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A Comparison of the Home and School Behaviors of
Pre-School Age Autistic and PDD Children

by
Debra L. Ribatsky

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree in the Graduate Division
of Rowan University in School Psychology
May 6, 1998

Approved by _____
Professor

Date Approved 5-6-98

ABSTRACT

Debra L. Ribatsky

A Comparison of the Home and School Behaviors of Pre-School Age

Autistic and PDD Children

1998

Dr. Dihoff, School Psychology Program

The purpose of this study was to examine the kinds of behaviors that were displayed in school and at home by autistic and PDD children of pre-school age. A group of twenty children were selected for this study. The children's parents and teachers answered questionnaires regarding different types of behavior exhibited by the children at different times. T-tests were conducted to compare the total amount of autistic type behaviors shown at home environment versus in the school setting. The sub-tests of the questionnaire were also analyzed using t-tests. A significant difference was found between the overall amount of typical autistic behaviors expressed at home as compared to those seen in school. The results also indicate that there was a significant difference between home and school behaviors of the autistic and PDD children in each of the four sub-tests of the questionnaire.

MINI-ABSTRACT

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1998

Dr. Dihoff, School Psychology Program

The purpose of this study was to observe, identify and compare the amount of autistic type behaviors that are exhibited by pre-school age autistic and PDD children at home and in school. The study found that there is a significant difference between the amount of typical autistic behaviors displayed in the home and school environments

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Chapter I: The Problem

Need

Determining the best way to educate pre-school age children with autism or pervasive developmental disorder(PDD) can be challenging. In order to ease this task, it is necessary to learn about the children's behavior in school and at home. Understanding what behaviors are more prevalent in school and which are more prevalent in the home allows a clinician to prepare the appropriate individual educational program for each autistic or PDD child. If a child already has a specific education or treatment plan, observing behavior is a tool that can be used to evaluate the effectiveness of the program being applied. Comparing home and school behavior also enables the child to receive a program at home that is supportive of the one in school and vice-versa.

Comparison of home and school behaviors and skills of autistic and PDD children is a way in which parents and school faculty can be evaluated to see if they are creating similar responses and consequences for the child's actions. By measuring the amounts of different behaviors in these children, the teachers and parents can discover what trouble, if any, the other is having and perhaps give suggestion for solutions. These observations and solutions are helpful in designing the child's optimal educational curriculum. It is important to know what skills, if developed, will enable a child to better function-

regardless of the environment, thereby allowing long range treatment goals to be completed successfully(Lansing and Schopler, 1978).

Purpose

This study will examine the kinds of behaviors that are displayed in school and at home by autistic and PDD children of pre-school age. The purpose of this study is to observe, identify and compare the amount autistic and non-autistic type behaviors that are exhibited by pre-school age autistic and PDD children at home and in school.

Hypothesis

Pre-school age children diagnosed with autism or Pervasive Developmental Disorder(PDD) will exhibit significantly different amounts of autistic type behaviors in the home environment as compared to the school setting.

Theory

Autism and pervasive developmental disorder(PDD) are behaviorally defined syndromes. The essential features are typically manifested prior to 30 months of age and include disturbances of (1) developmental rates and/or sequences, (2) responses to sensory stimuli, (3) speech, language and cognitive capacities, and (4) capacities to relate to people, events and objects. The most severe forms may include extreme forms of self-injurious, repetitive, highly unusual, and aggressive behaviors(Schopler, 1978). The relevant population is extremely heterogeneous and symptoms can range from mild to extremely severe. A pre-school age child with autism or PDD requires continuous monitoring in order to keep treatment programs up to date with physiological and behavioral changes. Constant monitoring provides the opportunity to discover any behaviors that are persistent or highly resistant to change which might require a new

approach to treatment or teaching strategies.

Due to the diversity of the population and the typical lack of diagnostic reliability, most autistic and PDD children are assigned a variety of labels including “brain damaged,” “emotionally disturbed,” or “mentally retarded.” Labels such as those mentioned are usually not correct, nor will they lead to a child receiving the appropriate form of treatment for the autism or PDD. It is necessary to focus more on describing individual behaviors(Dunlap, Koegel, and Egel, 1979).

Once one has assessed that a developmental disorder is present, the question of whether or not the child can be taught becomes relevant. The answer to the question is not a simple yes or no. After concluding that an autistic or PDD child can be and should be educated, the decision of which teaching method to use has been a constant question throughout the history of placing children with these syndromes in a school setting. A common, basic procedure that was one of the first mistakes to be employed in the schools was simply called behavior modification, which began in the early 1960’s. Originally, researchers used primarily one to one instruction to teach children appropriate classroom skills and behaviors(Russo and Koegel, 1979). Results of group instruction using the same method showed that the procedure was feasible and relatively successful. However, it required that the teachers clearly understood all issues related to children diagnosed with autism and PDD. Training teachers to employ behavior modification in the classroom is not difficult, but is not always possible to use such techniques in a classroom of twenty children. For this reason, other methods of teaching and training pre-school age autistic and PDD children were employed.

