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Running Head: Modification Techniques for Children with
Autism

A Survey of Autistic Behavior Modification Techniques

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Abstract

A survey of professionals who treat children with autism revealed the techniques most effective in modifying certain autistic behaviors. An open-ended, preliminary questionnaire was sent to professionals working in schools in Illinois. Treatment techniques for immediate echolalia, delayed echolalia, ritualistic behavior, self-initiated isolation, failure to accept change in routine, hypersensitive to touch, manipulation of digits, hand flapping, head banging, and biting were investigated.

An expanded questionnaire was developed using the respondents' answers from the preliminary questionnaire. An analysis of data revealed those techniques most commonly employed to modify specific behaviors.

A Survey of Autistic Behavior Modification Techniques

Leo Kanner opened up a new world to therapists, doctors, teachers, and parents when he introduced his definition of autism in 1943. Originally, he described children as autistic if they exhibited certain characteristics such as preferring to be left alone and not relating to others (Simpson, Smith-Myles, Sasso, & Kamps, 1991, p. 1). Over the years, dozens more characteristics have become associated with autism. For instance, disturbances in response to sensory stimuli, insistence on sameness, impaired verbal and nonverbal communication, and self-stimulation, are all now considered to be common characteristics of autism (Matson, 1994, p. 14).

As more characteristics of autism are being identified, the diagnosis of autism is increasing significantly. Recent figures show that autism affects 15 in 10,000 people, and all of the autism spectrum disorders affect over 400,000 people in the United States (London & Etzel, 2000, p. 401). Autism has lifelong effects; early intervention to modify the most problematic behaviors would give an individual a greater chance for a more normalized life.

There are many questions concerning autism that have not been answered suitably for all professionals. Is there

a way to prevent autism? What exactly causes autism? Who should be classified as autistic? There are several books, journals, and websites containing hundreds of different answers to these questions. Until professionals and researchers can solve those issues, it seems more pertinent to focus on answering the following question: How can professionals most effectively modify certain autistic behaviors? The answer to this question will positively impact the life of a person with autism.

The modification of behaviors characteristic of autism is one of the most challenging tasks performed by professionals for their clients. Our knowledge of autism grows and changes with each passing year. The best techniques used to alter a behavior one year are often disregarded a few years later. Pedagogy that may be widely accepted one year may be found to be prohibiting rather than producing a desired effect the next year. Because there are so many autistic behaviors that forbid normal socialization, expression, and interaction, it is essential that professionals discover techniques through science, observation, and collaboration, to help these children cope despite their handicaps.

There are several behaviors characteristic of autism that can be problematic for professionals when treating

their clients. Although these behaviors can range in their severity and frequency, each behavior must be uniquely modified. In my research, I will examine the techniques used to modify four basic treatment areas: self-stimulation (echolalia, ritualistic behavior, manipulation of digits/hand flapping), hypersensitivity to touch, aggression (biting, head banging), and social skills (self-initiated isolation, resistance to change). When professionals know how to modify these behaviors, they can certainly aid a child with autism immensely.

Self-stimulatory behaviors are some of the most common behaviors found in children with autism. Self-stimulation can be differentiated into two groups, verbal and physical (Fouse & Wheeler, 1997, p. 270). Verbal self-stimulation is exhibited primarily through echolalia. Echolalia is the delayed or immediate, whole or partial vocal imitation of another speaker. The purpose of echolalia is not known to an absolute certainty. Echolalia might be the product of confusion in a highly challenging environment, or it may serve as a communication function (Quill, 1995, p. 119). Some researchers believe it is a social function, an attempt to make contact with other people. Most professionals attempt to decrease the occurrences of echolalia in order for the child to become more socially

acceptable.

