

A Non-Medication Based Treatment Proposal For Individuals Diagnosed With A Tic Disorder and Intellectual Disabilities

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Abstract

The purpose of this work was to attempt to apply treatment methodology historically applied to individuals without Intellectual Disabilities (ID) to those with ID. Until recently, the majority of research had treated Tourette's syndrome as a psychological disorder that could only be treated by medication (Azrin and Peterson, 1990). Azrin and Peterson (1990) presented research that demonstrated that Functional Analyses, an experimental assessment into the maintaining function of the behavior, could be successful at demonstrating differentiated results with individuals that presented with non-functional motor movements or vocal tics. This finding was then able to support the work conducted in the practice of Habit Reversal treatment packages. Miltenberger and colleagues (1998) were able to conduct a review of available research into Habit Reversal and demonstrated that long term beneficial results, up to 25 years of effectiveness, had been supported with its implementation. Thus, supporting that a behavioral approach to treatment, not including medication, could be effective with individuals diagnosed with Tourette's syndrome or other motor and vocal tics .

Miltenberger and colleagues (1998), when describing the methodology and rationale to utilize Habit Reversal treatment packages, took into consideration the hypothesized function of the behaviors. The authors noted the possible negative reinforcement, removal or reduction of tension or anxiety. An alternative or additional form of reinforcement may have been positive reinforcement, in the form of sensory stimulation. Third, the authors noted a possible schedule-induced or adjunctive-behaviors as a side effect to intermittent schedules of reinforcement (1998). The Habit Reversal treatment package was originally developed Azrin and Nunn (1973), to treat nervous habits and tics. It consisted of 10 treatment components broken down into four phases; 1) Awareness training: a) Response description, b) response detection, c) early warning procedure, d) situation awareness, e) competing response training; 2) Competing Response Training: a) contingent practice; 3) Motivation Procedures: a) habit inconvenience review, b) social support training, c) public display; 4) Generalization Procedures.

Despite the progress made in non-medication based treatments for Tourette's syndrome, and documented success of habit reversal, current research still has only begun working with children above an IQ of 70 and without significant diagnoses, such as autism spectrum disorder (ASD) (Woods, Twohig, Flessner, & Roloff, 2003).

The treatment package focused initially on components introduced into the client's typically scheduled counseling the session. So as to produce minimal disruption to the

therapeutic effect of the session, the counselor was trained to utilize partial and whole interval measurement systems. The training of the counselor was conducted through behavioral skills training, as described by Palmen and colleagues (2010). The components included instructions, modeling, rehearsal, and feedback. The modified treatment package of Habit Reversal successfully reduced the client's motor tics while in session.

Method

Subject	John, is an 11year-old male with dual diagnoses of ASD and Tourette’s syndrome. Upon intake, on Clonidine, Lithium and Zyprexa. Before sessions started, all medication was titrated down to discontinuation.
Experimental Design	Retrospective Review of Treatment Package implemented during 1 on 1 counseling sessions
Settings	• Conducted at the day program that John attends • Separate room from classroom • Contained a table and chairs
Materials	• Data sheet with prescribed intervals for observation • <i>Self-Match</i> data sheet • John’s Points System sheet • Timer • Pen • Video Recording
Independent Variable	<i>Self-Match</i> , self monitoring system introduced during counseling sessions only at this point.

Dependent Variable

- IOA on tone of voice in session
- IOA on toleration of changes during session
- IOA on topics of conversation during session
- IOA on occurrence of motor tics during session
- Overall measure of matches when conducting self-monitoring recording.

Convenience sample with client already on caseload.

Procedure

Baseline/Pre-Treatment

- During baseline of the Habit Reversal training for John, data was collected on John's behaviors during a counseling session prior to conducting the awareness training through self-monitoring. Data was also collected as to the medication baseline levels to determine if those acted as a setting event or confounding variable for occurrence of motor and vocal tics.