In 1973, Lovaas evaluated the effects achieved by using behavior therapy with pre-school age autistic and PDD diagnosed children. When treatment was successful, problems were found in three areas: (1) post-treatment environment was not consistent for individual children or group as a whole, (2) treatment proceeded slowly even with

massive effort, and (3) gains were often situation specific, meaning the skills learned were not always generalized to environments other than the therapy setting(Lovaas, 1987). These problems inspired Lovaas to implement more parent training in his program, which enabled parents to reinforce what was learned in the therapy setting as well as to be a part of their children's progress. The training taught parents a form of therapy called "discrete trial therapy," which is based on the theories of operant conditioning(Lovaas, 1987). Various behavioral deficiencies were targeted and separate programs were designed to accelerate development for each behavior. Making use of the trained parents allowed for learning to occur no matter what the child's environment.

Lovaas' method worked well in the home as well as in a small classroom. He realized that pre-school children are at an age where they must learn to use socialization skills. Such skills are usually lacking in children with autism and PDD. For this reason, implementing a treatment plan that involves teaching social skills is quite important. Otherwise the pre-schoolers will not know how to relate to either same age peers or people of other ages.

Several programs have successfully combined both academics and social skills curricula for pre-school age children with autism or PDD. Developed at Vanderbilt University, the "Social Competence Intervention Package for Preschool Youngsters"(SCIPPY) uses play as a format for teaching social skills. The activities are developmentally sequenced, though not primarily designed for handicapped children who have some interest in play activities and materials(Schreibman, 1988).

Another project, called "Learning Experiences...An Alternative Program for Preschoolers and Parents"(LEAP), requires parent involvement and training. Curriculum targets focus on functional skills needed in the children's home, school, and community. Precise planning, implementation, and evaluation of each activity allows for group instruction as the primary instructional arrangement. For children with behavioral

handicaps, objectives are chosen that are needed for successful participation in classroom, home, and community settings. This approach to curriculum development accomplishes the difficult task of integrating the developmental and environmental approaches.

The most commonly used method for treating pre-school age children with PDD or autism was created by Ivar Lovaas at UCLA. Called the “Young Autism Project,” it combines aspects of both of the programs mentioned above as well as having its own unique approach. It emphasizes prompting and reinforcement of appropriate social behavior and mild punishment to reduce self-stimulation and aggression. The program also includes methods for increasing compliance, imitation, and toy play. Parents and therapist provide treatment for as many hours a day as is appropriate for the child’s attention span. As the program progresses, the curriculum includes language and interactive skills taught in pre-school groups and community settings. As the child approaches school age, academic skills are added to the curriculum(Lovaas, 1987).

Lovaas has incorporated involving parents in the treatment program, places children in pre-schools with non-handicapped peers, emphasizes school survival skills, and continues intensive treatment as long as children continue to require help in school. Ideally, the discrete trial therapy given through programs such as the “Young Autism Project” should be part of the child’s school routine, which would provide both therapy and regular classroom instruction, ideally with an extra aide to assist the child during classroom instruction. The intensive treatment provided by Lovaas would be difficult to offer on a large scale, but it does provide encouragement that a curriculum emphasizing academic and social skills at a young age can have a great impact on many children with autism and PDD.

Definitions

AUTISM: A severely incapacitating lifelong developmental disability disorder that includes the following:

1. Lower than average developmental rates;
2. Disturbances in sensory stimuli;
3. Speech, language, and cognitive deficiencies;
4. Disturbances in the capacity to relate to people events and object, in other words, failure to develop social relationships(Groden and Baron, 1988; Schopler, 1978).

AUTISTIC TYPE BEHAVIORS: The following are the general behaviors observed in PDD and autistic children(and adults):

1. Lack of appropriate speech;
2. Lack of appropriate social behavior;
3. Apparent, but unconfirmed sensory deficit;
4. Lack of appropriate play;
5. Inappropriate and out of context emotional behavior;
6. High rates of stereotyped, repetitive behaviors;
7. Isolated areas of high level functioning in the context of low level intellectual functioning(Rimland, 1978).

* It is important to realize that although autistic children may exhibit one or all of these symptoms, that their physical appearance is usually normal.

DISCRETE TRIAL THERAPY: Consists of 4 parts:

1. Trainer/therapist's presentation;
2. The child's response;
3. The consequence;
4. A short pause between the consequence and the next action(*Behavioral Intervention for Young Children with Autism*, 1996)

PERVASIVE DEVELOPMENTAL DISORDER(PDD): A class of conditions to which autism belongs, but for which the full features for autism are not met. There are no specific guidelines for PDD.

OPERANT CONDITIONING THEORY: The process of changing behavior by following a response with reinforcement. The subject's response determines what the outcome will be and when it will occur. Reinforcement is any event that increases the probability that the preceding response will be repeated in the future(Kalat, 1993).

PROMPTING: An instructional technique that helps the child make the correct response.

Types:

1. gestural-actions such as pointing
2. physical-guiding child through task
3. modeling-demonstrating
4. verbal-giving verbal instructions or cues

Assumptions

A basic assumption of this study is that the subjects used are representative of a random sample. Another assumption is that the amount and types of behavior displayed by the subjects in school and at home do not change throughout the school year. A third assumption is that the raters completely understand the questions on the scale and honestly evaluate the children.

Limitations

One of the limitations of this research is that it is only generalizable to autistic and PDD children receiving special education services as a part of every school day. The fact that the population being studied is mainly male also presents a limitation because the results should not be generalized to account for most female behavior. Another limiting factor is that the current research is based upon a predominantly caucasian population.

