REDUCING DISRUPTIVE CLASSROOM BEHAVIOR

WITH MULTICOMPONENT INTERVENTION:

A LITERATURE REVIEW

by

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ABSTRACT

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Literature Review

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Attention Deficit Hyperactivity Disorder (ADHD) affects children and their

learning in many ways. One main educational obstacle of children ADHD is how their

disruptive classroom behavior can inhibit their ability to learn. While many behavioral

interventions exist to decrease their disruptive behaviors, it would appear that using

several techniques in one approach might have greater utility than using a solitary

behavioral intervention strategy.

This research reviews the existing literature in behavioral interventions commonly

used to improve the functioning of disruptive students. One strategy, multicomponent

intervention, will be examined in depth. A critical analysis of the relevant literature

includes directions for future research and practice.

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CHAPTER ONE

Introduction

Attention deficit hyperactivity disorder (ADHD) impacts children in a myriad of ways. Affecting 3%-5% of school age children with a male to female ratio of 4:1-9:1 (American Psychiatric Association, 1994), many children with ADHD display low frustration tolerance, a tendency to become bored very easily or often, a lack of motivation for all but the most stimulating activities, and a relative inability to recognize future consequences of behavior or to learn from mistakes. In addition, children with ADHD often exhibit short attention spans, impulsivity, distractability, and hyperactivity (Batshaw, 1997). These common behavioral characteristics carry many negative academic and social undertones for children.

The disruptive behavior of children with ADHD has been shown to have social and academic implications. In school, children with ADHD often have difficulty following teachers' instructions and classroom rules. They also have difficulty focusing on classroom tasks and completing homework. Such difficulties frequently result in less time engaged in academics and lower grades (Wentzl, 1993). Additionally, the disruptive behaviors of students with ADHD require teachers to spend more time on classroom control and discipline; and, therefore, less time on academics. As children with ADHD mature, symptoms of the behavioral disorder may persist.

In the social atmosphere, children with ADHD continue to face challenges. Due to their disruptive behavior, peer rejection may be common for the child with ADHD (Batshaw, 1997). Researchers have identified several social characteristics of hyperactive

children, whether diagnosed with ADHD or not. This includes many negative factors

such as low peer status, an aggressive and bossy style of interaction that is disliked by

peers, an aloofness to others in social actions, and a less responsible and less compliant

nature during playtime (Radcliffe, 2000). These negative characteristics may not end in

childhood. Disruptive behavioral patterns during the early school years have been shown

to dramatically increase the risk for later antisocial behavior (Tremblay, Pihl, Vitaro, &

Dobkin, 1994). Due to the disruptive and pervasive nature of ADHD, effective treatments

are needed to manage the behaviors and to improve the academic performance of

students with this condition.

A variety of interventions exist to manage the behavioral problems of children

with ADHD. Psychotropic medications, including anti-depressants, selective serotonin

re-uptake inhibitors, and stimulants are common methods of treating ADHD. Most

children with ADHD take the stimulant, methyphnidate (brand name: Ritalin), which

stimulates the central and respiratory systems by changing the cerebral cortex and

subcortical structure (Radcliffe, 2000). Stimulant medications, such as methylphenidate,

have been found to effectively manage many symptoms of ADHD by increasing

academic productivity, associative learning, information processing, attention, and

associative learning (Radclife, 2000).

However, much controversy surrounds the side effects and the frequent

prescription of stimulant medications. Two common negative side effects of Ritalin are

appetite suppression and difficulty falling asleep. Other side effects include headaches,

stomachaches, growth inhibition, increased blood pressure, and increased heart rate

(Radcliffe, 2000). Additionally, this medication only works for fifty to eighty percent of

the prescribed population (DuPaul, & Eckert, 1997). Fortunately, medications are not the only treatment used for ADHD.

In addition to medication, various psychosocial or non-drug treatments exist for children with ADHD. These include skills training, cognitive-behavioral techniques, parent and teacher training therapy, and behavior modification. A recent addition to the literature involving classroom-based behavioral interventions is a multicomponent intervention model (Kehle, Bray, Theodore, Jenson, & Clark, 2000; Musser, Bray, Kehle, & Jenson, 2001). This model employs a broad range of behavior modification strategies such as precision requests, mystery motivators, token reinforcers, response cost techniques and antecedent strategies to target compliance with rules and to reduce disruptive behaviors.

