

Remediation and Prevention of Aggression: An Evaluation of the Regional Intervention Program Over a Quarter Century

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ABSTRACT: This article presents an overview of the Regional Intervention Program (RIP) and describes ongoing studies to examine the long-term effects of behavioral skill training for parents of preschool children who engaged in severe forms of aggression and antisocial behavior. The results of evaluation studies on RIP clients have shown that (a) the initial intervention experience yields predictable and replicable outcomes for adults and children; (b) outcomes for children and adult clients maintain for periods ranging from 3 to 9 years, based on direct observational assessments in school and home settings; (c) these intermediate follow-up results are strongly influenced by early enrollment in the program, with children who began at the earliest ages experiencing more favorable outcomes; (d) the 3- to 9-year follow-up results for home-based observation are replicable across clients who received treatment from an entirely different intervention staff; (e) adolescent and adult outcomes indicate long-term maintenance of intervention gains; and (f) former adult consumers consider RIP intervention strategies to be highly acceptable.

■ On a day-to-day basis, it appears that children identified with emotional or behavioral disorders constitute the population of youngsters who are of greatest concern to caregivers. Of this larger group, those labeled as disruptive, noncompliant, defiant, or oppositional predictably find their way to the top of service provider lists of referrals, other placements, and "most troubling." As Hobbs (1975) so aptly put it, not everyone may agree that these children are disturbed, but their physical aggression, destruction of property, lying, and defiance indeed make them *disturbing*. That is not to diminish or discount their risk of school failure and, more significant, their risk of marginalized adult lives characterized by violence, abuse, loneliness, and anxiety (Coie & Dodge, 1998; McCord, 1978; Olweus, 1991). There is perhaps no other group of individuals with disabilities for whom the developmental course is so certain and negative if they are not treated or are poorly treated (Lipsey & Derzon, 1998; Patterson & Fleishman, 1979). Moreover, there are abundant data to suggest that there may be powerful cross-generational pat-

terns of oppositional/defiant behavior (Tremblay, 2000; Wahler & Dumas, 1986).

The following items reflect our current state of knowledge related to the development and remediation of these severe behavior problems:

- Early-appearing behavior problems in a child's preschool career are the single best predictor of delinquency in adolescence, gang membership, and adult incarceration (Dishion, French, & Patterson, 1995; Reid, 1993).
- The stability of aggression in young children over a decade is equal to the stability of intelligence, with cross-year correlations of .80 (Kazdin, 1987).
- If aggression toward others and property is not altered by the end of the third grade, it appears that it should be treated as a chronic condition, hopefully kept somewhat in check by continuing and ever more costly intervention (Dodge, 1993).
- Children who grow into adolescence with aggressive behaviors are likely to drop out

of school, be arrested, abuse drugs and alcohol, have marginalized adult lives, and die young (Lipsey & Derzon, 1998; Walker, Colvin, & Ramsey, 1995).

- Early intervention focused on altering parent-child interaction patterns is the most effective strategy for altering these early behavioral problems (Strain, Steele, Ellis, & Timm, 1982; Timm, 1993).

The outcomes just listed clearly speak to the compelling need for effective and sustainable early intervention tactics. In fact, the national costs of unchecked aggression are nearly impossible to calculate accurately because of its pervasive nature. For the young child who engages in persistent aggression and defiance, and to all those with whom the child interacts (e.g., family, peers, educators), the costs include

- Early and persistent peer rejection (Coie & Dodge, 1998; Strain, 1984).
- Mostly punitive contacts with teachers (Strain, Lambert, Kerr, Stragg, & Lenker, 1983).
- Family interaction patterns that all participants find to be unpleasant (Patterson & Fleishman, 1979).
- Predictable school failure (Kazdin, 1993; Tremblay, 2000).

While we might view these children as victimizers of others, they are ultimately their own worst enemy, with a high risk of fatal accidents, alcoholism, drug addiction, unemployment, divorce, and psychiatric illness over a lifetime, as well as early death (Coie & Dodge, 1998; Kazdin, 1985).

The costs of unchecked aggression also accrue to society as follows:

- One billion dollars spent annually to incarcerate aggressive youths (Patterson & Bank, 1989).
- Five hundred million dollars spent annually to repair and replace property destroyed by youths (Patterson, DeBaryshe, & Ramsey, 1989).
- Untold billions of dollars to incarcerate adults, a large percentage of whom began their aggressive, antisocial careers in the preschool years (Long, 1993).

Notwithstanding the poor developmental and social outcomes for children who display this oppositional/defiant behavioral profile, a number of intervention approaches have produced excellent outcomes (Patterson & Fleishman, 1979; Strain et al., 1982; Wahler, 1975; Webster-Stratton, 1984). In each of these models, primary caregivers were taught to redirect much of their initial repertoire of interaction with their children. Noting through careful and repeated observations of parent-child interaction that coercive cycles of exchanges seemed to fulfill a child's goal of gaining any form of parental attention, caregivers were taught to withhold their attention until the child was engaging in positive, developmentally appropriate activities. Once more positive exchanges were occurring, parents were taught to (a) be more vigilant in monitoring their child's activities, (b) assist other key persons in the child's life to interact in a fashion consistent with the parents' new interaction style, (c) help their child to set self-management goals, and (d) recruit family and community support for their child and themselves. Many of these empirically validated tactics have come to form the foundation of treatment offered by the Regional Intervention Program (RIP).

Program Overview

The Regional Intervention Program was established in 1969 at George Peabody College of Vanderbilt University, Nashville, Tennessee. Designed initially to provide services to families of children under 36 months of age who have autism, the program soon broadened its scope to include services to all families with children of preschool age about whom serious concerns exist regarding behavior and/or development. The result has been an eligibility policy that cuts across a variety of diagnostic categories including behavioral disorders, emotional disturbance, autism, mental retardation, and multiple disabilities.

Referrals to RIP are from pediatricians and other physicians, evaluation centers, child care centers, social service agencies, schools, counselors, relatives, neighbors, and friends. The criteria for admission are that the family has serious concerns regarding the preschool child, that at least one adult family member agrees to work at the RIP center a minimum of two mornings or two evenings per week for 2 hours each visit, and that the family agrees to fulfill the payback obligation described later.

