

An intensive DBT program for patients with multidagnostic eating disorder presentations: A case series analysis

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ABSTRACT

Objective: This study presents case-series data on a novel outpatient program that blends dialectical behavior therapy (DBT) with standard eating disorder (ED) interventions (i.e., food exposure, weight monitoring, cognitive modification, ED psychoeducation) for patients with complex and multidagnostic ED presentations.

Method: Quantitative and qualitative data was collected on a sample of seven consecutively admitted women who presented with a severe ED, a history of several failed treatment attempts, pervasive emotion dysregulation, and significant Axis I or II psychiatric comorbidity (e.g., PTSD, borderline personality disorder).

Results: Treatment was associated with reductions in ED symptoms, suicidal and self-injurious behaviors, treatment interfering behaviors, psychiatric and medical hospitalizations, and clinician burnout.

Discussion: Overall, the results suggest that this blended DBT/cognitive behavior therapy for ED treatment model is a promising intervention for this complex and “hard to treat” population. © 2013 by Wiley Periodicals, Inc.

Keywords: complex eating disorders; dialectical behavior therapy; treatment development

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Introduction

Nadia is a 23-year-old female with a 9-year history of an eating disorder (ED). She had scheduled and then cancelled or failed to show for four assessments prior to her first presentation at the center. At the time of assessment, Nadia had a BMI of 16.5 and presented with the following symptoms: severe restriction, food rigidity, fear of weight gain, and daily laxative and diet pill abuse. She engaged in up to five episodes of self-induced vomiting per day and reported using high levels of caffeine “to stay awake.” In addition to her ED symptoms, Nadia also met diagnostic criteria for post-traumatic stress disorder (PTSD) and borderline personality disorder (BPD). She had attempted suicide by means of overdose on at least two occasions in the

past year, one of which occurred while hospitalized medically for bradycardia. At the assessment, she endorsed chronic suicidal ideation and frequent episodes of nonsuicidal self injury including head banging, carving words into her forearms, and burning herself with a lighter. Nadia had an extensive treatment history: she had several medical hospitalizations secondary to complications of her ED and two psychiatric hospitalizations for suicidality. She had engaged in outpatient treatment on and off for several years and reports not being helped by these treatments. Her therapists described being “burnt out” by Nadia’s lack of observable progress, angry/hostile style and a seeming “lack of motivation” to recover.

Patients with severe ED symptoms, particularly those with anorexia nervosa (AN), co-morbid Axis I disorders (e.g., PTSD, chronic major depression), greater emotional dysregulation (e.g., suicidal/self-injurious behaviors, problems with anger) and/or those with comorbid personality disorders (e.g., BPD, Narcissistic PD) are typically regarded as chronic and “difficult to treat” cases.^{1,2} Many of these individuals do not respond adequately to standard empirically supported ED treatments [e.g., cognitive behavior therapy (CBT) and interpersonal psychotherapy, (IPT)], terminate prematurely from therapy,^{3,4} require repeated hospital/residential admissions,⁵ and/or are unable or

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unwilling to meet the behavioral requirements (e.g., weekly 1–3 pound weight gain, timely symptom reduction, collaboration with treatment recommendations, etc.) of standard approaches.^{6–8}

CBT and IPT protocols, the treatment approaches with the most empirical support for EDs,⁹ were not designed to manage and simultaneously treat chronic suicidal and self-injurious behavior and/or pervasive character pathology in the context of a severe ED. When treating individuals with multidagnostic ED presentations, it has been our observation that attending solely to ED symptoms often results in treatment being derailed by therapy interfering behaviors (TIBs; e.g., noncompliance, water loading, habitual lateness, early termination from treatment, etc.), significant emotion dysregulation, suicidal crises, and other axis I (e.g. PTSD, OCD) and/or axis II (e.g., BPD) comorbidity. Likewise, approaches that predominately focus on axis II pathology, especially if it includes suicidality, often have difficulty simultaneously managing ED behaviors. It has also been our experience that therapists working with this population commonly report feeling burned out and ineffective in their ability to facilitate clinical change. Moreover, patients may leave standard ED treatments self-identifying as “treatment failures” and internalizing a greater sense of hopelessness.

Recently, there has been growing interest in utilizing dialectical behavior therapy¹⁰ (DBT), for the treatment of complex, difficult-to-treat patients with EDs.^{11–14} Well established as a leading treatment for BPD,^{15–18} DBT has evolved into a treatment modality for “hard to treat” clinical populations, particularly those with pervasive emotion regulation deficits.^{19,20} There is empirical support for the use of modified and time-limited (e.g., 20 weeks) DBT protocols, offered either individually or in a group-based format for reducing binge eating and purging symptoms among patients with low to moderate illness severity and little/no diagnostic comorbidity.^{21–23} The efficacy of DBT to treat more complex, “treatment resistant” ED cases is less well known. To date, several preliminary studies have shown that DBT may be a valuable intervention for ED patients with comorbid BPD and those with chronic ED symptoms.^{24–27} As described by others, these data suggest that patients with severe EDs and additional comorbid diagnoses may require more comprehensive interventions.^{1,2}

In light of these findings, and with the aim of further exploring the efficacy of DBT for complex patients with EDs, the Multidagnostic Eating Disorder—DBT (MED-DBT) Program was developed

and is currently being evaluated in a specialized outpatient treatment center (see Ref. 29). This skill-based intervention incorporates daily accountability for meals and weight stabilization, commitment building, and active targeting of the TIBs and life-threatening behaviors that typically interfere with treatment delivery. The current article presents preliminary pre/post case-series data on a group of women consecutively admitted to the MED-DBT program utilizing both quantitative and qualitative data.

Method

Treatment Description

Given that a full description of the theoretical conceptualization, treatment components, and specific strategies utilized in the MED-DBT program have been described elsewhere,²⁹ these elements will not be reviewed in full here. In brief, the MED-DBT program was developed for adult patients with multidagnostic ED presentations. The MED-DBT program combines well established and empirically supported ED interventions with standard DBT modalities and strategies. Drawing from clinical expertise and an extensive ED and DBT literature, the program assumes that patients with complex and multidagnostic presentations require a sophisticated treatment that targets deficits in emotion regulation and pervasive therapy interfering behaviors while simultaneously addressing the ED, life-threatening behaviors, and additional comorbid conditions that historically disrupt treatment delivery. The program emphasizes patient responsibility, flexibility and a collaborative stance with respect to rate of weight gain and meal planning, promotes building positive life experiences, and is grounded in behavioral principles including contingency management.

The program is an intensive, outpatient model where patients attend either day treatment programming (DTP; 6 h/day, 5 days/week) or intensive outpatient programming (IOP; 3 h/day, 3–5 days/week) over a 6-month period. Most patients begin at the DTP level of care due to symptom severity and graduate to a lower level of care (e.g., IOP) as quickly as possible to decrease dependence on the treatment center and increase building a life/identity outside of the ED. Although the majority of treatment is delivered in a group format, patients are required to attend weekly individual DBT therapy, as well as weekly nutrition and psychiatry appointments, and all patients have access to off-hours telephone skills coaching. The program adheres to the DBT target hierarchy, DBT assumptions about patients, and includes a DBT consultation team for therapists as outlined by Linehan et al.¹⁰

Please refer to Federici et al.,²⁹ for more information on specific program components.

Eligibility Criteria

Given that CBT-centered ED programs have the most empirical support,⁹ and that this program is novel and may be considered experimental, patients were not eligible to participate in the MED-DBT program if they had never attempted standard ED programming. Thus, patients admitted to the MED-DBT program had experienced either repeated treatment failures from standard ED day treatment, residential, and/or inpatient settings and/or had participated in our own standard ED programming for a minimum of 28 days without a significant decrease in ED symptoms. In addition, patients were required to meet one or more of the following criteria: (a) Present as multidagnostic as evidenced by an additional co-occurring axis I disorder(s) (e.g., major depressive disorder, PTSD, etc.) and/or axis II disorder(s) (e.g., BPD, obsessive compulsive personality disorder, etc.), (b) Struggle with pervasive emotion regulation deficits that typically lead to symptoms, (c) Have been unable to generalize skills outside of standard treatment as evidenced by relapse in symptoms post treatment or during treatment, and/or (d) Present with considerable therapy interfering behavior(s) such that they could not remain in standard ED treatment without significant adverse consequences to the therapy milieu (e.g., hostility or anger toward treatment providers or co-patients, recurrent absences, frequent omission of symptoms, etc.).

