

THE EFFECTIVENESS OF ENVIRONMENTAL MODIFICATIONS TO DECREASE PROBLEM BEHAVIOR AND MEDICATION USE

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Introduction

This case study examined environmental modifications to decrease the occurrence of self-injury and physical aggression. The subject of the study was a child receiving educational and residential behavior services through Children's Care Hospital and School. He has received intermittent educational services since 1999 and was most recently admitted to residential behavioral services in January 2008. Maxon was voluntarily admitted to the residential program by his parents in order to effectively evaluate medications in a controlled environment under the direct supervision of the pediatric psychiatrist.

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 care 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 educators, speech/occupation/physical therapist, social worker, nutritionist, and nurse. Children receiving residential services at Children's Care are also seen by a pediatric psychiatrist who works in conjunction with the behavior analyst.

Children's Care is a 43 week/year facility licensed by South Dakota Department of Education for educational programming and 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

Maxon is a 12 year old male diagnosed with mental retardation, attention deficit hyperactivity disorder, and noted to have speech/language delays as well as orthopedic impairments. He began receiving educational services at Children's Care in 1999 and most recently began receiving educational and residential services in 2008. Initial level of service in 1999 was a 6 hour school day and in January 2008 Maxon entered the residential program which is a 24 hour ABA based program.

Instruments

A functional assessment was conducted that utilized anecdotal antecedent, behavior, and consequence data collected by staff that work directly with Maxon. Direct observations in the educational and residential environment were completed by the behavior analyst. Data was collected and analyzed from the observations.

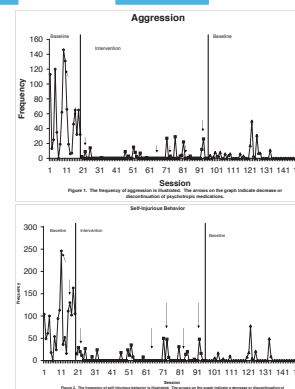
Procedure

- 1) Aggression was defined as any occurrence of aggression to include pinching, hitting, kicking, spitting, head-butting, and/or biting others; self-injury was defined as any occurrence of self-injury to include head-banging and/or biting self.
- 2) The functional behavioral assessment indicated that the problem behaviors were primarily maintained by social reinforcement in the form of escape from a demand/request and to a lesser extent the problem behaviors were maintained by social reinforcement in the form of access to a tangible.
- 3) Baseline data was collected in both educational and residential settings from January 21, 2008 to February 9, 2008, with a mean frequency of 22 for aggression (refer to Figure 1) and 80 for self-injury (refer to Figure 2).
- 4) It was determined if left untreated the behavior would be harmful to self and others, impede his access to the community and highly restrict his learning.
- 5) A change in residential units and educational classrooms was made, due to increased aggression towards other students. The change in units resulted in an increased staffing ratio, 1 staff to 2 students, previously 1 staff to 3 students. The classroom change resulted in a change of teacher and a change in peer group. The new peer group was able to demonstrate a higher level of appropriate social skills (i.e. interactive play skills, gaining attention, requesting a break, conversation skills, etc.) due to the fact that the students were primarily verbal.
- 6) Upon reaching a 75 percent reduction in problem behavior and an 80 percent increase in replacement skills, Maxon was transitioned to his previous classroom and moved to his home setting.
- 7) The frequency of aggression and self-injury was recorded and graphed.

Discussion

The environmental changes regarding staffing ratio as well as opportunities to engage and interact with more socially and language-abled peers was effective in decreasing Maxon's aggression and self-injury. After four months of plan implementation, the mean frequency of aggression decreased to 2 occurrences (refer to Figure 1) and self-injury decreased to 6 occurrences (refer to Figure 2). In addition, several psychotropic medications (clonidine, depakote, fluoxetine, and trazadone) were decreased and/or discontinued while maintaining low levels of aggression and self-injury. With the reduction in aggression and self-injury, Maxon also developed appropriate alternate skills such as communicating wants/needs, gaining attention, and interactive play skills.

Upon demonstrating a 75 percent reduction in problem behavior and an 80 percent increase in appropriate skills, Maxon was transitioned back to his previous classroom and was able to begin residing in his home with his family. Following the transition, a slightly elevated trend of aggression and self-injury was demonstrated with a peak of problem behavior exhibited when Maxon's twin brother was admitted for residential services and therefore no longer in the home. The frequency of aggression and self-injury did return to near zero levels of occurrence. This study illustrates that environmental modifications can increase appropriate alternate skills and decrease aggression and self-injury.



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