Overview

In the remaining chapters of this paper, the research question presented will be looked at in depth. In chapter two, the literature pertaining to treatment and observation of autism and PDD is reviewed. Chapter three contains a detailed description of the method and design of the study. The results of the research conducted will be analyzed and discussed in chapter four. Finally, in chapter five, conclusions about the data collected will be made and implications of the findings will be discussed.

Chapter II: Review of the Literature

There are three general treatment approaches that have been applied to children with developmental disorders. First, treatments based on a psychodynamic model follow from the psychogenic hypothesis of the etiology of the disorder. Second, pharmacological methods seek to alter basic biochemical deviations which will affect behavioral changes. Third, there are treatments based on a behavioral model that differ from the other treatment methods. The behavior model of treatment does not focus on a basic “disease” cause but instead focuses on the specific behaviors exhibited and on their relation to the child’s environment.(Schreibman, 1988). All three methods have been tried in relation to the school setting. This chapter will discuss the efficacy of each method along with assessing each method’s usefulness and practicality in a school setting.

Psychodynamic Model of Treatment

The psychodynamic model holds that autism is the result of the child’s withdrawal from an environment that is perceived as hostile, threatening, and dangerous. The child’s normal frustrations and minor setbacks or withdrawals are met with extreme negative reaction by the parent instead of responding with supportive behaviors. This hostility causes the child to further withdraw into autism. This is the “chronic autistic

disease” and involves an arrest in ego development since the child’s libidinal energies are spent in defending against the environment(Bettleheim, 1967).

Bettleheim(1967) pointed out that in most institutions the basic approach was to encourage the child to see the world as it really is, a task which he felt the psychotic child is capable of doing. Instead, what was needed was to create for the child a world that was completely different from the one that he/she abandoned and one which the child can enter in his current state of developmental delay. It was this view that invoked the ritual of removing the child from the home, and therefore the parents responsible for the autistic withdrawal, and placing the child in a residential setting. In this setting, the child had therapists who acted as surrogate mothers who attempted to be what the child’s mother was not. The therapist provided the child with as much tactile, kinesthetic and vocal stimulation as possible in order to engage the child. The child was encouraged to reach out for new experiences in order to develop a strong sense of self. The child’s behavior led to reciprocal responses from the therapists indicating to the child that his/her behavior did have an affect on others. This gave the child a sense of power that was lost in the days he/she spent with his natural parents. It was then that the therapist began to make small demands on the child(Kugelmass, 1970). In Bettleheim’s view, this step was essential to the development of autonomy. Once achieving a sense of independence, the child could be successful in all areas of life, including the school environment and socialization situations with peers.

A prime example of one such place that employs the psychodynamic approach is The Groden Center, located in California. It provides services for children and young adults with autism and pervasive developmental disorders. The program’s “mission is to provide those services and activities most likely to enhance the lives of those persons and their families both now and in the future”(Groden et al., 1984).

The center’s approach is based on three perspectives: developmental, behavioral,

and ecological. The developmental view considers the child's developmental level in critical adaptive areas and promotes progress in those areas. The behavioral methods are based on principles of learning, task analysis, and continuous data recording and review. The ecological perspective recognizes the need for understanding the reciprocal relationship between the children and their environment(Groden and Baron, 1988).

The Groden Center runs this treatment plan as a day program. The "whole-child" model is emphasized, which is why the center employs a variety of professionals representing different disciplines. By removing the child for a large portion of the day, a comprehensive system of both treatment inside and outside the home can be used. The Groden Center has proven that this method will enable autistic children to lead productive and dignified lives(Groden et al., 1984).

A key issue during this process was that the therapist, also recognized as the child's teacher, carefully considers the child's overall emotional, functional and developmental level since expectations above this level could result in frustration and further withdrawal(Bettleheim, 1964). It is also important to recognize that this model of treatment placed blame on the parents by labeling them as incapable of handling their own child, which caused severe feelings of guilt. This parent causation position has almost completely been abandoned and other methods of treatment have developed from it. A very positive outcome from the psychodynamic model must not be overlooked. In reaction to this psychogenic hypothesis, parents and professionals dedicated to the understanding and treatment of autistic children founded the National Society for Autistic Children(now called the Autism Society of America).

Psychopharmacological Treatments

Investigators have tried to identify a specific neurochemical aberration responsible for the etiology of the disorder. This would ideally allow them to treat

affected individuals with a specific drug that would cure autism and related pervasive developmental disorders. Unfortunately, no specific cause has been identified for autism. To compensate, the ultimate goal of psychopharmacological treatments has been to utilize a minimal and safe dose of some drug to alleviate some of the more disruptive symptoms of autism, thereby enabling the children to better benefit from other environmental treatments(Campbell et al., 1978).

Two types of drugs have been used to decrease autistic behaviors. Amphetamines were proven useful in controlling hyperactive disorders often associated with developmental disorders. This drug improved the children's attention spans and lowered their activity levels, thereby allowing them to benefit from educational interventions. Neuroleptics, also known as antipsychotics and major tranquilizers, were also used to decrease maladaptive behaviors and calm the child. Those drugs also caused excessive sedation, which limited the effectiveness of school intervention.(Campbell et al., 1972; Korein et al., 1971).

