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The Effects of Teacher Training vs. Teacher and Parent Training on the Aggressive Behavior of Preschoolers

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THE EFFECTS OF TEACHER TRAINING VS. TEACHER AND PARENT TRAINING ON THE AGGRESSIVE BEHAVIOR OF PRESCHOOLERS

by

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John J. Shamaly

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ABSTRACT

The Effects of Teacher Training vs. Teacher and Parent Training on the Aggressive Behavior of Preschoolers

by

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The present study was conducted over a two-month period and used a three-group post-treatment quasi-experimental design to compare the relative effectiveness of teacher training only, to teacher training plus parent training, upon the aggressive and social competency behaviors of teacher-identified aggressive preschoolers. In addition to a non-intervention control group of teacher-identified aggressive preschoolers, children who teachers identified as being non-aggressive were also observed for comparison purposes. The training that both parents and teachers received was general and focused on providing an understanding of the techniques of social learning theory and child behavior management. Parents also implemented behavior programs to increase desirable child behaviors. The dependent measures used in the present investigation included: observed child aggression, observed teacher reinforcement of parallel and cooperative play of target children, teacher ratings of social competency and problem behaviors, parents' ratings of problem behaviors, and parent satisfaction ratings

of children's daycare/preschool programs. Due to several problems with research design and methodology (e.g., quasi-random assignment, no baseline or pre-treatment data, a small sample size, etc.), it was impossible to draw definitive conclusions from the obtained results. However, it appeared that both teacher training and teacher and parent training were as equally effective in reducing aggression as was no treatment at all. Furthermore, teacher training did not appear to increase teachers' rate of reinforcement of appropriate child behaviors.

Another finding was that parent training may have increased parents' knowledge of behavioral principles as applied to children and may have improved parents' satisfaction with children's daycare/preschool programs. Suggestions made for further research included: increasing the sample size, random assignment of subjects, development of specific individual treatment programs, and collection of baseline pretreatment data.

(153 pages)

CHAPTER I

INTRODUCTION

Introduction and Statement of the Problem

The number of seriously emotionally disturbed (SED) students constitutes a significant national problem. According to one source, the number of SED students receiving services under the Education of the Handicapped Act has steadily increased from a low of 283,072 in the 1976-77 school year, to a high of 373,207 in 1984-85 (U.S. Department of Education, 1986). This nearly 32% increase in number of SED students in public and state-supported schools has occurred during a period when public school enrollments were declining. During this period, only the number of children served in the learning disabled category exceeded the SED population in growth (U.S. Department of Education, 1986).

A common concern shared by special educators and those in general education is the prevention of more serious emotional disturbances in children with mild behavior disorders, by providing appropriate treatment when the disability is less severe (Atkeson & Forehand, 1982; U.S. Department of Education, 1986). Conduct disordered children are the most common referrals to mental health centers, and surveys indicate that from 1/3 to 1/2 of all child referrals from parents and teachers are concerned with these kinds of problems (Atkeson & Forehand, 1982). The majority of students referred by teachers are those with conduct disorders whose behavioral characteristics are externalizing in nature; i.e., directed toward the social environment and extremely aversive to teachers and peers (Achenbach, 1979; Ross, 1980; Walker, Hops, & Greenwood, 1984). State directors of special education report a need to

enhance the ability of general education to better accommodate and serve these children, and a need to develop cooperative relationships between special education and general education in working with this population. State directors also believe that when the ability of general education to address these needs is limited or absent, it is more costly for special education and related areas to provide services (National Association of State Directors of Special Education, 1985). In support of this assertion, a study by Baker and Perkins (1984) found that the early prevention of emotional problems was more cost-effective than delivering treatment when emotional problems escalated to more severe disturbances.

In view of the fact that it is more cost-effective to provide services to mild behaviorally disordered children rather than to deliver services when problems escalate, it seems logical to provide treatment to preschool children who, because of their age, are less likely to have had a long history of behavior problems, and their problems may be less severe compared to older children. A longitudinal study by Robins (1966) demonstrated that young children who displayed frequent "antisocial" behavior tended to exhibit similar behaviors as adults, to the point that they were likely to be labeled sociopathic. Other studies have found that externalizing problems identified at preschool age often persist later into life (Campbell, Endman, & Bernfeld, 1977; Lerner, Inui, Trupin, & Douglas, 1985; MacFarlane, Allen, & Honzik, 1954; Richman, Stevenson, & Graham, 1982; Westman, Rice, & Berman, 1967). Although specific incidence of emotional disorders is largely unknown in the preschool population, it has been considered a mental health problem of considerable proportions (Joint Commission on Mental

Health of Children, 1973a). In fact, the Joint Commission on Mental Health of Children (1973b) made a plea for more research in the area of preschool children.

Since the plea for more research in the preschool area by the Joint Commission on Mental Health of Children (1973b), a large number of studies have investigated the use of parents as treatment agents for their conduct disordered preschool children (Eyberg & Matarazzo, 1980; Firestone, Kelly, & Fike, 1980; Fleischman, 1981; Forehand & King, 1977; Forgatch & Toobert, 1979; Gordon, Lerner, & Keefe, 1979; Hamilton & MacQuiddy, 1984; Patterson, Chamberlain, & Reid, 1982; Robinson, 1983; Sanders & Glynn, 1981; Scarboro & Forehand, 1975; Walle, Hobbs, & Caldwell, 1984; Webster-Stratton, 1983; Wells, Griest, & Forehand, 1980). In general, the results of these studies demonstrated that parents can be effective treatment agents for conduct disordered preschool-age children. To a lesser extent, a number of studies have examined the use of daycare/preschool providers as treatment agents for preschool-age conduct disordered children (Gross, Berler, & Drabman, 1982; Hanson, 1974; Pinkston, Reese, LeBlanc, & Baer, 1973; Porterfield, Herbert-Jackson, & Risley, 1976; Whitehurst & Miller, 1973). Like those studies involving parents, studies utilizing daycare/preschool providers as treatment agents have demonstrated success in working with preschool-age conduct disordered children. Given the successes mentioned in the above studies, one would expect that studies would have been conducted to determine the combined effectiveness of parents and daycare/preschool providers as treatment agents for conduct disordered preschool-age children. However, with one exception, a single-subject design study (Powers, 1983), no research has been conducted in this area. The

present research was designed to determine if general training in the application and techniques of behavioral principles for parents and teachers changed the behaviors of preschoolers nominated by teachers as aggressive.

Purpose and Objectives

The purpose of this study was to evaluate the relative effectiveness of teacher training alone versus teacher and parent training upon the aggressive and social competency behaviors of teacher-nominated aggressive preschoolers.

Three groups were used for comparison purposes; they were: (1) a group of Ss nominated by teachers as aggressive, but whose teachers and parents did not receive training; (2) a group of Ss nominated by teachers as non-aggressive who were in classrooms of teachers that received training; and (3) a group of Ss nominated by teachers as non-aggressive who were in classrooms of teachers who did not receive training.

The specific objectives of this study were:

1. To determine the relative efficacy of teacher training alone versus parent and teacher training in changing the behavior of aggressive preschoolers.
2. To determine if differences existed with regard to knowledge of behavioral principles between parents who received training and those who did not.
3. To determine if differences existed between the experimental and comparison group parents on degree of satisfaction with daycare/preschool providers.

The specific null hypotheses tested were:

1. There will be no statistically significant differences between the observed frequencies of aggression in the last two weeks of training for children in the Teacher Training Only (TT),

Teacher and Parent Training (PTP), Control, Nonaggressive Children in Training Classrooms (NCTC), and Nonaggressive Children in Control Classrooms (NCCC) groups.

2. There will be no statistically significant differences on the observed frequencies of aggression in the last week of training for children in each group (TT, TPT, Control, NCTC, and NCCC) for Ss who displayed relatively less aggression in the first week of training compared to Ss who displayed relatively more aggression in the first week of training.

3. There will be no statistically significant differences on total observed frequencies of teacher reinforcement of cooperative and parallel play of target Ss, between Ss in the TT, TPT, Control, NCTC, and NCCC groups.

4. There will be no statistically significant differences on total and acting out Walker Problem Behavior Identification Checklist (WPBIC) raw and t-scores obtained from preschool/ daycare providers following training between Ss in the TT, TPT, and Control groups.

5. There will be no statistically significant differences on California Preschool Social Competency Scale (CPSCS) raw scores and percentile ranks obtained from preschool/daycare providers following training between children in the TT, TPT, and Control groups.

6. There will be no statistically significant differences on parents' percent correct on the Knowledge of behavioral Principles as Applied to Children (KBPAC) following training Ss in the TT, TPT, and Control groups.

7. There will be no statistically significant differences on parent satisfaction rating with daycare/preschool providers as measured by the Parent Satisfaction Questionnaire (PSQ) obtained following training for Ss in the TT, TPT, and Control groups.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter will review research reports dealing with the effectiveness of parents and/or preschool/daycare providers as treatment agents for conduct disordered preschool-aged children. All of the articles reviewed examined behavioral treatment strategies with children between the ages of birth through five. Articles were only included in the review if target children exhibited externalizing, as opposed to internalizing, conduct problems. Externalizing problems are those that are: (1) directed toward the social environment, and (2) extremely aversive to teachers and peers (Achenbach, 1979; Ross, 1980; Walker et al., 1984). Examples of externalizing problems include: physical and/or verbal aggression, whining, crying, yelling, stealing, noncompliance with adult requests or commands, and tantruming behavior. Internalizing behavior problems, on the other hand, represent problems with self; e.g., depression and phobias. These disturbances of affect and social withdrawal/isolation are far less salient and aversive than externalizing problems for most teachers (Walker, Severson, & Haring, 1985).

The present review will review those studies where parents were the treatment agents for their children, those studies where preschool/daycare providers were treatment agents, and those studies that included both parents and preschool/daycare providers as treatment agents.

In order to be included in the present review, the research study had to meet certain criteria. Studies involving a group comparison design had to: Utilize a control group and/or a different treatment

group for comparison purposes, examine at least post-treatment differences between groups, and utilize standardized and normed multiple outcome measures with demonstrated reliability and validity. Studies with a single-subject design had to include: A stable baseline of at least three data points, interobserver agreement data, and adequate control procedures (e.g., reversals or multiple baselines).

All of the reports in the present review were located via computer searches of ERIC, Psychological Abstracts, Exceptional Children, and Dissertation Abstracts International databases. Keywords included in the computer searches were: antisocial behavior, behavior disorders, aggressive behavior, behavior problems, preschool-age children, preschool students, teachers, parent, mother, father, treatment effectiveness evaluation, behavior modification, parenting skills, and parent education. Following an initial review of all relevant articles, the references in relevant articles were searched for obvious fugitive articles on treatment involving preschool children.

The 26 studies which met the criteria for inclusion in the review appear as Table 1. As may be seen from Table 1, research in the area has been done on children as young as 21 months of age (Powers, 1983). A visual inspection of Table 1 reveals that the majority of studies included both male and female subjects, but most of these subjects were males. Table 1 also indicates that there were a smaller number of studies that had only males as subjects, while there were no studies that had just females as subjects.

An examination of Table 1 demonstrates that parents were used more often than teachers or daycare providers to modify a variety of target behaviors exhibited by externalizing conduct disordered preschoolers.

Table 1

Characteristics of Studies Reviewed

Reference	Subjects	Target Behavior(s)	Techniques	Design	Outcome Measures	Follow-up	Significant or Positive Findings
Eyeberg & Matarazzo (1980)	23 M, 6 F, mean age of 5.54 yrs. enrolled in summer speech/ language program.	Aggression/ noncompliance	Parents trained to deliver differential attention	Group design, other Tx group, & control group	Behavior Inventory, Attitude Inventory, & Direct Behavioral observations, all conducted pre- & post-treatment.	No	Children in individual treatment group showed significant decrease in inappropriate behavior at post-treatment. Mothers in all groups reported significant reductions in child behavior problems
Firestone et al. (1980)	31 M, ages 3-11 yrs. referred for aggression, non-compliance, and temper tantrums	Parent reports of problem behaviors	Parents trained to deliver token reinforcement & timeout	Group, other Tx group, and a waiting list control group	Parent completed Behavior Problem Checklist, & the teacher completed Conners Rating Scale	4 month	Both treatment groups (e.g., mother trained/mother-father trained) improved compared to control groups; these changes were maintained at follow-up
Fleishman (1981)	29 M, 7 F, ages 3-12 solicited from professionals because Ss displayed aggressive or antisocial behavior	Total Aggressive Behavior Score was comprised of the sum of observational scores of 14 noxious behavior caregivers in the Family Intervention Coding System	Parents trained in techniques of social reinforcement and timeout	Group design baseline or pretest measuring	Family Interaction Coding System, Parent Daily Report, & Becker Bi-Polar Adjective Checklist	4, 8, 12 months	Significant reductions in child aversive behavior from baseline to termination, & from termination to follow-up. Parent reported significant reduction in child undesirable behaviors at termination & follow-ups compared to baseline. Significantly lower Becker Bi-Polar aggressive & conduct problem scores at termination and follow-up compared to baseline
Forehand & King (1977)	10 M, 1 F, ages 3-7 referred to clinic for noncompliance to parental commands	Child compliance to parental commands	Parents trained in techniques of social reinforcement and timeout	Group design, nonclinic control group, & pretest measures	Observed child compliance, Parent Attitude Test	3 month	Significant increase in child compliance at treatment termination & follow-up compared to pretreatment. Attitudes of normal and clinic referred children's mothers were not significantly different at at treatment termination
Forgatch & Toobert (1979) Exp. 1	6 M, 6 F, ages 2-5 who were solicited from mothers who thought they whined at high rates.	Whining	Parents trained to reward non-whining & use timeout for whining	Group design, delayed treatment group, & baseline data	Parent Daily Report (observational data)	1 + 3 months	Both groups demonstrated significant decreases in whining at termination & follow-up compared to baseline. Treatment group showed significantly less whining at termination compared to baseline for control group Ss

(Table continues)

Table 1 (continued)

Characteristics of Studies Reviewed

Reference	Subjects	Target Behavior(s)	Techniques	Design	Outcome Measures	Follow-up	Significant or Positive Findings
Forgatch & Toobert (1979) Exp. II	9 M, 6 F, ages 2-5 solicited from mothers who thought their children were non-compliant	Compliance/Non-Compliance	Parent trained to deal with non-compliance with timeout & compliance with rewards	Group design, Other treatment group, delayed treatment group, & baseline group	Parent Daily Report (Observational data)	1 month	Significant decreases in non-compliance were found following treatment implementation & these changes were maintained at follow-up
Gordon et al. (1979)	12 children, ages 2-10, referred for problem behaviors & diagnostically labeled as adjustment reaction of childhood, hyperkinetic, & unsocialized aggressive reaction	Noncompliance, temper tantrums, head banging, stealing, bed wetting, fresh talk, fighting, sleep problems, unable to make friends, cursing, fire setting, enuresis	Parents trained in variety of behavior modification techniques through response parenting model	Group Design, baseline data collected on home projects for individual subjects & other treatment group	Becker Bi-Polar Adjective Checklist visual inspection of parent collected observation data, & Therapy Attitude Inventory as a measure of consumer satisfaction	No	11 of 12 showed significant reductions in deviant behaviors on home project, parent collected data. Significant decreases at post-treatment compared to pretreatment on Becker Scales for tense disposition, withdrawn, hostile, aggression & conduct disorders for both groups
Gross et al. (1982)	A 4-year-old retarded male S in a special preschool class for handicapped children	Aggression (i.e., biting/gouging)	teacher/aid trained to deliver a water squirt to the face contingent on aggression.	SS, Two baseline periods	Direct observation of aggression	6 month	Aggression was observed less frequently in first treatment condition compared to first baseline; less frequently in second treatment phase compared to second baseline; less frequently at follow-up compared to all other phases.
Hanson (1974)	5 preschool children	On- & off-task academic behaviors, whining, hitting, compliance	Direct care staff (including teachers) at 2 preschools trained to use reinforcement, timeout, token systems	2 Groups, Control group teachers received no training	Teacher Attitude Survey, Direct observational data	9 month	Treatment teachers demonstrated significantly more positive attitudes toward rewarding appropriate and ignoring inappropriate behavior following treatment compared to baseline & the control group. Inappropriate behaviors were found to decrease, changes were maintained at follow-up.

(Table continues)

Table 1 (continued)

Characteristics of Studies Reviewed

Reference	Subjects	Target Behavior(s)	Techniques	Design	Outcome Measures	Follow-up	Significant or Positive Findings
Hamilton & McQuiddy (1984)	27 children age 2-7, reported to have problem behaviors, 79% M, 21% F	Child compliance & problem behaviors (not specified)	Parents trained to deliver verbal praise & timeout	3 Group, 1 other treatment group, & a waiting list control	Eyeberg Child Behavior Inventory, Becker Bi-Polar Adjective Check-list, Daily Check-list, Post-Treatment Questionnaire	2 month	Lower problem intensity scores on Eyeberg for parents in signal seat with signal (SS-S) group at post-test & follow-up. Higher child compliance reports from signal seat with signal group & at follow-up. Less spanking reported by parents in SS-S group. Timeout only group showed significant decreases in child noncompliance
O'Leary et al. (1967)	3-year-old male & his 6-year-old brother. 6-year-old had previous treatment for hyperactiveness, aggression, & destructiveness	Deviant behavior (aggression/ property destruction) & cooperative behavior	Parent trained to deliver token system & timeout	SS, 2 baseline periods	Direct observation of deviant & cooperative behaviors	No	Mother was able to increase cooperative play compared to baseline
Patterson et al. (1982)	46 children (65% M, 35% F) referred for aggression	Total Aversive Behavior Score comprised of observational scores of 14 noxious behavior categories on the Family Interaction Coding System	Parents trained to deliver social reinforcement & timeout	2 Groups, one waiting list control group	Family Interaction Coding System, Parent Daily Report	No	Treatment group demonstrated significantly less observed deviant behaviors at post-treatment compared to control group. Parents of both groups reported significantly less deviant behaviors following treatment

(Table continues)

Table 1 (continued)

Characteristics of Studies Reviewed

Reference	Subjects	Target Behavior(s)	Techniques	Design	Outcome Measures	Follow-up	Significant or Positive Findings
Pinkston et al. (1973)	3-1/2 year old boy in preschool classroom who was reported to engage in frequent hostile/aggressive behaviors	Aggression (choking, pushing, pinching, poking, hitting, kicking) peer interactions (behavior where S initiated to peer & responded to, or was initiated to by peer & responded)	4 preschool teachers trained to extinguish aggression & deliver social reinforcement	SS, Multiple baseline across two classes of behaviors & reversals	Direct observations of target behaviors	1 month	Aggression found to decrease, peer interactions increased during treatment compared to baseline phases, levels of aggression & peer interactions were about the same at follow-up as during last treatment phases
Porterfield et al. (1976)	15 M, 11 F, age 12-36 months attending daycare facility	Disruptive (aggression, crying, tantruming, destruction of toys, creating dangerous situations	5 daycare providers trained to redirect disruptive behaviors	22, but data analyzed after collapsing across Ss. Compared 2 different treatments. No baseline periods	Direct observations of target behaviors	1 & 2 month	Disruptive behaviors found to be consistently lower using contingent observation than using redirection. Disruptions were maintained at low levels during both follow-ups
Powers (1983)	21-month-old M enrolled in daycare center	Biting/attempting to bite	Mother & daycare provider trained in timeout contingent upon biting	SS, Multiple baseline design across treatment providers & settings	Direct observation of biting	9 & 10 weeks	Biting gradually decreases until no biting observed in both settings following treatment implementation & at both follow-ups
Robinson (1983)	53 conduct disorder children (33 M, 20 F) ages 4 - 7	Aggression, noncompliance, tantrums, defiance, property destruction	Parents trained in contingency management & parent interaction	Group design/ other treatment group, waiting list control group	Eyeberg Child Behavior Inventory, Becker Bi-polar Adjective Checklist, Pre-Post home observations	No	Both treatment groups showed improved adjustment at posttest on the Becker. Ss in parent-training interaction group declined in observed child deviance & noncompliance at posttest
Sanders & Glynn (1981)	3 M, 2 F, age 2-4, referred for behavior management problems	Noncompliance, aggressive, disruptive behaviors	Parents trained in timeout and praise	SS, multiple baseline with 3 treatments sequentially implemented	Direct observations of child-parent interactions (via Family Observation System)	3 month	Instructor + Feedback Phase reduced deviant behavior, changes were maintained in self-management condition. The effects of the self-management phase were found to generalize to the community setting, changes maintained at 3 month follow-up

(Table continues)

Table 1 (continued)

Characteristics of Studies Reviewed

Reference	Subjects	Target Behavior(s)	Techniques	Design	Outcome Measures	Follow-up	Significant or Positive Findings
Scarboro & Forehand (1975)	24 solicited children (9 M, 15 F) ages 4-5	Initiated compli- and & oppositional behavior	Parents trained in in- & out-of-room timeout	Group design, other treatment group, control group	Direct observations	No	Both forms of timeout were effective at reducing child oppositional behaviors & increasing compliance compared to control group
Walle et al. (1984)	28 referred (for conduct disorders) or solicited children (17 M, 11 F), ages 2-6	Noncompliance	Parents trained to administer attention for compliance, timeout for noncompliance	Group design, baseline data, other treatment group	Direct observations, Treatment Evaluation Inventory	No	Timeout produced greater suppression of noncompliance when preceded by attention than when preceded by baseline conditions
Webster-Stratton (1983)	23 M, 11 F, mean age 3 yrs, 11 mts, parents were solicited for participation	Noncompliance & destructive behavior	Parents trained in positive interaction & play skills, praise, ignoring, & concise commands	Group design baseline data, other treatment group (mother & father training group)	Achenbach Child Behavior Checklist, Eyeberg Child Behavior Inventory, direct observations in the home	1 year	Significantly lower scores by fathers on Eyeberg & Achenbach at post-treatment & follow-up compared to baseline. Changes maintained by more Ss in father involved group at follow-up
Wells, Griest, & Forehand (1980)	8 M, 8 F, ages 3-8, clinic referred for noncompliance & other deviant behavior	Child compliance	Parents trained in techniques of social rewards, timeout, & concise commands	Group design, other treatment group, & baseline	Direct observations	2 month	Children in parent training + self-control group were found to be more compliance & less deviant (e.g., aggressive, tantrum-like, etc.) at follow-up compared to children in parent training alone group
Wells, Forehand, & Griest (1980)	15 M, 9 F, mean age 60 mts, consisting of clinic referred (for noncompliance) & non-clinic referred Ss	Noncompliance	Parents trained to deliver social reinforcement & timeout	2 Groups, Non-clinic control group, baseline measures	Direct observation of child compliance/ noncompliance, & deviant behaviors	No	Treatment group demonstrated significantly less noncompliance (treated) & deviant behaviors (nontreated) at post-treatment compared to pre-treatment and control group SS
Whitehurst & Miller (1973)	1 3-year-old & 1 4-year-old M, identified as aggressive	Aggression (hitting, slapping, kicking, etc.)	Nursery school bus driver trained to eject from bus individuals with disruptive behavior	SS, 3 baseline periods	direct observations of aggression	No	Overall rate of aggression decreased dramatically during treatment compared to baseline periods
Zeilberger et al. (1968)	4 year 8 month aggressive boy	Aggression, yelling, compliance, & cooperative play	Mother trained to deliver contingent attention & timeout	SS, 2 baseline periods	Direct observation of target behavior	No	Notable decreases in both treatment phases when compared to both baseline phases

Only one study (Powers, 1983) was found to use both parents and daycare providers as treatment agents. Table 1 demonstrates that the target behaviors modified most often by parents and/or daycare/preschool providers were child aggression and noncompliance, and, to a lesser extent, tantrum/disruptive verbalizations and property destruction.