Given that several non-medical treatments have been found to be effective for children with ADHD, it would appear that multicomponenet intervention techniques might have greater treatment utility than using a solitary behavioral intervention strategy. However, since multicomponent intervention strategies are relatively new, educators need to become aware of the effects and utility of using multicomponent interventions for children with ADHD. Therefore, the purpose of this literature review is to examine the research on interventions commonly used for children with ADHD and to determine whether multicomponent treatment interventions can be effective and useful with this population. The following three research questions guided this study:

1. What types of intervention strategies are commonly used for children with ADHD?

2. How effective are these intervention strategies?

3. What are multicomponent treatment strategies?

4. How effective are multicomponent strategies?

CHAPTER TWO

Literature Review

This chapter will review the literature relevant to the interventions commonly used to decrease disruptive behavior, as well as interventions specifically used for children with attention-deficit/hyperactivity disorder. The effectiveness of these interventions will be discussed. Additionally, individual pieces of the multicomponent intervention plan will be explained. The existing literature involving multicomponent interventions will be reviewed, including their effectiveness in reducing disruptive classroom behavior.

Behavioral Interventions

As the negative academic and social effects may permeate the lives of individuals with ADHD, effective interventions in the classroom can provide teachers with the necessary tools for early intervention and the possible prevention of future behavior problems.

Two recent meta-analyses are applicable to this research. Stage et al. (1997) examined 99 studies that used interventions to decrease disruptive classroom behavior in public education settings. This meta-analysis examined studies using various interventions, including behavioral interventions (group contingencies, differential reinforcement, overcorrection, time out), cognitive-behavioral interventions (anger control programs, affective imagery, social problem-solving, peer mediated), individual counseling, parent training and multi-modal interventions. The multi-modal interventions were those that employed two or more interventions into one treatment. Results of this meta-analysis indicated that behavioral interventions were more effective than cognitive-

behavioral interventions. On average, 78% of the treated students reduced their disruptive behavior compared to the non-treated students. Further, students in self-contained classrooms were more likely to show a reduction in their disruptive behaviors. Additionally, studies using behavioral observation coding systems were found to be more sensitive to change compared with studies that used teacher ratings as the outcome measures. The least effective interventions of the meta-analysis involved functional assessment and cognitive-behavioral interventions.

Another applicable meta-analysis analyzed the effects of school-based interventions for students with ADHD (DuPaul & Eckert, 1997). DuPaul et al. (1997) analyzed 63 studies and found that the number of school-based interventions for children with ADHD gradually have increased in frequency over the 24-year period covered. The majority of studies examined the effects of contingency management and cognitive-behavioral interventions, and only a few studies included control groups or involved the random assignment of participants to treatment groups. Nonetheless, effect sizes were significantly larger in studies involving academic and contingency management interventions compared to cognitive behavioral interventions. Of further interest, students in special education classrooms demonstrated significantly greater behavioral effects than those in general education.

Multicomponent Intervention

The multicomponent intervention combines many behavioral management strategies with the goal of decreasing disruptive classroom behavior. The various components typically include token economy and response cost, precision requests, mystery motivators, and antecedent strategies.

The rationale for using a multicomponent intervention is based on the assumption that while all of the components may be effective when used in isolation, they may be even more effective in reducing disruptive behaviors if they are combined. According to Kehle et al. (2000), multicomponent interventions consistently have been found to be teacher-friendly and cost-effective. They also can be employed in a variety of classroom settings.

Specific Strategies Used in Multicomponent Interventions

Token Economy and Response Cost

The basic premise of token economies is that students will be told that they will receive points for the amount of time that they can follow the classroom rules. According to Kehle et al. (2000), students should be awarded with points fairly frequently in order to establish a connection between the desired behavior and rewards. Eventually, the frequency should be thinned to a variable interval schedule (Kehle et al., 2000).

Token economies with response costs can be used to reward good behaviors and to punish bad behaviors. With the response cost procedure, students can lose points for noncompliance with classroom rules. Points are taken away as a consequence for engaging in disruptive behaviors and being non-compliant with teacher requests.

Token economies have been one of the most effective ways to improve classroom behaviors (Higgens, William, & McLaughlin, 2001). They have been effective with school behaviors across school populations and grade levels. Additional research has shown that when implemented together, token reinforcement and response cost interventions are associated with less disruptive classroom behaviors (McGoey & DuPaul, 2000). Token economies, combined with such strategies as response cost and

public posting of classroom rules, also proves more successful in reducing disruptive classroom behavior than a token economy system alone (Musser et al., 2001; Rosenberg, 1986).

