

Habit Reversal Training to Treat Tics in a Young Boy Diagnosed with Tourette Syndrome

Valerie L. VanTussi, Brittany A. Degner & Dr. Kevin Klatt
Psychology Department ❖ University of Wisconsin-Eau Claire



Introduction

Tourette's Syndrome is a neurological disorder. A majority of patients seek medical treatment to manage tics (Piacentini & Chang, 2001). Tic symptoms also fluctuate as function of the environment (Leckman & Cohen, 1999) posing the possibility that a behavioral intervention may be effective in managing tics.

Habit Reversal Training (HRT) (Azrin & Nunn, 1973) is a multi-component behavioral treatment package for suppressing nervous habits and tics by creating awareness of the behavior and engaging in an incompatible behavior, or competing response, to replace the nervous habit or tic. Studies using Habit Reversal Training have found the procedure to be effective for tics (Peterson, Campise, & Azrin, 1994; Piacentini & Chang, 2001; Woods & Miltenberger, 1995, 2001).

The competing response (CR) can be seen as a self-administered punishment, where through operant conditioning, tic frequency can be reduced (Miltenberger & Fuqua, 1985). Self-monitoring each time the tic occurs (Awareness Training) is a type of dissimilar competing response that may function as a punisher for the tic (Sharenow, Fuqua, & Miltenberger, 1989).

The purpose of the study is to reduce the frequency of motor tics in a 10-year-old boy diagnosed with Asperger's Syndrome, Tourette Syndrome, Attention-Deficit/Hyperactivity Disorder and Anxiety Disorder.

Method

Participant

Karl was a 10-year-old boy diagnosed with Asperger's Syndrome, Tourette Syndrome, Attention-Deficit/Hyperactivity Disorder and Anxiety disorder. Karl received approximately 3 hours of Applied Behavior Analysis (ABA) intervention per week.

Instructors

The researcher providing Applied Behavior Analysis (ABA) therapy and parents served as the instructors.

Setting

The study was conducted in the participant's bedroom at home with the participant, researcher, and parent in the room.

Procedure

A single subject multiple baseline design across tics was implemented.

Recording

Rate per minute of individual tics was recorded.

Awareness Training Condition

At the beginning of each session, the target tic(s) was described by the instructor and participant. The participant practiced identifying the occurrence of the targeted tic(s) throughout the session. Reinforcement was contingent on labeling the tics.

If the participant failed to independently acknowledge the occurrence of the target tic, the instructor brought attention to

the tic and provided a chance for the participant to acknowledge.

Competing Response Condition

At the beginning of each session, the target tic(s) was described by the instructor and participant as in the Awareness Training condition. In addition, an incompatible behavior of the target tic(s) was described and practiced by instructor and participant.

The participant was encouraged to engage in the incompatible behavior before the occurrence of the tic. If the tic occurred, the participant was instructed to engage in the incompatible behavior immediately after the occurrence of the tic (as an overcorrection procedure).

Eye Roll- Focusing both eyes on a point on the wall eye-level for 15-20 seconds or until urge passes.

Blinks- Gently and slowly close eyes and keep closed for three seconds. Repeat 2-3 times or until urge passes.

Reversal Back to Baseline

Rate per minute of individual tics was recorded to observe whether tic frequency remained low without implementation of treatment.

Inter-observer Agreement and Treatment Integrity

Inter-observer agreement was conducted at least 20% of sessions for each condition and was 87%. Treatment integrity was conducted at least 20% of sessions for each condition and was 100%.

