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THIRD PLACE

Effectiveness of the Comprehensive Behavioral Intervention for Tics (CBIT) in a Pediatric Psychiatry
Clinic: A Retrospective Chart Review

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Introduction: Tic disorders are characterized by sudden, non-rhythmic movements and/or vocalizations that are recurrent and experienced as largely involuntary. Relative to healthy controls, children with tic disorders report a lower quality of life, greater difficulties in school, and more discrimination. The emotional, functional, and social consequences of tic disorders underscore the importance of effective treatment. Medication is the most common intervention, but many patients experience inadequate symptom relief and/or intolerable side effects. Behavior therapy offers an alternative option, and the Comprehensive Behavioral Intervention for Tics (CBIT) is endorsed as a first-line treatment. Unfortunately, this intervention is not widely available. This is partially due to an enduring misconception that behavior therapy results in tic worsening, as well as the perception that treatment manuals are too inflexible for use in clinical settings. In an effort to address these concerns, the present study was conducted with two primary goals: (1) to use existing clinical data to assess the effectiveness of CBIT in a pediatric psychiatry clinic, and (2) to compare the content of CBIT administered in a real-world setting to the CBIT manual. To our knowledge, this is the first study to examine the effectiveness of CBIT when used as part of routine care in a pediatric sample.

Method: We conducted this chart review in the Tics, Anxiety and Compulsions clinic at a Midwestern children's hospital affiliated with an academic medical center. All patients with a tic disorder diagnosis who had received CBIT treatment since the clinic opened in 2015 were included. Clinical characteristics, clinician ratings of symptom severity, and data about session content were extracted. A repeated measures t-test was used to determine whether the change in symptom severity was significant, and one-sample t-tests were used to compare clinic-based treatment against the manual.

Results: Clinic-based CBIT treatment significantly reduced tic symptom severity ($t(13) = 6.27, p < .001, d = 1.8$). Importantly, these results were found even with flexible use of the CBIT manual. Compared with the CBIT manual, clinicians intervened on fewer tics ($t(7) = -6.00, p < .001$) and were less likely to create a behavioral rewards program ($t(8) = -8.00, p < .001$) or provide progressive muscle relaxation training ($t(8) = -4.00, p = .004$). Additionally, core components of CBIT (i.e., function-based interventions, reviewing the tic hierarchy, conducting the tic inconvenience review, and habit reversal training) were included in a significantly lower percentage of sessions than outlined in the CBIT manual (see Table 1 for full results).

Discussion: The results of this study suggest that for at least some pediatric patients with tic disorders, positive treatment outcomes can be achieved when CBIT is flexibly applied in a clinical setting. Given the limited number of clinicians who have CBIT training, we hope that these findings encourage providers to seek continuing education opportunities in this treatment approach.

See table below

Table 1

Comparison of Clinic-Based Treatment to CBIT Manual

Variable	Clinic-Based Treatment			CBIT Manual	Significance Test		
	<i>n</i> (%)	<i>M</i> (<i>SD</i>)	Range	%	<i>N</i>	<i>t</i> (<i>df</i>)	<i>p</i> -value
Number of sessions		11.2 (9.5)	2-29		11	.07(8)	.946
Number of tics addressed		3 (1.4)	2-6		6	-6.00(7)	.001
<i>Percentage of sessions that covered:</i>							
Function-based interventions		37.4 (21.8)	6.9-66.7	100.0		-8.62(8)	.001
Tic hierarchy		29.3 (25.0)	0-66.7	90.9		-7.39(8)	.001
Tic inconvenience review		4.4 (8.2)	0-22.2	90.9		-31.80(8)	.001
Habit reversal training		64.5 (20.8)	26.7-100.0	90.9		-3.81(8)	.005
<i>Percentage of patients who had:</i>							
Behavioral rewards program	1 (11.1)			100.0		-8.00(8)	.001
Deep breathing instruction	5 (55.6)			100.0		-2.53(8)	.035
Progressive muscle relaxation	3 (33.3)			100.0		-4.00(8)	.004