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Randomized, Controlled Trial of Web-based Psychoeducation for Women with Borderline Personality Disorder

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Abstract

Objectives—The aim of this randomized controlled trial of internet-based psychoeducation for borderline personality disorder (BPD) was to determine if this form of treatment was effective in reducing symptom severity and improving psychosocial functioning.

Method—Eighty women who met DSM-IV criteria for BPD were randomized either to the treatment group (n = 40) or the control group (n = 40). Recruitment was conducted from July, 2013 to March, 2015. Subjects participated in 15 assessment periods that were divided into an acute phase (weeks 1–12) and a maintenance phase (months 6, 9, and 12). Main outcomes were assessed using the Zanarini Rating Scale for Borderline Personality Disorder.

Results—In the acute phase of the study, those in the treatment group were found to have a significant decline in their scores on all ten outcomes studied, while those in the control group had a significant decline on seven of these outcomes. Two between-group differences were found to be significant—those in the treatment group reported a significantly greater decline in their impulsivity ($z = -1.98$, $p = 0.048$) and a significantly greater increase in their psychosocial functioning than those in the control group ($z = -1.97$, $p = 0.049$). In the maintenance phase of the study, those in the treatment group were found to have a significant decline in their scores on nine of the 10 outcomes studied, while those in the control group had a significant decline in only three of these outcomes. In terms of between-group differences, those in the treatment group reported a significantly greater decline in all five areas of borderline psychopathology studied: affective symptoms ($z = -2.31$, $p = 0.021$), cognitive symptoms ($z = -3.20$, $p = 0.001$), impulsivity ($z = -2.44$, $p = 0.015$), interpersonal difficulties ($z = -2.15$, $p = 0.032$), and overall BPD symptoms ($z = -2.11$, $p = 0.035$).

Conclusions—Taken together, these results suggest that internet-based psychoeducation is an effective form of early treatment for reducing the symptom severity of BPD for periods up to one year.

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Introduction

Borderline personality disorder (BPD) is a common psychiatric disorder; the best epidemiological evidence estimating that about 2% of American adults meet DSM criteria for BPD.^{1–3} It has also been estimated that approximately 19% of psychiatric inpatients and approximately 11% of psychiatric outpatients meet criteria for BPD.⁴ In addition, cross-sectional studies have found that BPD is associated with high levels of mental health service utilization⁵ and a serious degree of psychosocial impairment.⁶

More recently, two NIMH-funded, methodologically rigorous, prospective studies of the long-term course of BPD have found that the symptomatic course of BPD is better than previously known.^{7,8} More specifically, sustained remissions of BPD are common and recurrences are relatively rare. In addition, rates of completed suicide are substantially lower than those found in four follow-back studies of the long-term course of BPD conducted in the 1980s.^{9–12}

There is also mounting evidence that BPD is a treatable illness. More specifically, there are now six comprehensive forms of psychotherapy that have been found to be superior to treatment as usual or another manualized treatment in reducing the symptoms of BPD. These manual-based psychotherapies are: dialectical behavioral therapy;¹³ mentalization-based treatment;¹⁴ schema-focused therapy;¹⁵ transference-focused psychotherapy;¹⁶ systems training for emotional predictability and problem solving;¹⁷ and general psychiatric management.¹⁸ Taken together, the results of these trials suggest that psychodynamic therapies,^{14,16} cognitive behavioral treatments,^{13,15,17} and therapies that are a combination of both approaches¹⁸ are effective in the treatment of BPD.

In addition, medications have been found to “take the edge off” BPD symptoms. Before 1995 only four well-designed, double-blind pharmacotherapy studies had been conducted.^{19–22} Since then, the results of 17 double-blind, placebo or comparator-controlled trials have been published.^{23–39} Taken together, the results of these studies suggest that second-generation antipsychotics, mood stabilizers, and antidepressants all have a modest effect on the severity of borderline psychopathology but none are curative.

The recent research reviewed above suggests that BPD is a serious public health problem. It also suggests that it is a treatable illness with a substantially better prognosis than previously known. Despite all of these advances, clinical experience suggests that many patients with BPD are not told of their borderline diagnosis.⁴⁰ This practice is commonplace because those treating them fail to recognize the presence of BPD, believe BPD is too stigmatizing a diagnosis, or prefer to diagnose a disorder, such as bipolar disorder, that they believe is more responsive to treatment and thus, has a better prognosis.