In 1978, Campbell et al. conducted a haloperidol and behavior treatment study with 40 autistic children ranging in age from 2.6 to 7.2 years old. The study employed a double-blind, between-groups design, had a placebo control, and had multiple independent raters on several rating scales of behavior. The results revealed that haloperidol significantly reduced self-stimulation and withdrawal in subject age 4.5 and older. Also, the combination of the drug and behavior therapy was significantly superior to either treatment alone.

This study produced two questions about how the drug enhanced the efficacy of the behavior therapy. Was it because the haloperidol reduced the self-stimulating behaviors and withdrawal and thus removed two behaviors that could be expected to impede learning? Or did the drug somehow directly affect attentional mechanisms and thus facilitate learning(Schreibman, 1988)? Anderson et al.(1984) conducted a study to

address these very questions. Anderson et al. assessed the effects of haloperidol in two situations—a highly structured experimental setting in which the children were trained on an automated operant discrimination task in the laboratory and an outside setting (school or home). Forty autistic children ranging in ages from 2.3 years to 6.9 years were randomly assigned to one of two treatment schedules (drug-placebo-drug or placebo-drug-placebo), with each treatment lasting four weeks. The results indicated that outside of the laboratory (in school), the children showed significant decreases in self-stimulating behaviors, withdrawal, hyperactivity, abnormal object relationships, negativism and irritability during the drug treatment. In the laboratory, discrimination learning increased during the drug condition, but there was no effect on behavioral symptoms during this condition. It was therefore concluded that the effect of the drug on learning was not a function of its reducing symptoms, but it probably only directly affected their attentional mechanisms (Anderson, et al., 1984).

In another study, Cohen et al. (1980) used objective rating scales and a double-blind, placebo-controlled, within subjects design to assess the therapeutic efficacy of haloperidol in a sample of 10 preschool-age children. The drug was found to decrease the occurrence of self-stimulation. The effect was more pronounced in the older children and in those children who exhibited a high percentage of self-stimulatory behaviors during baseline. Haloperidol also facilitated the orienting reaction of the children to the request “look at me.”

Although a few types of drugs have been successful in lowering autistic-like behaviors, researchers involved in psychopharmacology realize that there are potentially harmful side effects that could impair learning. Also, there have been no consistent findings with any of the drugs used to date. Finally, not enough is known about the dosage, short- and long-term effects, and the mechanisms by which many of these drugs produce their effects. Prescribing drugs to reduce behaviors is only effective if other

aspects of a child's life, such as school functioning and socializing situations, are not negatively affected.

Behavioral Treatment

From a behavioral perspective, one would attempt to increase the deficit behaviors of an autistic child by reinforcing their occurrence and to reduce the behavioral excess by systematically removing the reinforcers that may be maintaining those behaviors. It has been proposed by some investigators to be one of the most promising treatment approaches for autistic children(DeMyer et al., 1981; Lovaas and Smith, 1989). Ferster(1961) suggested that the failure of autistic children to develop normally results from a failure to be affected by conditioned reinforcers. Ferster and DeMyer(1962) were the first to empirically demonstrate that the systematic manipulation of environmental contingencies could result in the acquisition of new behaviors in autistic children(Schreibman et al., 1990).

In the 1970's, researchers turned to the empirically based behavior model because the psychodynamic model could not demonstrate its effectiveness. Attempts to classify behaviors of all children with autism and pervasive developmental disorders has been virtually impossible because the population being diagnosed is extremely heterogeneous. For this reason, behavioral psychologists, such as O. Ivar Lovaas, de-emphasized the importance of defining the syndrome and focused instead on assessing and understanding individual behaviors. It was assumed that the individual behaviors manifested by children labeled autistic were functionally related to their environment and that the relation of these behaviors to the environment is no different than the relation of any behavior to the environment. This means that psychological principles, especially those related to laws of learning can be used to understand and alter these behaviors. This form of treatment is usually called "behavior modification" or "behavior therapy"(Schreibman,

1988).

One attempt at what was called a “behavior technology” involves the gradual increase of the group size with the concurrent thinning of the reward schedule. This should have resulted in the consistent performance and acquisition of new behaviors in groups of up to eight children and only one teacher. However, without continuous supervision, there was no proven success on individual tasks suited to idiosyncratic learning rates and levels of functioning(Rincover & Koegel, 1977). Another failure of this study is that the children who were mainstreamed into the group from a one-on-one situation took away the time and energy of the teacher from the other children, so that less learning was possible for the non-autistic children.

In 1970, Lovaas began an intensive behavioral intervention project called the “Young Autism Project” which sought to maximize behavioral treatment gains by treating autistic children, all below the age of four when the program began, during most of their waking hours for many years, involving therapists teachers and parents(Lovaas, 1987; McEachin et al., 1993). Treatment was provided for the nineteen children in all significant situations, particularly school and home, and it included all significant persons, including parents, teachers and graduate level therapists. It was believed that the younger the children were when they began the program, the less likely they would be to discriminate between environments, thereby making it easier for them to adjust and generalize their treatment gains(Lovaas, 1987).

Each subject in the experimental group was assigned several well trained therapists(graduate students in the clinical psychology program at the school where Lovaas worked), who worked part-time with the subject in the subject’s home, school and community for an average of 40 hours per week for two or more years. The parents worked as part of the treatment team throughout the intervention. They were extensively trained in the treatment procedures so that treatment could take place for the subjects’

during as many waking hours as possible, 365 days a year.