Self-stimulatory behaviors manifested through physical means may most need remediation. Hand and arm flapping, manipulation of digits, and ordering objects, are just some of the physical self-stimulatory behaviors that are considered to be compulsive in nature. Children with autism engage in self-stimulatory behaviors in order to achieve calmness and relief from stress or overstimulation. Some claim that self-stimulation also increases in times of boredom. Grofer-Klinger and Renner report that repetitive motor movements such as hand flapping occur in younger and lower functioning autistic children (2000, p. 480). Recent studies have focused on using a child's obsessive behaviors as reinforcers to decrease their inappropriate behaviors. Debra Rose, Assistant Director for Communication Services at Wabash and Ohio Valley Special Education District, stresses that the key to remedying these behaviors is, "to replace them with a more socially appropriate one" (personal communication, June 15, 2001).

Hypersensitivity to touch is another prominent characteristic of autism. The tactile and vestibular systems allow human beings to understand the world around them. (Trott, Laurel, & Windeck, 1993, p. 1). When an individual is hypersensitive to touch, the filtering or

processing of sensation is atypical. Even the lightest touch might cause a serious reaction. Thus, the child might display aggression, confusion, or anxiety when he/she is touched uncomfortably or unexpectedly. This causes extensive social problems for the child in a variety of settings. At home, parents often do not understand why their child does not like receiving hugs from them. For this reason, professionals must work diligently to treat their clients with hypersensitivity. Helping children reduce their hypersensitivity will impact other aspects of their disorder, including a probable decrease in aggression and increase in appropriate social behavior.

Aggression in children with autism takes many forms. It is not uncommon to see a child with autism become aggressive due to overstimulation, boredom, or confusion. Simpson and Smith-Myles (1998, p. 149) believe, "The social deficits associated with the disability often create frustrations and difficulties which result in aggressive behavior." This aggression may be expressed through self-injurious behavior or injurious behavior to others. In particular, head banging can be a self-injurious behavior done voluntarily and emotionless in order to reduce stress (Ernst, 2000, p. 449). Combating injurious behavior is essential to the mental and physical health of the child

and their classmates, and it will determine the successfulness of their future.

Individuals with autism may also have considerable deficits in social skills. Love, acceptance, and independence all depend upon a child's ability to interact and adapt to the world around him/her (Fouse & Wheeler, 1997, p. 89). Friendships and social relationships are fundamental parts of human life. Some hypothesize that inappropriate social behavior results from a failure of underlying cognitive modules or from a failure to understand internal states of others (Loveland, Pearson, Tunali-Kotoski, Ortegon, & Gibbs, 2001, p. 367). Because many children with autism cannot interpret facial expressions, body language, and intonation, social interactions may be quite intimidating and frightening to them. A deficit in social skills may result in later severe mental problems, life in residential or psychiatric institutions, or an inability to obtain employment (Strain & Schwartz, 2001, p. 120.) Having adequate social skills would entail having the ability to adapt to the environment and avoid interpersonal conflicts (Matson, 1994, p. 241). It is of the utmost importance that social skills are taught to children with autism because as adults they will most likely continue to struggle with isolation and

awkwardness.

It is clear that many of these behaviors characteristic of autism impact each other. If a child is aggressive or engages in physical self-stimulation, then the child will have problems developing social relationships with his/her peers. Modifying behaviors in one area will affect the way a child with autism behaves in another. When professionals can look at a child with autism as not having a multitude of isolated problems but as having a chain of interconnected behaviors, they can begin selecting a therapy program based upon the unique characteristics of that child.

As the preceding discussion has shown, working with a child with autism can be both challenging and exciting. Dealing with emotional outbursts and physical aggression can be quite difficult for professionals. The most arduous part of a professional's job is determining which technique to employ when modifying inappropriate social behaviors, self-stimulatory behaviors, or aggressive behaviors. Some techniques work wonders with a number of children with autism but do not show any results for others. It is, therefore, essential that professionals have multiple techniques readily available to them so they can discover what works best for each of their clients. Discussions with

other colleagues can unearth such methods.

Collaboration among professionals is a critical part of treating children with autism. The Education for All Handicapped Children Act of 1974, the Individuals with Disabilities Education Act of 1990, and their amendments, have recognized autism as a disability and mandated services for these individuals, but they have failed to design specific programs for treatment. Teachers, therapists, and parents are often confused about what methods to utilize in their classrooms and homes due to insufficient resources, knowledge, or experience. Professionals need to have several behavior modification methods available to them to determine which works best for their clients, and collaboration can make such methods available. Fouse and Wheeler (1997) believe having a wide variety of methods available is important because:

At school, even skilled teachers can develop stress and frustration when typical methods do not work with a specific student. Programs for students with autism can be physically and emotionally demanding and frequently have high rates of staff turnover. When methods do not work or stop working, a lack of confidence in teaching skills may result. (p. 8)

When professionals collaborate and share ideas, their

knowledge and ability to treat clients effectively increases. Thus, progression in a client will become more evident.

In my research, I will survey professionals in order to learn about effective methods used in the modification of autistic behaviors. Typically, researchers develop methods to treat children with autism based upon their findings. In turn, the teachers, therapists, and other personnel implement these techniques. These professionals, who have frequent contact with children with autism, shape future research by determining what is most effective in their setting. With this in mind, the goal of my research is to create a stronger link between researchers and professionals. As the researcher, I will question educators, therapists, and other personnel about techniques they use to modify certain behaviors characteristic of autism. I will then share this information with other professionals. Through this collaboration, I believe professionals can be more effective in their treatment of certain behaviors characteristic of autism.

Method

Preliminary Questionnaire Participants

The preliminary questionnaire, along with a cover letter explaining the purpose of the research and a self-addressed, stamped return envelope, were mailed to 10 school professionals; five were professionals with whom I am personally acquainted, and five were referrals provided by personal acquaintances. Seven of the ten questionnaires were returned (70% response rate). The respondents included four speech-language pathologists, two special education teachers, and one early childhood teacher. All of the respondents had worked with at least one child with autism within the past five years. Five of the respondents had 36 months or more experience with a child with autism. The geographic location of each respondent's school was classified as either rural, (a population of 19,999 or less), or urban, (a population of 20,000 or more). A majority of the respondents taught in rural schools (6 versus 1).

Preliminary Questionnaire Procedure

A preliminary, open-ended questionnaire was distributed to compile a list of techniques currently employed by professionals working with children with autism. The respondents were asked to list three ways in

which they modified 10 different behaviors characteristic of autism. The behaviors included: immediate echolalia, delayed echolalia, ritualistic behavior, self-initiated isolation, failure to accept change in routine, hypersensitive to touch, manipulation of digits, hand flapping, head banging, and biting. The answers received from this preliminary questionnaire became a list of response choices on a second, expanded questionnaire.

Expanded Questionnaire Participants

A cover letter explaining the purpose of the research, the questionnaire, and a self-addressed, stamped return envelope were mailed to 157 professionals working in schools throughout Illinois. These professionals were identified on school websites accessed through the Illinois Learning Web on the Internet. Seventy surveys were returned (44.59% response rate). The respondents included 24 special education teachers, 17 early childhood teachers, 11 general education teachers, 6 learning disorder teachers, 5 occupational therapists, 5 speech-language pathologists, 1 teacher aide, and 1 psychologist. All of the respondents had worked with at least one child with autism within the past five years. Twenty-three respondents had 36 months or more experience with a child with autism. A majority of the respondents taught in rural schools (37 versus 33).

Expanded Questionnaire Procedure

Utilizing the responses from the preliminary questionnaire, an expanded questionnaire was created. Each of the nine behaviors characteristic of autism had a response choice of 6-9 techniques. One of the choices for each behavior included 'other,' which allowed the respondents to write in a response. Respondents indicated the three most effective techniques they use to modify each behavior. The techniques were rank-ordered from 1 (most effective) to 3 (least effective). This information identified the most effective techniques currently employed to modify autistic behaviors.

The expanded questionnaire differed slightly from the preliminary questionnaire. The expanded questionnaire included questions about the modification of 9 instead of 10 behaviors. The manipulation of digits and hand flapping categories were combined into one behavior category because the responses to each in the preliminary questionnaire were similar modification techniques. Also, an additional question, intended to find a link between sensory activities and self-stimulating behaviors, asked the respondents if they employ sensory activities prior to instruction (e.g. exercise, music, bouncing) intended to reduce self-stimulating behaviors. If so, the respondent

was asked if self-stimulation behavior increased, decreased, or remained the same.

Results

The responses from the expanded questionnaire were analyzed and the results organized by choice selection frequency. The seven technique choices for immediate echolalia were: ignore, model an appropriate response, praise an appropriate response, reshape the utterance into meaningful speech, redirect to an activity, utilize visual cues/word cards, and other. The most commonly used techniques employed to modify immediate echolalia were model an appropriate response (27.3%), praise an appropriate response (18.5%), and reshape the utterance into meaningful speech (18.0%).

The seven technique choices for delayed echolalia were: ignore, model an appropriate response, reshape the utterance into meaningful speech, redirect to an activity/topic, determine linguistic intent and respond appropriately, avoid situations that elicit delayed echolalia, and other. The most commonly used techniques employed to modify delayed echolalia were: model an appropriate response (25.4%), reshape the utterance into meaningful speech (19.8%), and determine the linguistic intent and respond appropriately (18.8%).

The seven technique choices for ritualistic behavior were: ignore, redirect to an activity, punish the behavior, sabotage the behavior, present a reinforcer to alter the behavior, use the ritualistic behavior as a reinforcer, and other. The most commonly used techniques employed to modify ritualistic behavior were: redirect to an activity (33.3%), present a reinforcer to alter the behavior (24.7%), and ignore (17.2%).

The eight techniques choices for self-initiated isolation were: ignore, utilize social skills training, utilize behavior charts with incentives, reinforce an appropriate behavior, shape the child into group participation, perform parallel/cooperative play activities, assign an age appropriate buddy for recess, and other. The most commonly used techniques employed to modify self-initiated isolation were: shape the child into group participation (26.1%), perform parallel/cooperative play activities (22.6%), and utilize social skills training (17.2%).

The six technique choices for failure to accept change in a routine were: visual schedules for an individual student, schedule boards for the classroom, verbal/physical cues, warning bells, timers, and other. The most commonly used techniques employed to modify a child's failure to

accept change in a routine were: visual schedules for an individual student (31.6%), schedules boards for the classroom (26.9%), and verbal/physical cues (24.9%).

The six technique choices for hypersensitive to touch were: brush therapy, spinning/swinging, weighted vest, deep pressure massage, sensory activities, and other. The most commonly used techniques employed to modify hypersensitivity to touch were: sensory activities (27.4%), weighted vest (20.0%), and deep pressure massage (20.0%).

The seven techniques for manipulation of digits/hand flapping were: ignore, place soft object in the child's hand, reinforce the appropriate behavior, use the behavior as a reinforcer, verbally identify the emotion causing the behavior, verbal/physical cues, and other. The most commonly used techniques employed to modify manipulation of digits/hand flapping were: placing a soft object in the child's hand (25.1%), reinforce the appropriate behavior (21.8%), and verbal/physical cues (21.8%).

The eight technique choices for head banging were: physically extinguish the behavior, ignore (if not severe), reinforce the appropriate behavior, replace with an appropriate behavior, redirect to activity, deep pressure massage to head, verbal/physical prompts, and other. The most commonly used techniques employed to modify head

binging were: redirect to the activity (23.7%), replace the behavior with an appropriate one (19.1%), and reinforce the appropriate behavior (14.5%).

The nine technique choices for biting were: time out, removal of privilege, reinforce appropriate behaviors, utilize behavior charts with incentives, redirect to activity, social stories, provide some form of oral stimulus as a substitute, verbal/physical prompts, and other. The most commonly used techniques employed to modify biting were: provide an oral stimulus (17.2%), reinforce appropriate behaviors (16.6%), and time out (16.0%).

Finally, respondents were asked about their use of sensory activities and their effects on self-stimulating behaviors. Most of the respondents use sensory activities prior to instruction (81.4%). Of the respondents who use sensory activities, 54.3% reported that sensory activities help decrease self-stimulating behaviors. Others reported that the effect varies too much for each individual child to be generalized (43.9%). Only 1.7% responded that the sensory activities have no effect on self-stimulating behaviors. None of the respondents reported an increase in self-stimulating behaviors as a result of sensory activities.

MOST COMMONLY USED TECHNIQUES

BEHAVIORS	FIRST	SECOND	THIRD
Immediate Echolalia	Model an appropriate response (27.3%)	Praise an appropriate response (18.5%)	Reshape utterance into meaningful speech (18.0%)
Delayed Echolalia	Model an appropriate response (25.4%)	Reshape utterance into meaningful speech (19.8%)	Determine linguistic intent and respond appropriately (18.8%)
Ritualistic Behaviors	Redirect to activity (33.3%)	Present reinforcer to alter behavior (24.7%)	Ignore (17.2%)
Self-initiated isolation	Shape child into group participation (26.1%)	Parallel-cooperative play activities (22.6%)	Social skills training (17.2%)
Failure to accept change in routine	Individual, visual schedules (31.6%)	Classroom schedule board (26.9%)	Verbal-physical cues (24.9%)
Hypersensitive to touch	Sensory activities (27.4%)	Deep pressure massage and Weighted vests (TIE) (20.0%)	
Manipulation of digits/hand flapping	Place soft object in child's hand (25.1%)	Reinforce appropriate behavior and Verbal-physical cues (TIE) (21.8%)	
Head banging	Redirect to activity (23.7%)	Replace with appropriate behavior (19.1%)	Reinforce appropriate behavior (14.5%)
Biting	Provide oral stimulus as substitute (17.2%)	Reinforce appropriate behaviors (16.6%)	Time out (16.0%)

Discussion

The increasing number of children who are being diagnosed and treated for autism make the implications of this research very important. Autism affects every child differently, so professionals need to be familiar with multiple modification techniques. Also, professionals in multiple disciplines need to have a basic understanding of autism and treatment techniques. Treatment is most effective when all professionals involved understand the purpose and implications of the techniques employed by each discipline. Collaboration among professionals is a key component of treatment.

Much valuable information can be applied from the results of this research, however generalization may be limited due to a number of factors. First, only professionals from Illinois were surveyed. Geographic locations can reflect differences in treatment philosophies and policies. Second, a majority of the professionals had only 12 months experience working with a child with autism within the past 5 years. These professionals may have a limited knowledge of treatment due to their inexperience. Finally, a majority of the professionals surveyed taught in schools located in rural areas. These professionals may have not have access to resources.

Despite these limitations, the research is quite beneficial. This research provides professionals with various effective treatment techniques. Professionals who have clinical experience with a child with autism have effectively employed these techniques. Professionals will not continue to use techniques that do not produce the desired effect.

There are multiple techniques evaluated in the research that can be applied clinically. First, this research is a good resource for those professionals with little or no experience with children with autism. Professionals can read the information presented in the research and employ the techniques without consulting supplementary information. Secondly, professions from multiple disciplines can employ the surveyed techniques because they are applicable in a variety of settings. When professionals who work with a child with autism use the same techniques in their settings, carry-over will be more efficient.

The clinical applications of this research increase the efficacy of treatment. When treatment is more consistent, efficient, and effective, a child's life can be significantly impacted. The sooner a child's autistic behaviors are modified, the sooner the child will be more

socially appropriate.

Aiding professionals with techniques that help a child with autism become more socially appropriate is the chief outcome of this research. Whenever a child or young adult is socially inappropriate, it negatively affects their educational and occupational potential. The general public tends to avoid children with autism who, for example, bite themselves or others. By helping children with autism conform to the most fundamental behaviors and rules of society through behavior modification, they will be more likely to function in mainstream society. Early intervention and effective modification can result in a more productive life for a child with autism.

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