Available online at www.sciencedirect.com
SCIENCE DIRECT®
Pergamon
Research in Developmental Disabilities
24 (2003) 381–390
Research in Developmental Disabilities

Assessment of aberrant behavior maintained by wheelchair movement in a child with developmental disabilities

Iser G. DeLeon[a,b,*], SungWoo Kahng[a,b], Vanessa Rodriguez-Catter[a], Ingibjörg Sveinsdóttir[a], Christine Sadler[a]

[a]*Neurobehavioral Unit, Kennedy Krieger Institute, 707 North Broadway, Baltimore, MD 21205, USA*
[b]*Johns Hopkins University, School of Medicine, Baltimore, MD, USA*

Received 15 May 2002; received in revised form 29 October 2002; accepted 28 February 2003

Abstract

A child that used a wheelchair was anecdotally observed to display little aggressive behavior when being pushed in his wheelchair, but higher rates of aggressive behavior when movement was terminated. A functional analysis was conducted to systematically assess the relationship between aggression and wheelchair movement. The functional analysis results revealed elevated rates of aggression when it resulted in being briefly pushed in the wheelchair. This functional hypothesis was subsequently validated by teaching the child to request movement through appropriate means and demonstrating that aggression decreased under treatment conditions. These results extend prior research on functional analysis by demonstrating a previously unreported behavioral function particular to individuals with motor deficits.

Keywords: functional analysis; aberrant behavior; wheelchair use; functional communication training

Research on the functional analysis of aberrant behavior in individuals with developmental disabilities has uncovered a variety of consequences that can maintain behavior problems. Common behavioral functions include escape from instructional sequences (Carr & Newsom, 1985; Iwata, Pace, Kalsher, Cowdery, &

* Corresponding author. Tel.: +1-443-923-2842; fax: +1-443-923-2845.
E-mail address: deleon@kennedykrieger.org (I.G. DeLeon).

0891-4222/$ – see front matter
doi:10.1016/S0891-4222(03)00056-8

Cataldo, 1990), access to adult attention (Day, Rea, Schussler, Larsen, & Johnson, 1988; Hagopian, Fisher, & Legacy, 1994), access to tangible items (Durand & Crimmins, 1988) and automatic reinforcement, a category used to indicate that aberrant behaviors seem insensitive to consequences provided by others (Patel, Carr, Kim, Robles, & Eastridge, 2000; Piazza, Adelinis, Hanley, Goh, & Delia, 2000).

Several studies have reported observing problem behaviors that appeared to be maintained through less typical contingencies and/or exacerbated by specific stimuli in combination with more typical functional relations (e.g., therapist compliance with child requests, Bowman, Fisher, Thompson, & Piazza, 1997; the presence of certain toys but not others, Van Camp et al., 2000). These less typical behavioral functions are sometimes uncovered through a two-step process consisting of naturalistic observations followed by systematic analysis to verify hypotheses generated through the observations (e.g., Carr, Yarbrough, & Langdon, 1997; Kennedy & Itkonen, 1993; McComas, Hoch, Paone, & El-Roy, 2000). In some cases in which atypical behavioral functions have been identified through this process, researchers have found them to be related to specific participant characteristics or medical conditions. For example, O'Reilly, Lacey, and Lancioni (2000) reported that a 5-year-old girl with Williams syndrome and hyperacusis engaged in aggressive and disruptive behavior when confronted with loud noises in her classroom environment. A subsequent functional analysis revealed that high noise levels resulted in increased problem behaviors during instructional demand sessions. Several other person-specific medical or/and physical factors have been implicated in the etiology and maintenance of problem behavior. Examples include eye-poking that produces visual stimulation in individuals with visual impairments (e.g., Favell, McGimsey, & Schell, 1982) and escape-maintained self-injury exacerbated by recurrent otitis media (O'Reilly, 1997).

Physical disabilities that limit independent ambulation (e.g., cerebral palsy, spina bifida) are relatively common in cases of mental retardation and, like the disorders described above, may interact with other variables to maintain problem behaviors. In this study, informal observations led to the assessment of a behavioral function specific to an individual who used a wheelchair. The individual was observed to display little aberrant behavior when being pushed in his wheelchair, but momentarily higher rates of aberrant behavior when the pushing ceased. We hypothesized that his problem behaviors were, to some extent, maintained by access to positive reinforcement in the form of being pushed in the wheelchair. A formal functional analysis and a treatment evaluation were then conducted to test this hypothesis.

1. Method

1.1. Participants, setting, and target behaviors

Grady was a 14-year-old male diagnosed with profound mental retardation, cerebral palsy, and visual impairments. Grady displayed no expressive speech and