Table 1 suggests that a variety of techniques were used by parents and daycare/preschool providers to modify child behaviors, and several different methods were used to train parents and daycare/preschool providers to be treatment agents. Positive reinforcement for desirable behaviors, timeout for undesirable behaviors, and differential attention were the most used behavior modification techniques. Of the positive reinforcers utilized, social praise was used more often than token reinforcers. Less frequently used techniques used by parents and/or daycare/preschool providers included: punishment, redirection, contingent observation, and delay of reinforcement. Parents and daycare/preschool providers were trained both individually and in groups. Assigned readings, didactic sessions, and verbal instructions were the most common techniques used during parent or daycare/preschool provider training. Other training methods utilized included in vivo instruction and cueing, telephone calls, and audio and video instruction.

Table 1 indicates that both single subject and group design research methodology has been used to determine the effectiveness of parents and daycare/preschool providers in modifying the behaviors of externalizing conduct disordered preschoolers. Group research designs were used more than twice as often as single subject designs. The majority of group designs evaluated the effectiveness of parents or teachers by making comparisons with another treatment group and/or

pretest measures. However, other comparison groups included waiting-list control and control groups.

Reversal and multiple baseline techniques were in the single subject design research reviewed, but reversals were used twice as often as multiple baselines. Finally, with respect to research methodology, approximately 72% of group design studies and about 55% of single subject design studies included follow-up measures. As Table 1 illustrates, group design study follow-up ranged from 1 month to 1 year, whereas, single subject design follow-ups ranged from 1 to 6 months.

In reviewing outcomes measured and results of studies, Table 1 demonstrates that, as expected, single subject design studies always utilized direct observations, and that both teachers and parents were effective at decreasing undesirable child behaviors as well as increasing desirable behaviors. A surprising fact was that group design studies utilized observation and more traditional measures (e.g., checklists, inventories) about as equally as often as outcome measures. Observational measures for the most part in group design studies were performed by trained observers and to a lesser extent by parents. As can be seen, the most common traditional outcome measures used in group design studies were the Becker Bipolar Checklist and the Eyeberg Child Behavior Inventory, but many other instruments were used as well.

Parents as Treatment Agents

Group Design Studies

Group design studies reviewed indicated that parents appeared to be effective treatment agents for reducing inappropriate behaviors and

increasing the desirable behaviors at externalizing conduct disordered preschoolers. However, much of the research was plagued by one or more serious methodological flaws, such as: (1) conducting treatment in a laboratory setting in a structured interaction, limiting generalizability of results; (2) using conspicuous observers to collect data, leaving data subject to systematic bias; (3) gathering self-report data, another source of possible systematic bias; (4) not utilizing control comparable on important characteristics; (5) not conducting component analysis to determine necessary parts of effective treatment; and (6) not using an adequate sample size. In spite of numerous methodological flaws, the fact that similar results were found in so many studies may indicate that parents were probably effective agents of change.

Single-Subject Design Studies

In an early study of parent training, O'Leary, O'Leary, and Becker (1967) utilized an ABAC single subject design to evaluate modification of deviant (kicking, hitting, pushing, name calling, and throwing objects), cooperative (asking for a toy, requesting the other's help, conversation), and isolate (the absence of verbal, physical, or visual interactions) behaviors of a 6-year-old boy and his 3-year-old brother. During the first treatment period, an experimenter administered a token reinforcement program to increase cooperative behavior, coupled with a response cost to decrease deviant behavior. The second period of treatment consisted of having the mother implement the token system, as the experimenter had done, and to implement a time-out contingency for deviant behavior. The relative percentage at cooperative behavior was found to be higher during both treatment periods when compared to both

baseline periods. Furthermore, isolate behavior was relatively higher during the second treatment phase, as compared to all other conditions. Although the data of the O'Leary et al. study seemed conclusive, their results should be taken cautiously because interobserver reliability checks were not conducted after the first baseline.

In another single subject design study, Zeilberger, Sampen, and Sloane (1968) used an ABAB reversal design to examine the effectiveness of a mother in modifying aggressive, yelling, bossing, and compliant behaviors of her four-year, eight-month-old boy. During treatment sessions, the mother was instructed to use timeout when the subject was aggressive or disobe-dient, reinforce compliant, cooperative, and other desirable behaviors, and to ignore undesirable behaviors which did not merit timeout. Zeilberger et al. found notable decreases during treatment when compared to baseline phases. Unfortunately, Zeilberger et al. did not conduct a follow-up to determine the extent of the maintenance of effects.

In a study to evaluate the generalization and maintenance effects of teaching self-management in a parent-training program, Sanders and Glynn (1981) utilized a multiple baseline design across five two-parent families with children with a mean age of 3.5 years. Parents and children were observed in training and maintenance settings throughout all phases of the study. The following sequence of phases were used in the Sanders and Glynn study: (1) baseline, (2) instruction plus feedback, (3) self-management training, (4) self-management maintenance, and (5) a three-month follow-up. The instruction plus feedback condition consisted of a two-hour meeting where parents were instructed on use of praise to increase compliance and time-out to deal with deviant,

aggressive, and disruptive behaviors, and given feedback regarding their performance. Self-management training consisted of instruction in goal selection, program design, self-monitoring, and planning or arranging stimulus environments. In self-management maintenance training, parents were asked to continue applying management procedures to all settings, while therapists prompts and cues, and feedback sessions were discontinued. Instruction plus feedback condition was found to effectively decrease levels of disruptive behavior for each child in the training setting, compared with baseline. Further reduction in disruptive child behaviors occurred during self-management training and self-management maintenance training, and levels of disruptive behavior remained low at follow-up observation. Introduction of self-management training resulted in generalization effects and further reduced disruptive behavior. These reduced levels of disruptive behaviors were maintained in generalization settings with the introduction of maintenance training, and remained low at follow-up.

Although there were not as many single-subject design studies as group studies, the single-subject research reviewed also supported the notion of parents as effective treatment agents for externalizing conduct-disordered preschoolers. One of the studies reviewed (O'Leary et al., 1967) failed to conduct reliability checks beyond the initial baseline, while another study (Zeilberger et al., 1968) neglected to conduct a follow-up observation period.

Preschool/Daycare Providers as Treatment Agents

Group Design Studies

In the only group design study which focused on preschool/daycare providers as treatment agents, Hanson (1974) examined changes in teacher attitudes and behaviors and child behaviors following the implementation of a behavior modification workshop conducted over a two-week period. The attitudes of teachers and staff at the two experimental and one control school were assessed pre- and post-training and at a nine-month follow-up. A total of five children and five teachers were targeted for classroom observations at pre- and post-training and at a nine-month follow-up. Target behaviors for children included: on- and off-task academic behavior, whining and use of normal voice, conversations initiated, hitting, and following teacher requests. Goals of the workshop were to teach teachers to: (1) develop an understanding of basic learning theory and principles; (2) learn to pinpoint and consequate academic and social behaviors; (3) practice and problem-solving approach to classroom management problems; and (4) provide for interchange of ideas, problems, and projects among all staff members. Hanson found that treatment teachers demonstrated significantly more positive attitudes towards rewarding appropriate and ignoring inappropriate behavior following treatment when compared to baseline and the control group. Pupils were found to decrease inappropriate classroom behaviors as well as increase appropriate behavior; these changes were maintained at follow-up. Rate of teachers' verbal reinforcement was found to increase significantly from baseline to follow-up for three out of the five teachers observed. Some problems with Hanson's study

which limit any conclusions made were that the sample size was relatively small, and children and teachers in the control classrooms were never observed. Additionally, teachers were randomly assigned to treatment or control conditions dependent upon which school they attended, thus Hanson utilized a quasi-experimental design.

Single-Subject Design Studies

In a single subject ABAB reversal design study with, a six-month follow-up, Gross et al. (1982) examined the effectiveness of a water squirt to the face in reducing the aggressive behaviors (biting and gouging) of a four-year-old retarded boy in a preschool special class for handicapped children, with classroom staff as treatment agents. Gross et al. demonstrated decreases in aggression throughout all succeeding phases of the study, with no observed acts of aggression noted at follow-up. These results seem to support the notion that the water squirt was effect at reducing aggression. However, the fact that there were no increases in aggression during the second baseline, and aggression was lower during the second baseline when compared to the first treatment phase, suggests that a third variable may have been responsible for the observed decreases in aggression.

In a study utilizing three pre-treatment baseline periods, followed by a treatment phase, Whitehurst and Miller's (1973) designed attempted to reduce the aggressive behaviors (hitting, pinching, kicking, etc.) displayed by one 3-year-old and one 4-year-old subject on the bus ride home from nursery school. During the first and third baseline periods, the bus driver was asked to respond and she normally did whenever aggression occurred. The second baseline condition consisted of playing

noncontingent music. During the treatment phase, a suspected delay of reinforcement contingency was instituted, and subjects were instructed by the bus driver the children who misbehaved would not be allowed to get off the bus when it passed by their home and would have to wait for the second pass of the bus to go home. The overall rate of aggression decreased dramatically during treatment when compared to baseline periods. Although the data appeared to support the effectiveness of treatment, a serious limitation in the Whitehurst and Miller design was the lack of a reversal to baseline conditions following treatment.

In another study on the effects of preschool/daycare providers as treatment agents, Pinkston et al. (1973) utilized a multiple baseline technique across two classes of behaviors, including reversals, to change the behaviors of a 3-1/2-year-old boy in a preschool classroom. During the treatment phases, teachers were instructed to ignore the subject following an aggressive act, and to maximize attention to the subject's victim. Additionally, during treatment phases, teachers were instructed to praise the child for engaging in appropriate non-aggressive peer interactions. Pinkston et al. found aggressive behaviors to decrease and appropriate peer interactions to increase during treatment conditions and at follow-up when compared to the baseline phase, suggesting an effective intervention.

In the last single subject design study to use daycare/preschool staff as treatment agents, Porterfield et al. (1976) used a reversal design study to compare the relative effectiveness of "redirecting" and "contingent observation" in reducing the disruptive behaviors of 19 one- and two-year-olds in a daycare facility. Disruptive behaviors that were targeted for change included: tantruming, crying, and aggressive

behaviors. Redirecting involved describing an inappropriate behavior to a child once he/she has emitted the response, then instructing the child to engage in an alternative, more desirable activity. Contingent observation consisted of describing the inappropriate behavior displayed, then describing a more appropriate behavior, and finally having the child observe other children display the more appropriate behavior. Porterfield et al. found that "contingent observation" was considerably more effective at controlling aggressive and disruptive behaviors than "redirection," and that observed changes were maintained at 30- and 60-day follow-ups.

The articles reviewed using daycare/preschool staff as treatment agents, like those using parents, demonstrated effective changes in child behaviors. Those articles using daycare/preschool staff also suffered from some problems in methodology. However, the few good articles reviewed substantiate the use of teachers as effective agents of change for the problem behaviors demonstrated by preschoolers.

Parents and Daycare/Preschool Providers as Treatment Agents

Single-Subject Design Studies

No group design studies were found that examined the effects of both parents and daycare/preschool providers as treatment agents for externalizing conduct-disordered preschoolers. In the only single-subject design study that used both parents and daycare/preschool providers as treatment agents, Powers (1983) utilized a multiple baseline across settings and treatment agents to examine the effectiveness of timeout in reducing the biting behavior of a 21-month-

old, non-handicapped child enrolled in a daycare setting. In general, Powers' results demonstrated functional control of biting, as biting gradually decreased until no biting was observed in both settings following the implementation of treatment. Furthermore, these changes were found to be maintained at nine- and ten- week follow-ups. Powers' results should be interpreted cautiously because the data were collected by both treatment agents; therefore, subject to bias. Also, no reliability checks were ever conducted in the daycare center.

Summary

In general, there seemed to be an abundance of reports which investigated parents as treatment agents for their externalizing conduct disordered preschool-aged children. The majority of these studies utilized group designs, whereas a small number of investigations utilized single-subject designs. Taken together, these group and single-subject design studies seemed to indicate that parents can be effective treatment agents for their preschool-aged conduct disordered children. Parents' ratings and direct observations of child behaviors and parent-child interactions demonstrated favorable changes supporting the use of parents to increase child compliance and other desirable behaviors and to decrease noncompliance, aggression, tantruming, crying, whining, and yelling. The techniques used by parents to accomplish the foregoing objectives have included: differential attention, timeout, and token reinforcement systems. Furthermore, the positive changes noted when using parents as treatment agents have been found to be maintained up to one year following the termination of treatment.

There have been fewer studies concerned with daycare/preschool providers as treatment agents for externalizing conduct disordered preschool children compared to the number of studies utilizing parents. In contrast to those studies that focused on parents, the majority of studies investigating daycare/preschool providers as treatment agents have almost (with one exception) always utilized single-subject designs. All studies involving daycare/preschool providers as treatment agents were primarily concerned with decreasing observed acts of aggression. In general, the results of these studies have favored the use of behavioral techniques for daycare preschool-aged children's aggression.

In sum, the results of the present reviewed appeared to favor the use of parents and daycare/preschool providers as treatment agents for externalizing conduct-disordered preschoolers. However, many of the studies reviewed contained serious methodological flaws, limiting the definitions of many obtained results. The present review found that there has been practically no research that has focused on the combined effects of parents and daycare/preschool providers as treatment agents for externalizing conduct disordered preschool-aged children. No group design studies, and only one single-subject design study was reviewed. Thus, no conclusions regarding the combined effectiveness of parents and daycare/preschool providers as treatment agents can be made. The present study attempted to determine the effects of teacher training only vs. teacher and parent training on the social competency and aggressive behaviors of preschoolers, and on parents' knowledge of behavioral principles as applied to children, and parent satisfaction with daycare/preschool providers.

CHAPTER III

PROCEDURES FOR COLLECTION OF DATA

This study was exploratory in nature, and utilized a three-group quasi-experimental design. The effects of teacher training alone vs. teacher and parent training was compared to each other and with a control group. The following sections of this chapter will include a description of the setting, population, and sample, as well as methods and instruments used in data collection and analysis. Also included will be a description of observer training and descriptions of the two training strategies that were implemented.

Setting and Population

The setting for this study was a moderately large metropolitan western city. The study population consisted of 3- and 4-year-olds who were identified as aggressive and attended one of the approximately 30 daycare/preschool classrooms in the Reno, Nevada, area between February 1987 and May 1987.

Enrollment Criteria and Procedures

Initially, daycare/preschool center directors were contacted via telephone. During these telephone contacts, an interviewer explained the purpose of the study, collected some relevant data regarding characteristics of each center, and gauged a sense of willingness and commitment in respect to participation in the study on the part of directors. To facilitate this process, a guide was developed for use by the interviewer (see Appendix A).

Following the initial contact with daycare/preschool center directors, the direct service personnel (teachers) of the aggressive 3- and 4-year-olds were contacted via telephone by the interviewer. The purpose of this contact was to anonymously identify the number of eligible preschoolers in each classroom, as well as to explain the purpose of the study. In order to be eligible, a child, on the average, had to exhibit at least any three acts of physical or verbal aggression against peers, adults, or objects during the day, as reported by the daycare/preschool provider. Furthermore, this behavior pattern had to occur over at least a two-month period, and not appear to be a temporary reaction to an unusual circumstance. A guide was used by the interviewer to determine the number of eligible preschoolers for participation in the study (see Appendix B).

Once daycare center directors and direct care staff were contacted, informed consent for their participation in the study was obtained (see Appendices C and D). These letters of informed consent focused on the details of the project, noted possible risks and benefits of the study, and reviewed matters of confidentiality. Finally, a letter explaining the project was sent to the parents of eligible children through center directors, giving a telephone number at which parents could get additional information or agree to participate in the study (see Appendix E). Before intervention started, it was decided that a sample of nonaggressive preschoolers should be anonymously identified in each of the participating classrooms so that comparable observational data could be obtained. Verbal consent for the anonymous observation of nonaggressive preschoolers was confirmed via telephone with center directors. Following verbal consent from center directors, all daycare/

preschool direct care staff were asked to anonymously identify nonaggressive target preschoolers.

Once teachers agreed to participate, all daycare/preschool classrooms were matched or paired by the number of aggressive children in each classroom. The number of aggressive children in each classroom ranged from one to three. Thus, classrooms with one aggressive child were matched, classrooms with two aggressive children were matched, and classrooms with three aggressive children were matched. Following matching, all classrooms were randomly assigned to either a teacher training or control group. The children in teacher training classrooms were then randomly assigned to either a teacher training only, or a teacher and parent training group, after parents agreed to participate.

Sample

Initially, a total of 56 aggressive, possible preschool subjects, were identified by daycare/preschool center direct service staff. Attrition through centers and parents deciding not to participate reduced the sample size to include a total of 44 aggressive preschool subjects. Since random assignment took place prior to parents agreeing to consent, there were unequal numbers of subjects in the experimental and control groups. The teacher training only (TT) group contained 17 subjects, the teacher and parent training (TPT) contained 9 subjects and the control group consisted of 18 subjects. Originally, 13 of the children in the TT group were randomly chosen to be offered parent training. Only 10 of 13 parents agreed to take parent training. One parent who agreed to participate in parent training had to discontinue participation after the first session due to medical reasons. The data

for this parent, and the data for the three parents who opted not to participate in parent training, were combined with the data for the TT group for the purposes of data analyses.

Table 2 depicts the gender of preschool subjects by group assignment. The average age of preschool subjects was 47.5 months with a standard deviation of 7.3 months. Table 3 displays the mean ages and standard deviations of preschool subjects by group. Ethic data were reported on a total of 36 of the 44 (82%) children. Table 4 contains the observed frequencies and the total percentages of the data reported for the various categories of child ethnicity by group.