The adult family members (referred to hereafter as *parents*) serve as primary therapists for their own children, as principal trainers and sources of support for other parents, and as daily operators of the service delivery system. Sisters, brothers, grandparents, aunts, uncles, and family friends are invited to attend as well.

Enrollment in RIP occurs throughout the calendar year, thereby ensuring a mixture of participants ranging from new to veteran. Family participation is organized into two phases—treatment and payback. During treatment, parents work with their own children at RIP, at home, and in other community settings. When not engaged in family treatment sessions, feedback sessions, group discussions, and viewing instructional videotapes, parents in treatment are working in other program activities such as teaching in a classroom, collecting data, preparing snacks, or providing child care in the sibling nursery. The children are engaged in classroom activities, social skills instructional sessions, and parent-child interaction sessions each visit.

After completing the treatment phase, parents begin to “pay back” the program for services received. During this payback phase, parents provide assistance to newer families still in active treatment. They observe individual therapeutic sessions, offer feedback, record and analyze data, serve as lead teachers in RIP classrooms, provide classroom training for new parents, and develop instructional materials. Other duties might include conducting intake interviews with prospective families, serving as temporary support parents for newly enrolled families, or taking visitors on tours of the program. Families may continue to bring their children to the program during the payback phase but are no longer required to do so.

A day-for-day formula is used in which the number of sessions attended during the treatment phase determines the number of payback visits owed. All families are expected to fulfill their obligation to RIP with time and skills rather than money. The fiscal year 1998–1999 average length of stay for families completing the program was 24 treatment and 24 payback visits within a 7-month period.

Staff

RIP staffing patterns are designed to facilitate the parent-implemented core of the program

model. At the point of enrollment, clinical responsibility for each family is assigned to one of four full-time members of the professional resource staff. This staff member assists in the development and ongoing revision of the family's plan of treatment; monitors efforts designed to meet family treatment objectives; aids in securing resources in the larger community to meet additional child and family needs; and prepares written reports regarding the family. The same staff member remains assigned throughout the family's length of stay at RIP, working with an average of 16 families at a time.

Upon enrollment, case management responsibility for each family is assigned to one of seven parent staff members—successful graduates of RIP who have been invited to remain in a paid capacity, usually part time. Each case manager assists in developing the family's treatment plan, coordinates daily treatment activities, and aids in designing and monitoring daily-living programs conducted in community settings. The same case manager remains assigned during the family's active treatment phase at RIP, working with an average of four families at a time.

Four additional parent staff members provide specialized assistance in other areas of RIP operation. Two serve as classroom coordinators for the morning and evening programs, respectively. Two share responsibility for technical assistance services provided in child care and school settings for currently enrolled families and in home, child care, and school settings for graduated families.

The director is responsible for administrative and clinical oversight of RIP. Six consultants are available to families and staff in the areas of pediatrics, child psychiatry, speech and language development, physical therapy, occupational therapy, and educational skills assessment. Two additional professional staff members are responsible for site development, staff training, and technical assistance activities associated with the RIP Expansion Project. Support positions include a secretary and a part-time van driver.

Modules

All clinical and administrative functions are organized within RIP's modular system. Each module is managed by a professional staff member, and all but two are coordinated by members of the parent staff.

All enrolled families participate in the Behavioral Skills Training (BST) module, which addresses concerns regarding problematic child behavior such as noncompliance, aggression, destructiveness, tantrums, and self-injury. The BST module assists parents in the use of shaping, differential reinforcement, extinction, and timeout procedures in a variety of structured adult-child interaction sessions at RIP and simultaneously implemented daily-living programs at home and elsewhere.

The initial two visits for families are Orientation Days 1 and 2; they include general information about program staff and structure, a review of the child's developmental history checklist, discussion of the child's interests and incentives, discussion of the behavioral strengths and concerns checklist, and a mapping of the anticipated sequence of activities in BST.

Visits 3 through 6 include conducting adult-child interaction sessions, using a play format in which toy changes occur at 2-minute intervals per parent instruction. Sessions, which typically last for 20 minutes, are conducted in a simulated apartment separated from an observation area by two-way mirrors. The case manager reviews procedures with the family prior to each session and records selected parent-child interactions (i.e., instructions, attention to child behavior, cooperative behavior, oppositional behavior) using a 10-second interval data system. Family sessions are observed frequently by the assigned resource staff member and other parents. Upon completion of each session, the parent(s) and case manager, joined periodically by the resource staff member, summarize the recorded data, place them on a comparative graph, and complete written case notes about the session.

Visit 7 is devoted to construction of the family objectives plan that will guide activities for the next month or so. Visit 8 is devoted to development of the initial set of home programs to be implemented by the family away from the RIP center. The remaining 16 or more active treatment visits alternate adult-child interaction sessions in a variety of settings and working reviews of RIP classroom objectives, home program objectives, and family objectives. Primary emphasis throughout the BST treatment phase is on increasing generalization of adult and child skills across settings and circumstances.

The Social Skills Training (SST) module addresses specific concerns regarding peer

interactions. Virtually all attending children, including siblings, participate in SST activities as either target child or assisting peer. Structured SST sessions are conducted in a classroom-like environment by one or more trained adults with two to four children. Sessions are usually 10 to 15 minutes in length. Typically, parents of target children do not conduct sessions with their own children. SST objectives, individualized for each target child, emphasize the systematic acquisition and generalized use of prosocial behaviors with peers, including appropriate modes of communication, problem solving, sharing, mutual assistance, and conflict resolution.

All families participate in the Preschool Classroom module. RIP classrooms provide training settings for parents as they work with each other's children. The classrooms are also settings in which children acquire or refine skills necessary to function effectively in educational placements outside RIP. The classrooms operate under the daily supervision of coordinators from the parent staff. All assisting teachers, with the exception of a limited number of volunteers and practicum students, are enrolled parents. All assisting teachers must complete a standard set of training objectives before assignment to a classroom is made. Developmentally appropriate room organization, furniture, equipment, materials, and scheduled activities in RIP classrooms are comparable to those found in other early childhood centers.