The Occurrence of Tics in a 10-Year-Old Boy

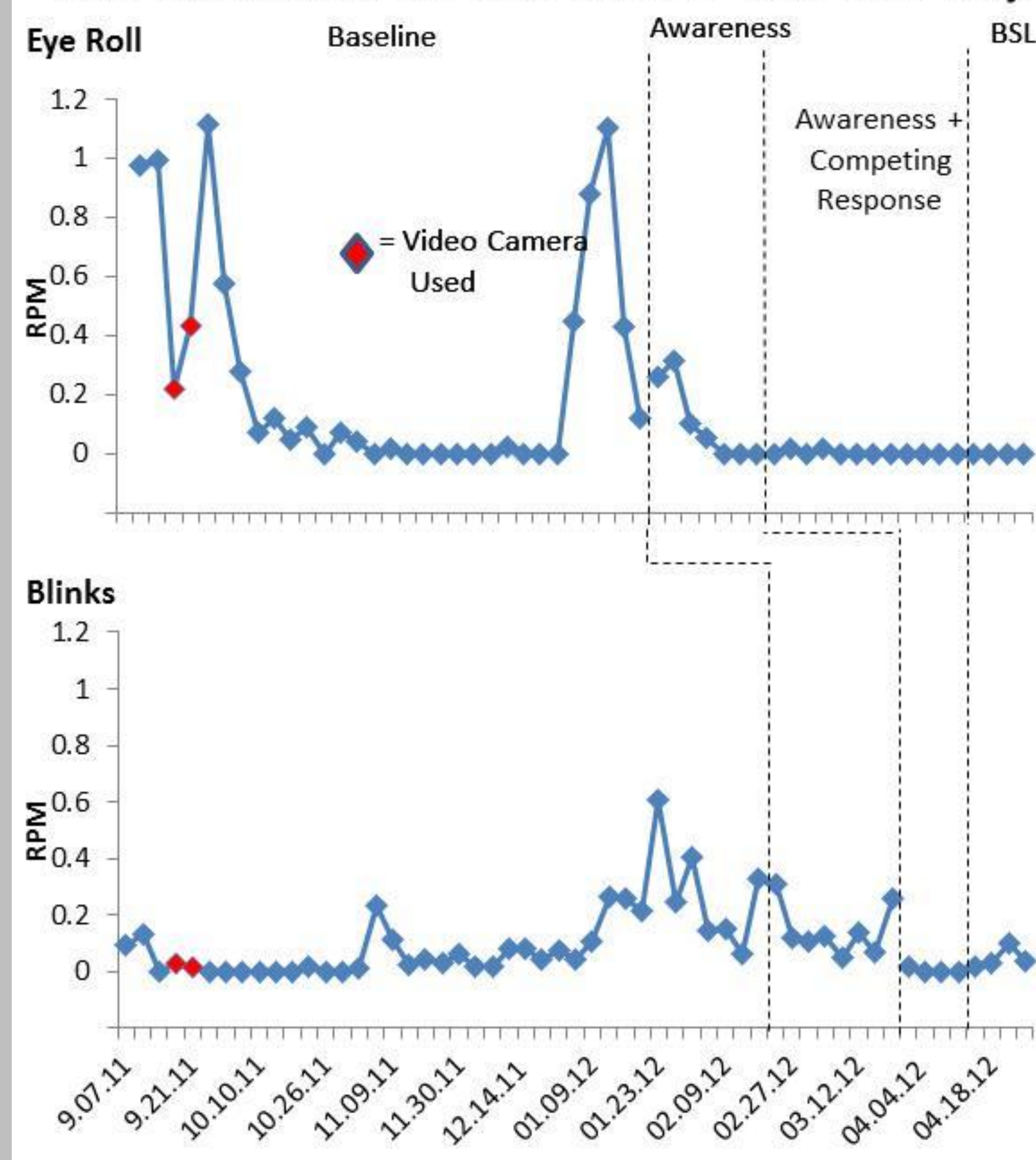


Figure 1. Multiple baseline of tics rate per minute.

Results and Discussion

Results

- Implementing awareness training sufficiently reduced the frequency of the target tic. By then introducing and teaching a competing response, the frequency of the target tic further decreased.
- After teaching a competing response for a target tic, the low frequency of tic occurrences maintained when reversing back to baseline in the same environment (in the participant's home).

Limitations

- A limitation of the current study is the limited time due to training parents on the implementation of the procedure.
- Due to the time limitation, the experimental design was altered. The implementation of the competing response condition followed the awareness condition.

Future Research

- Future research should examine the frequency of the target tics in different environments outside of therapy as well as to use an experimental design to demonstrate experimental control.

Selective References

- Azrin, N. H., & Nunn, R. G. (1973). A method of eliminating nervous habits and tics. *Behavior Research and Therapy*, 11, 619-628.
- Leckman, J. F., & Cohen, D. J. (1999). Evolving models of pathogenesis. In J. F. Leckman & D. J. Cohen (Eds.), *Tourette's syndrome- tics, obsessions, compulsions: Developmental psychopathology and clinical care* (pp. 155-175). New York: Wiley & Sons
- Miltenberger, R., & Fuqua, W. (1985). Contingent vs. non-contingent competing response practice with nervous habits. *Journal of Behavior Therapy and Experimental Psychiatry*, 16, 195-200.
- Peterson, A., Campise, R. L., & Azrin, N. H. (1994). Behavioral and pharmacological treatments for tic and habit disorders: A review. *Developmental and Behavioral Pediatrics*, 15, 430-441.
- Piacentini, J., Chang, S. (2001). Behavioral treatments for Tourette syndrome and tic disorders: State of the art. *Advances Neurology*, 85, 319-331.
- Woods, D., & Miltenberger, R. (1995). Habit reversal: A review of applications and variations. *Journal of Behavior Therapy and Experimental Psychiatry*, 26, 123-131.
- Woods, D., & Miltenberger, R. (Eds.) (2001). *Tic disorders, trichotillomania, and repetitive behavior disorders: Behavioral approaches to analysis and treatment*. Norwell, MA: Kluwer.
- Sharenow, E., Fuqua, R.W., & Miltenberger, R. (1989). The treatment of motor tics with dissimilar competing response practice. *Journal of Applied Behavior Analysis*, 22, 35-42.

We would like to thank the Office of Research and Sponsored Programs at the University of Wisconsin-Eau Claire, Renee Norman, and the parents and child that participated in this study.