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PREVIEW

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**The efficacy of a cognitive behavioral intervention for the
treatment of hospitalized children with attention-deficit
hyperactivity disorder**

Doherty, Sheila A., Psy.D.

Pace University, 1991

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PREVIEW

**The Efficacy of a Cognitive Behavioral Intervention for the
Treatment of Hospitalized Children with Attention-
deficit Hyperactivity Disorder**

by

Sheila A. Doherty

**A Doctoral Project Submitted in Partial Fulfillment of the
Requirements for the Degree of Doctor of Psychology in
the Department of Psychology at Pace University**

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1991

(Please type all information)

NAME: Sheila A. Doherty

TITLE OF PROJECT: The Efficacy of a Cognitive Behavioral Intervention
for the Treatment of Hospitalized Children with
Attention-deficit Hyperactivity Disorder

DOCTORAL PROJECT COMMITTEE:

PROJECT ADVISOR: Alfred W. Ward, Ph.D.
(Name)
Associate Professor of Psychology
(Title) (Affiliation)

PROJECT CONSULTANT: John Mitchell, Ph.D.
(Name)
Professor of Psychology
(Title) (Affiliation)

FINAL APPROVAL OF COMPLETED PROJECT:

I have read the final version of the doctoral project and certify that it meets the relevant requirements for the Psy.D. degree in School-Community Psychology.

Alfred W. Ward
(Project Advisor's Signature)

5/22/91
(Date)

John Mitchell
(Project Consultant's Signature)

5/24/91
(Date)

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ABSTRACT

The literature is replete with ambiguity and controversy regarding the treatment of Attention-deficit Hyperactivity Disorder. Cognitive behavioral interventions have been enlisted as a viable treatment strategy for this behavioral syndrome. The efficacy of the Kendall and Braswell training program for the acquisition of self control in four hospitalized ADHD children was assessed by a series of repeated measures. The acquisition of self control was defined as increasingly lower scores on the Hyperactivity Index on the Conners Teacher Rating Scale and the Hyperactivity, Aggression and Delinquent Scores on the Achenbach Child Behavior Checklist. Also, the children would demonstrate increased latency and lower error scores on the Matching Familiar Figures Test. Behavioral observation ratings collected for 30 days would show a positive trend in acceleration over time in on task, compliance, frustration tolerance and prosocial skills as a result of the intervention. The results of the Kendall Tau trend analysis did not provide evidence regarding the utility of the intervention as an effective therapy to reduce the behavioral manifestations of ADHD. The behavioral data provided testimony to the extreme variability in

behavior for these ADHD children. It may be that one would look to obtain consistency in behavior through such an intervention rather than expect marked decrease in behavioral symptomatology.

Chapter I

Background

Introduction

The scientific literature is replete with ambiguity and controversy regarding the description, etiology and treatment of the syndrome once labelled Hyperkinetic Impulse Disorder and now called Attention-deficit Hyperactivity Disorder (ADHD). Over thirty years ago, Laufer, Denhoff & Solomon (1956) generated a list of behaviors that comprised the syndrome. The list included hyperactivity, short attention span, impulsivity, low frustration tolerance, poor academic achievement and visual-motor difficulties. Much of these same behaviors are included in the currently accepted definition of ADHD given in the Diagnostic and Statistical Manual of Mental Disorders (DSM III-R). ADHD is defined as follows:

- A. A disturbance of at least six months during which at least eight of the following are present:
 - 1. Often fidgets with hands or feet or squirms in seat.

2. Has difficulty remaining seated when required to do so.
3. Is easily distracted by extraneous stimuli.
4. Has difficulty awaiting turn in games or group situations.
5. Often blurts out answers to questions before they have been completed.
6. Has difficulty following through on instructions from others.
7. Has difficulty sustaining attention in tasks or play activities.
8. Often shifts from one uncompleted activity to another.
9. Has difficulty playing quietly.
10. Often talks excessively.
11. Often interrupts or intrudes on others.
12. Often does not seem to listen to what is being said to him or her.
13. Often loses things necessary for tasks or activities at school or at home.
14. Often engages in physically dangerous activities without considering possible consequences.

- B. Onset before the age of seven.
- C. Does not meet the criteria for Pervasive Developmental Disorder. (p. 52).

Children considered hyperactive are an enigma in many ways. Their difficulties are chronic and comprehensive. Core problems in impulsivity, distractibility, hyperactivity and frustration tolerance pervade a variety of domains (Barkley, 1981, 1985; Henker & Whalen, 1989; Hinshaw, 1987; Milich & Fitzgerald, 1985). Academic achievement, social relationships and the modulation of emotions and impulses are common deficiencies in an inordinate number of ADHD children (Weiss & Hechtman, 1986).