This clinical practice often leaves borderline patients thinking that they are “bad” people or the only one suffering from these symptoms. It can also lead to a fruitless search for a cure for their “treatment-resistant” axis I disorder—a disorder that they may well have but that is not their central problem.

Clinical experience also suggests that many of those who are informed of their borderline diagnosis are not given up-to-date information about BPD.⁴⁰ This is so because clinicians either do not know the latest information concerning BPD or do not have the time to teach their patients about BPD. Because of this, patients with BPD are deprived of the information they need to become informed consumers of mental health services and to plan for their future in a reasonable manner.

This practice stands in stark contrast to the psychoeducation efforts common for those with other serious psychiatric disorders. More specifically, studies have found that targeted psychoeducation is beneficial in the treatment of those with schizophrenia, bipolar disorder, and major depression.^{41–44}

However, our group conducted a trial of psychoeducation for 50 young women who met rigorous criteria for BPD and who were randomized to immediate psychoeducation (N=30) or delayed psychoeducation (N=20). All instruction and assessment relied on clinically experienced research assistants and took place over 12 sessions.⁴⁵ The main objective of this study was to determine whether being taught the latest information concerning BPD leads to a decline in core BPD symptoms and an improvement in psychosocial functioning. The severity of general impulsivity (which excludes self-mutilation, suicide threats, and suicide attempts) and stormy relationships declined significantly more for those in the immediate treatment group than for those in the waitlist group. However, immediate psychoeducation concerning the BPD diagnosis did not result in significantly improved psychosocial functioning.

Despite widespread interest in implementing this psychoeducation program, the need for trained personnel and the resulting cost of the program prevented other centers from adopting this early form of treatment for BPD. Given this barrier to access, we developed a completely web-based instructional and assessment program for the psychoeducation of those with BPD.

Method

Study procedures were approved by the institutional review board of Partners Healthcare, and the study was registered at [ClinicalTrials.gov](https://clinicaltrials.gov) (identifier: NCT01719731). Recruitment of 80 women between the ages of 18 and 30 was accomplished through internet-based advertising in the Boston area (primarily on Craigslist). These ads asked: Are you extremely moody? Are you often distrustful of others? Do you frequently act in an impulsive manner? Are your relationships very painful and difficult? Subjects were initially screened by telephone to assess whether they met the DSM-IV criteria for BPD using the borderline module of the Diagnostic Interview for DSM-IV Personality Disorders.⁴⁶ A general psychiatric history was also taken at the time of first telephone contact. Potential subjects were excluded if they were currently in any type of psychiatric treatment.

Subjects were next invited to participate in a comprehensive face-to-face interview. At that time, the study procedures were fully explained and written informed consent was obtained. Five semi-structured interviews were then administered to each subject by the project

coordinator: 1) the Background Information Schedule,⁴⁷ which assesses demographic information, psychosocial functioning in the past two years, and lifetime psychiatric treatment, 2) the Structured Clinical Interview for DSM-IV Axis I Disorders,⁴⁸ 3) the Revised Diagnostic Interview for Borderlines,⁴⁹ 4) the non-borderline modules of the Diagnostic Interview for DSM-IV Personality Disorders,⁴⁶ and 5) the clinician-administered version of the Zanarini Rating Scale for Borderline Personality Disorder.⁵⁰

Inclusion/Exclusion Criteria

Subjects were included if they met both DIB-R and DSM-IV criteria sets for BPD. We chose this dual diagnostic set of criteria, which is standard for our research group, to ensure that we were recruiting core borderline patients with serious psychopathology. Subjects were excluded if they met current or lifetime criteria for schizophrenia or schizoaffective disorder. They were also excluded if they met current criteria for a physical condition that can cause serious psychiatric symptoms (e.g., lupus, multiple sclerosis), serious substance abuse, mental retardation, or were acutely suicidal or fully manic at the time of diagnostic assessment.

Diagnostic Disclosure and Randomization

The study coordinator met with each subject and informed her about whether she met study criteria for BPD. For subjects meeting study criteria for BPD, the study coordinator used a disclosure script that the PI developed more than a decade ago.⁵¹

Immediately after diagnostic disclosure, each subject found out if she had been randomized (using a computer-generated list devised by our study statistician) to participation in our psychoeducation program or not. Half of the subjects were randomized to this treatment and half were not. This design mirrors clinical practice where some patients receive information about their borderline diagnosis and others do not.