Demographics

Patients were seven consecutively admitted Caucasian women with a mean age of 23.9 (range 20–31 years). As shown in Table 1, three participants had a diagnosis of an ED not otherwise specified. Of this group, the symptom presentation of two patients was most characteristic of the purging subtype of BN and one was descriptively similar to a diagnosis of AN—purging type. Three patients met DSM-IV-TR criteria for AN—purging type and one met criteria for the restricting subtype of AN. According to initial assessment reports and confirmed by the treating individual therapist, all patients either met

diagnostic criteria for an Axis II disorder or evidenced substantial Axis II traits, primarily BPD ($n = 6$), and all had multiple comorbid Axis I disorders. Age of onset ranged from age 8–18 with a mean of 12.3 years.

All patients had previously been treated at the Center prior to their admission into the MED-DBT program. Six of the seven women had been referred directly from our standard ED, CBT-based, day treatment program and one patient had been referred from outpatient ED—focused individual therapy after several failed attempts at Family-Based Therapy prior to the age of eighteen. Of the seven patients referred from day treatment, five left the standard treatment program prematurely due to ongoing TIBs including unwillingness to work on ED symptoms or collaborate with the treatment team. The other two patients had completed more than 12 weeks of standard day treatment but remained highly symptomatic throughout and relapsed quickly upon discharge.

All patients completed between one and four sessions of commitment and orientation to determine whether the program was an appropriate fit and whether the patient was ready and willing to commit to treatment expectations. The MED-DBT program maintains the following three non-negotiable treatment criteria: willingness to stay alive including eliminating suicidal and self-injurious behaviors as well as potentially life-threatening ED behaviors (e.g., bradycardia, prolonged Qtc interval, and electrolyte disturbances); willingness to work on ED symptoms (e.g., restriction, vomiting, binge eating, excessive exercise, etc.), and willingness to remain in the program for a 6-month period. Similar to the four-miss rule in standard DBT,¹⁰ patients in the MED-DBT program could not miss more than one full week of programming for any reason. Such an absence would result in discharge from the program. All patients were given a treatment manual and signed a treatment contract.

Therapists

Individual and group therapists were master or doctoral level trained with expertise in both the treatment of complex EDs and BPD. Professional degrees included doctoral-level clinical psychologists ($n = 5$) social work

TABLE 1. Baseline demographic and diagnostic data for patients in the MED-DBT program

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7
Age (years)	31	22	24	23	23	20	24
ED age of onset	12	18	9	14	15	10	8
ED diagnosis	AN-P	AN-R	AN-P	AN-P	EDNOS	EDNOS	EDNOS
Comorbid axis I	MDD	MDD	PTSD	PTSD MDD OCD	MDD	OCD ADHD ANX NOS	PTSD
Comorbid axis II	PD NOS	BPD	BPD	BPD traits	BPD	BPD	BPD
Total # past ED treatments in lifetime	5	3	10	10	3	5	10

Note: AN-P = Anorexia Nervosa, Purging Type; AN-R = Anorexia Nervosa, Restricting Type; EDNOS = Eating Disorder Not Otherwise Specified; MDD = Major Depressive Disorder; PTSD = Posttraumatic Stress Disorder; OCD = Obsessive Compulsive Disorder; ADHD = Attention Deficit/Hyperactivity Disorder; ANX NOS = Anxiety Disorder Not Otherwise Specified; BPD = Borderline Personality Disorder; PD NOS = Personality Disorder Not Otherwise Specified; DPD = Dependant Personality Disorder.

($n = 3$), Master level psychology graduate student ($n = 1$). All had extensive experience and training in the application of DBT and attended a weekly DBT consultation team meeting to reduce burnout, receive supervision/consultation, and increase adherence to the treatment model. Dieticians and psychiatrists were also trained in the application of DBT for complex and multi-diagnostic patients with EDs.