Precision Requests

Precision requests can be used to initiate student compliance, to stop disruptive behaviors and to prompt appropriate behaviors. As described in the DeMartini-Scully et. al. (2000) investigation, teachers are trained to correctly communicate instructions using a series of steps. The initial command is given using the word "please." The teacher then waits approximately five seconds for compliance. If the student complies within the time period, he/she is reinforced. If the student does not comply, a second request is given using the word "need." Again, if the student complies within five seconds, he/she is reinforced. If the student does not comply with the request, a reductive technique, such as a timeout, is administered. In addition, the importance of the five-second waiting period and using the words "please" and "need," requests should be stated in a calm, quiet, and unemotional tone of voice. Eye contact and a distance of no more than three feet should be maintained throughout the precision request (Reavis, Sweeten, Jenson, Morgan, Andrews, & Fister, 1996).

There exists little research examining the effects of precision requests used singularly. However, they have been shown to be effective in increasing compliance in home and neighborhood environments (Mackay, McLauglin, Weber, & Derby, 2001).

Mystery Motivators

Mystery motivators are another element of many multicomponent intervention plans. A mystery motivator uses the principles of positive reinforcement to initiate

compliance. Very simply, an envelope labeled with a question mark is placed in a visible spot in the classroom. Inside the envelope is a card stating what the student will win (e.g., tutor-time, teacher helper). Mystery motivators tend to increase the anticipation of the reward (DeMartini-Scully et al., 2000).

Very little research has studied the effects and use of mystery motivators. However, two studies have found mystery motivators to be an effective tool in increasing compliance rates, and they have high acceptability ratings from teachers and students (Kehle, Maduas, Baratta, & Bray, 1998; Moore & Waguespack, 1994).

Antecedent Strategies

As with other behavioral intervention plans, antecedent strategies are often used to increase compliance. Antecedent strategies include teacher movement, which allows for increased opportunities for compliance, and the public posting of classroom rules. According to Kehle et al. (2000), when using antecedent strategies, classroom rules should be stated positively and definitively regarding expected behaviors.

Antecedent strategies, such as teacher movement, increase the likelihood that the teacher will detect problem behaviors, as well as notice and reinforce appropriate behaviors (Rhode, Jenson, & Reavis, 1993). Research demonstrates that teacher movement and rule posting increases compliance rates of students (Rhode et al., 1993).

Effectiveness of Multicomponent Interventions

Recent investigations have supported multicomponent interventions in a variety of settings with different individuals. DeMartini-Scully et al. (2000) implemented the multicomponent intervention with two elementary school students in a general education setting. The disruptive behaviors were measured using time sampling procedures and a

multiple baseline/reversal design. Disruptive behaviors consisted of students failing to respond to teacher requests, making noises, talking out of turn, being out of seat and staring in a direction other than the teacher or their work. The researchers developed a multicomponent intervention, which included precision requests, antecedent strategies, positive reinforcement, token economy, and response cost measures delivered through a contingency contract. During the baseline period, disruptive classroom behaviors of the students occurred 41% of the time. In contrast, during the intervention phase, disruptive behaviors were reduced to an average of 20% of the time. Also notable, teacher acceptability ratings from this study indicated that the implementation of this multicomponent intervention is relatively trouble-free.

In another study, Musser et al. (2001) used a similar multicomponent, multiple baseline design with three school-aged students with serious emotional disturbances. The intervention took place in a self-contained classroom in an alternative school setting. In this study, disruptive behaviors were defined as the failure to respond to teacher requests, talking out, being out of seat, playing with non-work related objects, being verbally aggressive, being physically aggressive and staring in a direction other than toward the work materials or the teacher. The researchers measured behaviors using 10-second partial-interval time sampling procedures. Musser and others employed a multicomponent intervention that consisted of precision requests, mystery motivators, token economy with response cost, and antecedent strategies. The results indicated that disruptive behaviors occurred 37% of the time during the baseline period. They were reduced to 10% of the time during the intervention phase. Similar to the research by DeMartini-Scully et al. (2000), teacher acceptability scores were positive.

Another applicable study used a partial multicomponent intervention (McGoey &

DuPaul, 2000). In this study, the researchers found token reinforcement and response cost

procedures to be effective in reducing the disruptive behavior of four Caucasian

preschool children with ADHD. This intervention included the use of buttons as token

reinforcers for good behavior in a half-day preschool setting. Alternatively, students

could lose buttons for breaking the classroom rules. Observers recorded how many times

the children followed and disobeyed classroom rules, were off-task, threw temper

tantrums and were engaged in positive and negative social interactions. The disruptive

behaviors decreased significantly when the token reinforcement and response cost

contingency intervention were implemented.

