

Group Dialectical-Behavior Therapy Skills Training for Conversion Disorder With Seizures

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Neuroimaging evidence suggests deficits in affective regulation in conversion disorder (CD). Dialectical-behavior therapy skills training (DBT-ST) was developed to target emotion dysregulation. This study was aimed to test the feasibility of stand-alone DBT-ST for CD using Linehan's manual for borderline personality disorder. In a prospective naturalistic design, 19 adult outpatients diagnosed with video EEG-confirmed seizure type CD were recruited and received weekly group DBT. Seventeen out of 19 subjects finished an average of 20.5 weeks of treatment. The mean seizure rate decreased by 66%. Cessation of seizures occurred in 35% of the sample. Completion rates reached 90%.

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Evidence-based treatments targeting emotion dysregulation may be useful approaches for conversion disorder (CD) given recent functional neuroimaging has implicated affective regulatory circuits in its pathophysiology.^{1,2} Dialectical-behavior therapy (DBT) is a highly operationalized form of cognitive behavior therapy (CBT) that targets affective instability. It was originally designed and found to be effective in borderline personality disorder (BPD) and has since been found to be useful in a variety of psychiatric disorders.³ Many of the epidemiological characteristics of CD patients are strikingly similar to BPD populations such as early childhood trauma, female gender, and difficult to treat characterizations.⁴ Patients with seizure type of CD especially demonstrate a disproportionately high presence of Cluster B traits and BPD.⁴ Despite these parallels, no DBT-informed interventions for conversion disorder have been reported to date.

Current formulations describe CD as a deficit in implicit to explicit processing of emotion.⁵ If true, a DBT approach focused on acquisition of these skills should improve CD symptoms. In a first step to exploring this hypothesis, we exposed CD patients to stand-alone DBT skills training (DBT-ST). Over 2-years, a pilot proof of concept was conducted examining adaptability and feasibility of group DBT-ST in subjects with seizure type CD.

METHODS

Recruitment

Adult outpatients receiving standard care in Stanford University's Department of Psychiatry were recruited from September 2010 to April 2012. Patients were invited to

participate in the study if diagnosed with CD with seizures confirmed by a qualified epileptologist and documented by absence of epileptiform changes on recordings of captured typical events. Institutional review board approval was obtained.

Procedures

Identified subjects were individually oriented to the purpose, format, and expectations of the group intervention on initial screening visit. Informed consent was obtained. During initial screening visit, two verbal commitments were made: (1) absences limited to no more than three, each requiring videotaped viewing of the missed material, and (2) individual weekly psychotherapy participation.

DBT-ST was psycho-educational in nature and was held weekly for 90 minutes in three consecutive repeating modules lasting 8–10 weeks each. Topics for skills training included 1) distress tolerance, 2) emotion regulation, and 3) interpersonal effectiveness. Each module was preceded by 1 week of mindfulness training. Modules were led by one intensively trained DBT therapist and 2 trainee level co-leaders. Skills groups were didactic and adhered to Marsha Linehan's *Skills Training Manual for Borderline Personality Disorder*.⁶ Groups were videotaped and reviewed for adherence criteria by an outside DBT certified consultant. Process and content supervision occurred during weekly hour debriefings with consultant and co-leaders.

Measures

Demographics. Questionnaires were administered at the beginning of each module consisting of age, gender, education,

TABLE 1. Demographic Characteristics and Results Compared With CBT and Group Literature for Conversion Disorder^a

Characteristic	DBT Group	CBT Pilot ⁸	CBT RCT ⁹	CBT RCT ¹⁴	Psychoed Group ¹⁰	Psychoed Group ¹¹	Dynamic Group ¹²	Eclectic Group ¹³
Screened	22	80	89	589	27	10	—	—
Enrolled	21	21	33	38	15	9	12	13
Completed	19 (90%)	17 (81%)	24 (72%)	31 (81%)	9 (60%)	7 (77%)	7 (58%)	9 (70%)
Sex (F:M)	18:1	17:0	24:9	31:3	9:0	6:4	12:0	8:1
Age (years; mean)	44.5	36	37.4	39.5	36	35.7	45.4	22.5
Education (years; mean)	13.6	13.4	—	15.0	14.1	13.4	—	9.7
Single	5	—	12	18	4	—	—	5
Caucasian	15	—	31	—	—	—	—	4
Unemployed	17	16	13	22	5	—	—	—
Disability income	14	7	—	15	—	—	—	—
Active litigation	2	0	—	0	—	—	—	—
Comorbid epilepsy	2	—	0	0	—	—	1	—
Treatment (weeks)	20.5 average	12	12	12	24	10	32	1 year ^b
Seizures								
Baseline (mean)	13.8/weeks	17.2/months	12.0/weeks	—	5.7/weeks	30.9/weeks	32/months	24/months
End	4.7 "	7.1 "	2.0 "	—	5.4 "	2.7 "	2.0 "	2 "
50% improvement	9/17 (53%)	16/21 (76%)	—	5/9 ^c (56%)	3/9 (33%)	2/7 (28%)	—	9/9 (100%)
Cessation	6/17 (35%)	11/17 (65%)	—	3/9 (33%)	0/9 (0%)	4/7 (57%)	—	6/9 (67%)
Individual therapy required	Yes	N/A	N/A	N/A	No	No	No	Yes

^a CBT=cognitive-behavioral therapy; DBT=dialectical-behavioral therapy; RCT=randomized-controlled trial.