The project coordinator provided each of the 80 subjects with a user name and password to access the study website. She also provided basic instruction on how to use the website for the purpose of review of the curriculum and assessment of our major outcomes. Then each subject filled out six self-report measures housed on our website. Five of these self-report measures pertain to the past week: 1) the self-report version of the Zanarini Rating Scale for Borderline Personality Disorder,⁵² 2) the Borderline Evaluation of Severity over Time,⁵³ 3) the Sheehan Disability Scale,⁵⁴ 4) the Clinically Useful Depression Outcome Scale,⁵⁵ and 5) the Clinically Useful Anxiety Outcome Scale.⁵⁶ The other measure was the 24-item version of Weissman's Social Adjustment Scale⁵⁷—which pertains to the past two weeks.

Half of our subjects were randomized to our treatment group and half to our control group. Both groups participated in 15 assessment periods that were divided into an acute phase (weeks 1–12) and a maintenance phase (months 6, 9, and 12).

Psychoeducation Program

This program details the latest information on the following aspects of BPD: introductory information (history of diagnosis, stigma associated with disorder, and demographic

characteristics associated with BPD), symptoms of BPD and alternative theories of how these symptoms fit together, co-occurring disorders, etiology, longitudinal course, psychosocial treatments, and psychotropic medications. The program is laid out like a book, with each topic being covered in its own chapter. For example, the chapter on etiology contains sections on childhood adversity, temperamental factors, family history of psychiatric disorders, and biological factors relevant to the development of BPD.

Data Analyses

Between-group differences in baseline demographic variables and clinical history variables were analyzed using chi-squared analyses for categorical variables and Student's t-test for continuous variables. Longitudinal regression modeling methods were used to assess between-group differences on changes in the study's 10 outcome measures using all available panel data. Specifically, proportional odds regression (implemented using the `ologit` command, with the empirical or so-called "sandwich" estimator of the standard errors, in Stata version 14⁵⁸) was used for ordinal outcome variables and linear regression, fitted using generalized estimating equations (and implemented using the `xtgee` command in Stata version 14), was used for continuous outcome variables. Both sets of regression models used for these analyses appropriately account for the correlation among the repeated administration of our outcome measures over time.

For all ten of our outcome measures, these models included the effects of group, a piecewise-linear time trend with breakpoint at end of acute phase (i.e., separate linear trends during acute and maintenance phases, with possibly different slopes), and their possible interactions. These analyses were based on week 1 data through month 12 data taken together. However, we present acute and maintenance phase results separately for ease of understanding.

Results

Two hundred and five women responded to the internet ad for the study (see Figure 1). Of these 205 women, 121 were excluded after a telephone pre-screening interview. Eighty-four then participated in our comprehensive in-person assessment and 80 met all of our inclusion and exclusion criteria. Forty of these 80 women were randomized to our treatment group and the other 40 were randomized to our control group. All 40 women assigned to our treatment group completed the acute phase of the study (weeks 1–12) and 39 completed the maintenance phase of the trial. Thirty-eight of the women in our control group completed both the acute and maintenance phase of the study. Thus, 39 of the women in the treatment group (98%) and 38 of the women in the control group (95%) completed the trial.

Table 1 details the demographic and clinical characteristics of our two study groups. Most of our subjects were young, middle class, white women with some college education, who had never been married and were functioning in the low end of fair as assessed by the Global Assessment of Functioning.

Sixty percent or more had a history of a mood or anxiety disorder. Both substance use disorders and eating disorders were less common. However, the rate of substance use

disorders was significantly higher in the treatment (43%) than the control group (20%). The rate of odd and anxious cluster axis II disorders was about the same for both study groups. However, the rate of non-borderline dramatic cluster disorders was higher in the treatment than the control group but non-significantly so.

About half of those in both groups had a history of individual therapy. Both taking standing medications and being hospitalized for psychiatric reasons were more common among those in the treatment group than the control group, although only the latter comparison was significant (10% vs. 0.0%).

In the acute phase of the study (see Table 2), those in the treatment group were found to have a significant decline in their scores on all ten outcomes studied. Those in the control group were found to have a significant decline in their scores on seven of these outcomes—all but the cognition and impulsivity sector scores on the Zanarini Rating Scale for Borderline Personality Disorder and the Social Adjustment Scale total score. Two between-group differences were found to be significant. More specifically, those in the treatment group reported a significantly greater decline in their impulsivity as measured by the Zanarini Rating Scale for Borderline Personality Disorder and a significantly greater increase in their psychosocial functioning as measured by the Social Adjustment Scale than those in the control group.

