*OUTCOME EVALUATION OF BEHAVIORAL PARENT
TRAINING AND CLIENT-CENTERED PARENT COUNSELING
FOR CHILDREN WITH CONDUCT PROBLEMS¹*

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The central question addressed was, how effective is parent training in reducing conduct problems in children in comparison to client-centered parent counseling? A secondary question was the relative effectiveness of the two treatment groups in comparison to a wait control group that when untreated during the 8-week period of treatment provided the other groups. Families of 36, 5- to 12-year-old conduct problem children were screened and assigned at random to treatment groups, but wait control group assignment depended upon therapist availability. Supervised graduate student therapists conducted 10 treatment sessions for each family. Parent reports and paper and pencil tests of child deviance and parent satisfaction showed a superior outcome for behavioral over the client-centered and wait control groups, and no differences between the latter two groups. At follow-up there was no maintenance of this superiority. Home observation data showed no advantage of behavioral over client-centered treatment, and these two groups did not improve significantly more than the wait control group. These results were discussed in the light of possible interactions between treatment and measurement, and methodological and sampling differences between this and other studies.

DESCRIPTORS: parent training, evaluation, control groups, client-centered counseling, conduct problem children

The development and evaluation of interventions that alter antisocial behaviors are important because children who show antisocial patterns have the highest risk, among children with other types of deviant patterns, for psychiatric disability as adults, particularly for juvenile

delinquency and crime (Robins, 1966). The terms "socially aggressive" and "conduct problem" have been variously applied to them. Children with these behavior patterns have been found to be among the most frequent consumers of mental health services for children (Anderson & Dean, 1956) and there are increasingly

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¹The following materials may be obtained from the senior author on request: manuals and readings for the training in both therapies, a manual for the coding system that includes thorough description of the system and reliability and validity information, and a more complete description of the sample.

mounting costs of loss of income, legal action, hospitalization, and crime prevention as the children grow up (Gray, 1979).

In recent years, behavioral interventions that focus on training of parents as effective change agents for children with conduct problems have been widely used and evaluated. In a number of reports reviewed by Berkowitz and Graziano (1972), Graziano (1977), Johnson and Katz (1973), and Pawlicki (1970), investigators have concluded that behavioral parent training is an effective intervention for these children. However, much of the research has not incorporated important design features (Cone & Sloop, 1971; Graziano, 1977; Hartmann, Roper, & Gelfund, 1977; O'Dell, 1974; O'Leary & Turkewitz, 1978).

The most critical feature that has been lacking from most studies (e.g., Eyberg & Johnson, 1974; Ferber, Keeley, & Schenberg, 1974; Patterson, 1974; Weinrott, Bauske, & Patterson, 1979) has been control groups for ruling out alternative explanations for results attributed to treatment. Most important among these alternative explanations are maturation and nonspecific effects of treatment. The available evidence regarding maturation as an alternative explanation suggests that untreated conduct problem children do not improve in periods of 4 to 8 weeks relative to treated children (Karoly & Rosenthal, 1977; Peed, Roberts, & Forehand, 1977; Tavormina, 1975; Wiltz & Patterson, 1974).

The nonspecific effects of treatment are due to being in treatment, expecting improvement, and whatever benefits arise from contact with and attention from a therapist. Parent training interventions contain specific behavioral components (e.g., Patterson, Reid, Jones, & Conger, 1975) but it has not been established that these components, rather than the nonspecific effects of treatment, are the active therapeutic components. The few published efforts that address this alternative explanation have incorporated either placebo or comparison treatment control groups.

In the one published placebo group study, Walter and Gilmore (1973) evaluated the effects of "status attention" and expectancy as alternative explanations for improvement in a sample of socially aggressive children. Although children in the social learning group improved whereas the placebo treatment group did not, the former group received more therapist attention than the placebo group. Therefore, the contribution of the nonspecific effects of therapist attention and contact to the improvement of the children could not be isolated from the behavioral ingredients.

Use of a comparison treatment group design requires that the investigator control the alternative treatment procedures and produce objective data validating their use. In four different studies incorporating comparison treatment groups, parent training was found to be more effective than the comparison treatment. In three of them the families were sent to community agencies for comparison treatment, where the investigators did not have control over the treatment provided (Alexander & Parsons, 1973; Christopherson, Barnard, Barnard, Gleeson, & Sykes, 1981 in press; Barnard, Gant, Kuehn, Jones, & Christopherson, Note 1). In a fourth study, the investigator controlled the comparison treatment (Tavormina, 1975), but in none of these studies was there an empirical check on the independent variable.

In the present study, the central question was the effectiveness of a parent training approach for conduct problem children relative to a client-centered comparison group and a wait control group. Client-centered treatment was chosen because it was a legitimate treatment found to be effective with a variety of child problem behaviors (Tavormina, 1974). To provide control over the nature and quality of treatment, therapists for both treatment groups were trained within the study and an independent variable check as well as assessment of the therapists' views of the two treatments was conducted. Procedures to reduce dropout from posttreatment data collection were implemented so as

to facilitate generalization to the population of conduct problem children and their families. The central hypothesis of the study was that, on the home observation measures, behavioral treatment would be superior to client-centered and wait control groups, and client-centered treatment would be superior to the wait control group. Parent report and perception of child deviance measures were expected to favor the client-centered group, but no formal hypotheses were entertained for these measures.