^b Treatment consisted of 12 weeks group followed by 9 months of individual therapy.

^c Results include only the CBT-alone arm of the RCT.

employment, income, ethnicity, relationship status, and orientation of individual psychotherapy (confirmed by contact with psychotherapist)

DBT diary cards. Participants completed weekly diary cards tracking DBT skills usage. Diary cards stem from behavior-targeting approaches drawing on both classical and operant conditioning.⁷

Seizure log. Participants also completed weekly seizure logs tracking nonepileptic seizure events.⁸

Statistical Analysis

Prior to analysis, self-reported seizure rates greater than 100 reported by two patients (265, 102 baseline frequency) were winsorized to nearest value (rate=99). All available seizure rate estimates (from up to 26 DBT session assessments) were included in analysis of change over time in a mixed effect model. Random slope and intercept effects were used to account for nested data structure of multiple 7-day seizure rate estimates within individual subjects. Effect of participation in individual DBT on change in seizure rate was tested by including a dummy variable indicating individual DBT in mixed effects model estimation of intercept and slope estimates. Nonepileptic seizure rate estimates included a large number of zeros and had a positively skewed distribution, typical of count data. Therefore, we used a log link (Poisson regression) for this mixed effects model analysis.

RESULTS

Enrollment

Twenty-two patients were screened and eligible to participate. One declined enrollment for unknown reasons.

Demographics

Demographics for enrolled subjects are shown in Table 1. These were similar to those reported in the literature for similar populations.^{8–14}

Retention

Nineteen subjects completed at least one module. After consenting, two subjects dropped out of the study during the first week of treatment and before explicit verbal commitment for a module was gained. Both felt "I'm different" and unlike other group members. No participant completing a module missed more than three sessions. Average group size was seven members; 86% of the sample continued to the next module after completing one module.

Duration

Rolling admissions occurred with subjects entering the study at different times within the first three sessions of a module. Average duration of treatment per participant was 20.5 weeks. Range of treatment varied from 1 to 5 modules. Seven subjects received three or more modules.

Individual Psychotherapy

All participants were receiving required individual psychotherapy. Seven participants received DBT-informed individual

psychotherapy while the rest received other orientations of psychotherapy including supportive, psychodynamic, traditional cognitive behavioral, and unidentified.

Safety

No adverse consequences or events were reported by group leaders or participants on exit interview.

Seizure Frequency

Two participants did not keep seizure logs. A decrease of at least a 50% from the baseline weekly seizure rate occurred in 9/17(53%) completers. Six subjects had complete cessation of seizure activity during course of study. Three occurred after enrollment and before treatment had begun. Three subjects reported worsening of symptoms during the last week of treatment, but all felt subjectively "helped" by the treatment. Using all available data from 19 subjects over 2 years, mixed effects model Poisson regression estimates indicated:

- 1) From baseline to session 20.5 (average treatment time), average seizure rate decreased by 66% (event rate ratio=0.34; 95% CI=0.19, 62). This indicated a statistically significant drop in average seizure rate from 13.8 to 4.7 events per week ($t=-3.76$; $df=17$; $p=0.002$).
- 2) Subjects engaged in individual psychotherapy of DBT orientation had a 59% greater reduction in weekly seizure rates, but was not statistically significant [event rate ratio=0.41; 95% CI=0.1, 1.5; $t(16) = -1.48$; $p=0.158$].

DISCUSSION

This is the first reported use of DBT and the largest sample studied of group therapy for CD (Table 1). Despite the naturalistic design, demographics and results appear similar to those reported in other group interventions and controlled trials of CBT. The remarkable completion rate of 90% may reflect the explicit commitment language that is a required in DBT. Acceptability and feasibility of this approach was suggested by completion rates, ease of recruitment, implementation, and positive responses on exit interview. Improvement in seizure frequency in relation to group time was documented as significantly higher than chance. This was encouraging given the inclusion of patients with highly negative predictors of outcome such as disability income, ongoing litigation, and comorbid epilepsy.

Subjects in individual DBT informed psychotherapy had significantly higher baseline seizure rates and yet appeared to have a trend toward improved outcomes. Similar results suggest more is better when it comes to psychotherapy. A smaller report of eclectic group therapy by Metin et al.¹⁵ reported 100% response rates in a much younger population with the addition of monthly intensive individual follow-up over 9 months as well as family psychoeducation.

The lack of a control group greatly limits the interpretation of these findings. Whether results were greater than placebo

or additive to effects of individual psychotherapy is unknown. Possible confounds included selection bias, group support, commitment procedures, and self-monitoring. The effectiveness and efficacy of DBT for CD is still unclear. Whether DBT has any advantage over existing individual CBT interventions has yet to be determined as well.¹⁴

DBT has quickly become a transdiagnostic treatment readily offered in most acute and outpatient psychiatric settings. Further study of DBT informed treatments for CD is warranted given its immediate accessibility. This is especially important in a highly ubiquitous disorder with inherent difficulties obtaining care, including a lack of manualized psychotherapy guidelines for providers. The use of existing DBT materials and principals to structure treatment of CD could be a time and cost effective solution. As evidence for stand-alone group, DBT-ST treatment for other disorders of emotion dysregulation is accumulating,¹⁵ its application to CD could have a tremendous impact on treatment capacity and costs in various settings.

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