In the maintenance phase of the study (see Table 3), those in the treatment group were found to have a significant decline in their scores on nine of the 10 outcomes studied—all but the Sheehan total score. In contrast, those in the control group were found to have a significant decline in only three of the 10 outcomes studied—the total score of the Borderline Evaluation of Severity over Time, Sheehan, and Social Adjustment Scale. In terms of between-group differences, those in the treatment group reported a significantly greater decline in all four sector scores and the total score of the Zanarini Rating Scale for Borderline Personality Disorder.

Discussion

In terms of between-group differences, those in the treatment group had significantly greater gains than controls in the acute phase of the trial in impulsivity and psychosocial functioning. They also had significantly greater gains than controls in the maintenance phase of the trial in all four sectors of borderline psychopathology as well as in the overall severity of borderline psychopathology. More specifically, the additional decline in overall severity of borderline psychopathology was by approximately half a standard deviation, often interpreted as a “medium” effect size.

In general, the course of the two study groups was quite different over time. In the acute phase of the study, those in the treatment group were found to have a significant decline in their scores on all ten outcomes studied. Those in the control group were found to have a significant decline in their scores on seven of these outcomes. However, in the maintenance phase of the trial, those in the treatment group were found to have a significant decline in

their scores on nine of the 10 outcomes studied. In contrast, those in the control group were found to have a significant decline in only three of the 10 outcomes studied.

Taken together, these results suggest that those treated with psychoeducation about BPD achieve near-term improvements and maintain them over a year of follow-up. In contrast, controls who did not receive psychoeducation made gains in the acute phase of the study but in many areas returned to their baseline level of symptom severity over the maintenance phase of the trial.

Both study groups showed broad improvement in the weeks after their first visit. This improvement may have been due to the weekly online assessments all subjects took. These assessments may have helped subjects to gauge how they were progressing. They may also have led subjects to think about their general situation and ways they could demonstrate agency over the course of their illness.

However, the knowledge about BPD gained by those in the treatment group may have been the reason why they maintained their acute phase gains in the maintenance phase of the study, while those in the control group reverted to their baseline level of severity. Looked at another way, they simply had more information with which to form a cognitive map of BPD, its likely course, and treatment options.

The subjects in this study were symptomatic volunteers. Whether patients in a clinical setting would do as well is an open question. This early form of treatment could be used in most clinical settings from outpatient to partial hospital to an inpatient unit. However, it probably would best be used in an outpatient setting as substantial wait times for an initial appointment are common. Both the psychoeducation aspect of this treatment and the online assessment aspect of this approach might be useful for those waiting to begin treatment as both seem to lead to significant outcomes symptomatically and psychosocially. However, we believe that this treatment may be most effective for prospective patients with a mild form of BPD, who are probably similar to our symptomatic volunteers.

This study has two main limitations. The first is that subjects were symptomatic volunteers. The second is that only women were studied. Whether actual patients or men with BPD would have the same pattern of response is unknown.

Finally, it is important to note that this treatment is cost efficient. It could also readily be scaled to deal with widespread use in a variety of clinical settings.

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Clinical Points

- Psychoeducation programs are available for most major psychiatric disorders. There is no widely available psychoeducation program for patients recently diagnosed with borderline personality disorder.
- The results of this web-based instruction and assessment study suggest that teaching people with BPD the latest comprehensive information about the disorder and tracking their symptomatic and psychosocial functioning over time leads to significantly greater gains over the period of a year than those achieved by subjects who did not review the curriculum.

Figure 1.
Consort Diagram of Subject Flow in the Randomized Controlled Trial

Table 1

Baseline Demographic and Clinical Characteristics of Study Subjects

	Treatment Group		Control Group	
	n	%	n	%
Marital Status				
Ever married	1	2.5	2	5.0
Never married	39	97.5	38	95.0
Education				
High school graduate	12	30.0	9	22.5
Some college or technical school	21	52.5	24	60.0
College graduate	7	17.5	7	17.5
Race				
White	33	82.5	22	55.0
Black	3	7.5	6	15.0
Hispanic	2	5.0	6	15.0
Asian	1	2.5	5	12.5
Other	1	2.5	1	2.5
Lifetime DSM-IV Axis I Diagnoses				
Any mood disorder	27	67.5	31	77.5
Any anxiety disorder	24	60.0	27	67.5
Any substance use disorder [/]	17	42.5	8	20.0
Any eating disorder	6	15.0	10	25.0
Axis II Diagnoses				
Odd Cluster	7	17.5	7	17.5
Anxious Cluster	22	55.0	23	57.5
Dramatic Cluster (excluding BPD)	9	22.5	4	10.0
Psychiatric Treatment History				
Any individual therapy	21	52.5	20	50.0
Any Standing Medication	13	32.5	6	15.0
Any Hospitalization [/]	4	10.0	0	0.0
	Mean	SD	Mean	SD
Age (years)	21.9	3.7	20.9	3.1
Global Assessment of Functioning	53.3	4.1	53.5	3.4
Socioeconomic Status (1=highest, 5=lowest)	2.4	1.4	2.1	1.3