Psychostimulant medication schedules continue to be the most widely utilized treatment regime for the ADHD child. The clinical utility of drugs such as methylphenidate, dextroamphetamine and magnesium pemoline has been well documented (Barkley, 1977; Bradley, 1937; Klein, Gittleman, Quitkin, & Rifkin, 1980; Rapoport, 1983; Whalen & Henker, 1976). More recently, a variety of antidepressants have also been proven effective in reducing symptomatology in some ADHD children (Barkley, 1981; Biederman, Baldessarini,

Wright, Knee, Harnote, & Goldblatt, 1989; Zametkin & Rapoport, 1987).

Moreover, operant conditioning strategies (rewards and punishment) have been employed as effective methods of treating hyperactive children (Abikoff & Gittelman, 1984; Ayllon, Layman, & Kandel, 1975; Blanchard & Johnson, 1973; Greenhill, 1989; O'Leary, Pelham, Rosenbaum, & Price, 1976).

An emerging emphasis has been the proposal for the use of cognitive behavioral interventions to supplement medication usage (Abikoff & Gittelman, 1985; Brown, Wynne, & Medenis, 1985; Brown, Borden, Wynne, Schleser, & Clingman, 1986; Douglas, Parry, Marton, & Garson, 1976; Geniesse, Brown, & Borden, 1987; Hinshaw, Henker, & Whalen, 1984; Horn, Chatoor, & Connors, 1983; Kendall & Braswell, 1982, 1984, 1985; Wolraich, Drummond, Salomon, O'Brien, & Sivage, 1978). These interventions stem primarily from the original cognitive behavioral procedures of Meichenbaum and Goodman (1971), and combine such clinical practices as self instructional training, modeling, role play, self evaluation and the use of operant procedures to promote the acquisition of self control.

Konstantareas and Homatidis (1983) examined the usefulness of the combined effects of behavioral programming and cognitive therapy in the treatment of hyperactive boys in a day treatment program. Results demonstrated that the children showed a change in measurement in the six main areas associated with the manifestation of hyperactivity. Support for the use of the combined treatment modalities was confirmed. In this light, a number of treatment packages are available (Brown et al. 1985; Camp, Blom, Hebert, & vanDoornick, 1977; Douglas, 1972; Kendall & Braswell, 1982, 1985) for use as part of the clinical armamentarium of the professional working with ADHD children.

It would seem appropriate that the effectiveness of purely psychopharmacological and operant treatment strategies could only be enhanced by the introduction of cognitive behavioral methods. This investigation was undertaken to demonstrate the efficacy of the Kendall and Braswell intervention program for the acquisition of self control in patients with ADHD at

the Children's Crisis Intervention Service, Bergen Pines County Hospital, Paramus, New Jersey.

Review of the Literature

Learning theory has provided the framework for the acquisition and maintenance of behavior. Behavior modification programming is the strategic use of operant conditioning principles to acquire and change behavior. Operant conditioning procedures focus on the effects of consequences on behavior (Skinner, 1938). In this orientation, behavior is viewed as a summary of experiences and past consequences. Operant conditioning encompasses the systematic and contingent use of reinforcement and punishment strategies. An event that follows a behavior and increases the likelihood that the behavior will be performed again under similar conditions is called reinforcement. Particular positive reinforcement devices include social reinforcement, activity reinforcement and token reinforcement. Punishment is any event which follows a behavior and which decreases the behavior in the future. Response cost and time out from positive reinforcement are common types of punishment. These pure methods dominated behavior therapy until the

seventies when a new style emerged which developed from the wedding of behavior therapy and cognitive therapy to form cognitive behavioral strategies.

In the pursuit of the development of cognitive behavioral strategies, the monumental work of Meichenbaum and Goodman (1971) is cited. Their investigation was influenced by the research of Soviet psychologists Luria (1961) and Vygotsky (1962). The Soviets proposed a paradigm by which a therapist could use modeling and direct instruction to influence the thinking processes and behavior of a child.

Subsequently, the child would assume the statements of the therapist as their own. Moreover, others have examined the specific types of cognitive variables that can influence children's behavior in a variety of situations which demand self control by way of the manipulation of the child's internal dialogue or his self instructions (O'Leary, 1968; O'Leary & Dubey, 1979). Meichenbaum and Goodman (1971) developed a self instructional training method that consisted of an amalgamation of modeling, overt and covert rehearsal, prompting, feedback and social reinforcement. This multidimensional instructional prototype was proposed

as a measure of teaching hyperactive children to "think before they act" and to become more systematically cognizant of their behavior in order to develop self control. The researchers' focus was not on training children what to think, but rather on teaching them how to think.