Table 2
Gender of Preschool Subjects by Group Assignment

	Group Assignment		
Gender	TT	TPT	Control
Male	12	8	17
Female	5	1	1

Table 3
Means and Standard Deviations (SD) of Preschool Subjects' Ages in Months by Group

	Group Assignment		
Statistic	TT	TPT	Control
Mean	45.71	46.33	49.83
SD	6.38	8.06	7.49

Table 4

Observed Frequencies and Total Percentages of Categories of Ethnicity by Group

	Category of Ethnicity				
Group	Caucasian	Black	Native American	Hispanic	Other (Unspecified)
TT	12 (33.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
TPT	9 (25%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Control	10 (27.8%)	2 (5.6%)	1 (2.8%)	1 (2.8%)	1 (2.8%)

Educational data (specifically the highest degree obtained) were collected on 35 of the mothers of preschool Ss. Table 5 illustrates observed frequencies and total percentages of highest educational degree obtained by mothers by group. Educational data, similar to that collected on mothers, were retrieved on 30 fathers. Table 6 depicts observed frequencies and total percentages of highest educational degree obtained by fathers by group.

Table 5

Observed Frequencies and Total Percentages of Highest Educational Degree Obtained by Mothers by Group

	Highest Educational Degree Obtained by Mothers						
Group	None	High School	Assoc/Tech Certif.	Bachelors	Masters	Doctors	Other
TT	0 (0%)	7 (20%)	1 (2.9%)	3 (8.6%)	0 (0%)	3 (8.6%)	0 (0%)
TPT	0 (0%)	5 (14.3%)	2 (2.9%)	1 (2.9%)	1 (2.9%)	0 (0%)	0 (0%)
Control	2 (5.7%)	4 (11.4%)	2 (5.7%)	3 (8.6%)	0 (0%)	1 (2.9%)	1 (2.9%)

Table 6

Observed Frequencies and Total Percentages of Highest Educational Degree Obtained by Fathers by Group

	Highest Educational Degree Obtained by Fathers						
Group	None	High School	Assoc/Tech Certificate	Bachelors	Masters	Doctors	Other
TT	2 (6.7%)	2 (6.7%)	1 (3.3%)	4 (13.3%)	0 (0%)	3 (10%)	0 (0%)
TPT	0 (0%)	2 (6.7%)	0 (0%)	1 (3.3%)	2 (1.2%)	1 (3.3%)	0 (0%)
Control	2 (6.7%)	5 (16.7%)	1 (3.3%)	2 (6.7%)	2 (6.7%)	0 (0%)	0 (0%)

Data regarding parents' age were obtained on 43 mothers and 40 fathers. Mothers had a mean age of 35.7 years, with a standard deviation of 6.9 years. Table 7 displays the average ages of mothers and standard deviations in years by group. Table 8 illustrates the average age of fathers and standard deviations in years by group.

Table 7

Means and Standard Deviations (SD) of Mothers' Ages in Years by Group

	Group Assignment		
Statistic	TT	TPT	Control
Mean	33.53	35.37	31.23
SD	5.71	5.04	4.57

Table 8

Means and Standard Deviations (SD) of Fathers' Ages in Years by Group

	Group Assignment		
Statistic	TT	TPT	Control
Mean	37.37	37.22	33.69
SD	9.21	6.17	4.77

Data concerning categories of occupational status according to Duncan's Socioeconomic Index (Duncan SEI) ratings were gathered on 43 mothers and 41 fathers. Table 9 presents observed frequencies and total percentages of categories of occupational status of mothers by group. Table 10 displays observed frequencies and total percentages of categories of occupational status of fathers by group.

Table 9

Observed Frequencies and Total Percentages of Categories of Occupational Status of Mothers by Group

	Category of Occupational Status				
Group	Unemployed	Unskilled	Blue Collar	Technical Managerial	Professional/ Executive
TT	1 (2.3%)	3 (7.0%)	7 (16.3%)	2 (4.7%)	4 (9.3%)
TPT	2 (4.7%)	1 (2.3%)	5 (11.6%)	0 (0%)	1 (2.3%)
Control	2 (4.7%)	2 (4.7%)	9 (20.9%)	2 (4.7%)	2 (4.7%)

Table 10

Observed Frequencies and Total Percentages of Categories of Occupational Status of Fathers by Group

	Category of Occupational Status				
Group	Unemployed	Unskilled	Blue Collar	Technical Managerial	Professional/ Executive
TT	0 (0%)	2 (4.9%)	7 (17.1%)	2 (4.9%)	3 (7.3%)
TPT	1 (2.4%)	1 (2.4%)	1 (2.4%)	4 (9.8%)	2 (4.9%)
Control	1 (2.4%)	2 (4.9%)	7 (17.1%)	7 (17.1%)	1 (2.4%)

Total yearly income data were retrieved on all 44 families. These data were generally reported in increments of $5,000. Table 11 presents observed frequencies and total percentages of categories of total yearly income by group.

In addition to the 44 aggressive preschool subjects, a total of 28 nonaggressive preschoolers were anonymously observed. Fifteen of these children were in training classrooms, while 13 were in control classrooms. Since these children remained anonymous, no demographic data, except for the obvious, gender, could be obtained. Fifteen of these nonaggressive children were male and 13 were female.

Data Collection

Four weeks prior to treatment, four trained test administrators, naive to subjects' status in treatment or control groups, began collecting pretreatment data. This pretreatment data consisted of demographics and the Achenbach Child Behavior Checklist (Achenbach & Edelbrock, 1983). Demographic data included: children's gender,

Table 11

Observed Frequencies and Total Percentages of Categories of Total Yearly Income by Group

	Category of Total Yearly Income									
Group	< $5,000	$5,000-$10,999	$11,000-$14,999	$15,000-$19,999	$20,000-$24,999	$25,000-$29,999	$30,000-$34,999	$35,000-$39,999	$40,000-$49,999	> $50,000
TT	0 (0%)	3 (6.8%)	2 (4.5%)	0 (0%)	2 (4.5%)	0 (0%)	5 (11.4%)	0 (0%)	3 (6.8%)	2 (4.5%)
TPT	1 (2.3%)	0 (0%)	1 (2.3%)	0 (0%)	0 (0%)	0 (0%)	2 (4.5%)	0 (0%)	3 (6.8%)	2 (4.5%)
Control	0 (0%)	0 (0%)	2 (4.5%)	0 (0%)	4 (9.1%)	1 (2.3%)	5 (11.4%)	0 (0%)	6 (13.6%)	0 (0%)

ethnicity, and age; mother's educational status, age, occupational status, and marital status; father's educational status, age, employment status, and marital status; and family's total yearly income. The Achenbach Child Behavior Checklists were completed by parents regarding the target children. Additionally, the Knowledge of Behavioral Principles as Applied to Children (O'Dell, Tayler-Benlolo, & Flynn, 1979) was administered to parents in the teacher and parent training group by the author prior to parent training.

During the second week of treatment, trained observers, naive to subjects' group assignments, began recording data on the frequency of aggressive behaviors of target children, and teacher reinforcement of cooperative and parallel play of aggressive and nonaggressive target children. Observations took place in the classrooms. An attempt was made to visit each classroom, twice per week, for two-hour periods. Observations on aggressive and nonaggressive target children continued for seven weeks, until the end of treatment. The actual schedule that was followed by observers can be found in Appendix F. Prior to observations, all observers were given an identification number ranging from 1 to 5. These observer identification numbers are found in the cells of Appendix F. The cells of Appendix F correspond to day of week and classroom identification number. Those observer numbers that are separated by slashes represent interobserver reliability checks. The number appearing before a slash is the identification number of the primary observer, whose data were included in the analysis. The number appearing after a slash is the identification number of the secondary observer, whose data were only included in the computation of a reliability coefficient. On some days, more than one observer collected data on the same classroom. In Appendix F, those observer

identification numbers separated by a "+," represent the observers who visited the same classroom on the same day.

Following the termination of treatment, the same four trained test administrators who collected pretreatment data began collecting post-treatment data. Post-treatment data consisted of the Achenbach Child Behavior Checklist (Achenbach & Edelbrock, 1983), California Preschool Social Competency Scale (Levine, Elzey, & Lewis, 1969), Walker Problem Behavior Identification Checklist (Walker, 1983), Knowledge of Behavioral Principles as Applied to Children, and the Parent Satisfaction Questionnaire (EIRI, 1986). Parents completed the Achenbach Child Behavior Checklist, Knowledge of Behavioral Principles as Applied to Children, and the Parent Satisfaction Questionnaire. Teachers or daycare/preschool direct service staff completed the Walker Problem Behavior Identification Checklist and the California Preschool Social Competency Scale. In addition to having direct service staff complete the Walker Problem Behavior Identification Checklist and the California Preschool Social Competency Scale, secondary raters in each of the same classrooms were also asked to complete these measures. These secondary raters had to be familiar with the children, but in no way were participating in the training conducted in this study. The reason for having a secondary rater complete the same measures as primary raters (teacher or direct service involved in intervention), was to have a measure of reliability of the primary raters. It was thought that the primary raters' scores on the Walker Problem Behavior Identification Checklists and the California Preschool Social Competency Scales might be biased because the primary raters received training.

Observer Training

A total of five observers were trained during the first week of teacher training. All observers were female and had high school diplomas. Four of the observers were Caucasian and one was Black. All but one of the observers were in the 30 to 40 year age range. A fifth observer was in her 50s.

Observer training took place at the School of Home Economics at the University of Nevada--Reno. A large conference room was utilized for discussions of the observation technique and the definitions of behaviors to be recorded. Additionally, a daycare center at the University of Nevada--Reno, with a hidden observation room was used to train observers.

Training took place over four consecutive days, about five hours per day. Thus, observer training was conducted for approximately 20 hours. This study's investigator served as the observer trainer. During the first day of training, all observers were given written definitions of the behaviors to be recorded. The behaviors to be recorded were: aggression, teacher reinforcement of cooperative play, and teacher reinforcement of parallel play. The following definition of aggression, provided by Pinkston et al. (1973) was utilized in the present study:

Aggression: an aggression was defined as either a verbal or motor attack by the subject.

Motor Aggression included any physically negative behavior directed toward peers and/or materials being used by them.

Definitions of specific motor aggressive behaviors against peers were as follows:

1. Choking: Placing one or both hands around the neck of a peer.

2. Head pushing: Pushing the head of a peer, usually by placing one or both hands on the chin of the other person, and pushing it back.

3. Biting or threatening to bite: Placing the mouth on the body or appendages of another person without first puckering.

4. Pinching: Applying pressure to a small area of skin with thumb and forefinger.

5. Pushing: Either a quick shove with one or both hands, or a prolonged applied pressure with one or both hands.

6. Poking: Pushing a finger or other object into the body or appendages of a peer.

7. Hitting: striking another person with hands or with another object, including throwing an object at another person.

8. Kicking: Striking another person or object with a foot or feet.

Examples of motor attacks on peers materials were:

1. Knocking down, kicking, or pushing over structures built or being built by peers.

2. Dumping peers' materials on the floor.

3. Spilling peers' milk, water, or other liquids at juice time, or pouring some on a peer.

4. Knocking down a structure with other people on it.

Verbal aggressive behavior was defined as any verbalization that threatened, forbade an activity, or indicated a negative judgement about a person, their relatives, or their property.

Examples:

1. "I don't like you!"

2. "You are dumb."

3. "This is our house, you can't play here."

4. "My mother is going to hit you with a big stick."

Any of the behaviors defined above were counted as one instance of an aggressive act. Any combination of the above behaviors occurring simultaneously were only counted as one act of aggression by observers.

Teacher reinforcement of cooperative play was defined as the teacher or daycare/preschool provider verbally praising or verbally rewarding a target child for engaging in an activity with a nontarget child within five feet of the nontarget child. Examples of teacher reinforcement of cooperative play included: (1) "Joey, you and Matthew are playing together very nicely with those blocks;" or (2) "Vanessa, you and Martha are doing a great job sharing the doll." Teacher reinforcement of parallel play was defined as the teacher or daycare/preschool provider verbally praising or verbally rewarding a target child for engaging in an activity along side a nontarget child (within five feet of the nontarget child). Examples of teacher reinforcement of parallel play included: (Joey, you are playing very nicely near Matthew;" or (2) "Vanessa, you are playing like a big girl along side Martha." Following some discussion of the foregoing definitions, observers and the investigator conducted observations of children, identified as aggressive, at the training site.

Throughout training and the study, observers utilized the data collection sheet in Appendix F. To improve observer reliability and accuracy, the two-hour observation periods were divided into 15 minute intervals on data collection sheets. Observers were asked to keep track of time on their personal wristwatches, so they knew which 15-minute interval to record data in. An act of observed aggression was coded as an "A" on data collection sheets. Teacher reinforcement of cooperative and parallel play were coded as a "C" or a "P," respectively, on data collection sheets.

During training observations, observers recorded data on two or three children, simultaneously, to approximate study conditions. Interobserver reliability during training and throughout the study were

computed using Pearson Product Moment-Correlation Coefficients on each behavior category. All observers reached an interobserver reliability criteria of at least .85 for a two-hour training observation before formal observations took place. During training, a total of nine observation periods were conducted. These training observations included: one 30-minute observation, one 45-minute observation, one 1-hour observation, one 1-hour and 45 minute observation, and five 2-hour observations. Only one instance of teacher reinforcement of cooperative play was observed during the training period; and four out of the five observers recorded this instance. Thus, those four observers obtained an interobserver reliability of 1.0 on this behavior; whereas, the one observer who did not record this behavior obtained an interobserver reliability coefficient of 0 for this instance of teacher reinforcement of cooperative play. Unfortunately, no instances of teacher reinforcement of parallel play were ever observed during observer training, but all observers verbally stated that they were comfortable with their understanding of the definition of teacher reinforcement of parallel play.

Instrumentation

The Achenbach Child Behavior Checklist for ages 2-3 (ACBC2-3) was designed to record in a standardized format the behavioral problems and social competencies of children as reported by their parents or parent-surrogates (Achenbach, 1979). The ACBC2-3 can be self-administered or given by an interviewer. Instructions on the ACBC informs the respondent to base ratings on the previous six months, but this interval can be changed to meet the users' needs. For purposes of this study, the period was changed to two months on post-treatment administration.

The ACBC2-3 (see Appendix G) consisted of 99 problem items, 57 of which have counterparts on the original ACBC. The items consisted of statements relating to problem behaviors. Parents were asked to rate the items as follows:

0 = Not True
1 = Somewhat or Sometimes True
2 = Very True or Often True

The problem items combined to yield six major scales. These scales were: Social Withdrawal, Depression, Sleeping Problems, Somatic Problems, Aggression, and Destruction. Furthermore, two broad scales, internalizing and externalizing, as well as a scale for Total Problems, were provided. Problem scales on the ACBC2-3 can be converted to t-scores, or percentile ranks, and plotted on a profile for comparison purposes.

The problem scales were derived from factor analyses of parents' ratings of 700 children and normed on 273 randomly selected nonreferred children. The ACBC2-3 was similar in format to the original ACBC. Preliminary study of the ACBC2-3 with 61 subjects found test-retest reliability at one week to be .91 via a Pearson Product Correlation, for total problem scores. Test-retest reliability for the average of all scales at a one-week interval was found to be .87. Correlations of the ACBC2-3 with the ACBC for boys and girls ages 2 through 4 were found to range from .64 to .84.

The Walker Problem Behavior Identification Checklist (WPBIC) was an assessment tool for preschool and elementary teachers to use in identifying children with behavior problems and disorders who should be referred for further psychological evaluation, referral, and treatment. It consisted of 50 items which were descriptions of observable,

maladaptive classroom behaviors (see Appendix I). These items were generated through interviews with school teachers (Walker, 1983).

The WPBIC consisted of five different scales, each designed to measure specific classes of behaviors. The scales were: acting out, withdrawal, distractibility, disturbed peer relations, and immaturity. Teachers were asked to circle a number corresponding to an item if that item was true. Each scale consisted of a number of weighted items. The weighted items were then summed for each scale, yielding raw scores for each scale. Raw scores for each scale were then summed to arrive at a total raw score. Raw scores for the WPBIC can then be plotted on a profile analysis chart. From the profile analysis chart, one can observe t-scores and percentile ranks for all raw scores (Walker, 1983).

The WPBIC was originally normed on 534 7th, 5th, and 6th Graders. Subsequently, the checklist was normed on children ages 2 to 5 (Greenwood, Walker, Todd, & Hops, 1978; 1979). A total of 469 children were included in the norming study. Split-half reliability of the checklist was reported to be .98. The test-retest correlations of the total scores on the WPBIC has been found to range from .66 to .74 across three separate studies (Walker & Bull, 1970; Boldstad, 1974; Greenwood et al., 1978).

The California Preschool Social Competency Scale (CPSCS) was designed for use in evaluating the social competence of children aged 2-1/2 to 5-1/2 years. The norms were based on teacher ratings of 800 children who were attending preschool or nursery school programs (Levine et al., 1969).

The scale was composed of 30 items which were though to be representative samples of critical behaviors to the social functioning of the preschool child. The items address behaviors such as: response

to routine, response to the unfamiliar, following instructions, making explanations, sharing, helping others, initiating activities, giving direction to activities, reaction to frustration, and accepting limits.

Each item was scored on a scale from 1 to 4. The items require the observation of actual performances of behaviors rather than a rating of capacities or capabilities. Items scored a 1 represented the lowest level of competence, whereas items scored a 4 represented the highest level of competence. A total competency score was derived by summing all of the item raw scores. A percentile rank of the total competency score was obtained by referring to the appropriate table. Individual item scores can be plotted on a profile to obtain a graphic display of a child's performance.

Three reliability studies were conducted on the CPSCS (Levine et al., 1969). These studies were conducted by independent observers in Texas, Minnesota, and California. Test-retest reliabilities in the three studies ranged from .75 to .86.

The Knowledge of Behavioral Principles as Applied to Children (KBPAC) was a 50-item multiple choice test designed to assess verbal understanding of the application of basic behavioral principles with children (O'Dell et al., 1979). Administration of the KBPAC required 30-60 minutes. The questions on the KBPAC avoided behavioral vocabulary and most presented practical problem situations to which the respondent was to select the response which has the greatest probability of producing the desired effect. Other topics covered by the KBPAC included principles in the use of reinforcement and punishment, basic behavioral assumptions about behavior change, sharing, counting and recording, and differential attention and extinction. The criterion

response for each question was selected on the basis of learning principles found in the four common texts designed for use by parents to facilitate behavior management of children. A study with 109 females with a median educational level of two years of college found an odd-even split-half correlation of .93 on the KBPAC . The authors of the instrument noted that it would not be appropriate to make behavioral inferences from scores on the instrument, since a verbal knowledge of behavioral principles may not relate to actual skills with children.

The Parent Satisfaction Questionnaire (PSQ) was developed by the Early Intervention Research Institute at Utah State University to assess parent satisfaction with various early intervention programs. For the purpose of this study, the PSQ was utilized to assess parent satisfaction with their child's daycare program. The PSQ consisted of 7 items rated on a 4-point Likert-type scale. A rating of 1 represented the lowest possible rating, whereas a rating of 4 represented the highest possible rating. The seven items on the PSQ rate parent satisfaction in the following various areas: persons who work with the child, the ease and opportunity to talk with the person who is working with the child, the program goals and activities for the child, the opportunities for parents to participate in their child's program, the range of services available to parent and child through the program, the progress the child has made, and parent satisfaction with their child's program in general.

Teaching Training Only

Direct service staff of classrooms in the Teacher Training only (TT) group were trained by masters level teacher-trainers. A total of three teacher-trainers were utilized in the present study. Two of the

three teacher-trainers had masters degrees in Early Childhood Education and one had a bachelors degree in Early Childhood Education. All teacher-trainers had previous experience in child behavior management techniques.

As part of teacher-training, all participating daycare/preschool center direct service staff attended an all-day training workshop conducted by the teacher-trainers. During the workshop, the following areas were covered:

1. A theoretical/philosophical base for positive guidance with young children.
2. An overview of the behavioral principles of reinforcement, shaping, extinction, etc. (using lay terms).
3. A brief review of the developmental characteristics of preschool-aged children, particularly three-year-olds.
4. A discussion of self-concept and techniques to build positive self-image in young children.
5. A discussion of how to foster internal control of behavior.
6. The importance of consistency in working with young children.
7. Setting realistic rules and expectations for preschoolers.
8. Other factors that influence child behavior: home and family, health, allergies, inability to deal with over-stimulation, inconsistent adult expectations, child temperament, etc.
9. The importance of providing support and positive feedback for the parents of difficult children.
10. Teachers also had an opportunity to share the problems and frustrations they experience and discuss specific child behaviors.

In addition to the all-day training workshop, teachers met once per week in smaller groups led by individual teacher-trainers. These weekly meetings occurred throughout the eight weeks of intervention and lasted between an hour to an hour and a half each meeting. These meetings focused on the following:

1. General reinforcement and more in-depth coverage of the information discussed during the initial eight-week workshop, as appropriate.

