



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



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Method

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 a 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. The competing response (CR) can also be described as a self-administered punishment; therefore, operant conditioning can reduce tic frequency (Miltenberger & Fuqua, 1985). Self-monitoring each tic occurrence (Awareness Training) is a type of dissimilar competing response that may function as a punisher for the tic (Sharenow, Fuqua, & Miltenberger, 1989).

Studies using HRT have found the procedure to be effective for tics (e.g., Peterson, Campise, & Azrin, 1994; Piacentini & Chang, 2001; Woods & Miltenberger, 1995, 2001). Further research is needed to identify the component (e.g., awareness training or competing response) responsible for decreasing tic occurrences.

The current study systematically evaluated the effectiveness of the Awareness Training component of HRT to treat tics in a 9-year-old boy diagnosed with Tourette's Syndrome. Tic rate per minute was measured across baseline, treatment and reversal to baseline conditions.

Method

Participant

Kraig was a 9-year-old boy diagnosed with Asperger's syndrome, Tourette's syndrome, Attention Deficit Hyperactivity Disorder and Anxiety disorder. Kraig received approximately 3.5 hours of Applied Behavior Analysis (ABA) intervention per week.

Setting & Materials

The study was conducted in a small classroom at the child's school. Materials included data sheets, a timer, and candy.

Procedure

An experimental single-subject multiple baseline design across tics was implemented.

Baseline

Rate per minute of individual tics was recorded.

Treatment (Awareness Training)

The targeted tic(s) were described by the therapist and participant followed by the simulation and identification of the target tic(s). Kraig was instructed to identify each occurrence of the targeted tic(s) throughout the session; identifying the tic occurrence resulted in the therapist providing Kraig with reinforcement. Reinforcement included one or more of the following: verbal praise, high-five, or candy.

If a targeted tic occurred and Kraig failed to label the tic, the therapist labeled the tic and asked Kraig if he detected the tic. Acknowledging the tic occurrence resulted in the therapist providing Kraig with reinforcement.

Inter-observer Agreement and Treatment Integrity

Inter-observer agreement was conducted at least 46.7% of the sessions and was 82.8%.

Treatment integrity was conducted at least 46.7% of the sessions and was 100%.

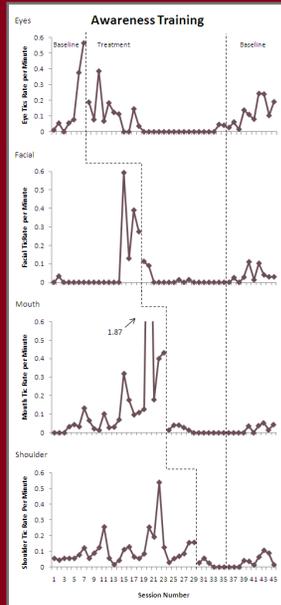


Figure 1. A Multiple baseline design across target tic rate per minute.

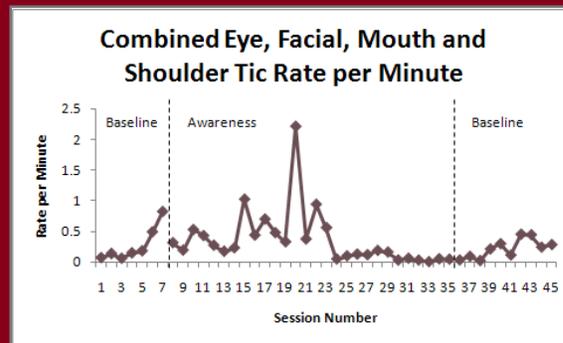


Figure 2. Line graph displaying a combination of eye, facial, mouth, and shoulder tic rate per minute across sessions.

Results and Discussion

Figure 1 depicts a multiple baseline design displaying baseline, treatment (awareness training), and reversal to baseline conditions across target tic (eye, facial, mouth, and shoulder) rate per minute.

Figure 2 depicts a combination of eye, facial, mouth, and shoulder tic rate per minute across baseline, treatment (awareness training), and reversal to baseline conditions.

The results of the current study indicate that awareness training is sufficient to decrease tic rate per minute. Baseline data show an increase in tic rate per minute; however, upon implementation of treatment (awareness training), tic rate per minute decreases to zero or near zero levels. Reversal back to baseline shows an increase in tic rate per minute indicating that awareness training does not maintain over time when treatment is withdrawn.

A limitation of the current study is that sessions were only conducted two times per week.

Future research could compare the maintenance of tic rate per minute for tics that receive awareness training to tics that teach a competing response in addition to awareness training.

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