Various behavioral deficiencies were targeted and separate programs were designed to accelerate development for each behavior. The treatment, called “discrete trial therapy,” was based on reinforcement(operant) theory and relied heavily on discrimination-learning data and methods(Lovaas et al.,1980). Self-stimulatory behaviors were ignored or were substituted by demonstrating a more socially acceptable behavior. During the first year, treatment goals were aimed at reducing self-stimulatory and aggressive behaviors, building compliance to simple verbal requests, and teaching imitation. The second year emphasized teaching expertise and early abstract language and interactive play with peers. Treatment was also extended into the school and community to teach children how to function within a preschool group. The third year focused on the teaching of appropriate and varied expression of emotions, pre-academic skills like reading, writing and arithmetic, and observational learning. Subjects were enrolled in a preschool only where the teacher agreed to help with treatment.

After preschool, placement in a public school setting was determined by school personnel. All children who successfully completed first grade, successfully completed subsequent grades while, at the same time, their treatment coordinators systematically decreased the number of treatment hours. As a result of Lovaas’ treatment experiment, forty seven percent of the experimental group achieved normal intellectual and educational functioning in contrast to only two percent of the control group subjects.

The results of this study indicate that this is the type of program that would be most beneficial for children, especially if the program is initiated at pre-school age. Public school systems have begun to recognize this and are now implementing the discrete trial program for preschoolers as well as older autistic and pervasive developmentally disordered children in their district.

Another type of behavioral treatment involves the use of non-handicapped peers.

During the preschool years, the developmental gaps between children with autism and their non-autistic mates are less apparent than in later years(Watson and Marcus, 1988). In an educational setting, it is easier during this period to design activities which are developmentally relevant to both autistic and non-autistic children. There is evidence that integration is beneficial when social interactions are planned as part of the curriculum(McHale and Gamble, 1986). The extent to which the autistic children can participate and benefit from the integrated activities varies with the severity of the autism. As well as benefiting autistic children, integration allowed non-handicapped children to gain skills which enabled them to be more successful social partners for handicapped children(Schopler and Mesibov, 1988).

Summary

It is important to recognize that children with autism or PDD do not comprise a discrete diagnostic group with similar etiology, clinical manifestations, natural history, treatment or prognosis. The diagnosis of “autism” has been used to encompass a heterogeneous group of children who require different therapeutic programs. For that reason, it is not appropriate to group all autistic and PDD children into a single classroom situation without individual attention, but rather it is necessary to develop a basis for management and treatment which will offer clues for their future.

An array of treatment modalities for autism and pervasive developmental disorder were developed in the past 30 years. Once a plan of treatment is implemented, it is important to periodically re-evaluate the individual and to modify the treatment plan as needed. It is in this way, along with support for and from the parents, that there can be continuity of services and the treatment methods can constantly be developed and improved.

Chapter III: Design of the Study

Sample

The sample used for this study consists of children who have been diagnosed with Autism or PDD prior to the start of the research. The age of the group ranges from 3 to 7 years of age. There are 20 males and 1 female. The children reside with their biological families in the South Jersey and Philadelphia area and attend school in their town.

Measures

The instrument that has been chosen to measure the behaviors of the children is the Behavior Rating instrument for Autistic and other Atypical Children(BRIAAC). Published by Stoelting in 1991, authors B.A. Rutterberg, E.G. Wolf-Schein, and C. Wenar created the device to be used in wither a weighted score or checklist manner. The current study uses the BRIAAC in the checklist style. The BRIAAC can be used in its entirety or, when the checklists are used, only parts of the test can be put to use. The reliability for both ways of implementing the rating scale is equivalent.

The Spearman rank correlation coefficient was used to test the BRIAAC's interrater reliability. Interrater reliability was measured in terms of a agreement between 2 raters who observed a child for approximately 4 hours during a given day. It was found that the scales used for the current study ad the following coefficients: Relationship to an

adult-.88; Communication-.85; Sound and Speech Reception-.88; Social Responsiveness-.91. These correlations indicate that the interrater reliability of all scales is highly satisfactory.

Test-retest reliability of the BRIAAC was also measured. A sample of 20 autistic and atypical children were observed at a two to three week interval. Again the Spearman rank correlation coefficient was calculated. The following are the results: Relationship to an Adult-.89; Communication-.74; Sound and Speech Reception-.83; Social Responsiveness-.91.

In relation to reliability, there is also the question of error of measurement. The BRIAAC contains a certain amount of “human error.” This can occur when comparing scores of two children or comparing different scores of the same child at different times. First of all there is the question of how much of a difference in total scores is to be expected for each scale. Also, there needs to be a designation of how large the difference in scores can be before a clinician or researcher can be positive that variance is not due to human error. The authors of the BRIAAC investigated both of these potential problems and discovered that although scoring can vary somewhat, the difference does not turn out to be statistically significant.

Another aspect of this study that requires examination of reliability is the raters’ contribution. This includes the raters’ comprehension of the questions and statements on the scales, compliance (regarding following the directions), and truthfulness in answering. The scales of the BRIAAC that were used were chosen because the directions were explicit and the statements that the raters had to read and comment on were very clear and concise. It is important to remember that one group of raters are parents of the children. This could cause a problem if the parents are afraid to let others know what their child does and does not do. In order to promote honesty in answering, the raters were told that all information would be kept confidential and that no names would be

connected to any data.