2. Discussion, in small groups, of the past week, focusing on the progress of children and teachers.

3. Making the connection between what happened in the classroom to the principles discussed during the workshop and in weekly meetings.

4. Discussion of and assistance with techniques of helping parents cope with difficult children, focusing on specific cases.

Training for the TT only group also consisted of teacher-trainers working individually with teachers in each classroom once per week for one hour. During these visits, the following took place, depending on the teacher, classroom situation, child, and other relevant factors:

1. The trainer observed the teacher for at least a half hour.

2. The trainer took notes on the observation, paying particular attention to verbal interactions between the teacher and children, non-verbal cues, attending to (or ignoring) specific child behaviors, group management, handling of aggressive incidents, if they occurred, etc.

3. The trainer then met with the teacher briefly and gave her feedback on and discussed the observation.

4. The trainer, in certain cases, used cuing to help the teacher deal with a particularly challenging situation.

5. The trainer provided any indirect assistance that would help the teacher in her classroom functioning.

The intention of all three portions of teacher-training was to be positive and supportive to the participating teachers while at the same time teaching appropriate guidance skills, good early childhood education principles, and sound child development information.

Teacher and Parent Training

Training for the Teacher and Parent Training (TPT) group was identical to that provided to the TT only group, except for the addition

of a parent-training component. Parents in the TT group participated in five individual and/or group sessions, approximately one to two hours each, over the course of five weeks, starting the beginning of the fourth week after teachers were initially trained. A timeline visually depicting observer, teacher, and parent training can be found in Appendix H. During the first session, parents completed the KBPAC and then were introduced to some social learning concepts as well as the ground rules for the parent-training group.

Parents were paid $5 for attending each meeting and an additional $5 was credited to them at each meeting. These $5 credits were paid contingent upon the completion of the fifth meeting, thus parents earned a total of $50 for their participation in the parent-training component. During the first and second meetings, parents were assigned readings from the book Families (Patterson, 1978). During the second meeting, parents discussed the previous meeting's reading assignment as well as reviewed baseline frequencies of specific child behaviors targeted for change. It should be noted that all parents were informed that they had to attempt to implement at least one behavior program that focused on increasing a desirable behavior (e.g., getting dressed, picking up toys, putting clothes away, a child sleeping at night in his own bed and not his mothers) of a target child. How to praise a child was also discussed extensively in the second meeting, and all parents rehearsed how they might praise their child. During the third meeting, parents discussed the previous meeting's readings, which focused on setting up behavior programs, weakening undesirable behaviors, and reasons for data collection. Parents also brought and discussed data from the behavior programs that they were implementing at home, during this third meeting.

The fourth and fifth parent training meetings generally focused on modifying and discussing behavior programs that the parents were implementing at home. Additionally, the fifth meeting was concerned with giving parents final words of advice and having them complete the KBPAC once again. Detailed objectives and session outlines for parent training can be found in Appendix I.

CHAPTER IV

ANALYSIS OF DATA AND RESULTS

This study was conducted for the main purpose of comparing the relative effectiveness of teacher training only with teacher and parent training in the general area of behavior control techniques upon the aggressive and social competency behaviors of preschoolers. Another purpose of this study was to compare the relative effects of the aforementioned training modes upon parents' knowledge of behavioral principles as applied to children, and parents' satisfaction with their children's daycare programs. In general, the study was designed to determine whether the training modes utilized, when compared to a control group, had any effect on various child and parent measures, as well as observed child and teacher behaviors.

Sample

At the onset of the study, various child, maternal, and paternal demographic data were collected. These data were analyzed via Chi-square analyses and t-tests. A breakdown of the demographic data by group can be found in Tables 2 through 11 in Chapter III.

A Chi-square analysis found no significant differences in observed vs. expected frequencies between groups on the variable Ss gender, x^2 = 3.914, two-tailed p = .1413. These results indicate that the numbers of male and female Ss were distributed fairly equally across groups. T-tests were conducted on the age of Ss between group. The t=test on age of Ss between the TT only group and the control group was nonsignificant, t = 1.75, two-tailed p = .089. No significant

difference was found between the age of Ss in the TT group and the Ss in the TPT group, t = -.22, two-tailed p = .829. Finally, no significant difference was found between the age of Ss in the TPT group compared to the control group, t = 1.12, p = .275. Thus, it can be concluded that the groups were comparable on the age of Ss. A Chi-square analysis found no significant differences in observed vs. expected frequencies between groups on the categories of ethnicity, X^2 = 8.12903, two-tailed p = .4210. These results indicate that the numbers of Ss in the various categories of ethnicity were distributed fairly equally across groups.

The educational data collected on parents (highest education degree obtained) were coded on an ordinal scale. The following codes were used: 0 = No Degree, 1 = High School Diploma, 2 = Associate Degree/Technical Certificate, 3 = Bachelors Degree, 4 = Masters Degree, 5 = Doctors Degree, and 6 = Other (unspecified). T-tests were then conducted between pairs of groups for the highest educational degree obtained, first for mothers and then for fathers. No significant difference was found between the TT and the control groups on the highest degree obtained by mothers, t = 0.30, two-tailed p = .763. No significant difference was found between the TPT and control group on the highest degree obtained by mothers, t = .56, two-tailed p = .583. Furthermore, no significant difference was found between the TT and TPT group on the highest educational degree obtained by mothers, t = .04, two-tailed p = .966. These results indicate that the mothers were comparable in education across groups. Regarding fathers, no significant difference was found between the TT and the control group on the highest degree obtained, t = -1.24, two-tailed p = .226. No significant difference was found between the TPT and control group on

the highest degree obtained by fathers, t = -1.66, two-tailed p = .116. Finally, no significant difference was found between the TT and TPT group on the highest educational degree obtained by fathers, t = -.47, two-tailed p = .647. These results, like those for mothers, indicated that the educational level of fathers were comparable across groups.

The age of parents of Ss were analyzed by conducting t=tests between pairs of groups for mothers and for fathers. A t=test on the age of mothers in the in TT and control group found no significant difference, t = -1.29, two-tailed p = .157. Mothers in the TPT group had a significantly higher average age compared to mothers in the control group, t = -2.12, two-tailed p = .045. Mothers in the TPT and TT groups were found not to have a significant difference in mean age, t = -.81, two-tailed p = .425. In analyzing the data on fathers' ages, no significant difference was found between the TT and control group, t = -1.32, two-tailed p = .205. Further, no significant difference was found between the ages of fathers in the TPT and control group, t = -1.64, two-tailed p = .113. Finally, no significant difference was found between the ages of fathers in the TT compared to control group fathers, t = .04, two-tailed p = .966. In sum, the only significant difference found regarding parental age was that mothers in the TPT group had a significantly higher average age when compared to control group mothers.

The occupational data collected on parents were coded on an ordinal scale. The following codes were used: 0 = Unemployed, 2 = Unskilled Laborer, 3 = Blue Collar Worker, 4 = Technical or Managerial Worker, and 5 = Professional or Executive Positions. T-tests were then conducted between pairs of groups on the occupational data, first for mothers and then for fathers. No significant difference was found between the TT

and control group on the occupational status of mothers, t = -.74, two-tailed p = .468. No significant difference was found between the TPT and control group, on the occupational status of mothers, t = -.70, two-tailed p = .490. Furthermore, no significant difference was found between the occupational status of TT and TPT group mothers, t = 1.25, two-tailed p = .223. These results indicate that others were comparable in occupational status across groups. Regarding fathers, no significant difference was found between the TT and control group on occupational status of fathers, t = -.43, two-tailed p = .670. No significant difference was found between the occupational status of TPT and control group fathers, t = -.62, two-tailed p = .539. Finally, no significant difference was found for occupational status of TT compared to TPT group fathers, t = -.26, two-tailed p = .798. These results, like those for mothers, indicated that the occupational status of fathers were comparable across groups.

The total yearly family income data were coded on an ordinal scale using the following codes: 1 = < $5,000, 2 = $5,000 - $7,999, 3 = $8,000 = $10,999, 4 = $11,000 - $14,999, 5 = $15,000 - $19,999, 6 = $20,000 = $24,999, 7 = $25,000 - $29,999, 8 = $30,000 - $34,999, 9 = $35,000 - $39,999, 10 = $40,000 - $49,999, and 11 = $\geq$ $50,000. T-tests were then conducted between groups using the ordinally coded income data. No significant difference was found for total yearly income between the TT and control group, t = .72, two-tailed p = .477. No significant difference was found when comparing the TPT and control group on total yearly income, t = -.37, two-tailed p = .715. Finally, no significant difference was found between the total yearly income of the TT and TPT group, t = -.78, two-tailed p = .441.

Observational Data

Table 12 presents the average number of observations per group per child by week and across weeks for children in the TT only, TPT, control (C) groups. Additionally, the same data is presented in Table 12 for nonaggressive children in training classrooms (NCTC), and for non-aggressive children in control classrooms (NCCC). Inspection of Table 12 reveals that there was a dearth of observations on Week 2, compared to other weeks. This relative lack of observations in Week 2 was explained by the fact that Week 2 was a vacation week for many children, and as a result, a number of preschool/daycare centers were closed. Table 13 displays corresponding standard deviations for the average number of observations per group per child by weeks and by group, and Table 14 presents the range of number of observations across children by week and by group. Perusal of Tables 12, 13, and 14 suggest the approximately equal numbers of observations were conducted across the training and control groups.

Table 12
Average Number of Observations Per Group Per Child by Week and Group

Group	N	1	2	3	4	5	6	7	Total Across Week
TT	19	1.69	1.24	1.47	2.00	1.56	1.20	1.59	1.42
TPT	9	1.78	.99	1.74	1.65	1.72	1.72	1.82	1.63
C	15	1.87	.93	1.60	1.47	2.20	1.80	1.87	1.67
NCTC	15	1.70	1.13	1.26	1.78	1.52	1.49	1.43	1.47
NCCC	13	1.58	.89	1.51	1.49	1.83	1.85	1.56	1.53

Table 13

Standard Deviations of Average Number of Observations Per Group Per Child By Weeks and By Groups

Group	N	Week 1	2	3	4	5	6	7	Total Across Week
TT	19	.61	1.28	1.11	.65	.67	.77	.89	.19
TPT	9	.63	1.61	.77	.67	.71	.42	.59	.27
C	15	.72	.77	.71	.72	.75	.75	.88	.37
NCTC	15	.67	1.23	.86	.72	.63	.48	.67	.21
NCCC	13	.78	.92	1.06	.64	.75	.83	.79	.29

Table 14

Range of Number of Observations Across Children by Week and by Group

Group	Ns	Week 1	2	3	4	5	6	7	Total Across Week
TT	19	0-2	0-4	0-4	0-3	0-3	0-2	0-3	6-14.5
TPT	9	1-2	0-4	0-2	.5-3	.5-3	1-2	1-3	7-14
C	15	1-3	0-2	0-3	0-2	0-4	0-3	0-3.25	4-14
NCTC	15	0-2	0-4	0-3.26	1-3	.5-3	1-2	0-2	7.51-12.6
NCCC	13	0-3	0-3	0-3	0-2	1-4	0-3	0-3.25	7-4.75

Interobserver reliability coefficients are presented in Table 15 by week number, classroom number, observers involved, and for each child observed. Interobserver reliability was calculated by using a Pearson Product-Moment Correlation Coefficient. A total of 27 two-hour-long interobserver reliability checks were conducted across classrooms throughout the study. As already noted, the observers involved in each reliability check are displayed in Table 15. Inspection of Table 15 notes that observer numbers are separated by a slash. Observer numbers appearing before a slash represent the primary observer, while observer numbers appearing after the slash represent the secondary observer. Data from primary observers were included in further data analyses, while data for the secondary observer were only utilized to calculate interobserver reliability coefficients. Interobserver reliability coefficients for aggression are represented by "A"s in Table 15, whereas coefficients for teacher reinforcement of cooperative play by the target child are abbreviated with "C"s, and coefficients for teacher reinforcement of parallel play by the target child are represented by "P"s. Interobserver reliability for observed aggression ranged from 0-1.0, with a mean of .86 and a standard deviation of .32. Interobserver reliability for teacher reinforcement of cooperative play was calculated twice throughout the study, and in both instances were 1.0. Interobserver reliability for teacher reinforcement of parallel play was calculated four times throughout the study, and in all cases were 1.0.

Since unequal numbers of observations were conducted on subjects, the raw data collected on each subject were collapsed and divided by the total number of observations on each subject, to yield a frequency mean for each subject for each week. Thus, frequency means for each week for

Table 15

Interobserver Reliability Coefficients

Week	#Class	Observers	Child #1	Child #2	Child #3
1	1	2/1	A=1.0	No Occurrences	Absent
1	6	1/2	A=0	No Occurrences	Absent
1	8	5/4	A=1.0	Absent	N/A
1	12	3/5	A=1.0	A=1.0	No Occurrences
2	25	4/5	A=1.0,P=1.0	A=1.0,C=1.0,P=1.0	N/A
2	15	1/2	A= .77	A=0	No Occurrences
2	30	4/3	A=1.0	Absent	No Occurrences
2	5	4/5	A= .99	No Occurrences	N/A
2	8	3/4	A=1.0	Absent	N/A
2	14	2/1	A=0.0	A= .65	A= .65
2	28	5/4	A=1.0	A= .98	N/A
2	18	4/3	A=1.0	A= .97	No Occurrences
3	23	2/1	A=1.0	Absent	N/A
3	7	3/4	A=1.0	Absent	N/A
3	24	4/5	A= .81	Absent	N/A
4	15	1/2	A=1.0	A=1.0	Absent
4	26	1/2	A=1.0	No Occurrences	N/A
4	25	5/3	A=1.0	No Occurrences	N/A
5	9	1/5	A=1.0	Absent	N/A
5	16	4/3	A=1.0,C=1.0 P=1.0	A=1.0,P=1.0	N/A
5	17	3/1	A=1.0	No Occurrences	N/A
6	5	1/2	No Occurrences	Absent	N/A
6	19	1/4	A=1.0	No Occurrences	N/A
6	5	5/4	A=1.0	Absent	N/A
6	10	3/4	A=1.0	A=1.0	Absent
7	8	2/1	A=1.0	No Occurrences	N/A
7	29	1/4	A=0.0	Absent	No Occurrences

each subject on observed aggression, teacher reinforcement of cooperative play, and teacher reinforcement of parallel play, served as the raw data for data analyses. Table 16 presents the means and standard deviations of frequency means of observed aggression by week and by group. The following abbreviations were used to designate groups in Table 16 and subsequent tables: TT only, TPT, C, Nonaggressive Children in Training Classrooms (NCTC), and Nonaggressive Children in Control Classrooms (NCCC). Table 17 displays the means and standard deviations of frequency means of observed teacher reinforcement of cooperative play of target children by week and by group. Table 18 exhibits the means and standard deviations of frequency means of observed teacher reinforcement of parallel play of target children by week and by group. Inspections of Tables 16, 17, and 18 failed to reveal any trends across weeks for any of the observed behavior categories. To corroborate the findings of Tables 16, 17, and 18, Pearson Product-Moment Correlation Coefficients were calculated for the first week of data with successive weeks for each category of observed behavior by group. Table 19 shows correlations for observed aggression between Week #1 and successive weeks by group. The number of Ss involved in the computation of each r value appears in parentheses along side its corresponding coefficient. Table 20 displays correlations for observed teacher reinforcement of cooperative play of target children between Week #1 and successive weeks by group. The number of Ss involved in the computation of a given r value appears in parentheses along side its corresponding coefficient. Table 21 shows correlations for observed teacher reinforcement of parallel play of target children between Week #1 and successive weeks by group. The number of Ss

Table 16

Means and Standard Deviations of Frequency Means of Observed Aggression by Week and by Group

Group	1		2		3		4		5		6		7		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
TT	2.2	2.4	3	2.6	5.2	6.3	2.7	2.4	1.8	2.3	3.3	6.3	2.3	2.1	2.7	1.7
TPT	3.9	3.8	3.5	.5	5.2	3.1	3	3	2.9	2.5	3.4	1.9	2.1	2	3.2	1
C	2.8	3.7	4.8	7.1	2.7	2.8	4	3.7	1.9	1.5	3.2	3.4	2.4	1.8	3	3.1
NCTC	.9	1.1	.5	.8	2.6	4.2	1.1	1.2	1	1.2	.9	1.7	1.2	1.9	1.1	.6
NCCC	.6	.8	2.5	2.8	.8	1.2	1.9	3.2	1.2	1.7	1.5	1.6	.2	.5	1.1	.9

Table 17

Means and Standard Deviations of Frequency Means of Observed Teacher Reinforcement of Cooperative Play by Week and by Group

Group	Week Number														Total	
	1		2		3		4		5		6		7			
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
TT	0	0	.08	.21	.33	.83	.16	.48	.08	.26	0	0	.02	.08	.08	.12
TPT	0	0	0	0	.31	.59	0	0	0	0	0	0	0	0	.06	.13
C	.09	.27	0	0	.04	.13	.08	.19	0	0	.07	.27	.06	.15	.05	.10
NCTC	.04	.13	0	0	.04	.13	0	0	0	0	.04	.13	.07	.27	.02	.04
NCCC	.04	.14	.25	.7	.07	.21	.08	.29	.04	.14	.03	.10	.04	.14	.07	.41

Table 18

Means and Standard Deviations of Frequency Means of Observed Teacher Reinforcement of Parallel Play by Week and by Group

Group	Week Number														Total	
	1		2		3		4		5		6		7			
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
TT	.08	.24	.08	.21	.07	.18	.07	.24	.17	.34	.13	.29	.06	.25	.10	.17
TPT	0	0	0	0	.25	.53	.11	.33	.11	.33	.22	.36	.22	.44	.17	.27
C	.17	.39	.28	.67	0	0	.08	.2	.14	.31	.06	.15	0	0	.13	.19
NCTC	.13	.34	.03	.08	.18	.37	.04	.17	.07	.26	.04	.13	.21	.58	.09	.13
NCCC	.08	.19	.38	.74	.05	.16	.29	.8	.04	.14	.13	.24	.04	.14	.10	.09

Table 19

Correlations for Observed Aggression Between Week #1 and Successive Weeks by Group

	Week Number					
Group	2	3	4	5	6	7
TT	.58(12)	-.18(13)	.11(17)	-.28(17)	.36(16)	-.20(15)
TPT	0.21(3)	-.27(8)	-.24(9)	.63(9)	-.21(9)	-.25(9)
C	.72(9)	-.34(14)	.14(13)	.07(14)	.22(14)	-.11(14)
NCTC	.12(8)	-.21(13)	-.14(14)	.67(14)	-.09(14)	-.11(13)
NCCC	-.14(8)	.84(9)	.51(11)	.04(12)	.44(11)	-.04(11)

Table 20

Correlations for Observed Teacher Reinforcement of Cooperative Play Between Week #1 and Successive Weeks by Group

	Week Number					
Group	2	3	4	5	6	7
TT	___(12)	___(13)	___(17)	___(17)	___(15)	___(15)
TPT	___(3)	___(8)	___(9)	___(9)	___(9)	___(9)
C	___(9)	.95(14)	.09(13)	___(14)	.09(14)	-.14(14)
NCTC	.12(8)	-.08(13)	___(14)	___(14)	-.08(14)	-.08(13)
NCCC	___(8)	___(9)	-.10(11)	-.09(12)	1.0 (11)	-.10(11)

Table 21

Correlations for Observed Teacher Reinforcement of Parallel Play Between Week #1 and Successive Weeks by Group

	Week Number					
Group	2	3	4	5	6	7
TT	-.13(12)	-.12(13)	-.11(17)	-.18(17)	-.10(15)	-.10(15)
TPT	___(3)	___(8)	___(9)	___(9)	___(9)	___(9)
C	-.19(9)	___(14)	-.20(13)	-.25(14)	-.21(14)	___(14)
NCTC	-.22(8)	-.22(13)	-.11(14)	-.11(14)	-.11(14)	-.17(13)
NCCC	-.20(8)	-.19(9)	-.20(11)	-.13(12)	-.15(11)	-.10(11)

involved in the computation of each r value appears in parentheses along side its corresponding coefficient. The correlation coefficients appearing in Tables 19, 20, and 21 confirm the lack of trends for any observed behavior categories across weeks (e.g., did not find progressively greater negative correlations across weeks from aggression, or progressively greater positive correlations across weeks for teacher reinforcement of cooperative or parallel play).