Outcome Measures

ED Examination-Questionnaire. Eating Disorder examination-questionnaire (EDE-Q)³⁰ was used to collect data on the episodes of objective binge eating, self-induced vomiting, restraint, excessive exercise, and the use of laxative and diuretics over the past 28 days. The EDE-Q generates four subscales (dietary restraint, eating concern, weight concern, and shape concern) based on statements rated on a seven-point Likert scale (0–6); higher scores indicate greater symptom frequency and/or severity. This measure has an adequate level of agreement with the original, clinician-administered version, concurrent and criterion validity, and good test-retest and internal consistency.^{31,32}

The Deliberate Self-Harm Inventory. The deliberate self-harm inventory (DSHI)³³ is a 17-item measure used to obtain information on the method, frequency, and medical severity of suicidal and nonsuicidal self-injurious behaviors over the previous 10 weeks (i.e., “In the past 10 weeks, have you intentionally (i.e., on purpose) cut your wrist, arms, or other area(s) of your body, without intending to kill yourself?”). A total score is generated by summing the number of episodes reported for each category of behavior. Gratz³³ reported that the DSHI had high internal consistency ($\alpha = 0.82$), adequate test-retest reliability, and good convergent and discriminant validity.

Body Weight and Medical Stability. Body weight (taken in a hospital gown) and medical stability (e.g., bradycardia, orthostasis, and tachycardia) were measured in the center twice weekly (DTP) or once per week (IOP) using standardized medical scales and blood pressure cuffs. Only trained nursing or clinical staff collected these measurements. Data on lab and EKG results (e.g., potassium or sodium levels, Qtc intervals) were obtained from the primary physician.

Additional outcomes included treatment retention, number of psychiatric hospitalizations admissions over the course of the treatment period, as well as client and clinician perspectives on the acceptability of the program. The former were collected using records of attendance and chart reviews. Client and clinician perspectives were obtained at the time of discharge, using a treatment satisfaction/helpfulness questionnaire developed specifically for this program by the authors. Chart reviews were used to gather data pertaining to diagnoses, treatment

history, and to confirm pre/post symptom changes. All patients provided written informed consent to participate in the current study, which was approved by the Institutional Review Board of Case Western Reserve University.

Statistical Analyses. Outcome measures were administered at baseline and at discharge from the program. Given the small sample size and preliminary nature of the study, statistical analyses were not run. Raw values pertaining to pre/post symptom frequency obtained from the EDE-Q and the DSHI are reported, in addition to pre/post BMIs. Qualitative data were reviewed by the authors and a representative sample of responses was chosen for the current article.

Results

Treatment Retention

All patients endorsed lengthy treatment histories characterized by multiple treatment failures. Patients reported a lifetime average of 6.57 (range 3–10) ED-related treatment attempts including inpatient hospitalizations, residential and day treatment programs, outpatient psychotherapy, and/or nutritional counselling. According to patient reports and confirmed by chart reviews, past problems in treatment were largely attributed to pervasive TIBs, difficulty managing multiple problem behaviors (“*no one knew what do to about my self-harming*”), and patients feeling invalidated in the treatment setting (“*I felt like no one understood me and I could tell the staff was frustrated by me*”).

In the current study, six of the seven patients completed the full 6 months of treatment, with minimal absences, and two requested a 3-month extension.

One patient, on the recommendation of the team, terminated treatment due to four hospitalizations (e.g., therapy interfering behavior) within the first 5 weeks of the program due to cardiac problems secondary to her ED symptoms. She was invited to participate in the program at a future date once she had resolved her medical instability. Patients completed an average of 31.5 (SD = 33.1) day treatment days and 60.6 (SD = 39.4) IOP days.

Body Weight and ED Behaviors

Of the four patients considered underweight (e.g., BMI less than 18.5), all gained weight ($M = 7.2$ pounds, range 3.2–13 pounds) over the course of treatment. As displayed in **Table 2**, of the three patients with baseline BMIs greater than 20, two