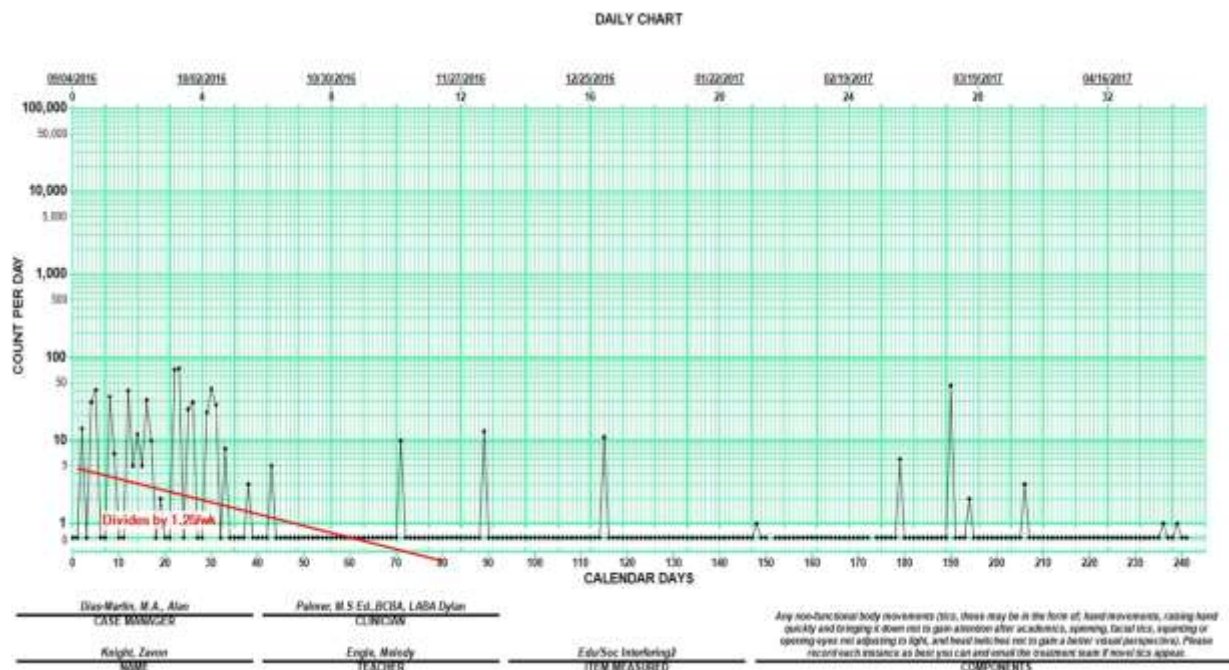
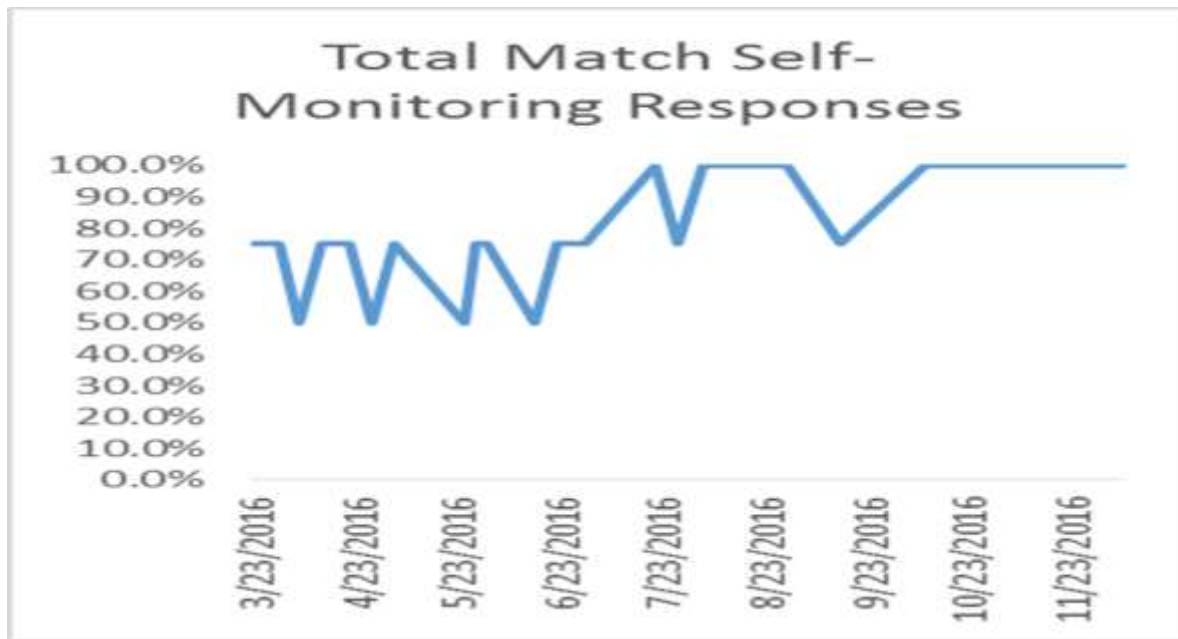
Training: Habit Reversal Steps