The frequency means of observed aggression were collapsed across the last two weeks of treatment to insure that all subjects were included in analysis, and to improve the stability of observations. The means of observed aggression for each group for the last two weeks of treatment were as follows: (1) TT only = 5.96; (2) TPT = 5.51; (3) Control Group = 5.62; (4) NCTC = 2.29; and (5) NCCC = 1.73. An ANOVA performed on the amount of aggression observed for the last two weeks of treatment yielded significant differences between groups $F = 2.976$, $p = .026$. Paired t-tests were then performed to determine which groups

differed from one another on observed aggression during the last two weeks. The amount of observed aggression was found to be significantly higher for the TT only group compared to NCCC, t = 2.31, two-tailed p = .034. Children in the TT only group were found to approach exhibiting significantly more aggression in the last two weeks of treatment compared to NCTC, t = 1.95, two tailed p = .067. The amount of observed aggression was found to be significantly higher for the TPT group compared to NCCC, t = 3.31, two-tailed p = .004. Children in the TPT group were also found to exhibit significantly more aggression in the last two weeks of treatment compared to NCTC, t = 2.59, two-tailed p = .018. Finally, Control Group Ss were found to exhibit significantly more aggression than NCTC, t = 2.69, two-tailed p = .013; and Nonaggressive Children in Control Classrooms, t = 3.42, two-tailed p = .003. The results of the above analyses seem to indicate that teacher and parent training were both ineffective at reducing observed classroom, aggression, and that teachers apparently were accurate in identifying children as aggressive versus nonaggressive.

In order to determine if training may have affected Ss differently, contingent upon the amount of aggression displayed early on in the study, all Ss were arbitrarily assigned to one of two groups (e.g., less aggressive or more aggressive). Ss in one group displayed a frequency means of less than two acts of aggression during the first week of observation. The second group of Ss displayed a frequency mean of 2 or more acts of aggression during the first week of observation. T-tests were then conducted between the amount of observed aggression during the first, compared to the last week of observation, for subjects displaying less aggression, and for subjects displaying more aggression, for

subjects in all conditions. Table 22 displays the N, means, standard deviations (SD), and significance levels of frequency means of observed aggression during weeks 1 and 7 of observation for subjects displaying frequency means of aggression less than two (< 2), and for subjects displaying frequency means of aggression greater than or equal to two (≥ 2), during the first week of observation for subjects in all groups (TT, TPT, C, NCTC, and NCCC). The only findings of significant ($p < .05$) were that Ss in both the TPT and NCTC groups who displayed frequency means of aggression greater than or equal to two during the first week of observation, displayed significantly less aggression during the 7th

Table 22

Average Observed Aggression for Subjects Displaying Frequency Means of Aggression Less Than, Greater Than, or Equal to Two During the First Week of Observation by Group

		Week #1			Week #7			
Group		N	Mean	SD	N	Mean	SD	Significance
TT	<2	9	.7778	.640	9	2.7222	2.611	.068
TT	≥2	6	4.5417	2.559	6	3.1333	3.038	.497
TPT	<2	4	.75	.645	4	3.375	2.428	.08
TPT	≥2	5	6.4	3.209	5	1.09	.957	.009
Control	<2	7	.5343	.749	7	2.5	2.217	.068
Control	≥2	7	3.4286	2.537	7	2.2471	1.438	.352
NCTC	<2	11	.5445	.62	11	1.4818	2.031	.152
NCTC	≥2	2	3.25	.354	2	.25	.354	.006
NCCC	<2	10	.317	.434	10	.244	.493	.714
NCCC	≥2	1	2.0	0	1	0	0	*

*uncomputable

week of observation. These results seem to imply that teacher and parent training may have had some direct and indirect effects on observed aggression; however, the foregoing assumptions must remain inconclusive due to the ow numbers of subjects included in the analyses.

It should be noted that four of the five groups of Ss who displayed a frequency mean of aggression of less than two during the 1st week of observation were found to have increased levels of aggression during the 7th week of observation. Another finding was that all five groups of Ss who displayed a frequency mean of aggression of two or greater during the 1st week of observation were found to have decreased levels of aggression during the 7th week of observation. These findings suggest that observers may have become more sensitive to detecting aggression from Ss who displayed little aggression and less sensitive to aggression emitted form Ss who displayed a relatively greater amount of aggression.

In further analyses of the aggression data, ANOVAs were conducted on the amount of observed aggression during the last week of observation by groups, first for Ss who displayed a frequency mean of aggression during the 1st week of observation greater than or equal to two, and then for Ss who displayed a frequency mean of aggression during the 1st week of observation of less than two. No significant differences were found between groups on observed aggression during the last week for Ss who displayed a frequency mean of aggression during the first week of observation greater than or equal to two, $F = 1.43$, two-tailed $p = .269$. Significant differences were found between groups on observed aggression during the 7th (and last) week of observation for Ss who displayed a

frequency mean of aggression during the first week of less than two, $F = 2.872$, two-tailed $p = .037$.

The Ss in the TT group who displayed a frequency mean of aggression during the first week of observation of less than 2 were found to exhibit significantly less aggression during the 7th week of observation, compared to similar Ss in the NCCC group, $t = 2.80$, two-tailed $p = .022$. Ss in the control group who displayed frequency means of aggression during the 1st week of observation of less than 2 were found to engage in significantly more aggression during the 7th week of observation, compared to similar Ss in the NCCC group, $t = 2.65$, two-tailed $p = .036$. These results seem to support the earlier suggestion that teachers may have accurately discriminated aggressive from nonaggressive children.

To examine the possibility that training may have had a different effect on outliers, the individual frequency mean data were visually inspected for those Ss in each group (TT, TPT, control, NCTC, NCCC) who had the highest and lowest total average frequencies of aggression and who had two or less weeks of missing observational data. Table 23 displays the frequency means of observed aggression by weeks and a total average across weeks for individual Ss in each group who had the highest and lowest average frequency means of aggression across weeks and who had two or less weeks of observational data missing. The only obvious possible effect noted in Table 23 was that Subject #28 in the TPT group, showed a continual decrease in observed aggression from Week 3 through Week 7, inclusive. Additionally, Subjects #2 and #53 showed declining trends in observed aggression during Weeks 3 through 5, inclusive. In light of the fact that no baseline observational data were collected, it

Table 23

Frequency Means of Observed Aggression by Weeks and a Total Average Across Weeks for Individual Subjects in Each Group (TT, TPT, Control, NCTC, and NCCC) Who had the Highest (Hi) and Lowest (Lo) Average Frequency Means of Aggression Across Weeks

Subject #	Group	Week Number							Total Average Across Weeks
		1	2	3	4	5	6	7	
22	TT/Hi	5	--	--	9.14	.50	25	2	6.97
34	TT/Lo	0	1	2	0	1	.50	2	.80
28	TPT/Hi	2	--	10.67	9.02	5.50	3.5	.50	4.71
2	TPT/Lo	0	--	5	1	0	3	1	2
44	Control/Hi	0	2	4	--	6	2.5	3	4.15
53	Control/Lo	2	--	1.5	.5	.67	1.33	1	.80
7	NCTC/Hi	.89	1	4	2	3	6	.50	2.3
14	NCTC/Lo	0	0	0	.25	0	0	0	.09
72	NCCC/Hi	2	2.67	--	10	0	5	0	2.78
56	NCCC/Lo	0	--	--	.50	0	1	0	.29

-- Indicates missing observation.

was impossible to draw any conclusions from the foregoing observations of Table 21. Some final interesting observations from Table 23 were that Subjects #7 and #72, who were both Ss nominated by teachers as being nonaggresive, had total average frequencies of aggression that were higher than Subjects #34, #2, and #53, who were all nominated by teachers as aggressive. These results suggest that teachers did not always accurately distinguish between aggressive versus nonaggressive subjects, or that there was variability between classrooms on behaviors of preschoolers considered aggressive versus the behaviors of preschoolers considered nonaggressive. Finally, it should be noted that the frequency final observations of Table 23 must remain inconclusive due to the absence of observational baseline data.

The frequency means of observed teacher reinforcement of cooperative play of target children were collapsed across weeks for each group and were as follows: (1) TT Only group = .08; (2) TPT group = .06; (3) Control Group = .05; (4) Nonaggressive Children in Treatment Classrooms Group = .02; and (5) Nonaggressive Children in Control Classrooms = .17. The difference between groups on observed teacher reinforcement of cooperative play of target children was nonsignificant, $F = 1.07$, two-tailed $p = .826$. Due to the fact that little or no teacher reinforcement of cooperative play of target children was observed throughout the study, further analyses on these data were not conducted.

The frequency means of observed teacher reinforcement of parallel play of target children were collapsed across weeks for each group, and were as follows: (1) TT only group = .11; (2) TPT group = .17; (3) Control Group = .13; (4) Nonaggressive Children in Treatment Classrooms

= .09; and (5) Nonaggressive Children in Control Classrooms = .10. The difference between groups on observed teacher reinforcement of parallel play of target children were nonsignificant, F = .375, two-tailed p = .826. Due to the fact that little or no teacher reinforcement of parallel play of target children was observed throughout the study, further analyses on these data were not conducted.

In order to determine if Ss who were missing observational data differed from Ss whose observational data were complete, Ss were assigned to a second group if they were missing less than two weeks of observation data (N = 32). Certain demographic data for these two groups were then analyzed using paired t-tests. No significant differences were found between Ss who had two or more weeks of observational data missing when compared to Ss who had less than two weeks of observational data missing on the variables occupation of mother, t = 1.99, two-tailed p = .053, and occupation of fathers, t = .18, two-tailed p = .856. However, it should be noted that the test of significance for occupation of mothers approached significance. These results seem to indicate that mothers with higher occupational levels were more likely to bring their children to daycare/preschool on a regular basis because the mean occupational rating for mothers whose children had two or more weeks of observational data missing was 1.5455, compared to a mean occupational rating of 2.3226 for mothers whose children had less than two weeks of observational data missing. No significant differences were found for those Ss missing two or more weeks of observational data when compared to Ss missing less than two weeks of observational data on the variables, highest educational degree obtained by mothers, t = 1.31, two-tailed p = .201, and highest

educational degree obtained by fathers, t = .38, two-tailed p = .709. The mean age of mothers was not found to be significantly different between mothers of Ss who were missing two or more weeks of observational data, when compared to mothers of Ss missing less than two weeks of observational data, t = 1.07, two-tailed p = .349. Finally, no significant difference was found between Ss who were missing two or more weeks of observational data compared to Ss missing less than two weeks of observational data on the dependent variable total yearly family income, t = 1.02, two-tailed p = .312.

Walker Problem Behavior Identification Checklist

Where possible, Walker Problem Behavior Identification Checklists (WPBIC) were completed by a primary and secondary observer on each child in the two training and control groups. Primary observers were teachers involved in training, whereas secondary observers were teachers or aides who were familiar with the target children, but were not involved in training. WPBICs were obtained from secondary observers to gauge the reliability of primary observers. A total of 39 WPBICs were completed by primary observers, whereas a total of 30 WPBICs were completed by secondary observers. The Pearson Product-Moment Correlation Coefficient between primary and secondary observers for Total Walker Problem raw scores was low and positive at .27, with a two-tailed p = .15. The Pearson Product-Moment Correlation Coefficient between primary and secondary observers for Total Walker Problem T-scores was also low and positive at .34, with a two-tailed p = .07. The Pearson Product-Moment Correlation Coefficient between primary and secondary observers for the raw scores of the WPBIC Scale of acting out was positive and significant

at .57, with a two-tailed p = .001. The Pearson Product-Moment Correlation Coefficient between primary and secondary observers for T-scores on the WPBIC scale of acting out was positive and significant at .65, with a two-tailed p = 0. Thus, it appeared that the primary observers reliably reported problems of acting out, but reliability on total problems were questionable. Paired t-tests conducted on Total Walker Problem raw scores reported by primary and secondary observers failed to reach significance, t = 0.03, with two-tailed p = .976. Paired t-tests conducted on Total Walker Problem T-scores reported by primary and secondary observers also failed to reach significance, t = -.04, with two-tailed p = .968. Thus, although it appeared that the reliability primary observers on Total Walker Problem raw scores was questionable, the differences between primary and secondary observers were nonsignificant.

The means and standard deviation for Total WPBIC raw scores for each group for primary raters were as follows: (1) TT only group, $\bar{x}$ = 27.82, S.D. = 12.08; (2) Daycare Behavioral Interventions Plus Home-Parent Behavioral Interventions Group, $\bar{x}$ = 25.89, S.D. = 12.99; and (3) Control Group, $\bar{x}$ = 36.92, SD = 17.48. The differences between groups for total WBPIC raw scores for primary raters were not significant, F = 1.722, with two-tailed p = .198. The means for total WBPIC T-scores for each group for primary raters were: (1) TT only group, $\bar{x}$ = 70.11, S.D. = 12.52; (2) TPT group, $\bar{x}$ = 66.89, S.D. = 14.72; and (3) Control Group, $\bar{x}$ = 36.92, S.D. = 17.48. The differences between groups for total WBPIC T-scores for primary raters were nonsignificant, F = 1.801, with two tailed p = .184.

The means for WPBIC acting out raw score for each group for primary raters were: (1) TT only group, $\bar{x}$ = 14.11, S.D. = 6.25; (2) TPT group, $\bar{x}$ = 13.44, S.D. = 8.13; and (3) Control Group, $\bar{x}$ = 16.23, S.D. = 7.5. The differences between groups for WPBIC acting out raw scores for primary raters were not significant, F = .496, with two-tailed p = .613. The means for WPBIC acting out T-scores for each group for primary raters were: (1) TT only group, $\bar{x}$ = 67.82, S.D. = 11.38; (2) TPT group, $\bar{x}$ = 65.89, S.D. = 15.86; and (3) Control Group, $\bar{x}$ = 70.38, S.D. = 14.16. The differences between groups for WPBIC acting out T-scores were nonsignificant, F = .312, with two-tailed p = .734.

In order to determine if differences existed between Ss whose WPBIC data were retrieved and Ss whose data were missing, paired t-tests were performed using the dependent variables, occupation of mothers, occupation of fathers, highest educational degree obtained by mothers, highest educational degree obtained by fathers, total yearly income, and age of mothers. The independent variables in the above mentioned analyses were retrieved WPBIC and missing WPBIC. A total of 38 WPBIC were retrieved and five were missing.

No significant differences were found between Ss whose WPBIC data were retrieved and Ss whose WPBIC data were missing on the variables occupation of mothers, t = -.17, two-tailed p = .869, or occupation of fathers, t = -.12, p = .905. Additionally, no significant differences were found between Ss whose WPBICs were missing and Ss whose WPBICs were gathered on the variables highest educational degree obtained by mother, t = .82, two-tailed p = 418, or highest educational degree obtained by fathers, t = .45, p = .659. The mean age of mothers was not found to be significantly different between mothers of Ss whose WPBICs were

collected when compared to mothers of Ss whose WPBICs were not gathered, $t = 1.78$, two-tailed $p = .082$. Finally, no significant difference was found between Ss who had missing vs. complete WPBICs on the variable total yearly family income, $t = .60$, two-tailed $p = .554$. It did not appear that demographic variables influenced the returning of WPBICs.

California Preschool Social Competency Scale

Like the WPBIC, the California Preschool Social Competency Scale (CPSCS) was completed by primary and secondary observers to gauge the reliability of primary observers. A total of 39 CPSCS were completed by primary observers and 30 CPSCS were completed by secondary observers. The Pearson Product-Moment Correlation Coefficient for raw scores of the CPSCS between primary and secondary observers was moderate, positive, and significant at .47, with a two-tailed $p = .009$. The Pearson Product-Moment Correlation Coefficient for percentile ranks on the CPSCS between primary and secondary observers was also positive, moderate, and significant at .43, with a two-tailed $p = .017$.

The means and standard deviations for CPSCS raw scores for each group for primary raters were as follows: (1) TT only group, $\bar{X} = 72.59$, S.D. = 12.98; (2) TPT group, $\bar{X} = 75.56$, S.D. = 14.587; and (3) Control Group, $\bar{X} = 66.62$, S.D. = 11.28. The differences between groups for CPSCS raw scores for primary raters were nonsignificant, $F = 1.447$, with two-tailed $p = 2.49$. The means and standard deviations for CPSCS percentile ranks for each group for primary raters were: (1) TT only group, $\bar{X} = 34.19$, S.D. = 23.83; (2) TPT group, $\bar{X} = 38.33$, S.D. = 23.08; and (3) Control Group, $\bar{X} = 21.77$, S.D. = 18.91. The differences between

groups for CPSCS percentile ranks for primary raters were nonsignificant, F = 1.793, with two-tailed p = 1.181.

Separate analyses of covariance (ANCOVAs) were conducted on the CPSCS raw scores with occupation of mother, occupation of father, highest education degree obtained by mother, highest education degree obtained by father, total yearly family income, and age of mothers serving as covariates. These analyses were conducted to determine if parent or family demographic variables had any effect on child social competence. Table 24 displays observed and adjusted CPSCS raw scores and observed score standard deviations by group and covariate. Data missing on CPSCS and occupation of mothers lend to a total of 37 cases being included in that ANCOVA (N for TT group = 17, N for TPT group = 8, and N for Control group = 8). No significant differences were found between groups on CPSCS raw scores after controlling for occupation of mothers, F = 1.69, two-tailed p = .201. A total of 35 cases were included in the ANCOVA on CPSCS raw scores after controlling for occupation of fathers (N for TT group = 14, N for TPT group = 8, and N for Control group = 13). No significant differences were found between groups on CPSCS raw scores adjusted for occupation of fathers, F = .80, two-tailed p = .46. Twenty-eight cases were included in the ANCOVA on CPSCS raw scores after controlling for highest educational degree obtained by mothers (N for TT group = 14, N for TPT group = 7, and N for Control group = 7). Furthermore, no significant differences were found between groups on CPSCS raw scores after adjusting for highest educational degree obtained by mothers, F = 1.89, two-tailed p = .173. Only 24 cases were included in the ANCOVA on CPSCS raw scores after controlling for highest educational degree obtained by fathers (N of TT

Table 24

Adjusted and Observed CPSCS Raw Scores and Observed Score Standard Deviations by Group and Covariate

	TT			TPT			Control		
	Adjusted	Observed	SD	Adjusted	Observed	SD	Adjusted	Observed	SD
Occupation of Mother	72.617	72.588	12.981	75.603	75.625	15.592	65.827	65.833	8.695
Occupation of Father	73.556	73.714	10.816	74.853	75.625	15.592	68.7	67.769	10.864
Highest Educational Degree Obtained by Mother	72.964	73.786	10.743	74.554	75	16.733	63.982	63.714	7.847
Highest Educational Degree Obtained by Father	72.833	72.750	9.037	81.687	81	10.863	68.229	69	11.719
Total Yearly Family Income	72.088	72.588	12.981	75.737	75.625	15.592	68.157	67.679	10.864
Age of Mother	72.627	72.588	12.981	73.371	75.625	15.592	66.048	65.833	8.695

group = 12, N for TPT group = 5, and N for Control group = 7). The ANCOVA between groups on CPSCS raw scores after controlling for highest educational degree obtained by fathers was nonsignificant, F = 2.11, two-tailed p .148. Thirty-eight cases were used in conducting the ANCOVA on CPSCS raw scores, adjusting for total yearly family income (N for TT group = 17, N for TPT group = 8, and N for Control group = 13). No significant differences were found between groups on CPSCS raw scores after controlling for total yearly family income, F = .90, two-tailed p = .417. The last ANCOVA conducted on CPSCS raw scores included 37 cases (N for TT group = 17, N for TPT group = 8, and N for Control group = 12) and controlled for age of mothers. No significant differences were found between groups on CPSCS raw scores after adjusting for age of mothers, F = 1.47, two-tailed p = .245. It appears that the demographic variables used in the foregoing analyses had no effect on child social competency as measured by the CPSCS. However, the results of the ANCOVAs on CPSCS raw scores after controlling for the educational levels of parents must be interpreted cautiously due to the low numbers of cases included in those analyses.

In order to determine if differences existed between Ss whose CPSCS data were gathered compared to those Ss whose CPSCS data were missing, paired t-tests were conducted between these two groups of Ss using the demographic variables occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total yearly income, and age of mother as dependent measures. A total of 38 CPSCSs were collected, and five were missing.

No significant differences were found between Ss whose CPSCS data were collected and those Ss whose CPSCS data were missing on the variables occupation of mothers, $t = -.17$, two-tailed $p = .899$ or occupation of fathers, $t = -.12$, two-tailed $p = .905$. Additionally, no significant differences were found between Ss whose CPSCSs were missing and Ss whose CPSCSs were gathered on the variables highest educational degree obtained by mothers, $t = .82$, two-tailed $p = .418$, or highest educational degree obtained by fathers, $t = .45$, two-tailed $p = .659$. The mean age of mothers was not found to be significantly different between mothers of Ss whose CPSCSs were missing, $t = 1.78$, two-tailed $p = .082$. Finally, no significant difference was found between Ss who had missing versus returned CPSCSs on the variable total yearly family income, $t = .60$, two-tailed $p = .554$. Thus, it id not appear that demographic variables influenced the returning of the CPSCSs. However, it should be noted that only 28 cases were included in the analysis of missing versus complete CPSCSs on the variable highest degree obtained by fathers.