In creating the BRIAAC, one of the author's major concerns was content validity. It is imperative to insure that the items on the scales are accurate representations of the behaviors of "Early Infantile Autism" and the "Atypical Child," as well as appropriate for the various degrees of severity of each category(BRIAAC Instruction Manual, 97). In order to insure the content validity, experts from many fields were consulted and assisted in revising the items so that each scale would "accurately reflect the observed behavior of autistic and other atypical children"(BRIAAC Instruction Manual, 97). Also related to content validity is the proper use of the test. To protect against misuse, the authors have specified the situations for which the BRIAAC is appropriate.

The authors of the BRIAAC also determined the test's concurrent validity. A double blind study was implemented in which 26 autistic and atypical children were compared with an expert clinician's rankings. Neither the BRIAAC raters nor the clinician had any information about the other rankings. The Pearson product-moment correlations were obtained for the following rankings(at the .01 significance level): Overall Disturbance(in which the Cumulative scores on the BRIAAC were correlated with the clinician's rankings of overall severity of disturbance)- $r=.65$; Relationship- $r=.43$; Vocalization and Expressive Speech- $r=.65$; Drive for Mastery- $r=.83$. It was proven that concurrent validity is satisfactorily established as a measure of overall severity and the three classical signs of autism - extreme aloneness, no communicative speech, and pathological need for sameness(BRIAAC Instruction Manual, 98).

In subsequent research, Fried(1980) reported on the concurrent validity of the BRIAAC for visually handicapped children. Using the same experimental method as described above, Fried used the Spearman rank correlation coefficient to make conclusions about the BRIAAC. It was found that the correlations ranked from .57 to .94 and all correlations were highly significant.

A final aspect of validity that was used was the intercorrelation of scales. Since the scales were assumed to be measuring different facets of autism, a high intercorrelation was desirable. However, if the intercorrelations were too high, then the scales would be considered redundant. The results of the intercorrelations indicate that the various scales measure a common “complex entity,” but that each scale is sufficiently distinct and warrants inclusion in the test(BRIAAC Instruction Manual, 103).

Design

The current study examined autistic behaviors and analyzed the results in a descriptive style. The instrument used to measure the behaviors was the Behavior Rating Instrument for Autistic and Atypical Children(BRIAAC). Four scales from the test were used: Communication Scale, Sound and Speech Reception Scale, Social Responsiveness Scale, and Relationship to an Adult Scale(Appendix A).

The independent variable being manipulated is the environment in which observation of the children took place. The two environments were the home and the school settings. The dependent variables being measured are based on the scales being used -- communication capabilities, sound and speech reception abilities, social responsiveness, and relationships with adults. After obtaining permission from the participating schools and agreement from the parents to conduct the research, surveys containing items from the scales named above were given to the parents of the autistic and PDD children. These scales were used in a checklist fashion. After receiving extensive instructions from the researcher, either over the phone or in person, the parents were asked to read the statements(40 total) and circle the appropriate response after observing their child for a period of about 2 hours. The response choices were as follows: **0**-the behavior was not observed or there was no opportunity for it to be seen; **1**-the behavior was occasional/intermittent; **2**-the behavior was very

characteristic/frequent. The parents were given about two weeks to complete the survey and send it back to the researcher. Also attached to the group of scales was a list of short questions asking the parents to fill out information related to their age, other siblings and other family situations(Appendix B). In this case, the surveys were sent home in the children's backpacks and returned the same way the day after the children were observed. This mode of exchanging materials seemed most effective because parents of young children, especially those in special education programs tend to check their child's backpack everyday.

During the same period of time that the parents were completing their survey, the people involved with the children at school, specifically teachers and therapists involved with the children, were asked to fill out the same scales in the same manner. The surveys were given to both groups of raters during the same time interval to insure that the children were observed during the same time period in both places. The school raters returned the surveys to the researcher the day after observing the child and rating his/her behavior. The important aspect of this is the significant difference in the amount of behaviors displayed at home and at school.

Hypothesis

Pre-school age children diagnosed with autism or PDD will exhibit significantly different amounts of autistic type behaviors in the home environment than in the school setting in the following areas: communication, sound and speech reception, social responsiveness, and relationship with adults.

Analysis

The data will be analyzed using a dependent t-test to contrast the amount of behaviors expressed at home as compared to those behaviors expressed in the school

environment.

Summary

Learning about the behavior of young children diagnosed with autism and PDD is essential to being able to help these children function to the best of their ability in society. This study is an attempt to gain knowledge about and interpret the reasons for the types and amounts of behavior displayed by autistic and PDD children in different environments. Conclusions drawn from the data collected can be valuable in the implementation of therapy programs and individual education plans.

Chapter IV: Analysis of the Data

Restatement of Hypothesis

The hypothesis tested in this research study predicted that pre-school age children diagnosed with autism or Pervasive Developmental Disorder(PDD) would exhibit significantly different amounts of typical autistic behaviors in the home environment as compared to the school setting.

In order to compare the total amounts of autistic type behavior at home and at school, a dependent t-test was used to analyze the data that was gathered. A lower score indicates that there are less normal behaviors displayed than autistic-type behaviors. As is shown in Figure 4.1, the mean score for the amount of behaviors in school is 42.5 while 48.9 is the mean score of home behaviors. After conducting the t-test, the results were found to be significant for the general amount typical autistic of behaviors displayed in the two different environments(Figure 4.2).