[/] P<0.05

Table 2

Acute Phase of Trial (Weeks 1–12) Outcome Measures

Outcome Measure	Treatment Group		Control Group		Odds Ratio/Mean Difference	95% CI	Z-score	P-value
	Baseline	12 Weeks	Baseline	12 Weeks				
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)				
ZAN-BPD								
Affective Sector Score ¹	5.25 (2.19)	3.15 (2.49)	5.05 (2.64)	3.76 (2.39)	0.34 0.22 0.64	0.20 to 0.58 0.13 to 0.37 0.31 to 1.34	-3.99 -5.78 -1.18	<0.001 <0.001 0.239
Cognitive Sector Score ¹	2.43 (1.95)	1.63 (1.29)	1.95 (2.07)	1.89 (1.93)	0.65 0.42 0.64	0.40 to 1.06 0.26 to 0.67 0.33 to 1.25	-1.72 -3.66 -1.31	0.086 <0.001 0.191
Impulsivity Sector Score ¹	1.68 (1.46)	1.13 (1.11)	1.00 (0.88)	1.58 (1.29)	1.22 0.58 0.48	0.74 to 2.00 0.34 to 0.99 0.23 to 0.99	0.77 -1.99 -1.98	0.443 0.046 0.048³
Interpersonal Sector Score ¹	2.78 (1.58)	1.93 (1.85)	2.13 (1.79)	1.92 (1.85)	0.63 0.37 0.59	0.40 to 1.00 0.23 to 0.60 0.30 to 1.16	-1.97 -4.01 -1.52	0.048 <0.001 0.128
Total Score ²	12.13 (5.88)	7.83 (5.80)	10.13 (5.86)	9.16 (6.18)	-2.30 -4.01 -1.70	-3.53 to -1.08 -5.71 to -2.30 -3.80 to 0.40	-3.68 -4.62 -1.59	<0.001 <0.001 0.112
Other Outcome Measures								
BEST Total Score ²	35.30 (9.97)	28.98 (10.39)	32.65 (9.04)	32.16 (12.45)	-3.02 -6.33 -3.32	-5.54 to -0.50 -8.90 to -3.77 -6.91 to 0.28	-2.35 -4.84 -1.81	0.019 <0.001 0.071
Sheehan Total Score ²	11.94 (6.95)	6.83 (6.08)	13.08 (6.05)	9.76 (7.51)	-4.32 -4.16 0.16	-5.91 to -2.73 -6.14 to -2.18 -2.38 to 2.69	-5.33 -4.12 0.12	<0.001 <0.001 0.903
SAS Total Score ²	1.63 (0.72)	1.13 (0.73)	1.53 (0.62)	1.44 (0.79)	-0.17 -0.45 -0.27	0.36 - to 0.02 -0.65 to -0.25 -0.55 to -0.001	-1.79 -4.45 -1.97	0.073 <0.001 0.049³
CUDOS Total Score ²	31.85 (12.94)	20.78 (13.93)	31.4 (13.65)	26.89 (17.08)	-7.07 -11.09 -4.02	-11.46 to -2.68 -15.01 to -7.17 -9.91 to 1.87	-3.15 -5.54 -1.34	0.002 <0.001 0.181
CUXOS Total Score ²	45.00 (16.14)	35.15 (15.03)	47.38 (17.38)	40.11 (17.72)	-7.39 -8.32 -0.93	-11.25 to -3.53 -12.76 to -3.87 -6.82 to 4.96	-3.75 -3.67 -0.31	<0.001 <0.001 0.757

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¹Analyses pertain to ordered data;
²analyses pertain to continuous data
³Bolded interaction terms indicate treatment group had a significantly better outcome than control group