Point-in-time data samples are collected for each child an average of once each week to assess levels of appropriate behavior, inappropriate behavior, and peer interactions across activities. Data-based observations guide movement of the children across classrooms, from those emphasizing social behavior to those emphasizing a wider array of preacademic skills. Data-based observations of adult performance aid parents in generalizing basic instructional and management skills from the group setting to application in their own family situations.

The Child Care/School Intervention module is available to actively enrolled families, particularly in the evening program, whose children are experiencing significant problems in a community-based program. Module coordinators are parent staff members who obtain information from child care or school representatives and parents, observe the child in the community-based settings, and, if necessary,

collaborate in the design and implementation of behavioral interventions in those settings. Members of the AmeriCorps* RIP Partnership Program, in place since 1996, provide direct assistance to teachers during intervention activities.

The Referral and Enrollment module coordinates the intake process. Information is provided to inquiring referral agents and families by telephone, mail, and e-mail. Interested families are invited to visit, usually within 3 to 5 working days following initial contact. These visits, which include conversations with participating parents and observation of the program in operation, are conducted by a parent. The module also coordinates extensive public education activities about RIP, including presentations, workshops, and program tours.

The Administration module, coordinated by the director, is responsible for meeting funding, staffing, physical facility, licensure, and accreditation requirements necessary for continued program operation. The Media module, coordinated by a parent staff member, is responsible for the development and management of an extensive library of videotaped instructional materials used daily within the program. The Liaison module, coordinated by a parent staff member, provides assistance to families who have completed the treatment and payback phases. Eligible families may request consultation, information, or direct intervention help with problems being experienced at school or at home for an unlimited time following completion of RIP.

Management and Evaluation

RIP operations are guided by a management-by-objectives (MBO) system developed in 1972 and refined over time. The first tier of the RIP MBO system comprises objectives from intervention programs implemented by individual families or involving individual children in the Preschool Classrooms, Social Skills Training, and Child Care/School Intervention modules. Objectives, procedures, measurement methods, and behavioral criteria are established. Parents, case managers, and resource staff members review data regularly and make decisions jointly regarding continuation or alteration of each objective. A typical first-tier objective is summarized as follows:

CHILD: JOSEPH P.

Program Name: Aggressions/not respecting the space of others

One adult is designated to "shadow" Joseph and prevent or block aggressions and invasion of peers' space throughout the evening. Prior to each activity, provide specific instructions to Joseph regarding appropriate behavior, inappropriate behavior, and consequences.

When Joseph:

Keeps all body parts to himself, treats peers appropriately, and respects the property and personal space of peers,

You:

1. Provide specific, positive attention intermittently.
2. Give him a sticker for his special chart at the end of the activity.
3. Take him for a Little Tykes car ride for every two stickers earned.

When Joseph:

Invades space of peers or grabs their property; hits, bites, kicks; throws toys or objects or tips over furniture,

You:

1. Attend to the victim while redirecting Joseph to the activity and neutral space.
2. At the end of the activity, tell Joseph why no sticker has been earned and how he can earn a sticker for the upcoming activity.
3. Remove the thrown object or toy for the remainder of the evening.

Criterion: The program is discontinued when two or fewer incidents occur during 5 of 7 consecutive days.

First-tier output data from family sessions, home programs, and classroom and social skills programs, as well as selected program data (e.g., family attendance, parent functioning on module training tracks, consultant utilization logs) are used to create and evaluate sets of family objectives that comprise the second tier of the MBO system. These objectives address individual child and parent performance using measurement methods based on specific behavioral criteria. The objectives are evaluated and revised in collaborative efforts

involving the parent(s), case manager, and resource staff member at 6-week intervals throughout each family's period of enrollment. The cumulative set of 6-week objectives serves as the master treatment plan for each family. A typical second-tier objective follows.

BST MODULE INDIVIDUAL SESSIONS

Objective 1.2.0: Differential Reinforcement I

Ms. B will demonstrate the ability to distinguish between acceptable and unacceptable child behavior and to respond differentially to each type of behavior by providing or withholding attention as quickly as possible following the behavior. This demonstration will occur in structured play sessions with "K" in the BST module area.

Measurement Method

Given a minimum of six BST sessions in which there was an average of 20 intervals of child oppositional behavior, Ms. B conducts three consecutive sessions with at least 85% cooperative child behavior and less than 15% adult attention to oppositional child behavior.

The third tier in the RIP MBO system contains modular objectives that are evaluated at 6-month and annual intervals. The director and resource staff members are responsible for management of the various modules and are accountable for aggregate results to the two RIP evaluation committees (i.e., morning and evening programs). The committees are composed of a majority of current and former RIP parents and invited community members. Each committee meets quarterly to review objectives and outcome data from the RIP modules. The committees may require and must approve additions, deletions, or modifications to the objectives. Structural program modifications in response to evaluation data are negotiated between the RIP staff and the committees. A typical third-tier objective follows.

PRESCHOOL CLASSROOM MODULE: EVENING PROGRAM

Objective 1.1.0: Target Child Behavior

To decelerate inappropriate child behavior and to establish and maintain

acceptable levels of appropriate child behavior during selected classroom activities.

Measurement Method: (a) Initial Level
Of all target children in Classroom One and Classroom Two who meet their attendance objective, 90% will achieve an initial level of 75% appropriate behavior for 5 of 7 consecutive data points during group and table activities, respectively.

The RIP Network

The RIP Expansion Project has been the original program's training and replication component since 1974. A total of 27 new program sites in the United States, Canada, Venezuela, and Brazil were opened between 1974 and 1999. Approximately 11,200 families were served by the RIP network from 1969 through 1999. As of May 1, 2000, the active RIP network comprised the original program in Nashville, Tennessee, and 16 certified replication sites.

Core Innovations and Program Adaptations

Adequate examination of any program model in continuous operation for 30 years in multiple locations must include consideration of the extent to which the program's original structure and approach have been modified. It appears that the basic RIP program model, in which consumers of the service function simultaneously as key staff members, contains an intrinsic predisposition—as well as the capability—to respond to changing needs. By the same token, some fundamental elements of this unique program model have required safeguarding. These core innovations are based on the following precepts:

1. Access to preventative, early-intervention services for families of young children with special needs must not be impeded by barriers associated with source of referral, diagnosis, or ability to pay.
2. Family members as primary agents of change provide the most cost-effective impact and represent the most plentiful pool of resources for early-intervention activities.