Figure 4.1

	Mean	N	Std Deviation	Std Error Mean
school	45.2000	20	8.1020	1.18177
home	48.9000	20	8.0387	1.7975

Figure 4.2

	Mean	Std Deviation	Std Error Mean	95% Confidence Interval		t	df	Sig (2 tailed)
				Lower	Upper			
Pair 1 School-home	-3.7000	5.5355	1.2378	-6.2907	-1.1093	-2.989	19	.008

These scores resulted from the sum of four sub-tests. The results of each of the sub-tests were also analyzed using t-tests. The results(Figure 4.4) of the analysis for the Communication Scale, which can be seen in full in Appendix A, show a higher mean for the home scores of these behaviors. This implies that the children express more communication skills at home than at school.

Figure 4.3

	Mean	N	Std Deviation	Std Error Mean
School	10.7500	20	3.3384	.7465
Home	11.45	20	2.4382	.5452

Figure 4.4

	Mean	Std Deviation	Std Error Mean	95% Confidence Interval		T	df	Sig (2 tailed)
				Lower	Upper			
Pair 1 School-home	-.7000	2.3193	.5186	-1.7854	.3854	-1.350	19	.193

Results from the t-test performed on the Sound and Speech Reception Scale, shown in Appendix B are shown in Figure 4.5. The difference in the amount of behaviors at home and at school indicate that the children involved in this study react to sound and speech in a manner characterized as autistic more at school than they do at

home.

Figure 4.5

	Mean	N	Std Deviation	Std Error Mean
School	11.9000	20	2.8451	.6362
Home	12.8500	20	2.9249	.6540

Figure 4.6

	Mean	Std Deviation	Std Error Mean	95% Confidence Interval		t	df	Sig (2 tailed)
				Lower	Upper			
Pair 1 School-home	-.9500	2.0125	.4500	-1.8919	-8.14E-03	-2.11	19	.048

Figure 4.8 shows that the results of the t-test analysis of the Social Responsiveness Scale, which is in Appendix C, do not indicate a significant difference in this characteristic between the school and home settings. This implies that the children are more responsive to the requests of others at school than at home.

Figure 4.7

	Mean	N	Std Deviation	Std Error Mean
school	11.4500	20	2.5021	.5595
home	12.1500	20	2.3902	.5345

Figure 4.8

	Mean	Std Deviation	Std Error Mean	95% Confidence Interval		T	df	Sig (2 tailed)
				Lower	Upper			
Pair 1 School-home	-.7000	2.2501	.5031	-1.7531	.3531	-1.391	19	.180

Results of a t-test analysis of the scores from the Relationship with Adults Scale, as shown in Appendix D demonstrate that the do not children have significantly better relationships with the adults in their own homes than with adults at school. The results(Figure 4.10) do not indicate a statistically significant difference between the relationships at the two different locations.

Figure 4.9

	Mean	N	Std Deviation	Std Error Mean
School	11.9000	20	1.8890	.4224
Home	13.000	20	2.3620	.5282

Figure 4.10

	Mean	Std Deviation	Std Error Mean	95% Confidence Interval		T	df	Sig (2 tailed)
				Lower	Upper			
Pair 1 School-home	-1.100	2.59395	.5799	-2.3138	.1138	-1.897	19	.073

Summary

The results suggest that children diagnosed with autism and PDD express more “normal” behaviors at home than at school. In other words, they display more autistic type behaviors at school than they do at home. Generally the scores of the four different sub-tests support the overall results, but individually the results of each scale vary.

Chapter V: Summary and Conclusions

Summary

This study was conducted to determine if children diagnosed with autism or PDD display more autistic type behaviors in the home or school setting. Understanding what behaviors are more prevalent in school and which are more prevalent in the home allows a clinician to prepare the appropriate individual educational program for each autistic or PDD child. By measuring the amounts of different behaviors in these children, the teachers and parents can discover what behaviors are common across all situations and which are specified to particular environments.

The data gathered from the 20 subjects involved gives researchers insight into the possible causes of the behaviors expressed by these children. It must always be recognized that a multitude of variables acts upon the types and frequency of behaviors displayed. Conclusions drawn from the data collected can be valuable tools in the implementation of therapy programs and individual education plans. Learning about the behavior of these young children is essential to being able to help them function to the best of their ability in society.

Conclusions

The current research demonstrates that there is a significant difference in the amount of typical autistic behaviors displayed in the home and school environments. In particular it appears that children with autism or PDD display more autistic type behaviors at school than they do at home.

Discussion

The results obtained from this study could be affected by a few variables that were not considered in this research. First of all, the fact that most of the children showed significantly less autistic type behaviors at home is slightly curious. This might be caused by the parents' embarrassment to tell the truth about their children's behaviors. It also might be caused by the parents inability to distinguish/understand what was being asked about on the questionnaire. This could be improved upon by going over the questionnaire with the parents in person to make sure that they comprehend all of the questions.

Another factor that should be considered is that majority of the subjects in this study were Caucasian. This could have created a bias in the data because some cultures consider certain behaviors to be inappropriate while others do not. In order to ratify this obstacle one would have to analyze that data according to each race.