Achenbach Child Behavior Checklist for Children Ages 2-3

Analyses of covariance were conducted on Achenbach Total raw scores, and raw scores from the Aggressiveness and Destructiveness Scales of the Achenbach Child Behavior Checklist for Children Ages 2-3 (ACBC), with Achenbach Total pre-training raw scores and occupation of mothers as covariates. Achenbach Total pre-training raw scores and occupation of mothers were chosen as covariates because they correlated significantly with Achenbach Total post-training raw scores. The

Pearson Product-Moment Correlation Coefficient between Achenbach total raw scores pre- and post-training was .71, with a two-tailed p = .0. The correlation between Achenbach Total raw scores post-training and occupation of mothers was .41, with a two-tailed p = .008. A total of 39 ACBC were collected pre-training, whereas 37 were collected post-training. Since information regarding occupation of mothers were incomplete, a total of 29 cases were included in the final analyses. These 29 cases were comprised of: (1) 9 from the TT only group, (2) 9 from the TPT group, and (3) 11 from the Control Group. Table 25 displays adjusted and observed post-training mean ACBC total, aggressiveness, and destructiveness scale scores, and observed score standard deviations by group. No significant differences were found between groups on post-training Total Achenbach adjusted mean scores, F = 1.49, with a two-tailed p = .245. Furthermore, no significant differences were found between groups on post-training ACBC adjusted mean aggressiveness scores, F = .11, with a two-tailed p = .896. Finally, no significant differences were found between groups on post-training ACBC adjusted mean destructiveness scales, F = .27, with a two-tailed p = .764. Thus, it appeared that teacher and/or parent training had no effect on post-training Achenbach scores, even after controlling for relevant variables.

In order to determine if differences existed between Ss whose post-training Achenbach 2-3 (ACBC) data were collected compared to those Ss whose ACBCs were missing, paired t-test were conducted between these two groups of Ss using the demographic variables occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total yearly income, and

Table 25

Adjusted and Observed Post-Training Mean Achenbach Total and Relevant Scale Mean Raw Scores and Observed Score Standard Deviations by Group

	TT			TPT			Control		
Variable	Adjusted	Observed	SD	Adjusted	Observed	SD	Adjusted	Observed	SD
Achenbach Total	38.68	35	17.29	37.55	39.11	18.13	41.44	42.87	18.82
Aggressiveness	21.97	21.08	10.07	22.82	23	9.3	23.74	24.2	9.3
Destructiveness	4.01	3.31	2.25	4.01	3.67	2.35	5.22	6.33	2.72

age of mother as dependent measures. A total of 37 post-training ACBCs were gathered and 6 were missing.

No significant differences were found between Ss where post-training ACBCs were gathered compared to Ss where ACBCs were missing on the variables occupation of mother, $t = -1.27$, two-tailed $p = .212$, or occupation of father, $t = .36$, two-tailed $p = .721$. Additionally, no significant differences were found between the Ss missing post-training ACBCs compared to Ss whose post-training ACBCs were gathered on the variables highest educational degree obtained by mother, $t = -.97$, two-tailed $p = .34$, or highest educational degree obtained by father, $t = .80$, two-tailed $p = .43$. The mean age of mothers was not found to be significantly different between mothers of Ss whose ACBCs were collected compared to mothers of Ss whose ACBCs were missing, $t = -.64$, two-tailed $p = .524$. Finally, no significant difference was found between Ss who had missing versus returned ACBCs on the variable total yearly family income, $t = -1.02$, two-tailed $p = .354$. Thus, it did not appear that there were any real differences between Ss whose ACBCs were returned compared to Ss whose ACBCs were not returned on the demographic variables included in the above analyses. However, it should be noted that only 28 cases were included in the analysis of missing versus complete ACBCs on the variable highest degree obtained by father.

Knowledge of Behavioral Principles as Applied to Children

An analysis of covariance was conducted on post-training Knowledge of Behavioral Principles As Applied to Children (KBPAC) correct percent scores, with age of mothers, occupations of mothers, and total yearly

family income as covariates. Age of mothers, occupation of mothers, and total yearly family incomes were chosen as covariates because they correlated significantly with post-training KBPAC percent correct scores. The Pearson Product-Moment Correlation Coefficient between age of mothers and post-training KBPAC percent correct scores was .41, with a two-tailed p = .024. The correlation between occupation of mothers and post-training KBPAC percent correct scores was .46, with a two-tailed p = .013. The correlation between total yearly family income and post-treatment KBPAC percent correct scores was .65, with a two-tailed p = 0. A total of 30 KBPACs were included in the final analyses. These 30 cases were comprised of: (1) 9 from the TT only group, (2) 9 from the TPT group, and (3) 12 from the Control group. Table 26 displays adjusted and observed post-training KBPAC percent correct mean scores, and observed score S.D. by group. The differences found between groups on post-training KBPAC percent correct adjusted mean score were significant, F = 4.98, with a two-tailed p = .016. Further, ANCOVAs were then performed between pairs of groups, using the same covariates (mother's age, mother's occupation, and family income) that were used in the initial analysis of the KBPAC. Parents in the TPT group were found to have significantly higher post-training KBPAC percent correct adjusted mean scores, compared to parents in the Control Group, F = 6.89, with a two-tailed p = .018. No other significant differences were found between pairs of groups. Thus, it appears that training may have significantly increased KBPAC scores of parents in the TPT group.

A final analysis of the KBPAC was a t-test between KBPAC percent correct pre-treatment scores and KBPAC percent correct post-treatment scores for parents in the TPT group. Pre-training and post-training

Table 26

Adjusted and Observed Post-Treatment Percent Correct Knowledge of Behavioral Principles as Applied to Children Percent Correct Mean Scores and Observed Score Standard Deviations by Group

	DBI			DBIHPI			Control		
Variable	Adjusted	Observed	SD	Adjusted	Observed	SD	Adjusted	Observed	SD
Percent Correct Mean KBPAC Scores	59.42	54.33	21.57	65.72	68.66	17.26	45.4	48.11	38.03

KBPACs were collected from all 9 parents in the TPT. The mean KBPAC percent correct pre-training score was 44.11, with a standard deviation of 11.49. The mean KBPAC percent correct post-training score was 68.66, with a standard deviation of 17.26. The difference between KBPAC pre-training and post-training percent correct scores was significant, $t = -5.14$, with a two-tailed $p = .001$.

This result further supports the notion that parent training may have increased the post-training percent correct KBPAC scores for TPT group parents, compared to pre-training percent correct KBPAC scores. However, this result should be interpreted non-conclusively because not giving the KBPAC to a control group at pre-training does not preclude the possibility of a practice effect on post-training KBPAC scores of TPT group parents.

To determine if differences existed between Ss whose post-training KBPACs were gathered compared to Ss whose post-training KBPACs were missing, paired t-tests were conducted between these groups of Ss using the demographic variables occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total yearly income, and age of mother as dependent measures. A total of 32 post-training KBPACs were gathered, and 11 were missing.

No significant differences were found between Ss whose post-training KBPACs were missing on the variables occupation of mother, $t = -1.54$, two-tailed $p = .096$. Additionally, no significant differences were found between Ss missing post-training KBPACs compared to Ss whose post-training KBPACs were gathered on the variables highest educational degree obtained by mother, $t = -.86$, two-tailed $p = .398$, or highest

educational degree obtained by father, t = .84, two-tailed p = .406. The mean age of mothers was not found to be significantly different between mothers of Ss whose post-training KBPACs were returned compared to mothers of Ss whose post-training KBPACs were missing, t = .70, two-tailed p = .490. Finally, no significant difference was found between Ss who had missing versus returned post-training KBPACs on the variable total yearly family income, t = -1.04, two-tailed p = .322. In sum, it did not appear that there were any real differences between Ss whose post-training KBPACs were returned compared to Ss whose post-training KBPACs were not returned on the demographic variables included in the foregoing analyses. However, it should be noted that only 28 cases were included in the analysis of returned versus missing post-training KBPACs on the variable highest educational degree obtained by father.

Parent Satisfaction Questionnaire

A total of 28 (approximately 65%) Parent Satisfaction Questionnaires (PSQ) were completed by subjects' parents. Nine of these were completed by the TT only group, 8 were filled out by the TPT group, and 11 were completed by the Control Group. Separate ANOVAs were performed for each item on the PSQ between groups. It was decided that if a variable was significant, below the $p < .10$ level, then further t-tests would be performed. Items 4 and 5 were found to be significant below the $p < .10$ level. The means and standard deviations for Item 4 were: (1) TT onlyl group, $\bar{x} = 2.6$, SD = 1.13; (2) TPT group, $\bar{x} = 3.5$, SD = .535; and (3) Control Group: $\bar{x} = 2.6$, SD = .966. The F-ratio for Item 4 was 3.172, with a two-tailed $p < .060$. Item 4 asked parents to rate the opportunities for them, as parents, to participate in their

child's program. A paired t-test indicated that parents in the TPT group rated Item 4 significantly higher than parents in the TT only group, $t = -2.41$, with a two-tailed $p < .029$. Another paired t-test indicated that parents in the TPT group also rated Item 4 significantly higher compared to Control Group parents, $t = 2.35$, with a two-tailed $p < .032$.

The means and standard deviations for Item 5 were: (1) TT only group, $\bar{x} = 2.75$, $SD = .463$; (2) TPT group, $\bar{x} = 3.375$, $SD = 744$; and (3) Control Group: $\bar{x} = 2.3$, $SD = .949$. Item 5 asked parents to rate the range of services available to them through their child's program. The F-ratio for Item 5 was 4.387, with a two-tailed $p < .024$. A t-test for Item 5 indicated that parents in the TPT group rated this item significantly higher than Control Group parents, $t = 2.62$, with a two-tailed $p < .019$. In sum, TPT group parents appeared significantly more satisfied than TT and Control group parents on certain PSQ items. However, due to the fact that more TPT parents returned PSQs, compared to TT and Control group parents, any conclusions regarding parent satisfaction must remain inconclusive.

To determine if differences existed between Ss whose PSQs were gathered compared to Ss whose PSQs were not returned, parent t-tests were conducted between these groups of Ss using the demographic variable occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total yearly income, and age of mother as dependent measures. A total of 27 PSQs were returned, and 16 were missing.

No significant differences were found between Ss whose PSQs were gathered compared to Ss whose PSQs were missing on the variables of

occupation of mother, t = -.07, two-tailed p = .945, or occupation of father, t = 1.61, two-tailed p = .115. Additionally, no significant differences were found between Ss missing PSQs compared to Ss whose PSQs were gathered on the variables highest educational degree obtained by mother, t = .35, two-tailed p = .73, or highest educational degree obtained by father, t = 1.83, two-tailed p = .079. The mean age of mothers was found to be significantly higher for Ss whose PSQs were returned (34.36 years) when compared to the age of mothers for Ss whose PSQs were not returned (30.35 years), t = 2.48, two-tailed p = .018. This result suggests that older mothers were more likely to return PSQs than younger mothers. Finally, no significant difference was found between Ss who had missing PSQs compared to Ss whose PSQs were returned on the variable total yearly family income, t = -.65, two-tailed p = .522. In sum, the only significant finding on the differences between Ss whose PSQs were returned versus Ss whose PSQs were not returned was that older others may have been more likely to return PSQs than younger mothers.

Correlations Between Measures

Pearson Product-Moment Correlations were conducted between scores for all observed behavior categories and scores for all instruments. Table 27 displays the correlations between the variables: mean total of frequency means of observed aggression ($\bar{x}$AT); mean total of frequency means of observed teacher reinforcement of cooperative play of target children ($\bar{x}$CT); mean total of frequency means observed teacher reinforcement of parallel play of target children ($\bar{x}$PT); mean total California Social Competency Scale raw scores by primary raters

(Calif.); total Walker Behavior Problem Identification Checklist raw scores by primary raters (Walker); total pre-training Achenbach Child Behavior Checklist for Children Ages 2-3 raw scores (ACBC1); total post-training Achenbach Child Behavior Checklist for Children Ages 2-3 raw scores (ACBC2); percent correct on post-training Knowledge of Behavior Principles as Applied to Children (KBPAC); and average Parent Satisfaction Questionnaire scores (Satis). Also indicated in Table 25 are significant correlations. Positive and significant correlations were found between: (a) $\bar{x}$AT and $\bar{x}$PT, (b) Walker and ACBC2, and (c) ACBC1 and ACBC2. Negative and significant correlations were found between: (a) $\bar{x}$CT and Walker, (b) Calif. and Walker, (c) Calif. and ACBC2, and (d) ACBC2 and KBPAC.

Table 27

Correlations Between Scores for all Observed Behavior Categories and Scores for all Instruments (also Indicated are Significant Correlations)

	$\bar{x}$AT	$\bar{x}$CT	$\bar{x}$PT	Calif.	Walker	ACBC1	ACBC2	KBPAC	Satis
$\bar{x}$AT	--	-.22	.31*	.02	.09	.32	.03	.03	-.11
$\bar{x}$CT	--	--	.08	-.01	-.32*	-.23	-.30	.31	.08
$\bar{x}$PT	--	--	--	-.01	.06	.22	-.01	-.01	-.23
Calif.	--	--	--	--	-.32*	-.22	-.41*	.33	.06
Walker	--	--	--	--	--	.20	.40*	-.30	-.19
ACBC1	--	--	--	--	--	--	.71*	-.27	-.11
ACBC2	--	--	--	--	--	--	--	-.49*	-.03
KBPAC	--	--	--	--	--	--	--	--	.05

*Significant Correlation ($p < .05$)

CHAPTER V

DISCUSSION

This study was undertaken to compare the relative effects of teacher training only, to teacher training plus parent training upon the aggressive and social competency behaviors of aggressive preschoolers. Additionally, a control group that received neither intervention, and children identified as nonaggressive, were used for comparison purposes. A secondary purpose of this study was to compare the relative effects of the aforementioned interventions upon parents' knowledge of behavioral principles as applied to children. A final purpose was to assess the effects of interventions upon parents' satisfaction ratings of their children's daycare program. The following sections of this chapter will include: a summary of the study, discussion of the findings, recommendations for further research, and conclusions.

Summary

This study was conducted over a two-month period of time and used a three-group post-treatment quasi-experimental design. Additionally, two groups of nonaggressive children (those in treatment and control classrooms) were used for comparison purposes on observational measures. The major purpose of this study was to compare the relative effects of teacher training only, teacher training plus parent training, and no interventions, upon the aggressive and social competency behaviors of preschool children identified as aggressive in the classroom.

A total of 44 aggressive 3- and 4-year-old preschoolers were recruited for participation in the study. The subjects were randomly

assigned by classroom to classrooms that either received teacher training or to no training control classrooms. Children in teacher training classrooms then either remained in the Teacher Training only group (TT), or were individually randomly chosen to be offered a position in the Teacher and Parent Training (TPT) group. Through this procedure, 17 subjects were placed in the TT group, 9 were in the TPT group, and 18 were placed in the Control group.

Direct service staff of classrooms involved in both training groups were trained by masters level teacher-trainers. As part of training, preschool/daycare direct service staff attended an all-day workshop which reviewed principles of behavior and child development, as well as discussions on how to build a positive self-image in young children and how to foster internal control of behavior. In addition to this initial group meeting, preschool direct service staff met in smaller groups weekly, throughout treatment, with teacher-trainers. Discussions in these weekly meetings focused on general techniques of reinforcement of child behaviors, and more in-depth coverage of information covered during the initial all-day workshop. Finally, intervention for both training groups consisted of teacher-trainers visiting each treatment classroom for one hour per week. During these visits, teacher-trainers observed teacher interactions with the children, and then the teacher-trainers provided feedback regarding observed interactions.

In addition to direct service staff receiving training, the parents of children in the TPT group were trained on theory and applications of behavior modification. Parents were trained by the author. Training for parents consisted of readings and discussions on the principles of reinforcement, extinction, avoidance, and punishment. In addition to

readings and discussions, parents implemented at least one behavior program designed to increase desirable behaviors (e.g., getting dressed, picking up toys, putting clothes away) of target children. Parent training consisted of five individual or group meetings scheduled approximately every week for about 1 to 1-1/2 hours each meeting.

Prior to the initiation of treatment, parents completed a demographic questionnaire and the Achenbach Child Behavior Checklist for Children ages 2-3 (ACBC). During the last seven weeks of interaction, trained observers collected data on observed aggression of target children, and teacher reinforcement of cooperative and parallel play of target children in daycare center classrooms. Following intervention, parents completed the ACBC, the Knowledge of Behavioral Principles as Applied to Children (KBPAC), and the Parent Satisfaction Questionnaire (PSQ); and daycare/preschool direct service staff completed the Walker Problem Behavior Identification Checklist (WPBIC) and the California Preschool Social Competency Scale (CPSCS).

Demographic variables, observational data, the WPBIC, CPSCS, ACBC, KBPAC, and PSQ were analyzed by the investigator in the following manner:

1. Means and standard deviations or observed frequencies of demographic variables were calculated for each group. Appropriate statistics (t-tests and Chi-Square analyses) were used to evaluate the significance of differences between groups.

2. Means and standard deviations were computed for each week, and across weeks, for all observed behavior categories.

3. Correlations were conducted between the first week of observational data and subsequent weeks for each observed behavior category.

4. An ANOVA was performed on the frequency of observed aggression for the last two weeks of treatment by group and paired t-

tests were then performed on the same data to determine where significant differences existed.

5. Subjects in each condition were arbitrarily assigned to one of two groups, less aggressive or more aggressive. For each possible combination of condition (e.g., TT, TPT, Control, NCTC, NCCC) and group assignment (e.g., less aggressive, more aggressive), t-tests were conducted between the first and last weeks of observational aggression data.

6. Separate ANOVAs were conducted on the observational aggression data obtained during the last week by group (intervention condition), first for subjects considered more aggressive and then for subjects considered less aggressive during the first week of observation.

7. Paired t-tests were conducted on the aggression observational data collected during the last week of observation, between all possible combinations of conditions (e.g., TT, TPT, Control, NCTC, NCCC) for subjects determined to be less aggressive based on the first week of observation.

8. The individual frequency mean aggression data were visually inspected for those subjects in each group who had the highest and lowest total average frequencies of aggression, and who had two or less weeks of missing observational data, to determine if training had a differential effects on outliers.

9. ANOVAs were performed for total observed teacher reinforcement of cooperative and parallel play of target children by group.

10. In order to determine if Ss who were missing observational data differed from Ss whose observational data were complete, Ss were assigned to one group if they had observational data missing for two weeks or more, and Ss were assigned to a second group if they were missing two or less weeks of observational data. Certain demographic data (e.g., occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, age of mother, total yearly family income) for these two groups were then analyzed using pair t-tests.

11. Correlations were computed between primary and secondary observers on total and acting out WPBIC raw and t-scores to determine the reliability of primary observers (direct service staff). Means and standard deviations were computed for total and acting out WPBIC raw and t-scores for primary raters by group. ANOVAs were then performed to determine the significance of differences between groups for primary raters.

12. In order to determine if differences existed between Ss whose WPBIC data were retrieved, and Ss whose data were missing,

paired t-tests were performed using the dependent variables occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total year income, and age of mother.

13. Correlations were calculated between primary and secondary observers on CPSCS raw scores and percentile ranks to determine the reliability of primary observers. Means and standard deviations were computed for CPSCS raw scores and percentile ranks for primary raters by group. ANOVAs were used to evaluate the significance of the differences between groups for primary raters.

14. To determine if parent or family demographic variables had any effect on child social competence, separate ANCOVAs were conducted on CPSCS raw scores, with occupation of mother, occupation of father, highest educational degree obtained by father, total yearly family income, and age of mother serving as covariates.

15. In order to determine if differences existed between Ss whose CPSCS data were gathered compared to those Ss whose CPSCS were missing, paired t-tests were conducted between those two groups of Ss using the demographic variables, occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total yearly income, and age of mother, as dependent measures.

16. ANCOVAs were run on post-treatment ACBC total, aggressiveness, and destructiveness raw scores by group. ACBC pretreatment raw scores and occupation of mothers served as covariates.

17. In order to determine if differences existed between Ss whose post-training ACBC data were collected, compared to those Ss whose ACBCs were missing, paired t-tests were conducted between those two groups of Ss using the demographic variables occupation of mother, occupation of father, highest educational degree obtained by mother, highest educational degree obtained by father, total yearly income, and age of mother, as dependent measures.

18. ANCOVAs were run on post-treatment KBPAC percent correct scores by group. Age of mothers, occupation of mothers, and total yearly family income served as covariates.

19. Paired t-tests were conducted between KBPAC pretreatment and post-treatment percent correct scores for the Daycare Behavioral Intervention Plus Home-Parent Behavioral Intervention.

20. To determine if differences existed between Ss whose post-training KBPACs were gathered, compared to Ss whose post-training KBPACs were missing, paired t-tests were conducted between those two groups using the demographic variables occupation of mother, occupation of father, highest educational degree obtained by father, highest educational degree obtained by mother, total yearly income, and age of mother, as dependent measures.

21. ANOVAs and paired t-tests were used to determine the significance of differences on PSQ item scores and the PSQ average scores between groups.

22. To determine if differences existed between Ss whose PSQs were gathered, compared to Ss whose PSQs were not returned, paired t-tests were conducted between those two groups of Ss, using the demographic variables occupation of mothers, occupation of father, highest educational degree obtained by father, highest educational degree obtained by mother, total yearly income, and age of mother as dependent measures.

The results of the analyses revealed the following statistically significant findings:

1. Mothers in the TPT group had a significantly higher age than mothers in the control group.

2. Amount of observed aggression between groups was significant during the last two weeks of treatment. Further analyses revealed that the TT only group displayed significantly more aggression when compared to nonaggressive children in control classrooms, and nonaggressive children in treatment classrooms. Another finding was that children in the TPT and Control groups displayed significantly more aggression in the last two weeks of treatment than either nonaggressive children in treatment classrooms or nonaggressive children in control classrooms.

3. Both Ss in the TPT group and nonaggressive children in treatment classrooms, who were considered to be more aggressive (based on first week's observational data), displayed significantly less aggression in the last, compared to the first week of observation.

4. Subjects in the TT group who were considered to be less aggressive (based on the first week of observation) were found to exhibit significantly less aggression during the last week of treatment, compared to NCCC Ss who were also considered less aggressive.

5. Subjects in the control group who were considered to be less aggressive (based on the first week of observation) were found

to exhibit significantly more aggression during the last week of treatment, compared to NCCC Ss who were also considered less aggressive.

6. Parents in the TPT group obtained a significantly higher percentage correct on the post-treatment KBPAC compared to Control Group parents after controlling for mother's age, mother's occupation, and family income.
7. Parents in the TPT group earned a significantly higher percentage correct on the post-treatment KBPAC compared to the pretreatment KBPAC.
8. Parents in the TPT group were found to be significantly more satisfied with children's daycare program in regard to opportunities for them as parents to participate in their child's program, when compared to parents in the TT only group and parents in the Control Group. Parents in the TPT group were also found to be significantly more satisfied with children's daycare programs in regard to the range of services available to them as parents, compared to Control Group parents. Finally, parents in the TPT group reported a significantly higher average satisfaction rating with their children's daycare programs, compared to Control Group parents.
9. The mean age of mothers was found to be significantly higher for Ss whose PSQs were returned compared to the age of mothers for whom PSQs were not returned.

Discussion of Findings

The fact that observational data regarding aggression failed to find significant differences between interventions groups and control group suggests that treatment was ineffective at reducing aggression. This failure to find reductions in aggression contradicts the findings of other studies that utilized direct observations in classrooms to assess the effectiveness of treatments for inappropriate and aggressive behaviors (Gross et al., 1982; Hanson, 1974; Pinkston et al., 1973; Porterfield et al., 1976; Powers, 1983). One major difference between the present study and other studies utilizing direct observation in classroom settings was that other studies developed individual

treatment plans with specific goals and procedures to deal with behaviors targeted for change. Unlike those earlier studies, no individual treatment plans were ever developed for use by direct service staff in the present study. Instead, teacher-trainers provided specific feedback about how a direct service staff handled an aggressive child, only after a specific incident was observed. In sum, training for daycare direct service staff may have been too general to effect a change in behaviors as specific as aggression, as defined in the present study.

Another explanation was that training had no effect upon direct service staff behaviors at all. This alternative hypothesis is partially supported by the fact that no differences were found between groups with respect to teacher reinforcement of cooperative and parallel play of target children. The possibility that teacher training had no effect upon direct service staff behaviors and this is why differences were not found in observed aggression is also supported by a couple of studies (Hanson, 1974; Pinkston et al., 1973). Hanson (1974) and Pinkston et al. (1973) demonstrated that teachers could change inappropriate child behaviors, and both studies found concurrent changes in teacher behaviors as a result of training.

The fact that children in the TPT group did not demonstrate a differential significant reduction in observed aggression compared to aggressive control Ss also suggests a problem with the parent training component of treatment. One obvious problem was that parents were not involved in reducing the aggressive behaviors of their children in the daycare settings. Instead, parents implemented programs to increase desirable behaviors in the home (e.g., pick-up toys, putting clothes

away). A major difference between the present investigation and other studies which were successful at utilizing parents as treatment agents to change disruptive child behaviors (Eyberg & Matarazzo, 1980; Firestone et al., 1980; Fleischman, 1981; Forehand & King, 1977; Forgatch & Toobert, 1979; Gordon et al., 1979; Hamilton & McQuiddy, 1987; Hobbs, Walle, & Caldwell, 1984; O'Leary et al., 1967; Patterson et al., 1982; Powers, 1983; Robinson, 1983; Sanders & Glynn, 1981; Scarboro & Forehand, 1975; Walle et al., 1984; Webster-Stratton, 1983; Wells, Forehand, & Griest, 1980; Wells, Griest, & Forehand, 1980; Zeilberger, et al., 1968) was that other studies explicitly instructed parents how to respond to the occurrence of an undesirable behavior. This suggests that the type of general training parents received in the present study may have contributed to the lack of differences in observed aggression between groups of preschoolers identified as aggressive.

It is also possible that there were problems with the observational system employed, and this is why reductions in aggressive behaviors were not observed. For example, interobserver reliabilities ranged from r = 0 to 1.0. However, reliabilities with an r value equal to 0 were uncommon, occurring on only four occasions. Furthermore, it has been noted by West and Sloane (1986) that even a single disagreement between observers can produce exceedingly low reliability coefficients with low incidence behaviors. It should be noted that all reliability r values for aggression during the last two weeks of treatment were 1.0, with the exception of one r value = 0. Additionally, it should be noted that during this reliability observation, which produced an r value = 0, only one act of aggression was observed, both observers observed one act of aggression, but they were in adjacent 15 minute intervals.

To combat the possibility that one week worth of observational data was inadequate to gather stable data, the last two weeks of observations were combined when analyzing the data regarding aggression. Although it was possible, the investigator believes it unlikely that the lack of differences in observed aggression between treatment and control groups was due to problems with the observational system. This is supported by the fact that observers naive to subjects' conditions, detected differences in aggression between children identified as aggressive and nonaggressive. However, one final problem with the observational data, which may have accounted for the lack of observed reductions in aggressions, was the absence of baseline data for comparison purposes.

Positive findings of significant from the aggression observational data were that both TT only group and TPT group children displayed significantly more aggression in the last two weeks of treatment than either nonaggressive children in treatment classrooms or nonaggressive children in control classrooms. These findings appear to give external validity to teacher identification of aggressive and nonaggressive preschoolers. However, this finding must remain tentative because no observations were conducted in a baseline period, thus the observations included in the present analysis were subject to the possible confounding effects of treatment.

In exploring the possibility that subjects who emitted varying rates of aggression early on in treatment were affected differentially, TPT group children who were considered more aggressive (based on the first week of observation) were found to display significantly less aggression in the last compared to the first week of observation. However, this result seemed minimized by the fact that nonaggressive

children in treatment classrooms were also considered to be relatively more aggressive, were also found to display significantly less aggression in the last, compared to the first, week of observation. Taken together, and assuming adequate interobserver reliability, it appears as though observers may have systematically been recording fewer of the actual occurrences of aggression.

However, in further support of the notion that Ss responded differentially to treatment dependent upon initial rates of aggression, TT group Ss considered to be less aggressive (based on the first week of observation) were found to exhibit significantly less aggression during the last week of treatment compared to nonaggressive children in control classrooms (NCCC), also considered to be less aggressive; whereas similar control group Ss were found to exhibit significantly more aggression during the last week of treatment compared to less aggressive NCCC Ss. These results suggest that teacher training may have been effective at reducing aggression in children that did not display a problem with high rate aggression. However, the fact that such low numbers of Ss were included in the analysis, and the fact that similar results were not obtained from less aggressive Ss in the TPT group, prevent such a conclusion.

The failure of teachers to report significant post-treatment differences between groups on the Walker Problem Behavior Identification Checklist (WPBIC) and the California Preschool Social Competency Scale (CPSC) supports the notion that both of the interventions utilized, failed to produce changes in aggressive child behaviors. It should be noted, however, that the WBPIC and the CPSCS are both global measures and may have been too insensitive to detect changes in specific

behaviors. Unfortunately, no instruments have been developed that evaluate child aggression specifically. To try and narrow the focus, the acting out scale on the WBPIC was analyzed separately, but still no statistically significant differences were found between groups.

The failure of parents to report significant post-treatment differences on the Achenbach Child Behavior Checklist for Children Ages 2-3 (ACBC) also supports the hypothesis that treatments had no effect. However, the ACBC also suffers the problem of being a global measure, and may not have been able to detect differences in a behavior as specific as aggression, as defined earlier. To try and overcome this problem, the aggressiveness and destructiveness scales of the ACBC were analyzed separately, but still no statistically significant differences were found between groups. Another possible problem with the ACBC which may have accounted for the failure to find significant differences between groups, was that the instrument was designed for use with 2- and 3-year-olds, and the children tested in the present study were 3- and 4-year-olds. However, the scores of 2- and 3-year-olds on the ACBC for 2- to 3-year-olds correlated positively and significantly when the same children were 4- and 5-year-olds on the ACBC for 4- to 16-year-olds (Achenbach, Edlebrock, & Howell, 1987). Finally, although the ACBC may have been too global a measure to detect changes, it should be noted that previous studies (Eyberg & Matarazzo, 1980; Firestone et al., 1980; Fleishman, 1981; Hamilton & McQuiddy, 1984; Robinson, 1983; Webster-Stratton, 1983) have used other global measures to successfully detect changes following short-term treatments.

Parents who attended parent training sessions were found to have a significantly greater knowledge of behavioral principles as measured by

the Knowledge of Behavioral Principles as Applied to Children (KBPAC), compared to parents in the Control Group following treatment. Furthermore, compared to pretreatment KBPAC scores, post-treatment KBPAC scores were significantly greater for parents who attended parent training. Thus, it appears that parent training had the effect of increasing parents' knowledge of behavioral principles as applied to children. However, the lack of giving pre-treatment KBPACs to a control group prevent any definitive conclusions.

Finally, it should be noted that increasing parents' knowledge of behavioral principles did not decrease observed aggression of their children in daycare centers. One unique contribution of analyzing parents' knowledge of behavioral principles was that no other studies in the literature on parent training with preschool children has reported assessing parent knowledge of behavior principles.

Parents who attended parent training were found to have significantly higher satisfaction ratings with children's daycare programs, with respect to opportunities for them as parents to participate in their child's program, compared to parents in the TT only and Control Groups. Parents who received parent training also reported being significantly more satisfied with the range of services available to them through their child's daycare program, when compared to Control Group parents. These findings seem to support the notion that parent training increased parent satisfaction with daycare programs. However, these results should be interpreted with caution, for the following reasons: (1) there was only a 65% return rate on Parent Satisfaction Questionnaires; (2) there was a proportional difference in the return rate for the three groups (TT only group = 53%, TPT group = 89%, and

Control Group = 61%), leaving open the possibility of bias; and (3) the mean age of mothers was found to be significantly higher for Ss whose PSQs were returned when compared to the mean age of mothers who did not return PSQs.

Conclusions

Conclusions derived from the data of the present study must remain tentative at best due to the many problems encountered with research methodology and data collection and training procedures (e.g., no baseline observations, small sample size, questionnaire return rate, possible problems with interobserver reliability, quasi-random assignment of Ss). Despite the numerous flaws in the present investigation, the results appeared to indicate that both teacher training and teacher and parent training were as equally as effective at reducing the aggressive behavior of preschoolers as was no treatment at all. This tentative conclusion was substantiated by analysis of aggression observational data as well as analyses of the Achenbach Child Behavior Checklist for Children Ages 2-3 and the Walker Problem Behavior Identification Checklist. The lack of effect of intervention on preschoolers aggressive behaviors was probably due to the general nature of training for both teachers and parents. Analyses of the observational data collected on teachers (e.g., reinforcement for parallel and cooperative play) suggests that in order to increase the rate of teacher reinforcement of appropriate child behaviors, teachers probably should be given specific assignments to reinforce instead of just discussing the concept of reinforcement with experimenters. Teachers in the present study just discussed the concept of

reinforcement with experimenters, and teachers were found to reinforce appropriate child behaviors at extremely low rates. The conclusion that parent training increased the rate of parent reinforcement of appropriate child behaviors could not be made because of the lack of parent-child observations, but the results of the present study, however, did suggest that parent training increased parents knowledge of behavioral principles as applied to children.

Finally, the results of the present study suggested that parent training may have enhanced parent satisfaction with their child's daycare program.

Recommendations for Further Research

Based on the results of the numerous difficulties encountered with respect to research design and methodology in the present study, the following recommendations can be made for future investigations on the relative effectiveness of teacher and parent training for reducing preschoolers' aggression:

1. Future studies similar in nature to the present one should include individual treatment plans for all subjects. Treatment plans should operationally define target behaviors to be changed, and procedures to be implemented should be well articulated.

2. Evaluation of treatments should include pre- and post-treatment assessments, and these assessments should consist of global measures as well as observational data.

3. Future studies should include a larger sample size than was utilized in the present study, and subjects should be individually randomly assigned to treatment or control groups.

4. Future studies should also include a parent training only comparison group.

5. Future studies should include long-term follow-up assessments.

6. Future studies should utilize an observational system with smaller recording intervals (e.g., 15 seconds as opposed to 15 minutes) and instruments (a tape recorder with signals when intervals are complete) should be used to facilitate the accuracy of data recording.

7. Future studies should involve parents in treating aggressive classroom behaviors. For example, by utilizing home-school programs where parents deliver consequences at home dependent upon child behaviors in school.

8. Observational measures should be used to assess the reliability and accuracy of daycare/preschool providers and parents in implementing treatment plans.

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APPENDICES

Appendix A

Telephone Interviewer Guide

Date: _____ Phone Interviewer: _____
Name of Center: _____
Address: _____
Phone Number: _____
Director: _____
Contact Person (if someone else): _____

INTRODUCTION: Brief overview of purpose and methods of study. I WOULD LIKE TO ASK YOU A FEW QUESTIONS ABOUT YOUR CENTER AND SEE IF YOU MIGHT BE INTERESTED IN HAVING YOUR CENTER PARTICIPATE IN OUR STUDY.

NUMBER OF CHILDREN IN CENTER: _____

NUMBER OF CLASSROOMS IN CENTER: _____

NUMBER OF 3-YEAR-OLDS IN CENTER: _____

NUMBER OF 4-YEAR-OLDS IN CENTER: _____

NUMBER OF CLASSROOMS WITH 3-YEAR-OLDS: _____

NUMBER OF CLASSROOMS WITH 4-YEAR-OLDS: _____

ARE THERE 3-YEAR-OLDS IN YOUR CENTER WHOM YOU CONSIDER TO BE OVERLY AGGRESSIVE? YES _____ NO _____ NUMBER _____

ARE THERE 4-YEAR-OLDS IN YOUR CENTER WHOM YOU CONSIDER TO BE OVERLY AGGRESSIVE? YES _____ NO _____ NUMBER _____

I WOULD LIKE TO DISCUSS THESE CHILDREN WITH THE TEACHER(S) IN THE 3-YEAR-OLD CLASS(ES). WE WILL NOT USE CHILDREN'S NAMES AT THIS TIME, SINCE WE DO NOT HAVE THEIR PARENTS' CONSENT FOR THEIR PARTICIPATION IN THE STUDY. WHEN WOULD BE A GOOD TIME TO REACH THE TEACHER(S)?

_____

WHAT PHILOSOPHY DOES YOUR SCHOOL FOLLOWING IN DEALING WITH AGGRESSIVE CHILDREN? _____

_____

_____

Explain center's role in the study, commitment required of center and director, and benefits to center and director.

WOULD YOU BE INTERESTED IN HAVING YOUR CENTER INVOLVED IN SUCH A STUDY?
YES _____ NO _____

WOULD YOU BE INTERESTED IF A CHILD OR CHILDREN IN YOUR CENTER WERE NOT SELECTED TO BE IN THE EXPERIMENTAL GROUP BUT WERE IN THE CONTROL GROUP INSTEAD? YES _____ NO _____

Appendix B

Interviewer Guide

DATE: _____ PHONE INTERVIEWER: _____

CENTER: _____ PHONE #: _____

TEACHER'S NAME: _____

Introduction. Describe purpose and methods of study and teacher's role. Discuss commitment and benefits.

YOUR DIRECTOR HAS TOLD ME THAT YOU HAVE AN AGGRESSIVE CHILD(REN) IN YOUR CLASS. Verify. I WOULD LIKE YOU TO TELL ME ABOUT EACH OF THESE CHILDREN. Stress that names are not to be used.

Ask questions about nature, severity, target, frequency, and time of occurrence of aggressive acts.

CHILD 1: _____

CHILD 2: _____

CHILD 3: _____

Appendix C

Informed Consent Form for Directors

INFORMED CONSENT FORM FOR DIRECTORS

This certifies that I have been informed of the purpose and procedures of the proposed research to explore ways of helping aggressive preschool children. I understand that if one (or more) of the children in the child care center of which I am director is selected to participate in this study, the child, his or her parents, the teacher, and the classroom will be involved in various aspects of the study. The parents will be asked to fill out some forms which will give us specific information about the families; the ;child will be administered a developmental test and will be observed in the class; the teacher will be observed in the class; and an environmental rating will be carried out in the class.

I also understand that all the children will be randomly assigned to be in one of two groups. In the first group, trained professionals will work with the teachers of the children for a two-month period to help the teachers gain some new behavior management skills. The second group of children will only be tested at this time, but will receive the same treatment as the first group in about one year.

I understand that all aspects of the research will be carried out in a way that minimizes interruption to the children, the center, and the teachers. Observations will be made as unobtrusively as possible. If any child(ren) in my center are in the first group for which the teachers will receive training this year, arrangements will be made between the teacher trainer, the teacher, and myself so that training fits as smoothly as possible into the center's schedule. Participating teachers will also be part of group meetings; to ensure that these do not disrupt the center's or the teacher's functioning, they will be scheduled to facilitate teacher's schedules.

Information from observations will only be reviewed by professionals and will be coded so that no identifying information will remain. The list of codes and names will be kept in a locked filing cabinet in the office of the researchers while all information gathered throughout the research will be kept in a separate locked cabinet. Results of any tests or observations will be available to me if I would like to see these.

I understand that there are no risks to the center, its teachers, or the children, and that all efforts will be made to make this as positive an experience as possible for all involved. We want to assure that children are at no time labelled as "aggressive" and that all adults who work with them view the behavior, not the child, as the problem.

Possible benefits from the study are the increased skills that the teachers will gain in working effectively with young children as well as the improved social skills that children will gain.

After this two-month period, we will again repeat the tests which were done at the beginning of the study. Parents will again be paid $20 for their participation. We expect to repeat this procedure again in about a year.

We will be happy to share the results of the developmental tests with you, whichever group your child is in. We will also be available to provide parenting information and support to all the parents taking part in this study. There will be meetings for parents during the two-month study period as well to explain in more detail what we are doing in the centers.

We hope very much that you will be interested in participating and having your child be a part of this study. But before we can begin, we need your permission to observe the child and work with his or her teacher. If you would like to be involved in this study, or if you have any questions, please call and leave your name, phone number, and where you can be reached at one of the numbers listed below by January 28:

784-6977 Dr. Eva Essa (between 8:00 and 5:00)
784-6762 _____ (between 8:00 and 5:00)

Once you begin as part of this research, you can withdraw at any time you wish, although, of course, we would like to see families involved through next year. Also, your telephone call in no way obligates you to have your child in the study.

All information we gather will be kept strictly confidential, and, were possible, we will not use names of children, teachers, or centers. Our final report will not use names of participants at all.

We hope to hear from you very soon.

Sincerely,

Eva L. Essa, Ph.D.
Associate Professor
Child and Family Studies

Appendix D

Informed Consent Form for Teachers

INFORMED CONSENT FORM FOR TEACHERS

This certifies that I have been informed of the purpose and procedures of the proposed research to explore ways of helping aggressive preschool children. I understand that if one (or two) of the children in my class is selected to participate in this study, the child, his or her parents, the classroom, and I will be involved in various aspects of the study. The parents will be asked to fill out some forms which will give us specific information about the families; the child will be administered a developmental test and will be observed in the class; an environmental rating will be carried out in the class; and I will be observed in the class. These tests and observations will be carried out before training of teachers begins, in the month of February, and again after training in May.