Meichenbaum and Goodman's work has become the cornerstone of subsequent investigations in the acquisition of self control. From these underpinnings, researchers have addressed the cognitive variables of self monitoring, self evaluation and self regulation separately and as integral components of what constitute a "package" to foster the acquisition of self control in the impulsive child.

Self monitoring or self observation is considered a primary component in the acquisition of self control (Brodén, Hall, & Mitts, 1971; Graziano & Mooney, 1984; Homme, 1965). This requires the child's selective attention to targeted behaviors. Numerous authors have researched this potentially valuable feature in the classroom, specifically regarding on task and disruptive behaviors (Brodén, Hall, & Mitts, 1971; Cameron & Robinson, 1980; Clement, Anderson, Arnold,

Bittman, Fantazzo, & Mays, 1978; Sagotsky, Patterson, & Lepper, 1978) and demonstrated a change in these behaviors as a result of the implementation of self monitoring. Moore and Cole (1978) demonstrated that hyperactive children showed significant changes on a number of measures of cognitive abilities by way of training in self mediation. The endurance of change has been questioned, yet it remains obvious that this particular procedure at least provides an opportunity for self observation as the first step toward self control (Abikoff, 1987; Cohen, 1981; Draeger, Prior, & Sanson, 1986; Hersher, 1985; Whalen, Henker, & Hinshaw, 1985).

In the paradigm of self control, self evaluation follows self monitoring. This procedure includes the presentation of overt and covert consequences contingent upon performance (Thoresen & Mahoney, 1974; Varni & Henker, 1979). Didactic exchanges and modeling of specific information by the therapist convey to the child the elements necessary to increase their self control.

Self evaluation prompts self regulation. The child is trained through subvocalizations to develop

adaptive cognitive responses that are incompatible with previous maladaptive behavioral sequences. These subvocalizations will invoke censorship to impede behavioral dyscontrol (Barkley, Copeland, & Sivage, 1980; Bender, 1976; Bolstad & Johnson, 1972; Meichenbaum & Goodman, 1971; Neilans & Isreal, 1981; Ross, 1981).

Many investigations have combined the aforementioned three components of the paradigm to develop a "package" of self instruction that in combination serve to foster self control. This comprehensive approach encompassing cognitive variables has been successfully utilized to reduce impulsive behavior (Finch, Wilkinson, Nelson, & Montgomery, 1975; Kendall & Finch, 1976, 1978), hyperactive behavior (Bornstein & Quevillon, 1976; Douglas et al. 1976) and disruptive behavior (Coats, 1977; MacPherson, Candee, & Hobman, 1974; Monohan & O'Leary, 1971).

Four specific packages have evolved. Most notable is the work of Brown et al. (1985), Camp et al. (1977), Douglas (1972, 1980), and Kendall and Braswell (1982, 1985).

Brown et al. (1985) instructed latency aged hyperactive boys to use "Super Thinking Tricks" to cope more effectively with cognitive problems and to evaluate their own performance. Camp et al. (1977) trained hyperaggressive latency aged boys to provide answers to four fundamental questions: "What is my problem?" "What is my plan?" "Am I using my plan?" and "How did I do?" prior to acting. The success of their program was recognized in the boys' ability to apply the procedures across situations and not just to specific tasks. Additionally, Douglas (1972, 1980) reinforced the necessity for impulsive children to "stop, look, listen and think" in their pursuit of self control.

Kendall and Braswell (1982, 1985) in their 12 week investigation used a variety of techniques for teaching impulsive 8-12 years old to stop and think before they responded. In their original investigation the teachers' blind ratings of the children in the cognitive behavioral intervention group indicated these children demonstrated improvement in self control and decreased hyperactivity post intervention. Normative comparisons and a 10 week follow up investigation

provided additional support for the use of their techniques. One year later however, behavioral control was not substantiated.

Generally speaking, Kendall and Braswell demonstrated that self regulation could be achieved by means of a series of exchanges between a therapist and child which would specifically address the child's impulsivity, overactivity, and inattention which are the behavioral manifestations of ADHD. The authors' multifaceted cognitive behavioral treatment program included emphasis on modeling, self instruction, self evaluation of performance, reward and response cost.

Each child was taught five components of problem solving: (a) problem definition, (b) problem approach, (c) focusing of attention, (d) selecting an answer and, (e) self reinforcement for correct performance. The therapist generously awarded social reinforcement for appropriate responses. If a child committed an error, the therapist labelled and explained the mistake. This was done to teach coping statements like "I'll do better next time if I remember to slow down."

The training package consisted of predesigned weekly one hour sessions for a period of twelve weeks.