ZAN-BPD=Zanarini Rating Scale for Borderline Personality Disorder; BEST=Borderline Evaluation of Severity over Time; Sheehan=Sheehan Disability Scale; SAS=Social Adjustment Scale; CUDOS=Clinically Useful Depression Outcome Scale; CUXOS=Clinically Useful Anxiety Outcome Scale

Table 3

Maintenance Phase of Trial (Baseline-12 Months) Outcome Measures

Outcome Measure	Treatment Group		Control Group		Odds Ratio/Mean Difference	95%CI	Z-score	P-value
	Baseline	12 Months	Baseline	12 Months				
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Control Treatment Control vs. TX			
ZAN-BPD								
Affective Sector Score ¹	5.25 (2.19)	3.18 (0.38)	5.05 (2.64)	4.29 (2.25)	0.61 0.25 0.40	0.35 to 1.08 0.15 to 0.42 0.19 to 0.87	-1.70 -5.25 -2.31	0.089 <0.001 0.021³
Cognitive Sector Score ¹	2.43 (1.95)	1.62 (1.58)	1.95 (2.07)	2.39 (1.78)	1.37 0.39 0.29	0.85 to 2.22 0.22 to 0.71 0.13 to 0.62	1.30 -3.13 -3.20	0.193 0.002 0.001³
Impulsivity Sector Score ¹	1.68 (1.46)	1.15 (1.66)	1.00 (0.88)	1.39 (0.95)	1.10 0.44 0.40	0.71 to 1.72 0.24 to 0.79 0.19 to 0.83	0.43 -2.74 -2.44	0.666 0.006 0.015³
Interpersonal Sector Score ¹	2.78 (1.58)	1.72 (1.61)	2.13 (1.79)	2.05 (1.41)	0.91 0.39 0.43	0.55 to 1.51 0.22 to 0.70 0.20 to 0.93	-0.36 -3.18 -2.15	0.719 0.001 0.032³
Total Score ²	12.13 (5.88)	7.67 (6.49)	10.13 (5.86)	10.13 (5.03)	-0.86 -3.75 -2.90	-2.50 to 0.79 -5.89 to -1.62 -5.59 to -0.20	-1.02 -3.44 -2.11	0.307 0.001 0.035³
Other Outcome Measures								
BEST Total Score ²	35.30 (9.97)	28.51 (11.28)	32.65 (9.04)	31.79 (11.98)	-3.28 -5.02 -1.74	-6.08 to -0.49 -8.70 to -1.34 -6.36 to 2.89	-2.30 -2.67 -0.74	0.021 0.008 0.462
Sheehan Total Score ²	6.83 (6.08)	8.81 (7.03)	9.76 (7.51)	10.71 (7.72)	3.66 - -1.84 -1.82	5.60 -2 to -1.71 -4.27 to 0.58 -1.29 to 4.92	-3.69 -1.49 1.15	<0.001 0.136 0.252
SAS Total Score ²	1.63 (0.72)	1.21 (0.73)	1.53 (0.62)	1.42 (0.73)	-0.21 -0.37 -0.17	-0.40 to -0.003 -0.60 to -0.14 -0.47 to 0.13	-1.99 -3.19 -1.09	0.047 0.001 0.275
CUDOS Total Score ²	31.85 (12.94)	24.18 (16.15)	31.40 (13.65)	31.21 (16.62)	-4.18 -6.92 -2.74	-8.68 to 0.32 -12.06 to -1.79 -9.57 to 4.09	-1.82 -2.64 -0.79	0.069 0.008 0.432

Outcome Measure	Treatment Group		Control Group		Odds Ratio/Mean Difference	95%CI	Z-score	P-value
	Baseline	12 Months	Baseline	12 Months				
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)				
CUXOS Total Score ²	45.00 (16.14)	36.28 (16.78)	47.38 (17.38)	43.39 (16.47)	-2.90 -4.71 -1.81	-6.86 to 1.07 -9.40 to -0.02 -7.95 to 4.33	-1.43 -1.97 -0.58	0.152 0.049 0.564

Control
Treatment
Control vs. TX

¹ Analyses pertain to ordered data;

² analyses pertain to continuous data

³ Bolded interaction terms indicate treatment group had a significantly better outcome than control group

ZAN-BPD=Zanarini Rating Scale for Borderline Personality Disorder; BEST=Borderline Evaluation of Severity over Time; Sheehan=Sheehan Disability Scale; SAS=Social Adjustment Scale; CUDOS=Clinically Useful Depression Outcome Scale; CUXOS=Clinically Useful Anxiety Outcome Scale