I also understand that all the children will be randomly assigned to be in one of two groups. In the first group, trained professionals will work with the teachers of the children, like myself, for a two-month period to help the teachers gain some new behavior management skills. The second group of children will only be tested at this time, but will receive the same treatment as the first group--that is, their teachers will be trained--in about one year.

I understand that training involves a visit from a professional early childhood education specialist who will visit me in my class once a week to observe and provide help in dealing with the aggressive (child)ren in my class. In addition, I will participate in weekly small group sessions with other teachers participating in this research data time mutually agreed on to fit my schedule and the center's. Before training begins, I will take part in a one-day training program for which I will be paid $50. Efforts will be made to schedule two (or more) of these meetings to best suit the schedules of all involved.

I understand that all aspects of the research will be carried out in a way that minimizes interruption to the children, the center, and the teachers. Observations will be made as unobtrusively as possible. If any child(ren) in my class are in the first group for which I will receive training this year, arrangements will be made between the teacher trainer, director, and myself so that training fits as smoothly as possible into my class and the center's schedule.

Information from observations will only be reviewed by professionals and will be coded so that no identifying information will remain. The list of codes and names will be kept in a locked filing cabinet in the office of the researcher, while all information gathered throughout the research will be kept in a separate locked cabinet. Results of any tests or observations will be available to me if I would like to see these.

I understand that there are no risks to myself, the center, or the children, and that all efforts will be made to make this as positive an experience as possible for all involved. We want to assure that

children are at no time labelled as "aggressive" and that all adults who work with them view the behavior, not the child, as the problem. Possible benefits from the study are the increased skills that you will gain in working effectively with young children as well as the improved social skills that children will gain. These should benefit the center and the children as well as myself. In addition, information from the research about methods of helping aggressive preschoolers will be important to professionals who work with this age group.

The University of Nevada may not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research.

I have been given the following numbers to call should I have any questions about the research, my rights, and any other related matters:

784-6977 Dr. Eva Essa
784-6762

If I am not satisfied with the manner in which this study is being conducted, I may report (anonymously, if I choose) any complains to the UNR Social Behavior Human Subjects Review Committee at 784-4040.

I have read and understand the above statement about the research project and agree to participate in it subject to the above conditions. I understand that I am free to withdraw from the study at any time and that I may do so without consequences. I certify that a copy of this consent form has been given to me.

_____ _____

Teacher Date

Appendix E

Parent Letter

Dear Parents:

This letter comes to you through the director of your child's child care center, since we do not, at this time, have any identifying information about you or your child. We are from the Child and Family Center of the School of Home Economics at UNR and are in the process of embarking on an exciting research project. Your child was suggested by the teachers of the child care center as a possible participant in the study, and we would like to give you some information about the study to see if you would like to become a part of it.

Our aim is to investigate ways of helping young children cope with aggressive feelings. To do this, we would like to work with the teachers of children who have shown aggressive tendencies. We would like to help these teachers explore and learn some new techniques and strategies in working with aggressive children in positive ways. We want them to be able to assist preschoolers to learn positive social skills which, in turn, should result in better relationships with their playmates and teachers and in higher self-esteem.

We need the help of the parents of three-year-olds who have been identified as having problems with aggressive behaviors in their school programs. We hope to have over 50 three-year-olds and their families, teachers, and child care centers involved. Once a group of children has been identified, we will ask their parents to bring the child to a testing center where we will administer a developmental test to the child and have the parents fill out some forms as well. This should take about an hour to an hour and a half. Parents will be paid $20 for their time and participation. Each child, the classroom, and the teacher will also be observed in the child care center.

Once we have completed all our tests and observations, children will be divided into two groups in a random way. We will then begin to work with the teachers of the first group for a two-month period, helping them learn new skills, as described earlier. The teachers of the second group of children will not be involved at this time, but will be in the same program next year, when the children are four years old. One-half of the parents of children in the first group will be randomly chosen to be offered an opportunity to participate in a training group which will focus on remediating child behavior problems in the home. Participants will meet for five sessions and will be paid a total of $50 each, for their participation.

I have been given the following numbers to call should I have any questions about the research, my rights, and any other related matters:

784-6977 Dr. Eva Essa
784-6762

If I am not satisfied with the manner in which this study is being conducted, I may report (anonymously, if I choose) any complaint to the UNR Social Behavior Human Subjects Review Committee at 784-4040.

I have read and understand the above statement about the research project and agree to participate in it subject to the above conditions. I understand that I am free to withdraw from the study at any time and that I may do so without consequences. I certify that a copy of this consent form has been given to me.

_____ _____

Parent Signature Date

Appendix F

Observer Schedule

Observer Schedule

Class #	M	T	W	TH	F	M	T	W	TH	F	M	T	W	TH	F	M	T	W	TH	F	M	T	W	TH	F	M	T	W	TH	F
1	2/1											4			4		2			4				3			5				2		3		
2			3+2										1	5			5			2	1			3		2				3	1	5			
3	5		4					1	3		2			4			1	4	2		3		5					2	2		3	2		
4		1		2		3					4					1		2				4	3			1			2		2	3	3
5				2			5		4/5				5		1				2	1				4			1/2			5/4		2+4			
6		1/2		3		2+5	5			4					2	3			5			1+4					1				2			
7		2		4				2+4			1		3/4			2	5	5				1	5						1+2	3+4	1			
8		4		5/4		4			3/4				1+2			5				3			1	5	4	5		3			4+1			
9		5			4						2+3	3	5			4+5		4						2	1/5	3						1+5		
10			1		4												4		1		4				2					3/4		5		1/4
11	1	2										4			3		4		5			1		2		1+4				2+5			4	
12		3			3+5										5			5		2	3		3	1		3		3		1		5		
13	5					1	2+3	4			4				5	2			1			4	5	2				3		5	2			4
14	5			1			3		2/1		4				3	1+2		2			5	2+4				1			2		4			
15		2		3		4	5	1/2		2		5			1	1/2		3						4	5	2/?				1+4				
16					5/3													5		3					4/3	3			5		3			
17		5			4							2+5				4				1			4		3/1		2			1	5			3
18	1		2					5		4/3	1+3	2					5						3+4		5				1+3		2		4	
19	2		1				4			3		5		4			3	1			2+5						5		1/4	3		4		
20	2	3					4		1				5	4				1+3			1+2	5					5	2			3+5	4	1	
21	3		4	5								1		3			4	1			2	5						4+4+5			2/1+3			
22	4													1	3		3	5			4		2			4	3			5	5	1			
23	4											3					3		1		4		2			4	3	4					1		
24			5	4			1				2/1		4/5	5				3				1+5													
25	3					4/5							2+4	1		3			5/3			2		1		1	3			4		4+5	3	
26		3			1					2+1			3	1	2	3				4				5		5	4					1		2
27		4			1	3					5		3	2			1/2		4			3	5			5	2				4	1		
28		4	4		2				5/4			1			2	4			3			1		5		4		5			3			1
29					3+2						5					5					5	3+3		3				1	3			5	5
30			1			5		4/3+5				3		2		4		4			3		1				4	1	5		4	2			

Appendix G

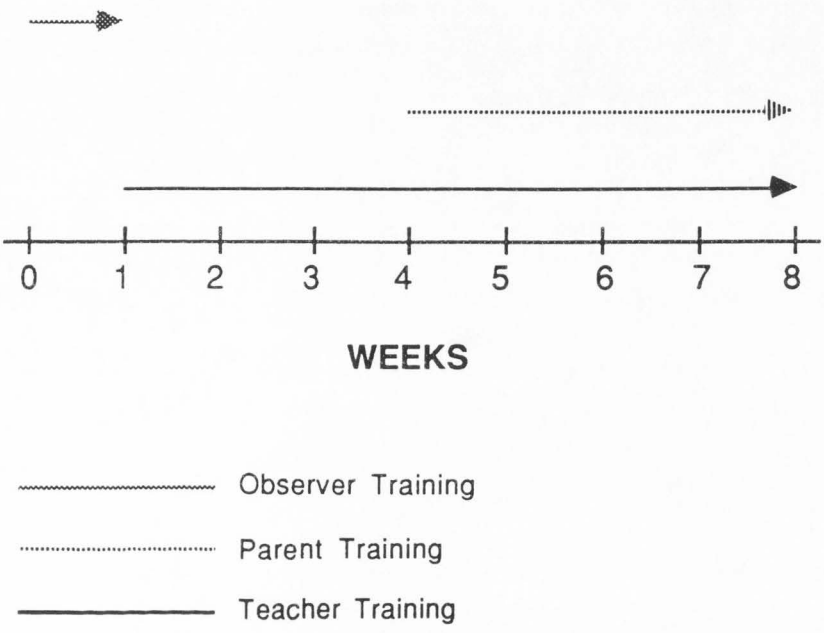
Data Collection Sheet

Date: _____ Classroom #: ____ Week #: ____ Start: ____ End: ____
Reliability Check: Yes No Observer #: ___ Reliability Observer #: ___

	Child #1	Child #2	Child #3
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Appendix H

Observer, Teacher, and Parent Training Timeline


0
1
2
3
4
5
6
7
8
WEEKS
Observer Training
Parent Training
Teacher Training

Appendix I

Parent Training Sessions Outlines

OBJECTIVES FOR SESSION 1

1. By the end of this session, parents will be able to state a desirable behavior they want to increase that is incompatible with aggressive behavior.

2. By the end of this session, parents will be able to verbally define what a reinforcer is.

3. By the end of this session, parents will be able to give at least two examples of possible reinforcers from each of the following reinforcer classes: material, social, activity, and edible.

4. By the end of this session, parents will be able to verbally explain the use of a frequency chart.

5. By the end of this session, parents will be able to verbalize the single most important reason for a baseline period.

Session 1

I. Introduction

A. Purpose and components of the group (e.g., readings, discussions, implementations, demonstrations)

B. Staff Introduction

1. Jack-background

II. Ground Rules

A. Necessity of active involvement, homework, attendance, families, and individual responsibilities (e.g., directed towards couples).

B. Staff availability

1. Phone consultations if needed between meetings.

III. Introduction of Participants

A.Target child; age, sex, behaviors to change

B. Expectations from parent training group

IV. Pre-Intervention Quiz Assessments

A. Collected on both parents if available.

V. Introduction to social learning concepts

A. Interaction patterns are learned (people teach people)

B. Law of reciprocity

1. Positive gets positive
2. Negative gets negative

C. Interaction patterns (positive vs. negative) can be changed

1. Behavior can be increased or decreased

D. Define reinforcers

1. Event that follows a behavior and increases the future probability of that behavior occurring

2. Can be social (e.g., positive statements), material, activity, or edible (not really desirable)

3. Explain why social is the most desirable

   a. Because it is more likely to occur uncontrived in the environment

E. Data collection and observation are the first steps

VI. Introduction to Data Collection

A. Hand-out frequency chart (see following page)

B. Explain use of chart

C. Have parents identify desirable behaviors they want to increase of the target child that is incompatible with aggressive behavior

D. Explain the purpose of baseline

VII. Homework

A. Read Section I in Families

B. Collect baseline data on the desirable behavior incompatible with aggression (e.g., sharing toys, food, etc.)

Child's Name: _____

Target Behavior: _____

Date: _____ Total Frequency for the Day: _____

4:00	8:15
4:15	8:30
4:30	8:45
4:45	9:00
5:00	9:15
5:15	9:30
5:30	9:45
5:45	10:00
6:00	10:15
6:15	10:30
6:30	10:45
6:45	11:00
7:00	11:15
7:15	11:30
7:30	11:45
7:45	12:00
8:00	12:15 to 9:00 a.m.

Other relevant behavior observations:

OBJECTIVES FOR SESSION 2

1. By the end of this session, parents will be able to state how often a reinforcer should be administered at the initiation of a new treatment program.

2. By the end of this session, parents will be able to state one reason why ignoring is generally preferable to punishment.

3. By the end of this session, parents will be able to state at least three behaviors that are incompatible with aggressive behaviors.

4. By the end of this session, parents will be able to demonstrate how to administer a social reinforcer (e.g., praise).

Session 2

I. Review data collected from homework

A. Allow each individual to discuss:

1. What was the behavior?

2. What was the frequency of this behavior during the days of baseline?

3. What other behavioral observations were noted?

II. Review Section I in Families

A. Make sure they understand:

1. Reinforcers strengthen behavior

2. Reinforcer classes (e.g., material, social, etc.)

3. Behavior changes are gradual

4. Changes are quicker by using consistent Sr+ initially

5. Why ignoring is generally preferable to punishment

6. It is easy to accidentally reinforce problem behaviors

7. Punishment behaviors (e.g., nagging) are easily reinforced

8. The importance of data collection and observation

III. Increasing Desirable Behavior

A. What to praise: ask parents

1. Have them generate a list of behaviors incompatible with aggressive behaviors

B. When to praise: ask parents

1. Reinforce immediately and often

2. Reinforce closer approximations to the desired behavior

C. How to praise: ask parents

1. Identify behavior that was praisable

2. Provide eye contact, and physical and verbal praises

3. Praise often

4. Do not add habitual criticism

5. Might withhold physical praise depending on the individual

IV. Behavior Rehearsal

V. Homework

A. Read pp. 35-57 in Families

B. Implement treatment program and collect data

1. All parents will use social reinforcers to increase the behaviors identified at the last session

C. Have parents review a reinforcer menu (see following page) for possible activity, material, or edible reinforcers

OBJECTIVES FOR SESSION 3

1. By the end of this session, parents will be able to verbalize four components to consider when setting up a treatment program.

2. By the end of this session, parents will be able to state what an adequate time period is for collecting baseline data.

3. By the end of this session, parents will be able to describe data taken during the previous week and how this treatment data compared to baseline data taken two weeks ago.

4. By the end of this session, parents will be able to identify a second target behavior to increase that is incompatible with aggressive behavior.

Session 3

I. Review readings in Families

A. Make sure they understand:

1. Initially reinforcers should be delivered every time and immediately to strengthen a behavior

2. To set up a program:

a. decide on a behavior to increase
b. decide on a goal (state positively)
c. decide on where the child is in relation to goal (baseline)
d. reinforce and use small specific steps to achieve goal

3. Do not punish closer approximations to the desired goal

4. Weaken undesirable behavior by ignoring

5. Baseline should be at least three or four days

6. Continue to collect data during treatment

7. If behavior is not changing, it is a problem with the program or its implementation, not the child

II. Review data collected from homework/revise treatment plan

A. How did responding differ compared to baseline?

B. How did parents feel about delivering reinforcers?

C. How did parents deliver reinforcers (describe/demonstrate)

1. Did they label behavior?
2. What words or sentences did they use?
3. Did they make eye contact or physical contact?
4. How quickly did they deliver reinforcers?

D. Modify programs if necessary

III. Design another treatment program on each child.

A. Identify another desirable behavior to increase that is incompatible with aggressive behaviors

B. Decide upon what reinforcers to use after collecting baseline data

IV. Homework

A. Continue to implement the first treatment program with modifications if they were made

B. Collect baseline data on a new target behavior

OBJECTIVE FOR SESSION 4

1. By the end of this session, parents will be able to describe the data collected on their two treatment programs.

Session 4

I. Review data collected from homework

   A. Review and modify (if necessary) first treatment programs

   B. Review baseline data collected on second target behavior

II. Homework

   A. Implement revised first treatment programs

   B. Implement second treatment programs

OBJECTIVES FOR SESSION 5

1. By the end of this session, parents will be able to describe the data collected on their two treatment programs.

2. By the end of this session, parents will have scored higher on the post-intervention quiz than they did on the pre-intervention quiz.

Session 5

I. Review data collected from homework

   A. Revise treatment programs if necessary

II. Give final words of advice

   A. Always try using positive reinforcement before using any aversive techniques

   B. If you are using aversive techniques, make sure that plenty of reinforcers are available for more desirable behaviors

   C. Strongly suggest that parents who want to use aversive techniques seek professional advice/consultation

   D. Make sure that your child's reinforcers are in fact reinforcing to your child

   E. Always collect data so that you make a sound judgment in your choice of treatment plans

   F. If you are ever in doubt, seek professional help

III. Post-Intervention Quiz Assessments

   A. Give to both parents if available

VITA

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Doctor of Philosophy

Dissertation: The Effects of Teacher and Parent Behavioral Interventions Upon the Aggressive Behaviors of Preschoolers

Major Field: Psychology

Born May 15, 1960 in Bridgeport, Connecticut

Education

1988 Ph.D. in Psychology from Utah State University, Logan, UT 84322

1981 B.S. in Psychology from Northeastern University, Boston, MA 02115

WORK EXPERIENCE

June, 1988 - Present. Associate Psychologist, Fairview Hospital and Training Center, Salem, OR. Responsibilities include: Conducting psychological evaluations and writing reports, writing behavior programs and monitoring their implementation, serving on an interdisciplinary team, and conducting staff inservices.

September 1987 - 1988. Associate Psychologist, Utah State Training School, American Fork, UT. Responsibilities included: Conducting psychological evaluations and writing reports, writing and monitoring behavior programs, serving on an interdisciplinary team, and conducting staff inservices.

Spring, 1987. Parent Trainer, Early Intervention Research Institute, Utah State University, Logan. Responsibilities included the training and assessment of parents of aggressive preschool children as part of a treatment in an experimental project.

December 1985 - June 1987. Research Assistant, Early Intervention Research Institute, Utah State University, Logan. Responsibilities included the development and maintenance of a DBMS for Project TEAM, using DBase III and SPSS-PC, and producing monthly evaluation reports.

July 1984 - December 1985. Research Assistant, Developmental Center for Handicapped Persons, Utah State University, Logan. Responsibilities included the development of a DBMS for the Comprehensive Planning Project using VAX/Datatrieve, and a review of the "Best Practices" literature on the delivery of services to severely handicapped individuals.

Fall, 1984. Assistant for Behavior Modification (372). Responsibilities included giving class lectures, correcting student papers and tests, and assisting students with self-behavior modification projects.

Spring, 1984 and Fall, 1984. Psychology Intern, Developmental Center for Handicapped Persons, Utah State University, Logan. Responsibilities included serving as a Case Member and Case Coordinator in making comprehensive behavioral, developmental, and educational assessments of children between the ages of 0 and 18 years of age. Specific duties included interviewing, testing, making recommendations and/or referrals, and training parents on behavioral techniques to use with non-compliant children.

Fall, 1983 and Winter, 1984. Assistant for Developmental Psychology (110). Responsibilities included giving class lectures, leading discussion groups, leading testing sessions, correcting student papers, and answer student questions.

Fall, 1982 and Winter, 1983. Student in Child Practicums (615, 616), Developmental Center for Handicapped Persons, Utah State University, Logan. Responsibilities included the designing and implementation of a behavioral treatment program for a behaviorally disadvantaged child.

June 1982 - August 1982. Recreation Aide, Developmental Center for Handicapped Persons, Utah State University, Logan. Responsibilities included the engaging of adult clients in useful recreational activities.

September 1981 - June, 1982. Animal Laboratory Manager, Basic Behavior Lab, Department of Psychology, Utah State University, Logan. Responsibilities included the maintenance of microcomputers and peripheral equipment, electrical wiring of operant chambers, scheduling of experimental session times, inventorying of equipment, and purchasing of laboratory supplies.

September 1981 - June, 1982. Animal Caretaker, Basic Behavior Lab, Utah State University, Department of Psychology, Utah State University, Logan. Responsibilities included the feeding, watering,and maintenance of rats and pigeons.

WORK EXPERIENCE (continued)

May 1981 - August 1981. Vocational Instructor. Responsibilities included the teaching and maintenance of "work" behavior in developmentally impaired adult clients.

Spring, 1981. Assistant for Abnormal Psychology. Responsibilities included correcting essay tests and answering student's questions.

Spring, 1981. Student in Applied Behavior Analysis (500 level). Responsibilities included the designing and implementation of a behavioral treatment program for a behaviorally disadvantaged adult client.

February 1981 - May 1981. House Parent. Responsibilities included the guidance of behaviorally disadvantaged adolescents.

June 1980 - August, 1981. Mental Health Worker. Responsibilities included maintaining low levels of aggressive client behavior, assisting nurses with the administration of psychotropic medications, monitoring suicidal clients, escorting clients to various activities, and writing daily client behavior observations.

PRESENTATION

Shamaly, J. J., Jr. (1987, April). <u>The paraprofessional in the service delivery system: A review of the literature and their recruitment, promotion, and reinforcement</u>. Paper presented at the Sixth Annual Conference on the Training and Employment of Paraprofessionals in Special Education, Vocational, and Rehabilitation Service Programs for Children and Adults with Disabilities, San Diego, CA.