METHOD

Subjects

Screening criteria. The Family Intervention Project staff represented themselves to the community as a clinic specializing in the treatment and evaluation of conduct problem children. Recruitment of families from a large metropolitan area was conducted through newspaper ads, contacts with school personnel, pediatricians, and clergy, and public service announcements on radio and television. In all cases, the parents themselves called in to request services. Subject children were screened during an intake call followed by an office appointment according to the following criteria: the identified problem child was 5 to 12 years old, had no debilitating physical impairment or intellectual deficit, was receiving no treatment at the time of referral and had no psychosis or history of psychological referral for other than social aggression, and demonstrated any or all of the following behaviors in the home: fighting, teasing, destructiveness, talking back, arguing, temper tantrums, and noncompliance. The families of these children were screened so that there were no more than six children in the family, there was no divorce or separation within the previous six months, in two-parent families both parents agreed to participate, and no counseling was being received regarding management of the problem child. Finally, families agreed to pay from \$1 to \$15 for each treatment session depending upon family income.

After children numbered 1-8 (Child 7 dropped out of treatment) were screened and admitted using the above criteria, it was noted that five of the eight children had home observation Overall Deviant scores below a mean for normal boys (Delfini, Bernal, & Rosen, 1976), and the parents of two of the children reported the occurrence of only one of the five behaviors they had targeted for treatment (Tailored Checklist). To ensure that subjects were truly in need of treatment, standard selection criteria were adopted. Sole reliance on home observation data as a screening criterion seemed unwise because of sampling and reactivity problems. Similarly, parent reports of targeted behaviors permitted no comparison to a normative mean and no assessment of interobserver reliability. The solution adopted was to add another measure for which normative data could be collected, even though interobserver reliability could not be determined. The Standard Checklist was generated and data on the occurrence of a set of problem behaviors in 74 normal boys were collected from parents via telephone (Bernal, Klinnert, Russell, Schultz, Bolstad, Rosen, North, & Chao, Note 2).

The concurrent use of the three measures increased the possibility of identifying children in need of treatment, yet avoided eliminating large numbers of children whose problem behavior was not reflected in a particular measure. Beginning with Child 9, all children who met the initial screening criteria were required to reach baseline a priori criteria on two of the following three measures: (a) observed Overall Deviant behavior rate that was above the mean for the normal sample of boys, (b) a Tailored Checklist mean occurrence score which was ≥ 1 SD of the scores for the first eight subjects of the sample, and (c) a Standard Checklist mean occurrence score that was ≥ 1.5 SD of the scores for a normal sample.

Of those children who met criteria, five dropped out of treatment. Despite the triple admission criteria, most subjects were those whose parents reported a high number of problem be-

haviors on the Tailored or Standard Checklists. While 58% of the sample met the criterion on the home observation variable, 92% met the criterion on the Tailored Checklist and 100% (of children 9-41) reached the criterion level on the Standard Checklist.

Description of the sample. The mean age of the children who took part in the study was 8.44 ($SD = 2.14$), and the average school grade was 2.94 ($SD = 2.12$). Five of the children were female and 31 were male. Eight of the 36 children were from mother-only families. The mean age of the mothers was 34.08 ($SD = 6.51$) and the fathers' mean age was 35.39 ($SD = 6.99$). The modal educational level for mothers was several years of college, whereas for fathers it was a college degree. The families' incomes ranged widely; the mean was \$12,850, and the SD was \$7,750. There were no significant differences among groups on any demographic variable. For married couples, mean scores on the short form of the Locke-Wallace Marital Adjustment Scale (Locke & Wallace, 1959) administered prior to treatment were 110.3 ($SD = 23.2$) for mothers and 104.9 ($SD = 21.7$) for fathers.

Subject payment. Subjects were paid \$50 to \$100 for participation in the posttreatment or second baseline (for the waiting list group) evaluation but forfeited \$10 for each treatment appointment that was not cancelled ahead of time. Families also were offered \$50 for participation in the 6-mo follow-up. If on follow-up they refused to allow observations but agreed to telephone calls, they were paid \$10.

Project timetable and group assignment. There was a 5-wk baseline period for all groups which consisted of twice per week home observations, twice per week parent telephone reports of child behaviors, and paper and pencil questionnaires filled out by parents at the end of the baseline period. When families completed baseline and met criteria, they were continuously assigned at random to behavioral or client-centered treatment until therapist and supervisor loads were full. Then random assignment was

made to all three groups, including waiting list. Treatment families waited brief periods to begin baseline, and waiting families went directly into the first baseline. The value of the wait control group was reduced using such assignment, even though this method approximated assignment patterns in clinics. The method was used in order to maintain referrals from community sources that might otherwise have referred clients elsewhere had they realized some families referred earlier would be kept waiting while others received service immediately.

The 8-wk treatment for the two treatment groups included 10, 1-h therapy sessions for each family and additional twice per week telephone reports. Immediately at the end of treatment there was a posttreatment evaluation which was identical to the 5-wk baseline evaluation. Waiting list families were told they would have to wait 8 wk for treatment, and that the evaluation would have to be repeated to have a current assessment of the child. These families continued in twice per week telephone data collection during the 8-wk waiting period, repeated the baseline measurement, and received group treatment.

Follow-up evaluations during the next year consisted of repetition of the 5-wk data collection periods at 6 mo and 1 yr after the end of treatment, followed by a telephone interview only at 2 yr.