Implications for future research

One of the ways in which this research might be furthered explored is by investigating the effects of other variables such as the amount of siblings present in the

household. The ages of the other siblings could have an effect on the behavior of the autistic or PDD child. Also, the fact that there is another sibling present could enable the child with autism or PDD to learn different behaviors than would otherwise be known.

The number of children in the autistic child's classroom is also another factor that should be considered. One might look at the advantages of having a smaller class as well as the disadvantages.

It should also be recognized that autistic children learn most effectively through modeling. An interesting topic for further investigation would be the effect of inclusion for autistic children. Perhaps increasing the amount of time spent with those without their disorder would alter their school behaviors and ultimately their home behaviors as well.

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Appendix A

Appendix A --Communication Scale

0=behavior never occurs during a typical day 1=behavior occurs sometimes
2=behavior is typical of your child on any given day

1. The child shows little or no expression of emotion. No sign of directing behavior toward or reaction to another person.
0 1 2
2. The child has undirected expression of emotion with no audience in mind. Expression is weak and repetitive.
0 1 2
3. The child seeks relief from distress or show signs of pleasure, but does not seek out a particular person to do so.
0 1 2
4. The child shows subtle signs that help or attention is wanted from a specific person.
0 1 2
5. The child uses regular, simple ways to get help, communicate displeasure or satisfy a need. May physically manipulate an adult to get what he wants. May gesture or point.
0 1 2
6. Communication regarding the child's desires is clearly directed toward a specific person. In effect the child is saying "do it for me."
0 1 2
7. The child has an attitude that he will "work with you" to accomplish something the child wants done.
0 1 2
8. The child communicates present feelings and observations.
0 1 2
9. The child communicates to another person about the past or future.
0 1 2
10. The child initiates and responds in a reciprocal manner. Furthers conversation.
0 1 2

Appendix B

Appendix B – Sound and Speech Reception Scale

0=behavior never occurs during a typical day 1=behavior occurs sometimes

2=behavior is typical of your child on any given day

1. The child has no awareness of any sound
0 1 2
2. The child has brief reflex response(head turns or body jumps) to a sound but then there is no other reaction. May use sound to withdraw(ex. rocking when music is present).
0 1 2
3. The child attempts to shut out or remove the source of a sound(ex. covers ears, runs away, or hits radio).
0 1 2
4. Child shows no interest in sound. May listen, nut not look to source of sound.
0 1 2
5. Child is aware of sounds and words. Turns eyes/head toward source of sound. Responds to name or conditioned phrases(ex. "come here").
0 1 2
6. The child discriminates sounds. Goes to sound and repeats it, but doesn't understand meaning of the words/sounds.
0 1 2
7. The child understands sounds and word in context or with clues such as pointing.
0 1 2
8. The child understands simple commands and familiar word without accompanying gestures or familiar context.
0 1 2
9. The child understands sentences requiring identifying of objects by use. Follows directions.
0 1 2
10. The child understands simple 2 or 3 step commands.
0 1 2

Appendix C

Appendix C – Social Responsiveness Scale

0=behavior never occurs during a typical day 1=behavior occurs sometimes
2=behavior is typical of your child on any given day

1. The child has no awareness of own needs or social requirements.
0 1 2

2. The child does not use objects associated with self-care correctly.
0 1 2

3. The child uses appropriate behaviors when carrying out self-care functions.
0 1 2

4. Initial response to social demands:
 - a. actively attempts to resist(ex. screaming, crying) 0 1 2
 - b. passively resists(ex. leaves the room) 0 1 2
 - c. responds if given constant monitoring 0 1 2

5. The child has beginning awareness and acceptance of social requirements.
Mirrors others. Needs reminding.
0 1 2

6. The child independently carries out a limited number of social behaviors. Never varies from the routine he/she was taught.
0 1 2

7. The child has a constantly growing repertoire of self-care behaviors. Moderately flexible.
0 1 2

8. The child has growing interest. Receptive and consciously imitative.
0 1 2

9. The child is cooperative and responds to requests(as much as any young child would.) Enjoys helping others.
0 1 2

10. The child uses appropriates social functions in most daily interactions. Still insecure in new situations or with unfamiliar people.
0 1 2

Appendix D

Appendix D – Relationships with Adults Scale

0=behavior never occurs during a typical day 1=behavior occurs sometimes
2=behavior is typical of your child on any given day

1. The child does not notice the presence of another person.
0 1 2
2. The child responds intermittently, meaning he/she “tunes in and out.”
0 1 2
3. (a) The child generally avoids adults intentionally.
0 1 2
(b) The child notices adults but shows no emotion towards them
0 1 2
4. The child pays attention to adults at a comfortable distance.
0 1 2
5. The child briefly and occasionally attends to an adult at a close distance.
0 1 2
6. The child regularly responds to adults and sustains attention, eye contact and close physical proximity. He/she experiences anxiety when separate from an adult.
0 1 2
7. The child consistently searches out and pays attention to one adult while specifically rejecting others. Most interactions on child’s own terms.
0 1 2
8. The child regularly responds to requests from familiar adults. Is able to anticipate whether or not a behavior will be approved of or disapproved of by adults.
0 1 2
9. The child attempts to direct attention of adults to his/her efforts.
0 1 2
10. The child assesses an adult’s mood and expresses empathetic behavior. The child attempts to help others.
0 1 2