- Awareness training:
 - Response description
 - Response detection
 - Early warning procedure
 - Situation awareness
 - Competing response training
- Competing Response Training
 - Contingent practice
- Motivation Procedures
 - a) Habit inconvenience review
 - b) Social support training

- c) Public display
- Generalization Procedures.

Due to the cognitive functioning ability of John, the following steps will be conducted

- Awareness training
 - a) Response description,
 - b) Response detection, in the form of the primary investigator stating that was a “tic” during brief 5-minute training sessions,
 - c) Early warning procedure, in the form of attempting to establish self-monitoring with *Self-Match*. This includes John recording on his own data sheet if he believes the behavior occurred and the LSW taking inter-observer agreement measure. A match for non-occurrence of challenging behaviors will result in two points. A match for occurrence of challenging behaviors will result in one point. Non-match between the two will produce no points.
 - d) Situation awareness, will be done the same way with *Self-Match*, e) competing response training, will be completed through a differential reinforcement of alternative (DRA) contract that produces points in John’s independent behavioral program.
- Competing response training, will be previously established in the DRA contract with the points system, complex token system.
- Motivation procedures, will be expanded with the points system that will allow John to earn additional points within the counseling session for both participating appropriately within the counseling session, and the non-occurrence of the motor and vocal tics.
- Generalization procedure, will be expanded upon in the multiple baseline as the Habit Reversal treatment package is introduced across environments.
- IOA Available for all sessions via DVR of facility.



Discussion

Results of this study suggest that following the implementation of the self-monitoring components of the Habit Reversal treatment package, that John had a significant decrease in instances of motor tics. The second findings of this treatment is that it expands the application of Habit Reversal treatment packages for individuals diagnosed with ASD and where vocal self-

report behavior is not consistently reliable. Additionally, this design demonstrates an effective method to collaborate between a clinician and a licensed social worker conducting counseling sessions.

The effectiveness of the self-monitoring system will rely on the points being able to be exchanged for reinforcers. If John becomes habituated to the items available for exchange with the points, then this could act as an abolishing operation on the value of matching the counselors recording of his behavior. Another consideration of confounding variables were John's medication levels. All medication adjustments were completed before the onset of the Habit Reversal training and were documented, so as to determine the impact an adjustment in medication may be causing.

References

- Ahn, H. N., & Wampold, B. E. (2001). Where oh where are the specific ingredients? A meta-analysis of component studies in counseling and psychotherapy. doi: 10.1037/0022-0167.48.3.251
- Azrin, N. H., & Nunn, R. G. (1973). Habit-reversal: a method of eliminating nervous habits and tics. *Behaviour research and therapy*, 11(4), 619-628. doi: 10.1016/0005-7967(73)90119-8
- Azrin, N. H., & Peterson, A. L. (1990). Treatment of Tourette syndrome by habit reversal: A waiting-list control group comparison. *Behavior Therapy*, 21(3), 305-318. doi: 10.1016/S0005-7894(05)80333-8
- Carr, J. E., Sidener, T. M., Sidener, D. W., & Cummings, A. R. (2005). Functional analysis and habit-reversal treatment of tics. *Behavioral Interventions*, 20(3), 185-202. doi: 10.1002/bin.193
- Daniels AC. Bringing out the best in people: how to apply the astonishing power of positive reinforcement. New York: McGraw-Hill; 1994.
- Himle, M. B., Capriotti, M. R., Hayes, L. P., Ramanujam, K., Scahill, L., Sukhodolsky, D. G., Wilhelm, S., Deckersbach, T., Peterson, A. L., Specht, M. W., Walkup, J. T., Chang, S., & Piacentini, J. (2014). Variables associated with tic exacerbation in children with chronic tic disorders. *Behavior Modification*, 38(2), 163-183. doi:10.1177/0145445514531016
- Himle, M. B., Chang, S., Woods, D. W., Pearlman, A., Buzzella, B., Bunaciu, L., & Piacentini, J. C. (2006). Establishing the feasibility of direct observation in the assessment of tics in children with chronic tic disorders. *Journal of Applied Behavior Analysis*, 39(4), 429-440. doi:10.1901/jaba.2006.63-06
- Himle, M. B., Woods, D. W., Piacentini, J. C., & Walkup, J. T. (2006). Brief review of habit reversal training for Tourette syndrome. *Journal of Child Neurology*, 21(8), 719-725. doi: 10.1177/08830738060210080101

Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1994). Toward a functional analysis of self-injury. *Journal of applied behavior analysis*, 27(2), 197-209. doi: 10.1016/0270-4684(82)90003-9

Johnson, B. M., Miltenberger, R. G., Egemo-Helm, K., Jostad, C. M., Flessner, C., & Gatheridge, B. (2005). Evaluation of behavioral skills training for teaching abduction-prevention skills to young children. *Journal of Applied Behavior Analysis*, 38(1), 67-78. doi: 10.1901/jaba.2005.26-04

Leary, M. R. (2016). *Introduction to behavioral research methods*. Pearson.

Miltenberger, R. G., Fuqua, R. W., & Woods, D. W. (1998). Applying behavior analysis to clinical problems: Review and analysis of habit reversal. *Journal of Applied Behavior Analysis*, 31(3), 447-469. doi: 10.1901/jaba.1998.31-447

Noell, G. H., Witt, J. C., LaFleur, L. H., Mortenson, B. P., Ranier, D. D., & LeVelle, J. (2000). Increasing intervention implementation in general education following consultation: A comparison of two follow-up strategies. *Journal of Applied Behavior Analysis*, 33(3), 271-284. doi: 10.1901/jaba.2000.33-271

Palmen, A., Didden, R., & Korzilius, H. (2010). Effectiveness of behavioral skills training on staff performance in a job training setting for high-functioning adolescents with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 4(4), 731-740. doi: 10.1016/j.rasd.2010.01.012

Reed, F. D. D., & Henley, A. J. (2015). A survey of staff training and performance management practices: the good, the bad, and the ugly. *Behavior Analysis in Practice*, 8(1), 16-26. doi: 10.1007/s40617-015-0044-5

Severtson, J. M., & Carr, J. E. (2012). Training novice instructors to implement errorless discrete-trial teaching: A sequential analysis. *Behavior analysis in practice*, 5(2), 13. doi:

Schepis, M. M., Reid, D. H., Ownbey, J., & Clary, J. (2003). Training preschool staff to promote cooperative participation among young children with severe disabilities and their classmates. *Research and Practice for Persons with Severe Disabilities*, 28(1), 37-42. doi: 10.2511/rpsd.28.1.37

Ulman, J. D., & Sulzer-Azaroff, B. (1975). Multielement baseline design in educational research. *Behavior analysis: Areas of research and application*, 377-391. doi:

Ward-Horner, J., & Sturmey, P. (2012). Component analysis of behavior skills training in functional analysis. *Behavioral Interventions*, 27(2), 75-92. doi: 10.1002/bin.1339

Weisz, J. R., Weiss, B., Alicke, M. D., & Klotz, M. L. (1987). Effectiveness of psychotherapy with children and adolescents: a meta-analysis for clinicians. doi: 10.1037/0022-006X.55.4.542

Witt, J. C., Noell, G. H., LaFleur, L. H., & Mortenson, B. P. (1997). Teacher use of interventions in general education settings: Measurement and analysis of the independent variable. *Journal of Applied Behavior Analysis*, 30(4), 693-696. doi: 10.1901/jaba.1997.30-693

Woods, D. W., Twohig, M. P., Flessner, C. A., & Roloff, T. J. (2003). Treatment of vocal tics in children with Tourette syndrome: investigating the efficacy of habit reversal. *Journal of Applied Behavior Analysis*, 36(1), 109-112. doi: 10.1901/jaba.2003.36-109