Independent Variable

Therapists. Therapists were 14 clinical or counseling psychology graduate students. Three of the 14 therapists conducted both types of treatment, whereas the remaining therapists conducted either one or the other therapy. Therapists for the behavioral group were in graduate school an average of 2.17 years; for the client-centered group this mean was 1.75. Prior to their involvement in this project, all therapists had been trained in interviewing and relationship enhancement skills, had course work in the theoretical background and practical application of both therapies, and had varying amounts

of experience in one or the other therapy. For the few most experienced therapists, both client-centered and behavioral orientations were equally represented in both groups.

Therapist training. An extensive training program was conducted within the project for therapists of both modalities. The didactic training covered the conceptual frameworks for behavioral and client-centered therapies and included readings, viewing of videotapes, role playing, and general clinical skills. Special emphasis was placed on the therapists' presentation of a convincing rationale to the families for the type of therapy being implemented. Once therapists began treatment, discussion of treatment strategies and techniques using client material characterized the training.

The conceptual model for behavioral therapy suggested that change in parent behavior would result in change in child behavior, and that the parents would learn how to teach their own children more appropriate social behaviors. For client-centered therapy, the model suggested that change in parent and child behavior would result from the parents' exploration and clarification of their own feelings and expectations about their children and from the enhancement of communication with their own children.

Supervisors were three advanced graduate students and three PhD level psychologists, all of whom had previous training and experience with the type of therapy they were supervising. Supervisors observed all sessions, provided feedback, and aided the therapists' conceptualizations of treatment issues, goals, and strategies. Therapists spent at least 4 h per week in supervision and training once they began treatment.

Treatment. Behavioral treatment focused on training parents in behavior management skills for treatment of the children's home problems. Although treatment was tailored to the children, the basic behavioral skills were: (a) discrimination between both parent and child desirable and undesirable behaviors; (b) pinpointing of both parent and child undesirable behaviors and competing desirable behaviors

that would be appropriate in the given situation; (c) observation and recording of the pinpointed behaviors; (d) identification of effective child reinforcers and reinforcement systems; (e) provision of appropriate contingencies to the child for desirable and undesirable behaviors; and (f) modification of stimulus conditions. Children participated during two to three sessions when family point systems were set up or when the parents rehearsed skills under therapist guidance. Parents were given copies of and assigned readings from Patterson and Gullion (1971). Therapists made use of social reinforcement, modeling, role playing, videotaped feedback, and home assignments to facilitate parent skill learning.

The client-centered treatment emphasized feelings, attitudes, and experiences in the family. Therapists helped the parents explore their ideas of discipline, their roles as parents, the meaning of child behavior, and how messages were sent and received among family members. Children in the family were included in the sessions on one or two occasions so that family members could express opinions, feelings, and attitudes. Parents were provided a copy of Ginott (1965) and urged but not required to read it for ideas which they might find useful in coping with their children.

Assessment of therapist bias. The Therapist Modality Rating Scale was filled out after the first and last treatment sessions with each family. Using a 5-point scale designed to assess bias based on theoretical orientation or personal affinity, therapists rated the effectiveness of both behavioral and client-oriented therapy in general. They then rated the appropriateness of each of the therapies for the particular family with which they were working. At the completion of each therapy session therapists rated their own perceived competence in implementing the assigned treatment modality using a 5-point scale. They also rated the effectiveness of that particular session in helping the family.

Independent variable check. To assess whether two different therapies were being implemented,

the videotaped therapist verbalizations were coded. It was assumed that behavioral therapy was educational in its parent instruction nature, whereas client-centered therapy was characterized by reflective statements intended to facilitate clarification of feelings and convey understanding and positive regard. The two process codes selected to reflect this difference were *Instruction* (therapist told client what to do or how to do it) and *Reflection* (therapist paraphrased or summarized client's comment about his or her feelings or other topics), for behavioral and client-centered therapies, respectively. Furthermore, in the former therapy mode therapists talked about behavioral concepts and techniques, and in the client-centered mode, therapists talked about feelings, relationships, and expectations. The two respective content codes used were *Behavioral* and *Relationship/Feeling*. The first occurrence within each 15-sec interval of any or all of these four codes was scored. The total number of intervals during which therapists talked about anything else also was scored and used as the denominator in computing the proportion of time for each of the therapist behaviors.

Two treatment sessions per family were coded independently by two undergraduates who were naive to the major hypotheses of the study. Inter-coder agreement was checked by an independent assessor on six of the coded tapes. Inter-coder agreement and the stability of the therapists' verbal behavior across two sessions was determined for each of the five behavior categories and found to be satisfactory.

To assess the relationship between intended therapy mode and the therapists' verbal content, the numbers of behavioral and client-centered cases falling above and below the median on each variable were crossed with each of the process and content variables. Client-centered therapists used *Reflection* more than did behavioral therapists, and behavioral therapists used *Instruction* more than did client-centered therapists, $\chi^2(1) = 9.6, p < .005$. Furthermore, client-centered therapists used *Relationship/*

Feeling content more than did behavioral therapists, and behavioral therapists used more *Behavioral* content than did client-centered therapists, $\chi^2(1) = 9.0, p < .005$.

Dependent Measures

Parent telephone reports. Once a family began baseline, parents were called at the same time of day on two days of the week. The calls continued throughout treatment and to the end of the posttreatment assessment. During each call, the interviewer collected data for both the Tailored Checklist and the Standard Checklist. The Tailored Checklist consisted of the five child behavior problems identified by the parents at intake as being of most concern to them. The Standard Checklist consisted of a set of 32 behaviors, 26 of which represented the most frequent complaints about aggression and non-compliance made by parents who referred children to the project. For both telephone measures, parents reported the occurrence or nonoccurrence of the behaviors for the previous 24 hours.

Telephone calls were made by two regular interviewers who were knowledgeable about project goals. Agreement between interviewers was consistently 100% when checked on multiple occasions during the course of the study.

Observation code and procedures. A multivariate behavioral coding system (Bernal & North, Note 3) developed for the purpose of recording home behaviors of primary grade conduct problem children and their parents was used. Categories scored for the target child included: Compliance-Noncompliance, Annoying, and Deviant. In addition to child behaviors, two categories were scored for the parents: Commands, divided into types, and type of Attention. Within the Attention category, codes included both positive and negative parent-administered consequences. Reliability and validity of the behavior codes have been investigated and found to be satisfactory.

Three codes, Noncompliance, Annoying, and Deviant, were combined by adding, for each observation, their respective numbers per min-

ute to yield an Overall Deviant measure that included all child problem behaviors. For convenience, this interval rate will be referred to as rate per minute (rpm). Interestingly, Patterson (1974) has reported a mean of .75 ($SD = .84$) rpm for his Total Deviant Behavior observation measure taken at baseline on his sample of 27 conduct problem boys, which is similar to the mean Overall Deviant baseline rpm score of .74 ($SD = .45$) for our sample, despite the use of two different coding systems.

Parent Command rpm was selected as a dependent variable because previous research (Del'fini et al., 1976) indicated that referred conduct problem boys had parents whose command rates were highly correlated, $r(19) = .63$, $p < .01$, with the children's problem behavior rates, and that parents of these boys tended to give more commands, particularly negative commands, than parents of boys identified by their parents as normal. Another major variable was the proportion of negative parent attention scored whenever child behavior occurred. Thompson (Note 4) found that this measure was correlated with child Overall Deviant behavior.

Three paid observers collected home observation data. These initially naive observers later learned that the study involved treatment of conduct problem children; however, they never learned that there were three groups. A fourth observer who was knowledgeable of all project goals acted as the main agreement assessor, calibration meeting leader, data processor, and occasional substitute observer.

Observations were scheduled between 3:30 and 8:30 p.m. at the same time of day for each family. The days on which observations were made were varied from the beginning to end of a week as recommended by Russell and Bernal (1977).

Standard observation procedures included the use of a pacer that generated an audio signal every 15 sec into an earphone. Observations were conducted when all family members were in view of the observer, the television set and radio were turned off, no telephone calls were

made, and no visitors were present. Observers scored continuously for 30 min on the referred child, yielding 300 min of data over each set of baseline and posttreatment observations.

Reliability checks were conducted during 55 of 720 observations during both baseline and posttreatment. Agreements were expressed as number of agreements on occurrence divided by number of occurrences. Agreement scores for categories constituting the Overall Deviant score were as follows: Compliance/Noncompliance $M = .91$, $SD = .18$; Annoying $M = .67$, $SD = .28$; and Deviant $M = .47$, $SD = .44$. The low reliability of the Deviant behavior category was related to its low base rate (averaging .04 rpm at baseline for the 36 children). Agreement scores for parent variables were satisfactory.

Paper and pencil measures. The Becker Adjective Checklist was administered to parents to assess their perceptions of the degree to which their children were aggressive. The validity of the Becker was addressed by Lobitz and Johnson (1975) in a multimethod comparison of 28 children referred for social aggression and 28 nonreferred children. These investigators found that a Becker Summary Score which combined factors I, III, and V as analyzed by Patterson and Fagot (1967) discriminated the two groups better than home- or laboratory-based behavioral observations. This Summary Score was used in the present study.

Following the posttherapy evaluation, a Therapy Attitude Inventory (Eyberg & Johnson, 1974) form was mailed to each of the parents with a cover letter from the first author. The inventory addressed changes in the behavior of the target child, feelings about the therapist and his or her skill, and attitudes toward the treatment program.

RESULTS

Treatment outcome. Four major dependent variables focusing on child behavior were used to compare the outcome of treatment for the

Fig. 1. Mean group scores at baseline and post treatment for the major dependent variables.

three groups: the Tailored Checklist, Overall Deviant, and the mothers' and fathers' Becker Summary scores. Baseline and posttreatment averages were computed for each child or parent in analyzing these major variables as well as for

secondary variables requiring repeated measurement during assessment periods.

Figure 1 presents, for descriptive purposes, the mean group scores at baseline and posttreatment for the four major dependent variables

and highlights the posttreatment changes relative to baseline levels. However, statistical analysis of the data adjusted the posttreatment scores according to the baseline levels using covariance analysis. The decision to adjust for initial baseline levels was based on the fact that there were initial group differences for some variables that would have resulted in masking of differential treatment effects between groups. A one-way analysis of covariance was computed for each variable using the baseline data as the covariate and the posttreatment scores as the dependent variable. The same analysis was used to examine some secondary treatment outcome effects.

For the Tailored Checklist variable, there was a significant group main effect, $F(2, 32) = 5.736, p < .007$. Post hoc pairwise comparisons revealed that the behavioral group was significantly lower at posttreatment in problem behavior levels than the client-centered, $t(1, 32) = 2.397, p < .022$ and waiting list groups, $t(1, 32) = 3.28, p < .002$. The difference between the client-centered and waiting list groups was not significant.

For the Overall Deviant variable, the main effect for groups marginally approached significance, $F(2, 32) = 2.996, p < .064$. The Dunn method for adjusting probability levels where three pairwise comparisons are made between groups indicated that, for these data, these comparisons would yield a $p < .08$ level. Therefore, none of the pairwise comparisons reached significance by this criterion, i.e. the apparently greater improvement of the behavioral and wait control groups in comparison with the client-centered group approached but did not reach significance.

To inspect changes in Overall Deviance scores for individual subjects, change scores were computed by the formula: posttreatment minus baseline score divided by baseline score. A reduction in deviance at posttreatment $\geq 30\%$ of baseline was defined as improvement as in Patterson (1974) and Eyberg and Johnson (1974). Using this criterion, 41%, 17%, and 50% of the behavioral, client-centered, and waiting list group

children, respectively, improved according to observation data.

Two types of concerns were raised regarding the observation data: (a) the possibility of observer drift in the form of systematic differences in scoring by pairs of observers over time, and (b) for all observers, the possibility of a systematic shift over time in implementation of the code. The scores coded by each pair of observers working together were computed by code category, and these scores collected over 4 years were correlated. No differences were found among observer pairs, nor were there systematic shifts in correlations over time.

Separate analyses of the mothers' and fathers' Becker scores yielded results similar to those for the Tailored Checklist. There was a significant group main effect for mothers, $F(2, 32) = 6.177, p < .006$, and fathers, $F(2, 24) = 4.44, p < .023$. Pairwise comparisons of adjusted group means showed that the behavioral group parents had significantly more favorable perceptions at posttreatment than either the client-centered parents, $t(1, 32) = 2.70, p < .011$ for mothers, $t(1, 24) = 2.264, p < .033$ for fathers, or waiting list parents, $t(1, 32) = 3.29, p < .002$ for mothers, $t(1, 24) = 2.778, p < .01$ for fathers. The latter two groups did not differ significantly.

Secondary treatment outcome effects. The Overall Deviant measure included a broad range of problem behaviors, and could be regarded as reflecting the degree of generalization of treatment effects from those behaviors that were targeted for treatment to nontargeted problem behaviors, similar to the notion of targeted and total deviant child observation measures used by Patterson, Ray, Shaw, and Cobb (1969). To evaluate treatment outcome for targeted behavior, the Noncompliance measure was analyzed separately from the Overall Deviant measure. Noncompliance was a presenting complaint for 35 of the 36 children, and a major treatment objective for all children was the reduction of noncompliance. The results showed no significant main effects due to treatment.

Parent Commands and parent Negative Commands were viewed as parent behavior variables that might show changes in parent supervision patterns as a function of treatment. If child deviance and parent supervision of the child were related, a reduction in one might be associated with a reduction in the other. Thus, if the child's behavior improved, all types of parent commands, especially negative commands, might be expected to occur less frequently. There were no significant group main effects when mother and father commands were analyzed together or separately.

Another parent variable of interest was the overall extent to which parents reacted in negative ways to the child, manifested by the proportion of parent negative Attention to child behaviors. The number of times that parent negative Attention was scored was divided by the total time of observation to yield the proportion. There was no significant group main effect for either parent.

Mothers from the two treated groups differed in their attitudes toward therapy on the Therapy Attitude Inventory to a greater degree than did fathers. Mothers from the behavioral group reported their child as more improved than did the mothers from the client-centered group in terms of the referral problems, $t(11) = 2.98, p < .01$, problems that were treated, $t(11) = 2.89, p < .01$, and problems that were untreated, $t(11) = 2.17, p < .05$. The behavioral group mothers also reported more optimistic expectations about treatment outcome than did the mothers from the client-centered group, $t(11) = 2.54, p < .05$. Fathers from the two groups did not rate improvement differentially for these four items. Behavioral group parents rated their treatment model more highly than did client-centered group parents: mothers, $t(11) = 2.28, p < .05$; fathers, $t(9) = 2.84, p < .05$.

Reported attitudes toward the therapist revealed differences in the same direction. The parents from the behavioral group felt that their therapists were of more help than did the cli-

ent-centered group parents: mothers, $t(11) = 3.41, p < .01$; fathers, $t(9) = 3.75, p < .01$. Fathers, but not mothers, from the behavioral group rated their therapists as more skillful than did the fathers from the client-centered group, $t(9) = 2.84, p < .05$. Despite differential attitudes toward the therapists' helplessness and skill, parents from the two groups did not differ in their personal feelings toward the therapists. In line with the foregoing attitudinal differences, a summary rating of overall feelings toward the treatment program revealed higher ratings by both fathers and mothers from the behavioral group: fathers, $t(9) = 3.33, p < .01$; mothers, $t(11) = 3.02, p < .01$.

Follow-up. No posttreatment or follow-up data were collected on the waiting list group. At 6- and 12-mo follow-up, most families in the behavioral and client-centered groups refused to permit home observations although most permitted telephone calls. For the cooperating families, the Tailored Checklist and Becker data were analyzed at posttreatment and 6-mo follow-up using the baseline data as the covariate in a covariance analysis for repeated measures. For each group, 10 families provided Tailored Checklist data and mothers' Becker data, while eight families provided fathers' Becker data.

On the Tailored Checklist, both behavioral and client-centered groups showed continuing improvement from posttreatment to follow-up, $F(1, 18) = 4.36, p < .05$, but there was no differential improvement between groups. The Becker Summary scores showed the same pattern from posttreatment to follow-up for both mothers and fathers. A significant groups by trials interaction for mothers, $F(1, 18) = 12.66, p < .002$, and fathers, $F(1, 14) = 6.64, p < .002$, indicated that the behavioral group Becker scores were lower than the client-centered scores at posttreatment, but at follow-up the behavioral group parents reported more deviance and the client-centered group parents less deviance than at posttreatment.

Two years after the treated families applied

for treatment ($N = 12$ behavioral and $N = 11$ client-centered) parent interview results showed no group differences in the number of original presenting complaints that persisted, ratings of school adjustment, ratings of satisfaction with their relationship with their children, or number of children judged as still in need of help for any psychological problem (two behavioral and three client-centered group children).

Therapist bias. An Anova was computed on the therapist modality rating scores. The results showed that both sets of therapists rated behavioral therapy as generally more effective, $F(1, 12) = 10.8, p < .01$, than client-centered therapy. However, behavioral groups therapists were no more biased in favor of behavioral therapy than were the client-centered therapists.

Analysis of the therapists' views of the appropriateness of the therapies revealed that, across sessions, each group of therapists believed that the therapy they were assigned was the most appropriate for their families, $F(1, 12) = 19.62, p < .001$. Other analyses of ratings made by therapists after each of the 10 sessions showed that there were no differences between the two therapist groups in their ratings of their effectiveness in particular sessions, their success in implementing the assigned treatment modality, the appropriateness of the assigned modality for individual sessions, and the appropriateness of the other therapy modality for those sessions.

DISCUSSION

The central question addressed in this evaluation of parent training was, how effective is a behavioral form of treatment in reducing conduct problems in children as compared to a client-centered treatment? Corroboration of the delivery of two different treatment models was provided by analysis of the therapists' verbal behaviors. Although therapists believed that behavioral therapy was the more effective, this general bias was countered by the therapists' reports that they believed the therapy they were assigned was the most appropriate for their

families and that they felt they were equally effective in implementing either treatment. On the other hand, the parent ratings of the skillfulness and helpfulness of the therapists suggested that the behavioral therapists, perhaps because of the better specified procedures available to them, were more effective and comfortable with that therapy than were client-centered therapists.

Because waiting list group assignment was not random, discussion of the results will focus primarily on the comparison between the two treatment groups. The outcome of treatment varied depending upon the dependent variable under consideration. Because most of the children in this study were selected on the basis of the high incidence of idiosyncratic problem behaviors reported by their parents by telephone, it would be expected that treatment effects would be reflected in this variable. Precisely such an outcome was found: Behavioral treatment parents reported less child problems after treatment than client-centered treatment parents. This finding suggested that it was the specific behavioral ingredients that led to the reported improvement in the children. Results showing more positive global perceptions of the children and greater satisfaction with treatment following behavioral treatment in comparison to the client-centered group supported this interpretation.

Results of the home observation data, on the other hand, indicated that there was no advantage of behavioral treatment as demonstrated by either child or parent behaviors over the comparison treatment group. These negative effects held for a generalized measure of observed child deviance as well as for a specific targeted behavior, noncompliance.

Results of related studies revealed a modest (Eyberg & Johnson, 1974; Ferber et al., 1974) to substantial impact (Károly & Rosenthal, 1977; Patterson, 1974; Peed et al., 1977; Weinrott et al., 1979) on observed child deviance by behavioral treatment when measures were taken in the home. Although parent report and ques-

tionnaire measures were used only in some of these studies, when included, these variables tended to converge with the observation measures (e.g., Eyberg & Johnson, 1974; Karoly & Rosenthal, 1977; Patterson, 1974). Thus, results of the present study were in agreement that parent reports of deviant child behavior reflected the efficacy of parent training but differed markedly from other studies by finding no such effects for observed child deviance.

Assuming valid behavioral measurement, the contradiction between lack of observed behavioral group differences and the differences reflected in parent report measures for the behavioral group may be due to the manner in which these two dependent variables interacted with the type of treatment. Parent report data were collected from all parents twice per week on each of five problem behaviors. Parents in the behavioral treatment group, however, also were working specifically on these five behaviors in treatment, while client-centered treatment parents were not. It seems plausible to explain the greater improvement reported for the behavioral treatment children as an effect based upon the fact that behavioral group parents were likely to see more improvement in the child problem behaviors they were monitoring because they also were working on them. The parents' theory might have been, "If I have worked on this behavior then that means it must be improved," a cognitive dissonance effect. Possible ramifications of this effect could be the reduction in the parents' global perceptions of child deviance after treatment as well as greater satisfaction with treatment. Because client-centered parents were not focusing on working directly on the five monitored behaviors, there was no similar reason to believe the behaviors were improved. Client-centered treatment group results for the global perception and parent satisfaction measures were consistent with this view.

Whether or not true behavior change occurred, the improved parental perceptions of the child, both for specific behaviors and global

attributes, may be considered a meaningful and valuable treatment effect. However, benefits reflected in parent reports and perceptions showed no maintenance over time of the superior effects of behavioral relative to client-centered therapy, and the lack of differentiation between the two groups 2 years after treatment supported the logical conclusion drawn from the observation data. That is, behavioral therapy was no more effective than client-centered therapy in reducing child conduct problems, and over time this fact was reflected in the parents' reports about their children's deviance.

These conclusions have implications for investigators and clinicians in the parent training field who rely on parent reports and perceptions of problem behaviors as an index of change. Parent monitoring and participation in behavioral treatment are common components in parent training. The present data point up a possible artifact of the interaction of treatment with measurement that may appear as a treatment effect and that may show poor maintenance.

A post hoc explanation for the failure of the home observation measure to demonstrate group effects of behavioral treatment implicates the client selection process of this study. Most of the children were selected according to set criteria in an attempt to define a homogeneous sample of conduct problem children. In parent training, however, treatment success depends upon the parents' willingness and ability to learn and apply child management strategies. No screening for these parent characteristics was conducted. In fact, because the project's goal was to generalize results to a population of conduct problem children insofar as possible given the size of the sample, efforts were made to include families even when there was severe personal or family psychological distress. Planned separation or dissolution of marriage was the only psychological distress variable used for exclusion of a family. Furthermore, cooperation with a demanding baseline data collection process may have selected parents who were highly

troubled about their children, but not necessarily parents who would be successful in parent training, as suggested by Lipp (Note 5) who found no relationship between keeping of home observation appointments and treatment outcome for this sample.

This generalizability issue was the basis for maintaining a low drop-out rate. Two factors may have operated to keep that rate at only 12% for the sample. The first was the commitment of staff to keep every family in treatment whose child had passed the screening stage, even though the strong clinical impression of staff regarding some of the parents was that they would not benefit from treatment. A second factor was that the parents knew that they had to complete treatment and the posttreatment assessment in order to qualify for payment for that assessment. These two combined factors may have led to generation of a sample that was more representative of parents who raise conduct problem children than a sample where a higher dropout rate operated to select out some families on unknown bases. However, such a sample also may have contained more parents who were unsatisfactory clients for parent training. This interpretation was supported by other studies reporting better success and higher dropout rates, e.g., Weinrott et al. (1979) had a 67% success rate and a 34% dropout rate.

The results of this study also may be understood in terms of the use of short-term treatment conducted by graduate student therapists. Other studies employing therapists of comparable experience for a roughly equivalent period of treatment had improvement rates for observed child deviance that were between 29% (Eyberg & Johnson, 1974) and 60% (Ferber et al., 1974). The 41% behavioral therapy group improvement rate of the present study is intermediate to these rates.

A most surprising finding was that, when parents simply provided telephone reports of child problems to staff over 8 weeks but did not receive treatment, there was improvement in

observed child deviant behavior comparable to that obtained with families receiving 10 sessions of either behavioral or client-centered therapy. Alternative post hoc explanations for the waiting list group results as compared to the two other groups included the possibility of a shift either in the implementation of the scoring code or in selection criteria over years of data collection, particularly because most of the waiting list group data were collected last. Evidence that all observer pairs achieved consistently high degrees of agreement suggests that it was unlikely there was an instrumentation shift (Campbell & Stanley, 1963). Analysis of the rates of Overall Deviant behaviors for the first seven children admitted as compared with the rest of the sample showed no shift in the level of observed problem behavior as more children were admitted. Nor were there significant differences between the three groups at baseline that might reflect shifts in selection criteria applied. Nevertheless, conclusions drawn from the wait control group results may only be regarded as suggestive because of the randomization problem.

In previous studies incorporating a wait control group (Alexander & Parsons, 1973; Karoly & Rosenthal, 1977; Peed et al., 1977; Wiltz & Patterson, 1974), there was no parent monitoring of client behavior. In this study, repeated contacts with project staff and parental monitoring of children's behavior may have had some therapeutic effect. However, neither the addition of nonspecific nor of specific behavioral therapy ingredients served to enhance these effects on observed child behavior. Also, although the monitoring may have interacted with therapy mode to result in improved parent report and perception for the behavioral group, monitoring alone did not improve parental reports and perceptions for the client-centered or waiting list groups.

Results that have been presented raise serious question about the prevailing belief among behavior therapists that parent training is the treatment of choice for conduct problem children. In the general population of parents of

conduct problem children, it is possible that a large proportion of them will not learn to be effective change agents for their own children. In order to maximize treatment effects, the investigation of the parameters of both parent and child clients with whom treatment packages designed for specific problems are effective is a top research priority. The inclusion of wait control groups and the examination of the characteristics of dropouts would seem to be critical in this enterprise.

REFERENCES NOTES

1. Barnard, J. D., Gant, B. L., Kuehn, F. E., Jones, H. H., & Christopherson, E. R. *Home-based treatment of the juvenile probationer*. Unpublished manuscript, 1979.
 2. Bernal, M. E., Klinnert, M. D., Russell, M. B., Schultz, L. A., Bolstad, C., Rosen, P. M., North, J. A., & Chao, C. *Parent telephone interviews: Normative data on an economical procedure for assessment of conduct problem children*. Unpublished manuscript, 1978.
 3. Bernal, M. E., & North, J. A. *Scoring system for home*. Unpublished manuscript, 1972.
 4. Thompson, R. J., & Bernal, M. E. *Assessment of parent labeling of children referred for conduct problems*. Unpublished manuscript and MA thesis, University of Denver, 1978.
 5. Lipp, D. O. *An investigation of the relationship between parental cooperation with the structural aspects of treatment and the outcome of time-limited therapy*. Unpublished MA thesis, University of Denver, 1979.
- ## REFERENCES
- Alexander, J. F., & Parsons, B. V. Short term behavioral intervention with delinquent families. *Journal of Abnormal Psychology*, 1973, **81**, 219-225.
- Anderson, F. M., & Dean, D. C. Some aspects of child guidance clinic intake policy and practices. *Public Health Monographs*, 1956, **42**, 1-16.
- Berkowitz, D. P., & Graziano, A. M. Training parents as behavior therapists: A review. *Behaviour Research and Therapy*, 1972, **10**, 297-317.
- Campbell, D. T., & Stanley, J. C. *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally, 1963.
- Christopherson, E. R., Barnard, S. R., Barnard, J. D., Gleeson, S., & Sykes, B. W. Home-based treatment of behavior disordered and developmentally delayed children. In M. J. Begab, H. C. Haywood, & H. T. Garber (Eds.), *Psychosocial influences in retarded performance, Volume II: Strategies for improving competence*. Baltimore: University Park Press, in press.
- Cone, J. D., & Sloop, B. W. Parents as agents of change. In A. Jacobs and W. W. Spradlin (Eds.), *Group as agent of change*. Chicago: Aldine-Atherton, 1971.
- Delfini, L. F., Bernal, M. E., & Rosen, R. M. Comparison of deviant and normal boys in natural settings. In E. J. Mash, L. A. Hamerlynck, & L. C. Handy (Eds.), *Behavior modification and families*. New York: Brunner/Mazel, 1976.
- Eyberg, S. M., & Johnson, S. M. Multiple assessment of behavior modification with families: Effects of contingency contracting and order of treated problems. *Journal of Consulting and Clinical Psychology*, 1974, **42**, 594-606.
- Ferber, H., Keeley, S., & Schenberg, K. Training parents in behavior modification: Outcome of problems encountered in a program after Patterson's work. *Behavior Therapy*, 1974, **5**, 415-419.
- Ginott, H. G. *Between parent and child*. New York: Macmillan, 1965.
- Gray, C. M. (Ed.). *The costs of crime*. Beverly Hills, California: Sage Publications, 1979.
- Graziano, A. M. Parents as behavior therapists. In M. Hersen, R. M. Eisler, & P. M. Miller (Eds.), *Progress in behavior modification*, 1977, **4**, 251-298.
- Hartmann, D. P., Roper, B. L., & Gelfand, D. M. Evaluation of alternative modes of child psychotherapy. In B. Blahney & A. E. Kazdin (Eds.), *Advances in clinical child psychology*. New York: Plenum Press, 1977.
- Johnson, C. A., & Katz, R. C. Using parents as change agents for their children: A review. *Journal of Child Psychiatry and Psychology*, 1973, **14**, 181-200.
- Karoly, P., & Rosenthal, M. Training parents in behavior modification: Effects on perception of family interaction and deviant child behavior. *Behavior Therapy*, 1977, **8**, 406-410.
- Lobitz, G. K., & Johnson, S. M. Normal versus deviant children: A multimethod comparison. *Journal of Abnormal Child Psychology*, 1975, **3**, 353-374.
- Locke, H. J., & Wallace, K. M. Short marital adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living*, 1959, **21**, 251-255.
- O'Dell, S. Training parents in behavior modification: A review. *Psychological Bulletin*, 1974, **81**, 418-433.
- O'Leary, K. D., & Turkewitz, H. Methodological issues in marital and child treatment research. *Journal of Consulting and Clinical Psychology*, 1978, **46**, 759-776.
- Patterson, G. R. Interventions for boys with conduct problems: Multiple settings, treatments, and criteria. *Journal of Consulting and Clinical Psychology*, 1974, **42**, 471-481.

- Patterson, G. R., & Fagot, B. I. Selective responsiveness to social reinforcers and deviant behavior in children. *The Psychological Record*, 1967, 17, 369-378.
- Patterson, G. R., Ray, R. S., Shaw, D. A., & Cobb, J. A. *Manual for coding of family interactions* (NAPS Document No. 101234). New York: Microfiche Publications, 1969.
- Patterson, G. R., Reid, J. B., Jones, R. R., & Conger, R. C. *A social learning approach to family intervention, Vol. 1: Families with aggressive children*. Eugene, Oregon: Castilia, 1975.
- Pawlicki, R. Behaviour-therapy research with children: A critical review. *Canadian Journal of Behavioural Science*, 1970, 2, 163-173.
- Peed, S., Roberts, M., & Forehand, R. Evaluation of the effectiveness of a standardized parent training program in altering the interaction of mothers and their noncompliant children. *Behavior Modification*, 1977, 1, 323-350.
- Robins, L. N. *Deviant children grown up*. Baltimore: The Williams and Witkins Co., 1966.
- Russell, M. B., & Bernal, M. E. Temporal and climatic variables in naturalistic observation. *Journal of Applied Behavior Analysis*, 1977, 10, 399-405.
- Tavormina, J. B. Basic models of parent counseling: A critical review. *Psychological Bulletin*, 1974, 81, 827-835.
- Tavormina, J. B. Relative effectiveness of behavioral and reflective group counseling with parents of mentally retarded children. *Journal of Consulting and Clinical Psychology*, 1975, 43, 23-31.
- Walter, H. I., & Gilmore, S. K. