($N = 35$) (Table 1) were observed for participants' EDE-Q shape concerns, $t(68) = 3.90$, $p = .001$ and EDEQ weight concerns, $t(68) = 3.89$, $p = .001$, and global EDE-Q scores, $t(68) = 4.52$, $p = .002$, which improved from 4.18 at intake to 2.15 at discharge. There were also significant reductions in the frequency of secret eating, $t(68) = 2.19$, $p = .040$, objective binging, $t(68) = 2.01$, $p = .041$, and self-induced vomiting, $t(68) = 2.90$, $p = .005$. There was no significant

TABLE 1 Results of Paired Samples *t*-Test for BN Symptoms Before and After FBT/DBT Treatment

Outcome	Intake		Discharge		<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
BMI	26.3	2.34	24.9	2.87	.68
Objective binge	4.03	6.69	1.43	3.66	.04*
Secretive eating	1.24	1.57	0.60	.847	.04*
Purge	10.82	11.57	3.51	2.26	.005*
Restraint	3.52	1.86	1.33	1.82	.95
Eating concerns	3.69	1.26	1.69	1.51	.47
Shape concerns	4.97	1.47	2.96	1.97	.001*
Weight concerns	4.54	1.41	2.62	1.87	.001*
Global	4.18	1.33	2.15	1.67	.002*
Non-acceptance	16.91	6.72	15.14	5.05	.156
Goal difficulties	15.11	4.81	15.68	4.59	.581
Impulse difficulties	17.14	5.51	16.66	6.12	.679
Emot. awareness	20.49	4.93	20.20	5.21	.784
Emot. clarity	12.66	3.68	13.23	2.61	.489
Emot. reg. strat	23.91	7.31	19.91	6.75	.045*
DERS global	106.23	14.71	103.83	14.87	.617
PVA	19.72	2.01	24.27	3.26	.001*

Notes: BMI = Body Mass Index. Objective Binge = Eating Disorders Examination-Questionnaire (EDE-Q) self-report binge behavior. Secretive Eating = EDE-Q self-report secretive eating behavior. Purge = EDE-Q self-report purge behavior. Restraint = Restraint sub-scale on the EDE-Q. Eating Concerns = Eating Concerns sub-scale on the EDE-Q. Shape Concerns = Shape Concerns sub-scale on the EDE-Q. Weight Concerns = Weight Concerns sub-scale on the EDE-Q. Global = EDE-Q Global Score. Non-acceptance = Non-acceptance of emotional responses sub-scale on the DERS. Goal Difficulties = Difficulties engaging in goal-directed behavior sub-scale on the DERS. Impulse Difficulties = Impulse control difficulties sub-scale on the DERS. Emot. Awareness = Lack of emotional awareness sub-scale on the DERS. Emot. Clarity = Lack of emotional clarity sub-scale on the DERS. Emot. Reg. Strat = Limited access to emotional regulation strategies sub-scale on the DERS. DERS Global = DERS global score. Parental Efficacy = Parents versus Anorexia total score.

* $p < .05$.

change in EDE-Q restraint, $t(68) = 3.97$, $p = .95$ or EDE-Q eating concerns, $t(68) = 4.81$, $p = .47$. No significant change was reported in BMI throughout treatment, although is perhaps reflective of the normative weight range occupied by those with BN.

A significant improvement in the access to emotion regulation strategies score was noted over the course of treatment, $t(68) = 2.43$, $p = .045$, although no change was detected for non-acceptance of emotional responses, $t(68) = 1.452$, $p = .156$, difficulties engaging in goal-directed behavior $t(68) = -.557$, $p = .581$, impulse control difficulties, $t(68) = .417$, $p = .679$, lack of emotional awareness, $t(68) = .277$, $p = .784$, lack of emotional clarity, $t(68) = -.700$, $p = .489$, or global DERS global scores, $t(68) = .504$, $p = .617$. Additionally, parents reported a significant increase in PVA scores across the course of treatment, $t(20) = .081$, $p = .001$, reflecting increased self-efficacy in assisting with BN symptom reduction.