TABLE 2. Pre/post treatment data for patients in the MED-DBT program

	Patient 1		Patient 2		Patient 3		Patient 4		Patient 5		Patient 6		Patient 7	
	Pre	Post	Pre	Post	Pre	Post								
Weight (lbs)	107.2	112.2	101.6	109.2	101.8	114.8	111.4	114.2	146.0	156.6	99.4	102	136.2	129.8
BMI (kg/m ²)	17.8	18.7	16.4	17.6	16.7	18.8	16.9	17.4	23.6	25.3	20.1	20.1	23.4	22.3
Hosp. Admits	1	0	0	1	5	0	5	4	2	1	0	0	6	0
DTP days attended	–	0	–	30	–	24	–	12	–	33	–	101	–	52
IOP days attended	–	139	–	41	–	77	–	15	–	87	–	29	–	48
SI/NSSI episodes ^b	1	0	15	30	18	0	4	0	18	0	11	10	15	0
Days restricting ^a	28	0	28	14	28	4	28	28	28	8	28	20	28	2
Binge episodes ^a	0	0	0	6	0	0	1	0	28	0	8	0	0	0
Vomit episodes ^a	16	0	0	6	8	1	5	0	28	0	28	0	12	2
Excessive exercise ^a	5	2	0	0	56	2	28	1	28	8	28	15	20	2
TIBs reduced		Yes		Yes		Yes								
Medical stability	No	Yes	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	Yes

Note. BMI = body mass index; DTP = day treatment program; IOP = intensive outpatient program; TIBs = therapy interfering behaviors.

^a Data obtained from the EDE-Q.

^b Data obtained from the DSHI.

gained weight and one patient lost weight as her meal plan stabilized and her symptoms ceased. Pre/post changes were observed for all ED symptoms as measured by the EDE-Q. As shown in **Table 2**, five patients reported significantly less restrictive eating (e.g., \leq half of their baseline number) from pretreatment to post-treatment. Two patients reported minimal or no change with respect to food restriction. Of the three patients who endorsed episodes of binge eating at pretreatment, all were abstinent of episodes at post-treatment. Similarly, all six of the participants who engaged in episodes of self-induced vomiting at pretreatment either reported no ($n = 4$) or minimal (e.g., ≤ 2 ; $n = 2$) episodes in the previous month at the post-treatment assessment. One participant reported an increase in binge eating and purging behaviors from pretreatment to post-treatment. Among those WHO reported excessive exercise, fewer episodes of excessive activity were reported from pre ($M = 27.5$, range 5–56) to post treatment ($M = 5.0$, range 1–15). One patient who was regularly abusing laxative, diuretics and diet pills reported complete abstinence from all three for the two months preceding the post-treatment assessment.

Suicidal/Self-injurious Behavior

Although most participants demonstrated reductions and/or cessation of suicidal (assessed by clinician report and chart review) and self-injurious behaviors (as measured by the DSHI), some variability was observed across the sample. Five patients reported complete abstinence from any suicidal or self-injurious behavior in the month preceding discharge from the program. One patient reported minimal change and another patient reported an increase in the frequency of self-injuri-

ous behavior between pre and post assessments though the methods had changed (e.g., overdosing and stabbing at baseline to scratching and cutting at discharge). In both cases, the need for medical attention was reduced. Of note, one patient who reported a significant change in her suicidal and self-injurious behavior (from 18 at pretreatment to 1 in the month preceding discharge) had a serious suicide attempt, which required hospitalization in the last week of her 6 month commitment. At the time of her discharge, the patient was considering committing to a 3-month treatment extension in the DBT program. The patient reported that she was struggling with weight gain and that she intended to restrict and lose a large amount of weight once she left the DBT program. She was unable to provide additional information at the time pertaining to prompting events and triggers.

The most frequently endorsed self-injurious behaviors at pretreatment included overdosing, cutting or scratching, preventing wounds from healing, burning, and punching oneself. Among those who reported self-injurious behaviors at discharge ($n = 4$), the most commonly endorsed methods involved cutting and scratching behaviors. In the month preceding their participation in the MED-DBT program, patients reported that they sought medical treatment for self-injury on a total of 10 occasions. At discharge, there was one hospitalization due to a suicide attempt as described above and no reported instances of patients needing medical attention for acts of self-injury.

Medical Stability and Hospitalization

As shown in **Table 2**, all patients entering the MED-DBT program had been diagnosed with current comorbid medical instability secondary to the ED characterized by bradycardia ($n = 3$), orthosta-

sis ($n = 6$), tachycardia ($n = 4$), prolonged QTc interval ($n = 2$), and/or electrolyte imbalances ($n = 3$). With the exception of the patient who had to leave the program due to multiple hospitalization (as previously described), all patients were medically stable in the month preceding treatment discharge. In terms of ED-related medical or psychiatric hospitalization admissions, a significant reduction was observed from pre (a total of 19 admissions in the year preceding the MED-DBT program) to post-treatment (a total of six admissions in the 6 months during active treatment, four of which were attributed to the one patient who terminated the program early).

Therapy Interfering Behaviors

All patients engaged in a significant number of TIBs during treatment that required continuous targeting and shaping (Table 3). According to clinician reports and chart reviews, TIBs were most pervasive, frequent, and intense in the early weeks and months of treatment with significant reductions in their frequency reported over time. The following comment by a therapist clearly describes the changes typically observed in TIBs:

“At the beginning of treatment, the patient was passive and often resistant to change any behavior, frequently refusing to participate in group discussions and answering questions with “I don’t know”. She became angry with staff when challenged to use

TABLE 3. Therapy interfering behaviors observed at baseline

ED-specific TIBs
– Hiding food during program meals
– Engaging in ED behaviors (using small spoons, tearing bread, cutting food items into very small pieces) during program meals
– Meal plan noncompliance
– Unwillingness to manage medical instability
– Significant stated investment in staying ill
– Water loading
– Not attending on weigh in days
– Unwilling to address medical instability (e.g., bradycardia)
Other TIBs
– Angry outbursts at staff,
– Severe behavioral passivity
– Unwillingness to collaborate with treatment providers and/or participate in group session
– Deciding to stay home from treatment due to physical symptoms (e.g., upset stomach, migraine headaches, fatigue) or comorbid psychiatric illnesses (e.g., depression, PTSD symptoms, anxiety)
– Intermittent memory impairments from previous ECT treatments,
– Forgetting to bring hearing aids to treatment or to remember to take prescribed medications.
– Excessive use of humor or deflection to avoid addressing target issues
– Being overly directive of one’s treatment plan,
– Walking out of treatment or making negative comments about the program when emotionally dysregulated,
– Falling asleep or talking to co-patients during treatment
– Sporadic attendance or tardiness
– Inappropriate contact with co-patients outside of treatment

skills or find solutions to her problems, was dishonest in her report of symptoms and urges on diary cards and would call for coaching after she engaged in a targeted behavior.”

According to clinician feedback, the most notable reductions in TIBs involved: no longer engaging in ED-related behaviors during treatment hours (e.g., hiding food, water loading, refusing to address medical instability), substantial reductions in the frequency of angry/aggressive behaviors toward staff, improved treatment attendance, greater collaboration with treatment plans. For example, one therapist stated that, over time, her patient *“became more tolerant of feedback and was more collaborative with staff around her meal planning, meal preparation, and eating behaviors.”* In addition, therapists reported that patients demonstrated greater honesty with the treatment team (e.g., naming urges to withhold information rather than acting on the urge), more personal responsibility for symptoms and life decisions (e.g., taking charge of their own medical appointments, academic responsibilities, and career plans), an improved ability to express emotions adaptively (e.g., use of DBT skills to identify and communicate with treatment providers), and increased generalization of skills primarily in the areas of distress tolerance and interpersonal effectiveness (e.g., observing patients express their needs appropriately to family members; using distress tolerance skills in challenging life circumstances). According to three clinicians, patients were better able to utilize group and individual therapy and demonstrated improvements in their ability to use phone coaching appropriately: *“the program really helped the patient stay engaged even when she wanted to flee. This helped tremendously because we could work on directly targeting her TIBs while shaping and reinforcing an identity outside of her illness.”*

Patient Responses to the MED-DBT Program

When asked to describe what was most helpful about the MED-DBT program, six patients identified contingency management, daily goal setting, and accountability around meals and symptoms as essential to their progress. Although the program was reportedly difficult to adjust to at first, the majority of patients ($n = 5$) stated that they ultimately felt more capable and willing to make changes while in the program:

“This was the first program that made me feel empowered – all the other treatments took that away from me – they made decisions for me, made

me feel helpless. This program believed that I could figure out my problems and be skillful – that was the most important thing for me”

The relationship with the individual therapists, telephone skills coaching, having a supportive and understanding team, and the emphasis on non-judgmentalness were identified as valuable treatment components. Four patients reported that the nonjudgmental stance paired with active problem-solving helped them make more “wise mind” decisions (“*This is the first time I’ve eaten on my own outside of a hospital.*”). A total of six patients named DBT skills training, homework review, and group discussions of ways to utilize skills outside of treatment as a highly beneficial. Skills such as coping ahead, radical acceptance, opposite action, interpersonal effectiveness, minding the consequences, and mindfulness were identified as invaluable, particularly with respect to emotion regulation: “*I learned to notice emotions and decipher them more clearly, to managing urges from self-destructive behavior, and to take greater self-responsibility.*” In addition to helping reduce ED symptoms, six of the seven patients reported that the MED-DBT program helped them work on co-occurring symptoms such as depression (“*It helped me by forcing me out of bed and to treatment. . . Encouraged me to follow my goal of volunteering which made my depression better*”), anxiety, and PTSD (“*in general, I am more able to manage my feelings in a therapeutic way*”).

When asked to describe how the MED-DBT program differed from other ED programs they had participated in, five patients stated that the former provided greater structure, focused on patient accountability, and required a longer-term commitment: “*I really liked the approach. It was six months of intense treatment, which made me work hard every day. The commitment, and not being able to give up, also helped a lot.*” Three patients stated that the focus on DBT skills throughout the program was also different from previous treatments, even for those patients who had been exposed to DBT skills training before: “*Previous skills groups were more lecture and less talking about how group members can and do use skills in daily living. Going over and completing homework was helpful.*”

Suggested areas of improvement included ensuring that groups were engaging, creative, and infused with applicable examples (“*Information wasn’t always presented with real life application.*” “*It was boring at times and I lost interest*”). Another patient reported that she felt unhappy that the team could influence treatment decisions (“*Team*

has a great influence on decisions despite what the individual therapist and client would choose.”). In terms of program components, one patient reported that the behavior chain group was not helpful though did not indicate why. Another patient stated that she would have benefited from more mindfulness practice. Four patients stated that they would highly recommend the MED-DBT program to someone else struggling with similar issues, two reported that they were moderately likely to recommend the program, and one indicated that she would not recommend the program.

Clinician Responses to the MED-DBT Program

I believe that structure and accountability with a meal plan prevented further medical complications. Because of her TIBs being related to dishonesty and lack of interpersonal effectiveness, it was helpful to have daily monitoring of her moods, behaviors, and physical symptoms. The program increased the patient’s self awareness and insight regarding her self harming behaviors and she received much needed education regarding her ED. She began to develop interpersonal effectiveness skills, an increased awareness of the seriousness of her mental illness. Medication compliance improved - and she opted to return for another three month commitment.

All therapists reported that the program was highly beneficial both in terms of helping the patient become more stable and skillful and reducing burnout among treatment providers. The most commonly cited benefits of the program involved the reduction in TIBs and improved treatment retention, which translated into symptom reduction, greater patient collaboration, and improved management and earlier detection of medical problems. As a group, therapists reported feeling more supported and less burned out with their patients in the MED-DBT program and as a result of regular DBT team consultation meetings. Other reported program benefits included increased patient motivation and willingness to normalize eating, gain weight, and eliminate suicidal/self-injurious behaviors, patient honesty and accountability, and greater use of DBT skills instead of symptoms to cope with painful emotions. Therapists reported that the program helped patients engage in more appropriate behaviors (e.g., decrease in the number of inappropriate coaching calls, reduction in active passivity, attending program on time with homework completed) and emotional responses (increased ability to tolerate and communicate emotions).

“In the four years we’ve treated this client, we have never seen her function this well. Since she started the MED-DBT program, she is more collaborative, she completed the entire program, and her ED & mood symptoms are stable. It’s really amazing to see.”

In terms of program limitations and/or ways to improve treatment, therapists’ main concern was to determine where, and with whom, treatment planning and clinical decisions are made. Given the group-based and intensive nature of the program, two clinicians indicated that they felt “outside of treatment planning” and that decisions about care were not always made between the patient and therapist as is done in a standard DBT model. In addition, while all therapists named contingency management as vital to the program, several felt that, at times, contingencies were too rigidly held (e.g., maintain the 1 week miss rule when a patient was in the hospital). Finally, clinicians consistently reported a critical need for family involvement, particularly for those patients still living at home and/or those who are dependent on others.

Discussion

This case-series provides preliminary evidence to support the use of the MED-DBT program for patients with multidagnostic ED presentations who have not responded adequately to traditional ED treatments. Participation in the program was associated with improvements with respect to weight gain, ED symptoms (e.g., binge eating, vomiting, and food restriction), suicidal and self-injurious behavior, medical stability, and treatment retention. Notable reductions in the frequency of TIBs and number of hospital admissions were observed across all patients in the program. According to the treating therapists, patients also demonstrated greater willingness to work on ED symptoms, collaborate with the treatment team, and ability to express emotions more adaptively. Clinicians in the program further reported feeling greater team support and less burn-out as a result of the program. Based on these data, the MED-DBT program appears to be a feasible and well tolerated clinical intervention.

These findings are especially notable given the diagnostic complexity and history of multiple treatment failures (i.e., those marked by no or minimal clinical change and/or premature treatment termination) of the seven women in the study. The majority of patients in this study maintained their

commitment to the 6-month treatment contract and showed greater collaboration and symptom reduction over time. The largely positive qualitative feedback from patients suggests that the MED-DBT program contains key treatment components for the successful engagement and treatment of this complex patient population. As previously noted, each of the patients had been treated in our center (e.g., standard CBT-based ED day treatment, Family-Based Therapy) in the year prior to their participation in the MED-DBT program with little clinical success. Interestingly, although our standard CBT-based ED day treatment program includes elements of DBT (e.g., skills training groups, telephone coaching), patients in the current study responded more favorably to the MED-DBT program. Unlike our standard program, the MED-DBT program involves the consistent use of DBT strategies (e.g., contingency management, behavior chain analysis, dialectical stance, irreverence, etc.) while targeting the ED and co-occurring psychiatric comorbidities that typically interfere with treatment delivery. These data are consistent with other published work^{2,28} that recommend more sophisticated, multimodal approaches for this complex patient population. Thus, the addition of adjunctive components of DBT to existing ED programs (e.g., adding a DBT skills group) is not likely to facilitate significant clinical change. Unlike those with primary EDs (e.g., no significant comorbidities) who respond reasonably well to stand alone skills training and/or abbreviated versions of DBT,^{21–23} these data suggest that the delivery of the full DBT model combined with traditional ED treatment components is necessary for patients with multidagnostic ED presentations.

In addition to being a potentially effective treatment for a population often considered “treatment resistant,” the MED-DBT program may have important implications related to healthcare costs. In the year prior to their participation in the MED-DBT program, the seven patients in this study had a total of 17 psychiatric and/or ED-related medical hospital admissions and reported an average of six lifetime attempts in various ED treatment programs. In this study, a total of six hospitalizations were recorded, four of which were related to one patient who developed severe cardiac problems (e.g., significantly prolonged Qtc Interval requiring medical attention) in the first 6 weeks of the program. With the exception of this one patient, all other patients demonstrated greater medically stability over time and thus, less need to seek medical intervention. Although the MED-DBT program requires a 6-month commitment, most patients

completed a greater proportion of their treatment at the IOP level of care (e.g., 3 h/day; 3–5 days/week, see **Table 1**) which, for patients with repeated hospitalizations and residential admissions, is likely to be more cost-effective than repeated hospital and/or residential treatment admissions.^{34,35} Evaluating the cost-effectiveness of the MED-DBT program over time would be an important component of future research.

The results and subsequent conclusions of this study are to be interpreted tentatively as with any case-series analysis. The reliance on self-report measures for symptom frequency, small sample size, and lack of control group limit generalizability and interpretation. In addition, we acknowledge that there may be potential biases with respect to interpretation given that the lead authors who analyzed the data were also clinically involved in the program. These data do, however, offer greater insight into important treatment variables to study in the future for this patient population, including treatments that involve greater attention to emotion, more flexible approaches, and simultaneous targeting of multiple comorbidities. A larger study of the MED-DBT program is currently underway to determine effectiveness, acceptability, predictors of treatment response, as well as the program's impact on secondary ED (weight and shape concerns) and psychological (e.g., depression, emotion regulation, etc.) symptoms.

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