

THE EFFECTIVENESS OF ENVIRONMENTAL MODIFICATIONS AND A RESPONSE COST TOKEN SYSTEM TO DECREASE PHYSICAL AGGRESSION

Erin F. Stabnow, M.A.

Children's Care Hospital and School - Sioux Falls, S.D.

Introduction

This case study explored the effectiveness of environmental modifications such as classroom placement, increased staff to student ratio, and reduction of demands along with the implementation of a response-cost token system to decrease physical aggression. The subject of the study was a 14-year-old female receiving educational services through Children's Care Hospital and School. She has received educational services since 2005.

Methods and Settings

Children's Care Hospital and School is a private, non-profit facility serving children with disabilities from birth to 21. Children's Care is based in Sioux Falls, South Dakota, and the behavioral services program provides ABA-based services for individuals with significant cognitive and behavioral deficits, including autism and related disorders.

Each child's interdisciplinary team consists of a behavior analyst, school psychologist, special educator, speech/occupational/physical therapist, social worker, dietician, and nurse. Children receiving residential services at Children's Care are also seen by a pediatric psychiatrist who works in conjunction with a behavior analyst.

Children's Care is a year-round facility licensed by the South Dakota Department of Education for educational programming and the Department of Health for residential programming. Teaching is delivered through a "child-initiated, adult-directed approach" in which child preferences in terms of activities and materials are used as a basis for teaching skills in a discrete trial format. Individual educational plans are developed in alignment with the South Dakota Content Standards.

Participant

Lauren is a 14-year-old female with diagnoses of autism and psychosis NOS. She began receiving educational services at Children's Care in 2005.

Instruments

ABC data and direct observation by the teacher were collected over a 3-week assessment period. From the data, it appears that Lauren's physical aggression was maintained by social reinforcement in the form of escape, and to a lesser degree environmental factors including noise/disruptive levels due to other students in the classroom.

Procedure

Physical aggression was defined as scratching, pulling hair, grabbing clothes, spitting, hitting, kicking, biting and throwing objects towards staff or other children. Baseline data were collected in the educational setting from March 13, 2006 to March 31, 2006 with an average weekly frequency of 428. It was determined if left untreated the behavior would impede Lauren's learning, be a danger to herself and/or others, and restrict her access to the community.

Intervention 1 included three variables:

- Lauren's staffing ratio was increased from a 1:2 teacher/student ratio to a 1:1 ratio.
- Lauren worked in a separate room adjacent to her class with her 1:1 teacher, which reduced the noise/disruptive levels in the environment.
- Lauren's demands were gradually reduced to meet her behavioral needs. For example, Lauren was given more frequent breaks throughout the day and her daily academic assignments were shortened.

Prior to the implementation of Intervention 2, Lauren's demands were gradually increased (Treatment Change 1 on Figure 1), she was reintegrated into the classroom setting (Treatment Change 2 on Figure 1), and her 1:1 teacher was discontinued (Treatment Change 3 on Figure 1).

Intervention 2: A response-cost token system was implemented with Lauren, which allowed her to earn positive/negative points for absence/demonstration her targeted maladaptive behaviors, including physical aggression as well as her other targeted behaviors of property destruction, stripping, teasing others, screaming, running away, and head banging. Lauren was allowed to trade her points twice during the school day to allow her to have more opportunities to purchase tangible reinforcers.

The frequency of Lauren's physical aggression was recorded and graphed.

Discussion

The intervention was effective in decreasing Lauren's physical aggression. Following implementation of Intervention 1 Lauren displayed an average weekly frequency was 246 (see Figure 1). Treatments changes of gradually increasing demands (T1), returning to the classroom setting (T2), and discontinuation of the 1:1 teacher to student ratio (T3) were also noted on the graph (see Figure 1). Following implementation of intervention 2 she displayed an average weekly frequency was 18 (see Figure 1).

With the reduction in physical aggression, Lauren was able to demonstrate appropriate learning skills for participation in her daily school routine, which allowed her to transition from a private special school day program placement, with no access to typically developing peers, to a public high school special education setting. This study illustrates that initial implementation of environmental modifications such as classroom placement, increased staff to student ratio, and reduction of demands, which were faded, along with the implementation of a response-cost token system were effective in reducing physical aggression.

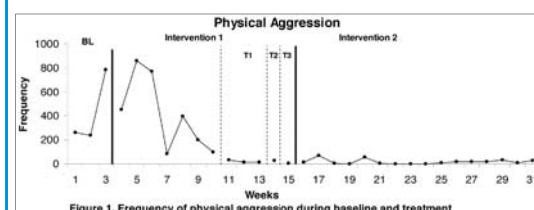


Figure 1. Frequency of physical aggression during baseline and treatment

References

- Johnson, L., McComas, J., Thompson, A. & Symons, F.J. (2004). Obtained versus programmed reinforcement: Practical considerations in the treatment of escape reinforced aggression. *Journal of Applied Behavior Analysis, 37*, 239-242.
- Lerman, D.C., Addison, L.R., & Kodak, T. (2006). A preliminary analysis of self-control with aversive events: The effects of task magnitude and delay on the choices of children with autism. *Journal of Applied Behavior Analysis, 39*, 227-232.
- Pace, G.M., Ivonic, M.T., Edwards, G.L., Iwata, B.A., & Page, T.J. (1986). Assessment of stimulus preference and reinforcer value with profoundly retarded individuals. *Journal of Applied Behavior Analysis, 19*, 1249-255.
- Smith, R.G., & Iwata, B.A. (1997). Antecedent influences on behaviors disorders. *Journal of Applied Behavior Analysis, 30*, 343-375.

For Further Information

Please contact (605) 782-2300. More information on this and related projects, plus a PDF-version can be obtained at www.cchs.org.