DISCUSSION

The primary aim of this study was to examine the preliminary efficacy of an integration of FBT and DBT in the treatment of adolescent BN. In particular, we analyzed discharge scores on the EDE-Q, paying particular attention to BN specific symptomatology such as secretive eating and binge/purge frequency. In support of our hypotheses, preliminary findings demonstrated promising efficacy in reducing core BN symptomatology. More specifically, these data suggest that the integration of FBT and DBT is associated with a significant reduction of binging and purging episodes, in addition to broader reductions in shape and weight concerns across the course of treatment.

With the noted absence of clinical treatment trials in the context of adolescent BN (Hoste, Labuschagne, & Le Grange, 2012), these data provide preliminary support for an innovative new avenue for treatment development. BN is typically inclusive of ego-syntonic components (i.e., dietary restriction) and shame-based secretive symptomatology, for which motivation for disclosure and change may be very low (Hoste et al., 2012), alongside an elevated prevalence of impulsivity and suicidality (Crow, Swanson, Le Grange, Feig, & Merikangas, 2014). As such, the integration of direct and interventive parenting, alongside skills training to manage individual impulsivity and dysregulation, has been postulated to provide both structural and individual support to encapsulate all facets of BN symptomatology (Anderson et al., 2015). However, these are the first reported data demonstrating the efficacy of integrating FBT and DBT in reducing core BN symptomatology.

Alongside reduced BN symptom severity at discharge, parents reported greater perceived self-efficacy in supporting their adolescent, suggesting that symptom remission may occur in a linear fashion alongside increasing

parental efficacy. However, the notion that global emotional dysregulation did not improve alongside improvements in BN symptomatology is noteworthy, and may suggest that BN symptomatology improved independently of improved overall emotional regulation. This is consistent with previous findings noting that emotional regulation did not significantly improve concurrently with reductions in bulimic symptomatology (Ben-Porath, Federici, Wisniewski, & Warren, 2014; Wonderlich, Peteron, Crosby, Smith, & Klein, 2014). However, it is also possible that a reduction in core BN symptomatology could elevate emotional dysregulation, given that behavioral features of BN typically serve to regulate emotional distress in those with BN (Lavendar et al., 2014). Indeed, the finding that patients apparently increased their use of emotion regulation strategies may indicate that although core emotion dysregulation did not decrease with treatment, patients learned to cope with their emotions without turning to bulimic behaviors.

While previously controlled trials for adolescent BN have excluded those with comorbid psychiatric disorders requiring hospitalization and comorbid substance use (Le Grange et al., 2007; Schmidt et al., 2007), the present findings offer important data regarding the treatment of BN when presentations inclusive of an array of comorbid emotional dysregulation and impulsivity. Indeed, with increasing empirical evidence underscoring the centrality of emotional dysregulation in underpinning BN symptoms (Lavendar et al., 2014), treatment studies must seek to include those with elevated dysregulation and impulsivity. However, the present study is inclusive of noteworthy limitations. Firstly, longer-term follow-up data are required in substantiating the validity of the present preliminary findings, and in fact outcomes at 1-year post discharge are in the process of being collected. Notwithstanding, the absence of follow-up data in the present study precludes any firm conclusions as to the long-term efficacy of this integrated treatment, particularly when considering that symptom remission at discharge is not unexpected in partial hospital treatment settings, where symptom remission is a determining factor in when discharge takes place. Furthermore, the clinical nature of this open trial precludes the inclusion of a control group, and more controlled trials must include comparison treatments. In particular, a comparison of this integrated approach with both FBT and DBT respectively may allow for a rigorous evaluation of the integrated treatment alongside its component parts. Notwithstanding, these findings represent an important contribution to the existing dearth of outcome literature for adolescent BN.

REFERENCES

- Anderson, L. K., Murray, S. B., Ramirez, A., Rockwell, R., & Kaye, W. (2015). The integration of family-based treatment and dialectical behavior therapy for adolescent bulimia nervosa: Philosophical and practical considerations. *Eating Disorders*. doi: [10.1080/10640266.2015.1042319](https://doi.org/10.1080/10640266.2015.1042319)