CHAPTER THREE

Summary and Discussion

Attention Deficit Hyperactivity Disorder (ADHD) affects 3%-5% of school-age children. Children with ADHD exhibit many symptoms that may have a broad range of academic implications, including low frustration tolerance, a tendency to become bored easily, lack of motivation and disruptive behaviors. In school, children with ADHD may have difficulty following teachers' instructions, obeying classroom rules, and focusing on homework. Such behaviors make it difficult for students to achieve to their highest potential in the classroom. Therefore, a great need exists for effective classroom-based interventions to increase student compliance and to decrease the disruptive behaviors of students with ADHD.

Fortunately, there exists a variety of interventions to help manage the behavioral problems of children with ADHD. These include medications, skills training, cognitive-behavioral techniques and behavior modification. A recent addition to the repertoire of behavioral interventions involves a multicomponent intervention model. This model includes the use of many behavior modification tools such as precision requests, mystery motivators, token reinforcers, response cost techniques and antecedent strategies.

Recent research supports the application of a multicomponent behavioral intervention in the classroom to reduce disruptive behaviors of children with ADHD. Stage et al. (1997) reviewed 99 studies that used interventions to decrease disruptive classroom behaviors and found that behavioral interventions were more effective than other interventions. Specifically, Stage et al. (1997) reported that, on average, 78% of students reduced their disruptive behavior with behavioral interventions.

Even more research exists investigating the effects of employing the multicomponent intervention in classrooms. DeMartini-Scully, et al. (2000) found that disruptive classroom behaviors decreased substantially after the intervention period with two elementary students. Similarly, DuPaul et al. (1997) used the multicomponent intervention with school-aged students with serious emotional disturbances. On this study disruptive behaviors were exhibited 37% of the time during the baseline period, and they were reduced to 10% of the time during the intervention phase.

In sum, children with ADHD may be affected by a variety of distracting, impulsive and inattentive symptoms. In school, such disruptive behaviors may impede the student learning and instruction. Therefore, it is imperative that effective classroom interventions be implemented to decrease such disruptive behaviors. Recent literature describes a limited amount of research that supports the use of a multicomponent intervention program as an effective tool for managing disruptive behaviors in the classroom.

Limitations of Literature Review

There exist several limitations of this literature review. While this researcher attempted to be exhaustive in reviewing all the literature available on behavioral interventions used to decrease disruptive student behavior, some research may have been overlooked. As such, this review may present a biased view regarding the effectiveness of behavioral and multicomponent interventions. Further, other interventions that exist to reduce disruptive behaviors were not discussed in depth.

In addition, this literature review is merely a summarization of previous research. No empirical research was conducted. Therefore, it does not add or contribute new information to the field of education.

Limitations of Multicomponent Interventions

There are several limitations of the research on multicomponent interventions. While research exists regarding the specific effects of each component used in isolation, it is difficult to determine how the various components interplay to reduce disruptive classroom behaviors. Although preliminary studies indicate positive results regarding the implementation of multicomponent intervention strategies, this is a relatively new area of applied research. Thus, multicomponent interventions have not bee implemented over numerous situations. In addition, an interpretation of a synthesis of the literature in this area is problematic due to the small number of studies and the small sample of students. Therefore, the results of the existing empirical studies should be considered with caution.

Implications for Future Research

Further research is needed regarding the use of multicomponent interventions to decrease disruptive classroom behaviors with a variety of children. Specifically, this research could hold great importance for children with ADHD. More research is needed to determine the relative effectiveness of single components and which combinations can be most effective. Additionally, more research is needed to further validate the overall effectiveness and utility of multicomponent interventions.

Implications for Practice

As multicomponent intervention plans have received preliminary support as an effective way to decrease disruptive classroom behaviors, there exist many implications

for practice. Because many educators are familiar with the several of specific components of multicomponent interventions, this tool may have a wide scope for classroom implementation. Thus, teachers and school psychologists could employ specially designed multicomponent plans in their classrooms and monitor the behaviors of their students to determine its effectiveness.

Additionally, educators need to be aware of the variety of strategies that exist to create an optimal learning environment for all students. Educators need not be timid in implementing multicomponent intervention plans in the classroom, as previous research supports using a combination of behavioral intervention. With knowledge of effective classroom interventions, including multicomponent interventions, classroom teachers will be armed with the essential tools necessary for maximizing student learning.

Summary

Attention Deficit Hyperactivity Disorder (ADHD) affects children and their learning in many ways. One main educational obstacle for children with ADHD is how their disruptive classroom behavior can inhibit their ability to learn. While many behavioral interventions exist to decrease their disruptive behaviors, it would appear that using several techniques in one approach might have greater utility than using a solitary behavioral intervention strategy.

This research reviews the existing literature in behavioral interventions commonly used to improve the functioning of disruptive students. One strategy, multicomponent intervention, was examined in depth. A critical analysis of the relevant literature includes directions for future research and practice.

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