3. Early-intervention systems employing applied behavioral analysis technology, with strong reliance on data-driven intervention methods and program management, represent the most effective means of enabling family members to serve as primary agents of change.
4. Skill development for family members is best achieved by reliance upon an action-oriented learning approach utilizing brief preparatory instruction, monitored application, and immediate, supportive feedback.
5. Veteran family members within an intervention system represent the single most valuable resource available to new families, serving as direct sources of support and as accessible role models. Moreover, the sustainability of intervention gains by veteran family members is greatly enhanced through mentoring relationships with new families.
6. Roles for professional staff members should focus upon program management, technical assistance consultation, and community education functions. Family members should implement all adult-child and the majority of adult-adult intervention activities within the system.

The challenge has been to support the sustained presence of these core innovations within each RIP program while adapting the structural forms within which the innovations reside. Some examples of methodological adaptations across time and sites include (a) increased utilization of multiple settings for adult and child training activities to maximize generalization effects; (b) reductions in the use of overcorrection, restitution, restraint, and seclusion timeout procedures with children; (c) significant reductions in the use of edible reinforcers for consequence of child behavior; (d) introduction of various incidental teaching procedures in skill acquisition programs for children; and (e) reliance upon different mixtures of instructional formats within the program involving structured adult-child interaction sessions at the center and in community settings, parent work groups, home program reviews, and videotaped instruction.

Some examples of structural adaptations include (a) development of evening programs to accommodate families; (b) development of supplementary father's programs for enrolled families; (c) development of an Hispanic RIP

in an American city as well as establishment of certified programs in Caracas, Venezuela, and Manaus, Brazil; (d) modification of the pay-back component to permit a variety of third-party payment arrangements; (e) reduction of required visits per week and hours per visit to respond to family schedules; and (f) placement of certified programs within a variety of sponsoring agencies, including outpatient divisions of psychiatric hospitals, pediatric divisions of medical hospitals, community mental health centers, public education systems, universities, and Children's Aid Society systems in Canada.

RIP Long-Term Follow-Up Study

Phase I

The initial cohort of families (40) involved in the long-term follow-up study were served by RIP between 1969 and 1978. Most families were scheduled to attend a minimum of four 3-hour sessions each week. All families who entered the program with oppositional children during this time were assigned to the Generalization Training (GT) treatment module (now identified as the Behavioral Skills Training module). Each family in GT proceeded through a predetermined sequence of treatment.

During baseline, several days (usually 3 to 5) of nonintervention were used to assess the child and parent problem behaviors and establish a stable level of behavior from which to judge the magnitude and direction of behavior change during treatment. Typically, families in baseline remained only long enough each day to conduct one or two adult-child interaction play sessions and to provide program staff with descriptions of child behavior at home and in community settings. Parents received necessary information about program organization and participation requirements, but every effort was made to shield them from exposure to details regarding specific treatment procedures.

The second stage of the treatment, designated Differential Reinforcement I (DRI), introduced parents to various social learning techniques. Instructional procedures included written materials describing recommended techniques, group theory classes led by veteran parents, modeling (live and videotape), structured adult-child interaction play sessions of 20 minutes duration (described more fully

later), and daily feedback on performance. This stage continued until child behavior was appropriate 85% of the time across three consecutive interaction sessions and parent attention was correctly applied to appropriate behavior 85% of the time across a similar number of sessions. During DRI, families were scheduled to remain for the entire 3 hours each visit. With the exception of the daily interaction sessions with their parents, children remained in an assigned classroom setting and a 30-minute recreational setting each visit. Following initial training, parents served as assisting teachers in one or more of the four classrooms or the nursery (typically not in the same area as their own children) and participated in other group and individual activities such as theory class and parent meetings.

The third treatment stage, Reversal, lasted from one to three interaction sessions. Parents were instructed to attend to any oppositional behaviors and ignore all cooperative responses, the exact opposite of prescribed procedures during DRI. This stage was designed for two purposes: to provide a demonstration of functional control over oppositional child behavior and to provide parents with a powerful example of the relationship between their behavior and their child's improved performance. Some parents expressed initial concern that the Reversal sessions might jeopardize progress to date by encouraging the child to revert to earlier patterns of oppositional behavior. Prior to and throughout this stage, parents received reassurance from other parents who had successfully completed the entire program, including Reversal, that their own progress had been enhanced as a result of the experience.

During the fourth treatment stage, Differential Reinforcement II (DRII), parents once again provided positive social responses to cooperative behaviors and continued to ignore oppositional behaviors in the interaction sessions. Parents also were given specific instructions in DRII regarding the systematic reduction of levels of reinforcement for cooperative child behaviors. In addition, individually designed interventions were introduced in home and community settings. For a number of years (i.e., 1971–1975), program staff conducted a limited number of home visits as permitted by families to observe implementation of recommended procedures in that setting. The DRII phase continued until child cooperation was maintained in the home and the clin-

ic at least 85% of the time under conditions of minimal adult attention. It was not unusual for cooperative behavior to maintain at criterion levels with five or fewer parent attention events per 20-minute session.

Thus, each of the 40 families in Phase I participated in an ABAB, reversal treatment design during their active participation in RIP. This test of initial treatment efficacy is a key foundational step to establishing long-term efficacy. To date, over 1,300 families have completed the ABAB protocol. Figure 1 presents a composite display of parent and child data from the ABAB protocol for the initial follow-up cohort of 40 children. As the figure indicates, data paths across conditions show clear functional effects between active intervention and comparison (i.e., baseline or reversal) stages. To demonstrate the magnitude of behavior change achieved across the 40 families, the percentage of nonoverlapping data (PND) between baseline and intervention stages was calculated for each case (Scruggs, Mastropieri, & Casto, 1987). Across all participants, the mean PND, or the percentage of intervention phase data points that exceeded the highest baseline data point, was 92%, indicative of a highly effective intervention (Mathur et al., 1998).

Participant Selection

A total of 69 families in the Nashville, Tennessee, area who were clients of RIP from 1969 to 1978, comprised the initial sample for this follow-up. These 69 families were selected at random from case files of participants who completed all stages of intervention. Previously, Strain, Young, and Horowitz (1978) reported that 70% of families completed all intervention stages. Furthermore, these researchers showed that two family characteristics were associated with intervention completion: family intactness and race, with Anglo-American families showing more completion. In the Strain and colleagues' (1978) database of 213 RIP clients, intact families were represented at a ratio of 4 to 1 and Anglo-American families were represented at a ratio of 4 to 1. This same ratio characterizes the final sample of 40 families. Criteria for selecting families from this sample were that (a) the children had entered or completed the first grade; (b) the families currently resided within easy driving distance of Nashville; and (c) the families were referred to the program

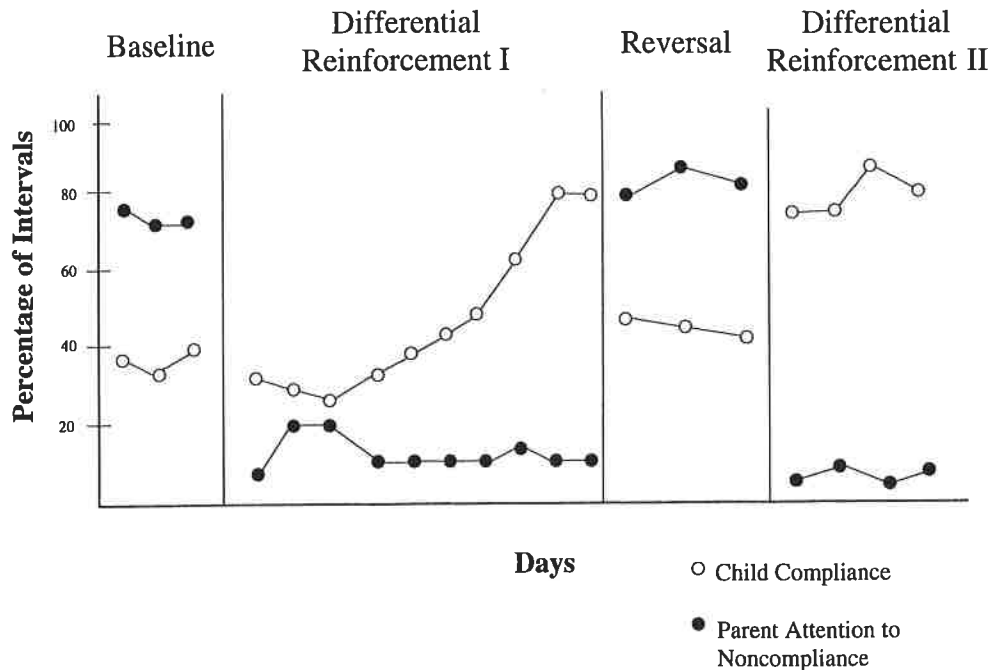


FIGURE 1. Parent and Child Data from the ABAB Protocol for the Initial Follow-Up Cohort of 40 Children.

originally because of child oppositional behaviors (e.g., refusal to follow requests, tantrums, aggression toward parent). The final group of 40 families represented 90% of the total number of families who met the criteria just listed and agreed to participate. Of these, 33 families were white and 7 were African American. These criteria resulted in a group of former clients who had not been involved in treatment for a period ranging from 3 to 9 years. As toddlers and preschoolers, this group of 40 children had engaged in a wide variety of challenging behaviors. Data collected from an initial presenting problem checklist revealed that over 50% of this group entered the program with the following behavioral concerns: persistent tantrums, refusal to obey requests, physical abuses of parent(s), negative interactions with peers, sleeping problems, and failure to recognize danger. Less frequently cited concerns included inappropriate toy play, running away from caretakers, not being toilet trained, and poor self-help skills.

The 40 former clients were located in their elementary and middle school classes with the aid of parents. To preserve client confidentiality and to reduce reactive observational effects, all children in each designated class

took home a permission letter for inclusion in a study on school adjustment. Then, four same-sex and -age peers were selected randomly in each class along with the target child. A total of 160 class peers, 132 males and 28 females, were selected for observation and teacher ratings in the school setting. Absenteeism by 3 students during the course of the study reduced the final number of class peers to 157.

General Observational Procedures

Data on former clients and class peers were taken in two school settings: (a) group academic instruction, where the teacher was presenting a lesson to the entire class; and (b) unstructured recess or gym. Observers collected data in both settings for three 30-minute sessions. All class and home observations were completed within 3 weeks. Three 30-minute home sessions were scheduled immediately preceding or following the evening meal. Parents were asked to instruct all family members to be at home, not to turn on the television, not to make any phone calls, and to limit the length of incoming calls during the sessions.

Behaviors Observed in School and Home

Adult (i.e., teacher, aides, student teacher) and child behaviors recorded during school observations included (a) adult command, demand, or request; (b) repeated command, demand, or request; (c) positive social reinforcement; (d) negative feedback; (e) compliance to adult command, demand, or request; (f) noncompliance to adult command, demand, or request; (g) on-task behavior; (h) off-task behavior; (i) positive social behavior with peers; (j) negative social behavior with peers; (k) appropriate nonsocial behavior; and (l) inappropriate nonsocial behavior. Adult and child behaviors recorded in the home included all the categories just listed with the exception of on-task and off-task behaviors. Child and parent categories were selected because of their correspondence with initial treatment goals and current relevance to socially validated indices of adjustment (Strain et al., 1983). Adult behavior categories were selected because of their often demonstrated functional control over socially significant child behaviors.

Observational Procedures

The following sequence of observation was in effect for each 30-minute school session: During the first minute, the former client was observed, followed by Peer 1 the second minute, the RIP client the third minute, Peer 2 the fourth minute, and so on. Thus, for each 30-minute session, 15 minutes of data were collected on the former client and 15 minutes on peer group members. As soon as any of the target behaviors occurred, they were recorded; however, only one occurrence of each category could be entered in a 10-second interval. Using this system, it was possible to have intervals scored with incompatible behaviors (e.g., on-task, off-task). Positive and negative interactions were entered on a coding sheet such that it was possible to determine whether a target child or another child initiated these behaviors. During the three 30-minute home observations, the former client and parents were the focus of observation. Therefore, only social exchanges in which this child was a participant were recorded. With this exception, all other procedures for collecting data in school were used during home observations.

Observer Training and Reliability Assessment

Eight observers received 40 hours of training over a 3-week period on school and home

observation systems. Prior to data collection, each observer had to reach a level of 90% agreement with a second observer on three 30-minute sessions. Agreement was calculated on an interval-by-interval basis for each category of behaviors scored. On 17% of all 30-minute observation sessions, observer agreement was assessed.

Problem Behavior Checklist

In school, the former clients' primary teacher completed a modified version of the Walker Problem Checklist (Walker, 1970) for these youngsters and each of the four classroom peers. The checklist, which contains 50 problem statements, calls for the rater to determine whether each statement is or is not applicable to the child in question. Nine new items were interspersed throughout the inventory. Each new item represented some index of academic problems; for example, retention in grade, referral for specialized testing, assignment to a special education class, and a failing grade in an academic subject, were assessed. One parent, usually the mother, completed the Walker checklist.

Results

Observer Agreement. The overall percentage of interobserver agreement across all categories ranged from a low of 90% (i.e., on-task; negative feedback) to a high of 97% (i.e., appropriate nonsocial; noncompliance to adult command, demand, or request).

Adult and Child Behaviors in School. Adult behaviors directed toward the former clients and class peers were similar. Specifically, 52% of the instances of commands, demands, and requests were directed at former clients, with the remainder aimed at peers. Given the occurrence of child noncompliance, there was a .10 probability that adults would direct another identical request to former clients and a .12 probability of this occurrence for class peers. Instances of positive social reinforcement rarely occurred. Adults reinforced former clients' compliance 4% of the time and peer compliance 5% of the time. On-task behavior by former clients and peers was reinforced on the average, 2% and 1% of the time, respectively. Occurrences of negative feedback also were observed infrequently. Given an episode of child noncompliance, adults gave former

clients and peers negative feedback 12% and 14% of the time, respectively.

During group academic instruction, former clients and peers maintained a high level of compliance. For the former clients, compliance occurred, on the average, following 89% of the commands, demands, or requests, with a range across children of 60% to 100%. Averaged data for classroom peers showed that 87% of commands, demands, or requests were met with compliance, ranging from 53% to 100%. An examination of on-task behavior levels during group academic instruction also showed a close correspondence between former clients and peers. Former clients were observed to be on task during an average of 85% of the recording intervals, ranging from 69% to 100%. The classroom peers were observed to be on task during 87% of the recording intervals, ranging from 52% to 100%. When the children were observed during unstructured free play or gym, former clients and peers consistently engaged in behavior appropriate to this setting. Former clients and peers averaged 90% and 93% of the recording intervals engaged in appropriate behavior, respectively. Appropriate behavior levels ranged from 80% to 100% for both groups. The positive and negative interaction patterns of former RIP clients and class peers were similar also. The results of *t* tests comparing both groups of children on each of the behavior categories observed in school revealed no significant differences.

A variety of statistical procedures were used to assess the relationship between demographic characteristics and follow-up school measures. Multiple linear regression was used to investigate whether any of the following variables were predictive of performance on any of the child behavior categories: sex of client; race of client; birth order; number of siblings; percentage attendance during scheduled client sessions; mother's age; family intactness (i.e., presence of mother and father in home); family income level; mother's educational level; years away from the program; age at which treatment began; rapidity with which child met initial behavioral criteria in treatment; and rapidity with which mother met initial behavioral criteria in treatment. The only demographic characteristic that predicted outcome measures was age at which treatment began. Specifically, this variable was related to current levels of compliance, on-task behavior, and positive interaction initiated and

received. On these four outcome measures, the earlier treatment began the more favorable was the current level of behavior.

The demographic variables also were studied independent of one another, using one-way analysis of variance to study the influence of dichotomous variables (i.e., sex, race, family intactness) and Pearson product moment correlation coefficients to examine the influence of continuous variables, (i.e., birth order, number of siblings, mother's education level, years away from the program) on all possible outcome measures. Once again, the only statistically significant finding was associated with the age at which treatment began variable. Here, moderate negative correlations were found between age at which treatment began and positive interaction ($-.23, p < .10$), compliance ($-.38, p < .05$), and on-task behavior ($-.26, p < .10$).

Parent and Child Behavior in the Home. With few exceptions, parents engaged in patterns of interaction with their child that resembled the management skills taught 3 to 9 years previously. On 25% (range across parents, 18%–40%) of the available opportunities, parents provided positive social reinforcement to their children for compliance. On the few occasions when noncompliance was observed, no negative feedback or repeated requests were observed. There was no evidence that parents responded differentially to their children when they engaged in appropriate or inappropriate nonsocial activity.

Former clients complied, on the average, with parents' commands, demands, and requests on 82% of the occasions (range across children, 70%–97%). Inappropriate nonsocial activity by former RIP clients seldom occurred in the home setting. Less than one half of 1% of the total number of observation intervals were scored as containing an episode of inappropriate nonsocial activity. Examining the social interactions of former RIP clients in their home settings revealed two major trends. First, over 97% of all interaction episodes were positive in nature (range across children, 85%–100%). Second, the positive social exchanges in which these children participated were reciprocal. That is, there were nearly equal percentages of interactions initiated by former clients (52%) and social partners (48%).

Multiple linear regression procedures were used to investigate whether any of the

demographic characteristics mentioned earlier were predictive of former client behavior at home. Only two demographic variables were found to predict current performance. Age at which treatment began was associated with current levels of compliance and positive social interaction. For each of these outcomes, earlier treatment was related to more favorable levels of behavior. The other demographic variable related to child behavior in the home was family intactness, which was associated with compliance only. Intact families tended to have children who were more compliant.

The demographic variables also were studied independent of one another, using one-way analysis of variance to study the influence of dichotomous variables and Pearson product moment correlation coefficients to examine the influence of continuous variables on all child behaviors in the home. Age at which treatment began was highly correlated with child compliance ($*.49, p < .05$), positive interaction ($*.52, p < .05$), and appropriate nonsocial behavior ($*.62, p < .05$). Intact families had children who were significantly more compliant ($F = 4.76, p < .01$).

Problem Behavior Checklist Data. Data from the Walker Problem Behavior Checklist revealed four primary outcomes. First, there was a highly significant positive correlation between teacher- and parent-completed checklists on former clients ($.81, p < .01$). Second, the teacher ratings of former clients and class peers were remarkably similar. On the average, teachers identified 8 problem behaviors for former clients (range, 0–40) and class peers (range, 0–50). A *t* test between the groups' ratings did not approach statistical significance. Third, none of the former clients had been referred previously for specialized testing or special services because of behavioral problems. Several of the children in both groups had experienced academic learning problems (i.e., retention in grade, placement in a special reading group). Finally, children's ratings on the checklist were found to correlate significantly with a number of the observational measures. Specifically, there were significant negative correlations between the number of identified problem behaviors (scored by either teacher or parent) and clients' level of on-task behaviors ($*.59, p < .05$), compliance ($*.64, p < .05$), and positive interaction in school ($*.61, p < .05$). In the home setting there were significant nega-

tive correlations between problem behaviors identified and compliance ($*.48, p < .05$), positive interaction ($*.62, p < .05$), and appropriate nonsocial activity ($*.56, p < .05$).

A more complete presentation of these Phase I data can be found in Strain and colleagues (1982).

Phase II

Phase II of the long-term follow-up study involved two distinct components. First, 23 additional families were recruited to participate in the home-based observational component described previously. Like the original cohort, these 23 families were also 3 to 9 years away from intervention at the time of observations. These 23 families were served by the RIP program from 1986 to 1995. Criteria identical to those used in Phase I were used to select the participants. This replication cohort provided an important test of RIP treatment procedures in that there was a 100% turnover in professional and family staff from the Phase I treatment group.

Home Replication Results

Observational tactics identical to those employed in Phase I were used. Essentially, the results for the new cohort replicated Phase I data. For example, Phase I clients complied an average 82% of the time to parental requests. Phase II clients complied an average of 85% of the time (range, 70%–100%). Phase II clients' interactions were coded as positive on 95% of all occasions (range, 89%–100%) as compared to 97% for Phase I clients.

Parental behaviors for Phase II clients were also similar to those observed for Phase I clients. Both cohorts delivered positive social reinforcement for compliance on 25% of the available occasions. Whereas no occurrence of repeated requests followed noncompliance for Phase I families, one family in Phase II engaged in repeated requests following episodes of noncompliance.

Similar to Phase I, age at which treatment began was the one demographic variable that predicted later performance. Here, significant Pearson correlations were noted between age at which treatment began and compliance ($*.63, p < .05$) and between early starting and positive interaction ($*.58, p < .05$).

Adult Status of Original Cohort

The second component of Phase II involved a series of former adult and child client interviews to establish indices of functioning throughout adolescence and early adulthood for the original cohort group from Phase I. Child clients were 25 to 32 years of age at the time of interviews. The results of these taped interviews are presented next according to various status indices that were probed during the semistructured interviews.

Employment Status. All but one child client was either employed or in graduate school. These individuals were in diverse employment roles, including educators, homemakers by choice, salespersons, computer programmers, and mechanics. All former clients were working in career ladder positions. On average, former clients had made one job change during their limited work careers.

Education History. All but one client had graduated from high school, and 50% had completed college. Four individuals had or were completing graduate degrees. Throughout the junior high and high school years, no former client had been enrolled in special education. Adult client interviews suggested that they and their children experienced the usual litany of challenges throughout schooling, including being teased, running with the crowd, bringing home a surprising report card, and driving and dating debates.

Problem Behavior History. Throughout adolescence and adulthood, there were no reported instances of aggression or antisocial behavior except for one former client who was caught shoplifting. On related issues, no incidents of gang membership were noted, nor were the former clients recipients of repeated disciplinary actions at school. In sharp contrast to their preschool behavior, the former child clients were now described by their parents as sensitive toward others, loving, and well adjusted. Some 50% of the former clients now have young children themselves. None of these children are described by their parents as having challenging behavior, and former adult clients generally describe their adult child's parenting skills as outstanding.

Adult Client Perspectives

Given the former adult clients' unique quarter-century perspective on their early intervention experience, a number of interview questions focused on how they viewed the RIP experience as well as their adult children. Specific protocol questions and the three highest-probability responses (in order of occurrence) to those questions are listed in Figure 2.

Former adult clients also completed a rating scale describing the acceptability of various RIP intervention strategies. That scale and the average rating for each strategy are shown in Figure 3.

Discussion

The results of evaluation studies on RIP clients show that (a) the initial treatment experience yields predictable and replicable outcomes for adults and children (as exemplified by ABAB reversal designs); (b) outcomes for children and adults maintain for periods ranging from 3 to 9 years, based on direct observational assessments in school and home settings; (c) these intermediate follow-up results are strongly influenced by early enrollment in the program, with children who began at the earliest ages experiencing more favorable outcomes; (d) the 3- to 9-year follow-up results for home-based observation are replicable across clients who received treatment from an entirely different intervention staff; (e) adolescent and adult outcomes indicate long-term maintenance of treatment gains; and (f) former adult consumers consider RIP intervention strategies to be highly acceptable.

Considering the ABAB reversal design data from clients' intervention experience, the 1,300 cases may well be the largest data set on the efficacy of any early intervention program. Not only do the sheer number of cases speak to the short-term general efficacy of RIP strategies, but the diversity of this group across demographic variables is significant as well. For example, we have shown earlier (Strain, Young, & Horowitz, 1978) that these short-term effects are not influenced by child sex or race or by family income and primary intervention agents' educational level. By contrast, it appears that more traditional, professional clinician models of parent training may not be as broadly beneficial as this parent-mediated model (see Webster-Stratton, 1997). Simply put, the probability of a match in life experi-

<ul style="list-style-type: none"> * Were there one or two things gained from the RIP experience that continued to be of benefit? <ul style="list-style-type: none"> Positive reinforcement. Ignoring inappropriate behavior. Relationship with others. * In general, how would you assess your child's greatest strengths as of today? <ul style="list-style-type: none"> Intelligent/high achiever. Loving and caring. Hard worker. * What about areas needing improvement? <ul style="list-style-type: none"> Strong willed. Can be taken advantage of. None. * What is your best estimate of why behavior concerns existed during the preschool years? <ul style="list-style-type: none"> Born that way. Lack of parenting skills. Conflict in the family. 	<ul style="list-style-type: none"> * What are your strongest memories of the RIP experience? <ul style="list-style-type: none"> Pain of my child's aggression. Learning new skills from other parents. Reversal. * What is your overall perception of your child at present? <ul style="list-style-type: none"> Good, mature person. Happy, does what she or he wants. Could be more emotionally mature. * If I had to do it all over again . . . ? <ul style="list-style-type: none"> Go to RIP sooner. Get help for entire family. Do the same.
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FIGURE 2. Protocol Questions and Responses.

ences between a cadre of experienced RIP parents and new parents is far greater than one might expect between a single or a few professional clinicians and a diverse client pool. Significantly, interviews with former adult clients confirmed that the accessibility of a person who had "walked in their shoes" was a key to their success. For these clients, "walking in their shoes" was not simply a matter of shared experience with a troubling child. It was also a matter of sharing other common experiences around factors of race, income level, and religion.

Our initial snapshot of former child client performance 3 to 9 years away from RIP is encouraging, particularly in light of the fact that follow-up studies have seldom gone beyond 4 years (see Webster-Stratton, 1997). On school observational and rating measures, these 40 children were indistinguishable from class peers on all indices. While one might lament the absence of a control or comparison treatment group for this stage of the RIP evaluation, we find no evidence to suggest that this

population experiences anything but a negative developmental course in the absence of effective intervention (Dodge, 1993; Kazdin, 1987; Walker et al., 1995). In fact, existing follow-up studies of parent training have shown behavioral improvement at home but not at school (Breiner & Forehand, 1981). At the same point in time, home observations suggested that these children and their family members were having interaction patterns that were overwhelmingly positive and the antithesis of the coercive patterns of social exchange reported in the literature for this population of antisocial children studied at this age level (Patterson, 1986; Patterson & Bank, 1989).

Both home and school results were influenced by the age at which children were enrolled at RIP, with younger children having superior outcomes. While we have no definite explanation for this age-at-start association with later outcomes, our follow-up interviews may lead to some probable operational variables. Former adult clients spoke uniformly of their frustration, feelings of hopelessness, and

1 = Never, 2 = Seldom, 3 = Occasionally,
4 = Most of the time, 5 = Always

1. RIP staff members were open, forthcoming, and interested in my concerns. (4.77)
2. The handouts and videotapes used at RIP were helpful. (4.38)
3. RIP staff explained to me why I needed to do certain things with my child. (4.77)
4. RIP staff explained to me why I was expected to go through a series of steps in the program. (4.72)
5. Other parents in the program provided help and encouragement. (4.17)
6. Using RIP procedures in public places like the grocery store was easy. (3.81)
7. When I used RIP procedures around people who did not understand them, I felt embarrassed. (2.30)
8. RIP procedures were readily accepted and used by other adults in our family. (3.49)
9. The parent-child interaction data used at RIP were helpful to me. (4.21)
10. Learning how to take data was helpful to me. (3.86)
11. If a friend asked me whether they might find RIP helpful, I would recommend the program. (4.43)
12. Compared to other educational or related service programs that I have encountered, I found RIP's ability to meet my family's needs: ___ (1 = Far less than expected, 2 = Somewhat less than expected, 3 = About what was expected, 4 = Slighter better than expected, 5 = Far better than expected). (4.43)

FIGURE 3. RIP Intervention Acceptability Rating Scale.

feelings of worthlessness prior to enrollment. It seems reasonable, for example, that caregivers who experience 2 years versus 2 months of these feelings would bring a different level of challenge to any therapeutic endeavor. We should note also that children's initial level of oppositional behavior in Baseline was not a

predictor of outcome, nor was the level of caregiver attention to these behaviors. Even with a system of service delivery with minimal or no diagnostic, referral, or fiscal barriers to intervention, it is clear from the interview data that far too many former RIP clients suffered too long and needlessly in their search for help. Availability of and access to high-quality service are indeed issues of profound importance in this arena. Solving the availability and access problem is, however, only part of the systems change challenge. As many adult clients expressed, the stigma of seeking services for a child they couldn't control was a major factor in their hesitancy to seek help.

To our knowledge, the adult follow-up phase of this study provides the only data of this kind on individuals who engaged in serious antisocial behavior in their preschool years. By all standards, the former RIP clients are well-adjusted, competent, and happy adults. While we know of no comparable treatment outcome data, it is clear that adults who have received no or ineffective intervention during their early childhood years often present with a tragic profile characterized by psychiatric illness, incarceration, unemployment, and explosive exchanges with others (McCord, 1978; Olweus, 1991).

We caution the reader against the notion that the age-related effects in this study indicate some universal critical period for children with aggressive behaviors. In fact, children may begin their aggressive, antisocial careers throughout childhood. The clinical issues are timeliness and developmental relevance of preventative measures. To address adequately the full range of children who engage in aggressive, antisocial behavior, we must develop a corresponding array of programs (Conduct Problems Prevention Group, 1999a, 1999b). Some of these programs may well be parent mediated; others will undoubtedly be school based; still others may require a multi-setting, multiagency approach.

Conclusion

While it has been commonplace in psychology and education to attribute positive adult outcomes to the sole influence of some planful early intervention on children's behavior in the distant past (e.g., Schweinhart & Weikart, 1993), the very nature of the RIP intervention demands a more interactive and contemporaneous conceptualization of long-term out-

comes. In effect, the RIP experience for families put into place an *ongoing* intervention in the form of enhanced parenting skills. Both follow-up observations in the home and interviews with former adult clients confirm the continuing use of RIP strategies throughout childhood, adolescence, and into adulthood. As one former adult client put it, "They [the strategies] became like second nature, like something your Mama taught you. I guess they'll always be with me." Other respondents' comments reflected a similar theme and further highlighted their continuing role as active intervention agents. As one former client said, "RIP didn't make my son perfect, but it gave me ways to deal with problems as they came up." At this point, it is our best estimate that the power of RIP in influencing long-term child outcomes is directly related to adult family members' adopting a few simple behavioral strategies that they continue to use to this day. In turn, we suggest that the continued use of these strategies was and is dependent upon their acceptability to the consumers.

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