- Anestis, M. D., Selby, E. A., Fink, E. L., & Joiner, T. E. (2007). The multifaceted role of distress tolerance in dysregulated eating behaviors. *International Journal of Eating Disorders, 40*, 8, 718–726.
- Ben-Porath, D., Federici, A., Wisniewski, L., & Warren, M. (2014). Dialectical behavior therapy: Does it bring about improvements in effect regulation in individuals with eating disorders. *Journal of Contemporary Psychotherapy, 44*, 245–251.
- Berner, L. A., & Marsh, R. (2014). Frontostriatal circuits and the development of bulimia nervosa. *Frontiers in Behavioral Neuroscience, 8*, 395, 1–12.
- Crow, S., Peterson, C., Swanson, S., Raymond, N., Specker, S., Eckert, E., . . . Mitchell, J. E. (2009). Increased mortality in bulimia nervosa and other eating disorders. *American Journal of Psychiatry, 166*, 1342–1346.
- Crow, S., Swanson, S. A., Le Grange, D., Feig, E. H., & Merikangas, K. R. (2014). Suicidal behavior in adolescents and adults with bulimia nervosa. *Comprehensive Psychiatry, 55*, 1534–1539.
- Fairburn, C. G., & Begling, S. J. (1994). Assessment of eating disorders: Interview of self-report questionnaire? *International Journal of Eating Disorders, 16*, 363–370.
- Gratz, K. L., & Roemer, L. Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 26*, 41–54.
- Hoste, R. R., Labuschagne, Z., & Le Grange, D. (2012). Adolescent bulimia nervosa. *Current Psychiatry Reports, 14*, 391–397.
- Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., & Master, K. (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *American Journal of Psychiatry, 11*, 2215–2221.
- Lavendar, J. M., Wonderlich, S. A., Peterson, C. B., Crosby, R. D., Engel, S. G., . . . Berg, K. C. (2014). Dimensions of emotion dysregulation in bulimia nervosa. *European Eating Disorders Review, 22*, 212–216.
- Le Grange, D., Crosby, R. D., Rathouz, P. J., & Leventhal, B. L. (2007). A randomized controlled comparison of family-based treatment and supportive psychotherapy for adolescent bulimia nervosa. *Archives of General Psychiatry, 64*, 1049–1056.
- Le Grange, D., & Lock, J. (2009). *Treating bulimia in adolescents: A family-based approach*. New York, NY: Guilford.
- Linehan, M. M. (2014). *DBT skills training manual* (2nd ed.). New York, NY: Guilford.
- Lock, J. (2015). An update on evidence-based psychological treatments for eating disorders in children and adolescents. *Journal of Clinical Child & Adolescent Psychology, 12*, 1–15
- Marsh, R., Horga, G., Wang, Z., Wang, P., Klahr, K. W., Berner, L. A., . . . Peterson, B. S. (2011). An fMRI study of self-regulatory control and conflict resolution in adolescents with bulimia nervosa. *American Journal Psychiatry, 168*, 55–64.
- Rhodes, P., Bailie, A., Brown, J., & Madden, S. (2005). Parental efficacy in the family-based treatment of anorexia: Preliminary development of the Parents Versus Anorexia Scale (PVA). *European Eating Disorders Review, 13*, 399–405.
- Safer, D. L., Telch, C. F., & Chen, E. (2009). *Dialectical behavior therapy for binge eating and bulimia*. New York, NY: Guilford.

- Schmidt, U., Lee, S., Beecham, J., Perkins, S., Treasure, J., Yi, I., . . . Eisler, I. (2007). A randomized controlled trial of family therapy and cognitive behavior therapy guided self-care for adolescents with bulimia nervosa and related disorders. *American Journal of Psychiatry*, *164*, 591–598.
- Smink, F. R. E., van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports*, *14*, 406–414.
- Thompson-Brenner, H., & Westen, D. (2005). A naturalistic study of psychotherapy for bulimia nervosa, Part 1: Comorbidity and therapeutic outcome. *Journal of Nervous & Mental Disease*, *193*, 573–584.
- Treasure, J., & Russell, G. (2011). The case for early intervention in anorexia nervosa: Theoretical exploration of maintaining factors. *British Journal of Psychiatry*, *199*, 5–7.
- Weinberg, A., & Klonsky, E. D. (2009). Measurement of emotion dysregulation in adolescents. *Psychological Assessment*, *21*, 616–621.
- Wonderlich, S. A., Peterson, C. B., Crosby, R. D., Smith, T. L., & Klein, M. H. (2014). A randomized controlled comparison of integrative cognitive-affective therapy (ICAT) and enhanced cognitive-behavioral therapy (CBT-E) for bulimia nervosa. *Psychological Medicine*, *44*, 543–553.