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POSITIVE REINFORCEMENT AS AN INTERVENTION FOR CHILDREN WITH
ATTENTION DEFICIT HYPERACTIVITY DISORDER AND
SCHIZOID PERSONALITY DISORDER

by
Dana H. Kagan

A Thesis

Submitted in partial fulfillment of the requirements of the
Masters of Arts Degree
of
The Graduate School
at
Rowan University
May 2004

Approved by

Date Approved 5/4/04

ABSTRACT

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Positive Reinforcement as an Intervention for Children with Attention Deficit
Hyperactivity Disorder and Schizoid Personality Disorder

2004

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Positive reinforcement is effective when used as an intervention for children with inappropriate behaviors. Children with the diagnosis of Schizoid Personality Disorder (SP) and/or Attention Deficit Hyperactivity Disorder (ADHD) may exhibit inappropriate behaviors that inhibit their quality of life. When appropriate behaviors are paired with rewards or reinforcements, there is an increase in the likelihood of such behaviors reoccurring. When four appropriate behaviors were reinforced by stickers for a child with SP and ADHD, the behaviors increased, therefore inappropriate behaviors decreased. The data that was collected was analyzed by a two-way ANOVA test. Several types of reinforcement interventions were researched and discussed.

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Chapter I

Need

Interventions that include reinforcements being paired with desired behaviors yield an increase in such behaviors. Children with Attention Deficit Hyperactivity Disorder (ADHD) or Schizoid Personality Disorder (SP) often display inappropriate, negative behaviors. These behaviors include inattention, hyperactivity and impulsivity. The children often do not possess the social and self-control skills to develop positive interpersonal relationships. When a child receives a reward for an appropriate behavior, he/she is inclined to increase that behavior. A positive reinforcement intervention increases the child's motivation to change his behaviors because the appropriate behavior leads to rewards and eventually to the skills to positively interact with others. Children also learn through social interactions and observations of peers.

Purpose

The purpose of the study is to assess an intervention. Interventions are used to modify the behaviors of others. It is beneficial to intervene when negative behaviors cause a disturbance or interference in daily living skills. The type of intervention that is being assessed is a positive reinforcement intervention. A child will be given rewards when appropriate behaviors are demonstrated.

Hypothesis

The hypothesis for this study is that positive behaviors when paired with a reward will increase while negative behaviors will decrease. Positive behaviors include socializing and interacting with others in an appropriate manner.

Theory

Behavior modification is the treatment of human behavioral disorders through the reinforcement of acceptable behavior and suppression of undesirable behavior. Behavior therapists believe that, in many cases, behaviors can be learned or unlearned through basic conditioning techniques. Behavior therapy uses such techniques as conditioning, where unwanted habits are paired with unpleasant stimuli, and systematic desensitization, where a stimulus that causes anxiety or negative emotions is paired with a pleasant one. It first came about in the beginning of the twentieth century by Russian psychologist, Ivan Pavlov. Pavlov developed a process known as classical conditioning. Pavlov began his research studying digestion. He was looking at the digestive process in dogs and the interaction between salivation and the action of the stomach. He realized that they were closely linked by reflexes in the autonomic nervous system. Without salivation, the stomach did not get the message to start digesting. Pavlov wanted to see if external stimuli could affect this process, so he rang a metronome at the same time he gave the experimental dogs food. After a while, the dogs, which before only salivated when they saw and ate their food would begin to salivate when the metronome sounded, even if no food was present. In 1903 Pavlov published his results, calling this a conditioned reflex and the learning process, conditioning. He also found that the conditioned reflex will be

repressed if the stimulus proves not to yield the reward too often. If the metronome sounded repeatedly and no food appeared, eventually the dog stopped salivating at the sound. (A Science Odyssey. PBS online 2004)

John B. Watson, an American psychologist, further developed this idea of classical conditioning in 1920. He studied the behavior of children, concluding that humans operated on the same principles. (A Science Odyssey. PBS online 2004)

Watson's experiment included conditioning an eleven-month-old baby to fear rats by associating the rat with a loud noise when presenting it to the baby. The baby then became frightened of the rat even when the loud noise did not sound.

B. F. Skinner also further developed these theories of behavior modification by developing the technique in the United States, using positive or negative reinforcers to encourage desirable behavior and punishments to discourage undesirable behavior. He did extensive research with animals, notably rats and pigeons, and invented the famous "Skinner box," in which a rat learned to press a lever in order to obtain food. With pigeons, he developed the ideas of "operant conditioning" and "shaping behavior." Operant conditioning is the rewarding of a partial behavior or a random act that approaches the desired behavior. Operant conditioning can be used to "shape" behavior. If the goal is to have a pigeon turn in a circle to the left, a reward is given for any small movement to the left. When the pigeon mastered the concept of turning to the left a reward was earned. Then the reward is given for larger movements to the left, and so on, until the pigeon has turned a complete circle before getting the reward. Skinner believed other complicated tasks could be broken down in this way and taught. (A Science Odyssey. PBS online 2004)

The social learning theory of Bandura emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others. Social learning theory explains human behavior in terms of continuous interactions between cognitive, behavioral, and environmental influences. The processes that underlie observational learning are: (1) Attention, including modeled events (distinctiveness, affective valence, complexity, prevalence, functional value) and observer characteristics (sensory capacities, arousal level, perceptual set, past reinforcement), (2) Retention, including symbolic coding, cognitive organization, symbolic rehearsal, motor rehearsal), (3) Motor reproduction, including physical capabilities, self-observation of reproduction, accuracy of feedback, and (4) Motivation, including external, vicarious and self reinforcement. (Theory into Practice 2003)

Definitions

- *Positive reinforcement* is a reward for a desired behavior.
- *Behavior modification* is the treatment of human behavioral disorders through the reinforcement of acceptable behavior and suppression of undesirable behavior.
- A *visual prompt* is a technique that is utilized for the subject and this writer to keep track of the subject's progress on each target behavior as well as remind the subject to stay focused on his behavior.
- *Attention Deficit Hyperactivity Disorder* (ADHD) includes some hyperactive-impulsive or inattentive symptoms that cause impairment and which are before age 7 years. Some impairment from the symptoms are present in two or more settings (e.g. at school or

home) and there must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

- *Schizoid Personality Disorder (SP)* refers to having a disorder marked by extreme shyness, flat affect, discomfort with others, and an inability to form close relationships

Assumptions

- The target behaviors did not mask underlying disorder.
- The subject had the capability to be motivated to improve his interpersonal relationships.
- Extended environmental factors supported this intervention.
- There was sufficient continuity during implementation of the intervention.

Limitations

The limitations in this study include a single subject population therefore, limiting the ability to generalize. There was no control over outside environmental factors. The effectiveness of the intervention was not contaminated because he attended on the scheduled times. The variance of the subject's mood did not affect his performance.

Summary

The following chapter will include a review of research of reinforcements used as interventions. Chapter III will include the design of the study and a discussion of the intervention plan. Chapter IV will include a report of the results of the intervention. Chapter V will contain a discussion of the results and the summary.

Chapter II

Reinforcing a behavior will increase the likelihood that the behavior will reoccur. Using a positive reinforcement intervention for increasing appropriate behaviors in children can result in decreasing inappropriate or problem behaviors. Children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) or Schizoid Personality Disorder often exhibit many inappropriate behaviors. If a child diagnosed with such disorders receives positive reinforcement for appropriate behaviors, he/she will increase the behavior to receive such reinforcements. There are several different types of reinforcements designed to decrease problem behaviors. Some examples include visual reinforcements, verbal reinforcements, or a token economy. Peer socialization also can have utilized as positive reinforcement. Pre-adolescent children often model or imitate others. If one child witnesses another receiving attention for acting out, he/she in turn may act out. This modeling can be used to yield a positive result. For example if a child witnesses attention for a positive behavior, he/she may imitate the behavior to receive such attention.

"Typically" developing child

Jean Piaget theorized that children until the age of eleven or twelve are in the Concrete Operational stage. The child in this stage shows the ability to think logically and deductively. His or her thought is reversible; actions are integrated into strong, logical systems, which enable the child to organize the immediate environment. (Booth

1983). Piaget reported that children in this stage also begin to understand concepts such as quantity, order, and a sense of right and wrong that take into account several relevant dimensions at once. (Malerstein 1979) Beginning at around age eight, children make increased use of abstract adjectives referring to traits, beliefs, values, and attitudes. The act of describing is more organized than of their previous stage and show greater sensitivity to the complexity of personality characteristics and behavior. In early childhood, pro-social behaviors are far outnumbered by selfish and aggressive responses.

However, the incidence of sharing, helping, sympathy, and empathy increases dramatically during the elementary school years. A variety of techniques have been used in efforts to socialize children to engage in pro-social behaviors. They include modeling and observation, induction (reasoning with the child), direct instruction, and early assignment of responsibility. Age-related changes in social interaction and play are to some extent a function of increasing skill in role-taking. Role-taking ability appears to develop through a series of qualitatively distinct stages and is correlated with general intelligence and moral behavior. (Mussen 470-471)

Children with Attention Deficit Hyperactivity Disorder (ADHD)

ADHD is one of the most commonly diagnosed behavior disorders among preadolescent children in the United States. The disorder is characterized by such behaviors as inappropriate levels of hyperactivity, deficits in attention and increased impulsivity. It is suggested that these behavioral patterns observed in children with ADHD are the result of differential sensitivity to consequences of their behavior compared to normal, undiagnosed children. (Kollins 1997) ADHD children's abilities to

sit still, attend, listen, obey, inhibit impulsive behavior, cooperate, organize actions, and follow through on instructions, share, play well and interact appropriately with other children are essential to negotiating a successful academic experience. (Barkley 2000) Most parents first observe excessive motor activity when the children are toddlers, but disorder might not be diagnosed until the child's elementary school years. This is when behavior compromises school adjustments. (American Psychiatric Association 2000) The majority of ADHD children are identified as deviant in behavior in school. (Barkley 2000) Inappropriate behavior manifested in the classroom interferes with the learning process of both the offender and the remainder of the class population. (Higgins 2001)

At least 30-50% of ADHD children are likely to develop symptoms of conduct disorder and antisocial behavior, such as lying, petty thievery, and resistance to authority. Twenty five percent or more may have problems with fighting with other children. Those children who have not developed some other psychiatric, academic, or social disorder are in the minority. The majority of children with ADHD in elementary school will have been placed on a trial of stimulant medication and over half will participate in some type of individual and family therapy. About 30-45% will also be receiving special education assistance at school. (Barkley 2000)

Noncompliant, oppositional behaviors, symptoms of ADHD, are frequent causes for parents to seek help from mental health professionals, and considerable treatment-oriented research into this problem has recently been accumulated. Oppositional behavior can be conceptualized more broadly as a continuum of actions from normal restrictiveness when autonomy is threatened to tyrannical, aggressive, and destructive behavior. If oppositional actions are defined as a refusal to initiate or carry out requests

made by another person, then much deviant behavior can be considered oppositional. Two major types of intervention are traditional individual psychotherapy and behavior management. Psychotherapy is generally based on the assumptions that the children's insight into the origins of the behavior problem is necessary for change to occur and that the children can change themselves without the need for any major reconstruction in the environment. Behavior modification includes positive reinforcement. Positive reinforcement such as praise has been shown to increase compliance in noncompliant children. Consequently, parents are encouraged to reward all appropriate behavior with praise and physical affection in an immediate, consistent and specific fashion. They are also taught to label the behavior they are rewarding. Once the noncompliant behavior has decreased, parents are then trained to reward more intermittently. Parents are also taught to ignore the child's negative behaviors without responding emotionally. (Gard 1986)

Treatment for ADHD includes classroom modifications and interventions; parent education and training; pharmacotherapy when appropriate; and, as needed, other therapies such as training in social skills, anger control or problem-solving, family therapy, and individual therapy. Children with ADHD are less sensitive to reinforcements than "typical" children. Researchers proposed that such children need a greater level of reinforcement to control the same level of behavior than in normal children. It is also proposed that children with ADHD have a lack of proper stimulus control and a deficit in rule-governed behavior. The behavior of children with ADHD is less efficient than the behavior of normal children in terms of response allocation per reinforcer. (Kollins 1997)

Children with Schizoid Personality Disorder

Schizoid personality disorder (SP), is a psychiatric condition characterized by a lifelong pattern of indifference to others and social isolation. (Aetna IntelliHealth 2004) It is said to be the most difficult to treat of the personality disorders. (Slavik 1992) It is a long-standing maladaptive pattern of behavior and experience that impairs functioning and causes distress. (Aetna IntelliHealth 2004) SP may be first apparent in childhood and adolescence with solitariness, poor peer relationships, social anxiety, underachievement in school, hypersensitivity, peculiar thoughts and language, and bizarre fantasies. These children may appear "odd" and attract teasing from others. It is slightly more common in males. (American Psychiatric Association 2000) The disorder is seen as consisting of characteristic deficits such as social withdrawal, vivid internal life, contradictory presence of sensitivity and callousness, sexual chaos, moral unevenness, cognitive peculiarities, vagueness of pursuits and fluctuations in attachment to others, from extreme involvement to complete withdrawal. (Akhtar 1987)

People with SP sometimes exhibit odd speech or behavior, and have a limited or flat range of emotions. Many people with this disorder have subtle difficulties with memory, learning and attention. (Aetna IntelliHealth 2004) Often, the social isolation characteristics of the disorder prevent others from offering the help or support that could potentially improve the child's life. (US National Library of Medicine 2004) The therapeutic goal, when working with someone with Schizoid Personality Disorder is to increase social interest and usefulness. Interventions that encourage the SP to participate in living are important. (Slavik 1992)

Schizoid Personality Disorder maintains historical continuity in the use of the term "schizoid," which was to designate a natural component of man's personality which directed his attention towards his own inner life and away from the external world. (Akhtar 1987) This disorder may be associated with schizophrenia and share many of the same characteristics but is not as profoundly disabling as schizophrenia. Schizoid traits are not marked by hallucinations, delusions, or the complete disconnection from reality as in untreated schizophrenia. (US National Library of Medicine 2004)

Reinforcements

B.F. Skinner advocated the systematic use of operant principles to manage classroom behavior, but it was not until the early to mid-1960s that actual attempts to use principles of reinforcement to decrease disruptive behavior were documented. (Skiba 1985) Praising appropriate behavior while ignoring inappropriate behavior could successfully reduce classroom disruptiveness. Praise was studied to be more effective than reprimands. (Abramowitz 1991) Since reinforcement provides a consequence for some change in performance, it includes both a motivational (the consequence) and an informational (the performance change) component. (Skiba 1985)

Author's of "Central Auditory Processing Disorders and Reduced Motivation: Three Case Studies," hypothesized that improvements in their study was related to increased motivation associated with reinforcements and that the children in the study represented false-positive results on the central auditory test battery. Their study was conducted with three children with normal hearing who were initially diagnosed as having a central auditory processing disorder and learning disability. The children were

referred to the authors for second opinion consultations. Central auditory processing retesting was performed by the authors under the condition of no reinforcement and then the condition of reinforcement with the child's favorite food, hobby or toy. In each of the three case studies, the children were tested then retested with reinforcements and each of their performances were in normal levels or met scores appropriate for the mean of their age groups.

Classroom teachers use a variety of reinforcers in an effort to motivate and manage children's behavior. Examples of reinforcers frequently used are grades, conduct marks, stars, recess time, and opportunities to do various tasks such as helping the teacher distribute papers, collecting books, or painting at the classroom easel. Additional classroom reinforcers are found within the teacher. His or her smiles, and frowns, compliments and sarcasms, attention and lack of attention are used to motivate acceptable classroom behavior. (Piper 1972)

For the teacher to successfully employ the reinforcers she or he must: 1) recognize potential reinforcers; 2) match the reinforcer to the child, or let the child choose his/her own reinforcer; 3) reinforce appropriate behavior rather than attending to and reinforcing inappropriate behavior; 4) follow appropriate behavior with reinforcement as soon as possible; 6) reinforce frequently; and 7) be consistent. (Piper 1972)

Verbal Reinforcements

Teachers generally give frequent verbal feedback, both positive and negative, to their students. (Abramowitz 1991) Verbal feedback can be given from peer rating systems and teacher evaluation systems. (Skiba 1985)

Research conducted on verbal reinforcements, where students were either verbally reinforced for correct responses, verbally punished for incorrect responses, or verbally reinforced for correct and punished or incorrect responses. The results concluded that the group, which was verbally reinforced for correct responses, learned the fastest. Learning the second fastest was the group who was verbally reinforced for correct and punished for incorrect and third was the group who was verbally punished for incorrect responses. (Ochocki 1975) This study illustrates the power of positive reinforcement.

A study conducted by Brehony et.al (1980) used verbal intervention to decrease three disruptive behaviors in a severely retarded child. During two of the sessions the child was verbally punished for targeted negative behaviors and socially reinforced for appropriate behaviors. A firm "no" was given for targeted negative behaviors and verbal praise and gentle touches for behaviors viewed as positive. The results of the study showed significant improvements in all three-target behaviors following the application of the treatment intervention. The behavioral improvements were maintained at a two-month follow up. (Brehony 1980)

In an experiment employing a 2-alternative discrimination task and both lower- and middle-class school children, a comparison was made of the effects of three reinforcement combinations (Reward-nothing, Punishment-nothing, and Reward-punishment) and, within each of these, of verbal reinforcers (right and wrong) versus

nonverbal reinforcers (candy and a raucous sound). In both lower- and middle-class groups, the candy-nothing groups were found to be significantly inferior in performance compared to the other treatment conditions. Each of the other conditions yielded similar results right-nothing tending to be inferior to the other verbal reinforcements. (Spence 1967)

Ronald M. Doctor (1969) conducted a study, which concluded that his results do not support previous research findings that different combinations of reinforcement lead to different rates of conditioning. The right-wrong, right-nothing and nothing-wrong reinforcement groups in his study evidenced comparable, rather than distinctive, conditioning rates. (Doctor 1969)

A study by Prosvac, et.all tested the efficacy of a cueing procedure for improving the impulse regulation of four boys with Attention Deficit Hyperactivity Disorder (ADHD) during social skills training. Impulse regulation as defined as raising hands before speaking. Effects on collateral behaviors (i.e., talking out of turn) were also assessed. A reversal design was used. Behavioral data collected by independent observers suggested that all subjects demonstrated positive changes in impulse regulation (i.e., an increase in the frequency with which subjects raised their hand before speaking). Likewise, the treatment effects appeared to have produced positive effects on a behavior not directly targeted for intervention (i.e., talk outs). In general, behavioral changes were considered to be socially valid and the treatment agents viewed the cueing procedure very positively. (Prosvac 1999)

E.L. Deci, *Journal of Personality and Social Psychology* (1975) has proposed that rewards have both controlling and informational aspects. When controlling aspects are

most important, administration of reward will cause a shift in causality from internal to external and a decrease of intrinsic motivation. When informational aspects are most important, rewards will enhance one's feelings of competence and self-determination and intrinsic motivation will thus increase. Presumably, the controlling aspects of physical rewards and the informational aspects of verbal rewards are normally important, so that physical rewards lower and verbal rewards enhance intrinsic motivation. (Swann 1977) An increase in motivation yields an increase in the will to change one's behavior.

Visual Reinforcements

Visual reinforcements such as nods, frowns, smiles and pats of approval, are harder to investigate but frequently are used. (Abramowitz 1991) A stop-sign paradigm may be useful for assessing inhibitory control in children with ADHD under conditions of reinforcement versus no reinforcement. First, unlike other impulsivity measures, children do not have to learn when to inhibit but instead are explicitly told when not to respond. This eliminates learning difficulties as an alternative explanation for performance deficits. Second, the stop-signal task can be made easier or harder so that all participants inhibit their responding to the stop-signal. (Stevens 2002)

Hursh (2000) conducted a study that compared the effectiveness of written instructions with the effectiveness of direct instructions (spoken instructions and feedback) for training the application of four behavior change processes (reinforcement, timeout, imitation training and shaping). All students received written instructions for the application of two of the behavior change processes and direct instructions for the application of the other two processes. Half of the students received written instructions

for the application of a particular process and the other half received direct instructions for the application of the same process. Both written and direct instructions were followed by increases in the students' mean appropriate application of the processes. The final mean levels of appropriate applications were about the same for both direct and written instructions. Thus, both instructional techniques were effective and direct instructions were more consistently immediately effective with both techniques producing similar effects by the end of the investigation. (Hursh 2000)

Physical Guidance as a reinforcement for noncompliance

Physical guidance is a strategy commonly used for noncompliance. An experiment conducted for reinforcing effects of physical guidance by Kern et.al 2002. The experiment included three individuals with developmental disabilities who were noncompliance with tasks. Anecdotal observations indicated physical contact was highly reinforcing, and a functional analysis identified attention as a reinforcer for problem behavior. Two conditions compared physical guidance following noncompliance and no physical guidance following noncompliance. Results showed noncompliance increased for all three participants when physical guidance followed noncompliance. (Kern et.al 2002)

Token Economy

Classroom token economy has been addressed by numerous narrative reviews of behavioral programs and has been found to be a highly effective intervention across a broad range of behaviors, populations and settings. (Skiba 1985) Classroom token

economies involve awarding or removing tokens or points to children contingent upon specified desirable or undesirable behaviors. These tokens or points are exchanged later for activities, objects, or privileges. (Abramowitz 1991) A "points-and-level" system can also be instituted. The tokens or points can be counted toward a student's promotion to the next level. This increases structure and predictability of the school day. (Cruz 2001) These systems can be used as overall management approaches for an entire class, or as special programs for selected children who are experiencing difficulties. They can encompass a wide variety of academic and social behaviors or can specifically target one or two selected behaviors, such as aggression toward peers or accuracy on independent work. (Abramowitz 1991)

Educators prefer an all-positive approach and are reluctant to withdraw or withhold that which a child has already earned. In all probabilities children with ADHD will require some reductive techniques, so it is probably expedient to build such a procedures into the token economy. If the child begins to lose more points than he or she earns, the program should be promptly modified. In order to shape higher rates of appropriate behaviors, any of a variety of techniques may be applicable in this situation. Examples include behavioral criteria can be temporarily lowered, time intervals shortened, more powerful reinforcers offered, and alternative negative consequences such as time-out employed. An approach to group contingencies within an individualized token program involves having the target children earn rewards not only for themselves, but for their peers as well. (Abramowitz 1991)

A multi-component intervention that included a precision request program, mystery motivators, token economy with response cost, and antecedent strategies (i.e.,

public posting of classroom rules and teacher movement around the room) was employed to reduce disruptive classroom behavior in 3 school-aged students with social and emotional disorders. The results suggested that the intervention was successful in reducing levels of disruptive behaviors for all students. The baseline data indicated that, on average, students were disruptive in 37% of observed intervals. This diminished to an average of 10% during the intervention phase. In the follow-up phase, disruptive intervals remained at an average of 10%. (Musser et.al 2001)

Peer Involvement in behavior modification

Researchers have demonstrated the value of involving peers as models to assist in behavior modification efforts to treat classmates' social behavior. Much research has shown that children are likely to imitate a peer whom they observe to be the recipient of reinforcement. One way to establish a peer as a behavioral model is to provide reinforcements to the peer in the presence of the imitator. Other researches have demonstrated that children become less likely to imitate a peer who is behavioral disobedient. (Strain 1976) Researchers have also shown that peers selectively attend to a child who is misbehaving, thereby reinforcing the child's misbehavior. When peer attention is manipulated for purposes of intervention, sizeable positive behavior changes can result. Children can be successfully trained to praise peers' appropriate behavior and ignore inappropriate behavior. Peer-mediated interventions have several potential advantages over interventions that are exclusively teacher-mediated. Children may have better opportunities than teachers to observe closely each other's behavior, affording more opportunities for immediate and consistent reinforcement. (Abramowitz 1991)

Social reinforcement is an important goal of children's achievement behavior. The attainment of approval and avoidance of disapproval are important goals of children's behavior. Children are satisfied internally in standards of excellence when external social reinforcement is present. This study concluded that achievement behavior or achievement effort was greater with all types of social reinforcement tested than it was when no reinforcement was provided. Person-oriented praise or approval yielded the highest motivation for achievement. (Stein 1969)

Loneliness or rejection are common to experience at times throughout development but persistent social withdrawal or isolation deprives children of opportunities for learning adaptive and appropriate modes of social conduct, placing them at risk for serious difficulties later in life. Being teased, neglected, or avoided by peers is the single most frequent characteristic of children at high risk for developing behavioral and emotional disorders. Critical influence of peers is common in the development of deviant behavior in children. (Moroz 2002)

Peer-mediated reinforcements can be divided into three types: interdependent, independent and dependent. Interdependent is when the behavior of the entire group determines whether the group receives reinforcement. Independent is when a set of contingencies is applied to the entire group, but the child's behavior determines his or her eligibility to receive reinforcement. Dependent is when the behavior of one or several target children determines the reinforcement for the entire group. (Abramowitz 1991)

Peer Positive Reporting (PPR) consists of rewarding classmates for publicly praising the social behavior of a socially withdrawn student. Peers are taught to initiate contacts with disabled youth, challenge inappropriate behavior and administer or

withdraw token points for behavior. PPR has been shown to decrease negative social interactions and/or increase positive social interactions during general classroom activities, cooperative learning tasks, and home routines. It is effective for antisocial youth because the contrived contingency (i.e., peer praise for pro-social behavior) increases reinforcement for appropriate social interactions while reducing the occurrence of peer reinforcement for disruptive behavior. (Moroz 2002)

An increasingly popular alternative to traditional disciplinary practices is the use of Positive Behavior Supports (PBS), which recognizes the broad set of relevant variables that can affect a person's behavior. "The goal of PBS is to apply behavioral principles in the community in order to reduce problem behaviors and build appropriate behaviors that result in durable change and a rich lifestyle." (Safran 2003) When PBS strategies are implemented in schools, children benefit by having an environment conducive to learning. Strategies such as setting positively stated expectations for behavior and a continuum of procedures for discouraging violations are implemented. Classroom techniques to support positive behaviors include altering environments when useful, explicitly teaching new skills, and genuinely appreciating positive behaviors. Implementation of the PBS model on a school-wide basis focuses on providing school-wide support, specific setting support, classroom support and individual student support. (Warger 1999) PBS interventions are designed to be proactive, to prevent problem behavior by altering a situation before problems escalate, and to concurrently teach appropriate alternatives. (Safran 2003) PBS is effective in reducing problem behavior by eighty percent in two-thirds of the cases that were studied. They learn more about their own behavior, learn to work together and support each other as a community of learners.

Individual student support provides immediate, relevant, effective and efficient responses to those students who present the most significant behavior challenges.

(Warger 1999) Interventions within the PBS umbrella are built on the foundations of applied behavior analysis (ABA) and repackaged in a more positive, collaborative, and holistic framework. (Safran 2003)

An extended comparison theory was proposed including research on the inequity in social exchange. The theory stated that individuals compare themselves to others in terms of what each individual contributes to a situation (input) and what each individual derives from that situation (outcome). The comparison is in terms of the input-output ratio for two people within a situation. (Masters 1969)

Summary

In summary, children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and/or Schizoid Personality Disorder exhibit many inappropriate behaviors. If a child diagnosed with these disorders receives positive reinforcement for appropriate behaviors, he/she will increase the behavior to receive such reinforcements. Some treatments mentioned for ADHD and Schizoid Personality Disorder include classroom modifications and interventions, training in social skills and social interest, anger control or problem-solving, individual therapy. Studies have shown verbal reinforcements, visual reinforcements, token economies, and peer involvement in modification all have positive effects on decreasing inappropriate behavior.

Chapter III

Subject

The subject is an eleven-year-old child who has been diagnosed with ADHD and Schizoid Personality Disorder. He is an intelligent child, with an energetic personality. He has a positive outlook on life and takes any chance he can to talk to others or make someone else feel important. Many of the subject's behaviors are problematic and disruptive in an educational setting. His limitations include staying focused, socializing appropriately with peers, verbalizing his feelings appropriately and impulsivity. He is unable to read social cues from peers, which often result in arguments. The main problem behaviors that are targeted for the intervention are voice volume, asking for desired items, using "please" and "thank you" at appropriate times and sharing with others. He has the motivation but not the skills to change his behavior. He is easy redirected and listens when given advice or spoken to one-on-one about his behavior. He also enjoys receiving attention and working for rewards, so this type of positive intervention is appropriate for him.

Procedures/Measures

The purpose of the study is to assess an intervention. Interventions are used to modify the behaviors of others. It is beneficial to intervene when negative behaviors cause a disturbance or interference in daily living skills. The baseline was obtained by

observing the subject for four, ten-minute intervals per day, two days a week for two months.

The type of intervention that is being assessed is a positive reinforcement intervention. The child will be given stickers as rewards when appropriate behaviors are demonstrated. If the goal is reached for the amount of stickers, the child is rewarded with ten minutes of time playing on a computer.

This will be examined by using yellow, green and red stickers to increase target behaviors. The subject's problem behaviors fall into two areas: social skills and volume control. Within social skills, his problems are primarily sharing, asking for desired items, and using please and thank you. He was recently reinstated back into school from being expelled last school year. The reasons for his expulsion were these behaviors, which caused many disruptions. The plan is to use a visual form of behavior modification by using three different color stickers, which in the end result in a possible reward. The plan includes a chart, green, yellow and red stickers, a timer and a reward. A three prompt method of behavior modification has been developed to modify the subject's behavior. A green sticker is representative of performing the target behaviors, yellow is a warning that he is on the edge of receiving a red sticker, which represents a lack of performing the target behaviors. A green or red sticker will be given at the end of each of four, ten-minute periods. A yellow warning sticker can be given throughout each period to communicate to him that he needs to change his behavior in order to receive a green sticker. The subject will need to receive three out of four green stickers per day to receive ten minutes on a computer. He is responsible for his own actions and whether he receives a reward is in his control. After he receives a warning, he has the ability to change his

actions. If he earns the reward, a note of communication will be given to his mother to encourage another home-based reinforcement. The researcher will include both his mother and school one-on-one aid to assist in this study.

The target appropriate behaviors include: the subject talking at a normal level, therefore decreasing his high-pitch, loud, attention-seeking volume; asking for desired items, rather than saying, “gimme” or grabbing items from others; using “please” and “thank you,” when appropriate and sharing with his peers.

The independent variable is the positive reinforcement intervention and the dependent variable is the amount of inappropriate behaviors in four, ten-minute periods.

Hypothesis

The null hypothesis is the child’s behavior will not change overtime.

The alternate hypothesis is the child’s behavior will change overtime.

Analysis

A two-way ANOVA test will be conducted on the collected data. This type of test is appropriate for this study because it will compare baseline data and the changes in behavior when the intervention is in place. The test will conclude if the data is significant and if the intervention yielded a change in the subject’s behavior.

Chapter IV

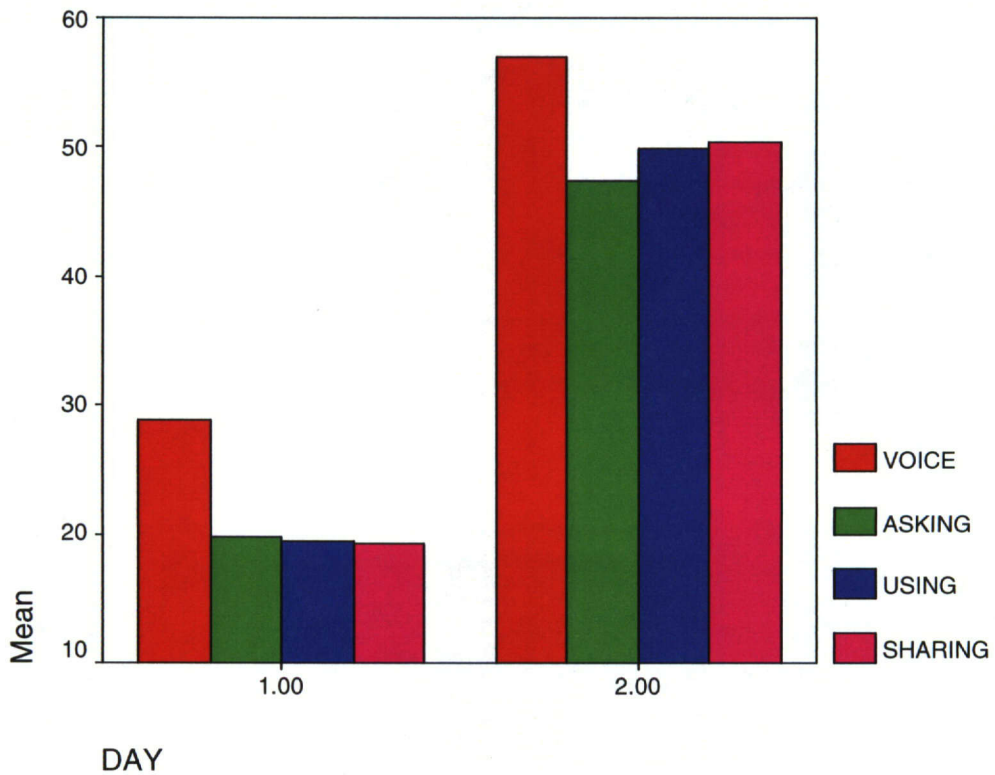
The hypothesis is that positive behaviors, when paired with a reward, will increase, while negative behaviors will decrease. Rewards are used in positive reinforcement intervention. The hypothesis was supported. Positive reinforcement intervention increased the subject's appropriate behaviors and therefore decreased his negative, inappropriate behaviors. A two-way ANOVA was used to analyze the collected data. The analysis output showed a significance of $p=.004$, an F value of 4.891. As shown in figure 4.1, the subject's positive behavior increased substantially after the intervention began. When he was positively reinforced for his appropriate behaviors, the frequency of such behaviors increased. Positive reinforcement made the subject focus on his behaviors. He was given reachable goals and was reinforced as he appropriately behaved. As he was reinforced to keep his voice down, ask for objects, use "please" and "thank you" and share, he conversely did not yell or grab objects out of other's hands, say "gimme that" or refuse to share. The reinforcement increased the positive behaviors, therefore decreasing the negative behaviors.

The intervention was conducted for four ten-minute periods throughout the day. Different activities were being run during each group. As shown in figure 4.2, the subject's behavior differed depending on the type of activity and the degree of structure between each group.

The first group was at the beginning of the day. The subject came in with a fresh start for the new day. When he first arrived, children from ages 6-17 years old were in

the same room. He was somewhat reserved when the older children were around. This writer observed his behavior to be more appropriate during the first 10-minute period. He enjoyed having attention of positive interactions with me and he enjoyed earning stickers.

Figure 4.1



1.00=baseline

2.00=intervention

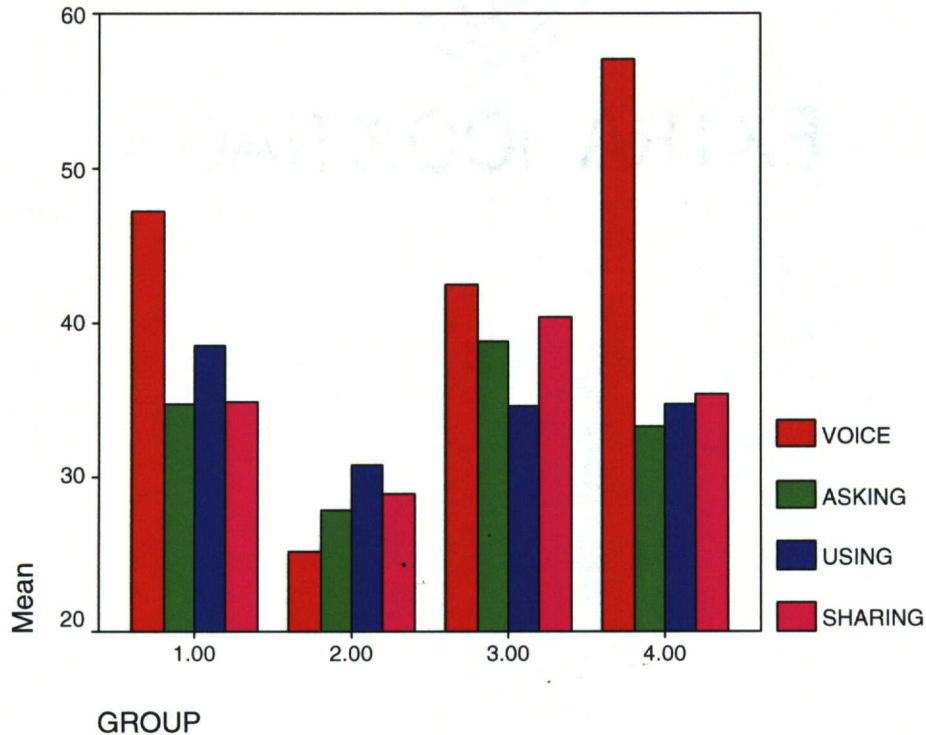
RED=keeping his voice at an appropriate level

GREEN=asking for items

BLUE=using the words "please" and "thank you" when appropriate

PINK=sharing supplies or toys

Figure 4.2



1.00=arrival 2.00=therapeutic art 3.00=therapeutic discussion 4.00=free time

RED=keeping his voice at an appropriate level

GREEN=asking for items

BLUE=using the words “please” and “thank you” when appropriate

PINK=sharing supplies or toys

The second group was a less structured activity. Art therapy was conducted but the subject lacked interest in this subject. He would finish his picture and immediately provoke his peers for attention. He would spin around in circles and yell across the room.

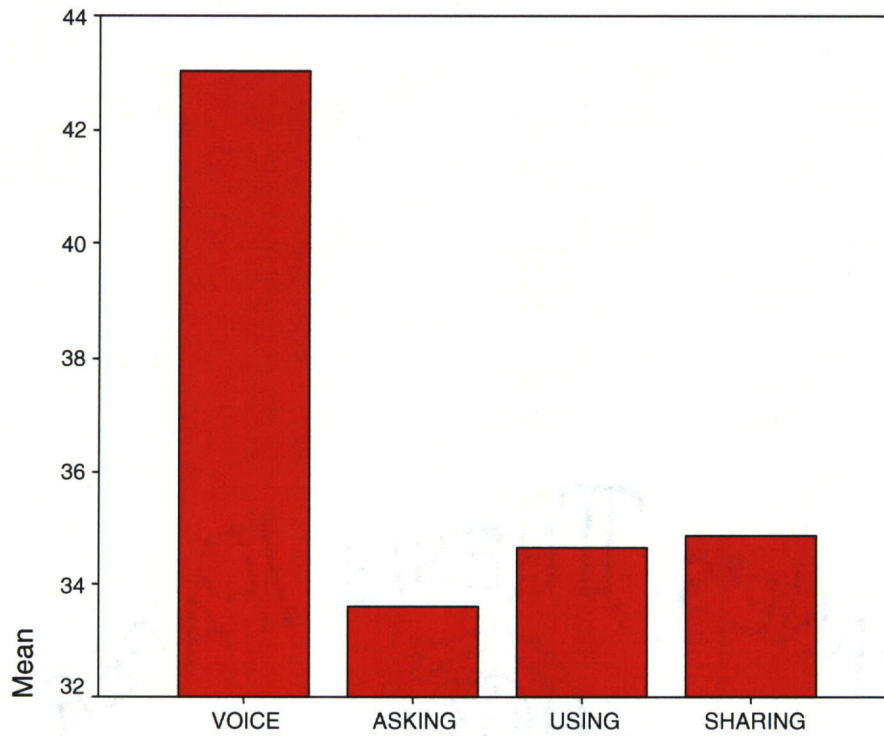
The third group was more structured. It was a group discussion activity. There was either a teamwork group, reading and discussing a book, or talking about experiences and emotions. There were specific rules and order during this time.

During the fourth and final group, free time was scheduled. During free time, the subject was outside interacting with staff and at times with peers. Because he was

allowed free time, it was more difficult for his behavior to be considered inappropriate since he rarely interacted with peers and did not have to share supplies or toys with peers as often. This 10-minute period was directly before he was given his reward, when it was earned.

The subject achieved differing amounts of success for each behavior. Using the positive reinforcement technique, he was able to control keeping his voice at an appropriate level. The behavior involving appropriate “inside voice” improved the most. In the future, this new skill (appropriate voice control) will allow him to function more appropriately in his classroom setting and could assist in improving his peer and adult relationships help a great deal in his classroom education, for example. Each of the other three behaviors did not differ significantly. The subject improved in each of them after the intervention began, but not one much more than the other. This is summarized in figure 4.3.

Figure 4.3



VOICE=keeping his voice at an appropriate level

ASKING=asking for items

USING=using the words “please” and “thank you” when appropriate

SHARING=sharing supplies or toys

Chapter V

Summary

There are several different types of positive reinforcement interventions that can be implemented to increase appropriate behaviors. Some of these interventions include visual reinforcement, verbal reinforcement, token economy and using peers as reinforcements. These interventions have been proven effective when working with children who display inappropriate behaviors.

As stated previously, the subject is diagnosed with Schizoid Personality Disorder and ADHD. He behaves inappropriately often. When a positive reinforcement intervention was used to reinforce four specific behaviors, these positive behaviors significantly increased.

Discussion

The reinforcement of a behavior will increase the likelihood that the behavior will reoccur or increase in frequency. Using a positive reinforcement intervention for increasing appropriate behaviors in children can result in decreasing inappropriate or problem behaviors. When inappropriate behaviors decrease, often a level of acceptance from others increases as well. Children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) or Schizoid Personality Disorder often exhibit many inappropriate behaviors. If a child diagnosed with such disorders receives positive reinforcement for appropriate behaviors, he/she will increase the behavior to receive such reinforcements.

As stated, there are several different types of reinforcements designed to decrease problem behaviors. Some examples included in this research were visual reinforcements, verbal reinforcements, or a token economy. Peer socialization also can have utilized as positive reinforcement.

The literature reviewed supports the theory that positive reinforcement interventions, including visual and verbal reinforcement, token economy and/or peer reinforcement, increased appropriate behaviors. Interventions need to be individualized for each child so his/her specific needs are met. My research supports what was found by the literature review.

An interfering factor to my research was certain environmental factors. It was difficult to focus as much attention as was needed on the subject's behavior when this writer was also in charge of observing 10 other children's behavior. This observer was not able to catch and record his every behavior. There were some instances where he reported to me that he shared or said "thank you" appropriately when unnoticed.

Another interfering factor was the other children who surrounded the subject also had many inappropriate behaviors. He observed other children acting inappropriately and at times copied them. The other children were not role models for good behavior for him. At times, it was difficult for him to focus on acting inappropriately.

A third interfering factor in terms of the research is the baseline data was observed, then the intervention was implemented but the intervention was never removed. His behavior was never reviewed to see how it would change without the intervention. Would he continue to act appropriately without the positive reinforcement or would his appropriate behavior decrease because he was no longer rewarded? To truly

test the intervention, it would need to be implemented and then retracted to assess the effectiveness.

Conclusions

When an intervention is individualized for a child's specific needs and there is focus on reinforcing what the child is doing correctly, behaviors will improve. The four behaviors, which were chosen for the subject, were ones that could effect his present functioning and potential in life. He is an intelligent child but his inappropriate behaviors impede his education and interfere with the development of his socialization skills. When he was reinforced for acting appropriately, he increased such appropriate behaviors, therefore decreasing his negative, inappropriate behaviors.

Implications for Future Research

Future research should compare the outcomes for different types of positive reinforcement interventions. One child who exhibits many inappropriate behaviors can be observed for changes in behavior when several positive reinforcement interventions are implemented. One intervention at a time for specified behaviors should be implemented and changes observed. Would one type of positive reinforcement work better than another for extinguishing specific inappropriate behaviors?

Another research idea would be for studies on children with specific dual diagnoses, such as Schizoid Personality Disorder and Attention Deficit Hyperactivity Disorder. What interventions are best for children with such specific disorders?

A third research idea would be to study the quality of life of children who display inappropriate behaviors. Are their lives significantly impacted by displaying such behaviors? If a child was to decrease inappropriate behaviors, would the quality and happiness of his/her life increase?

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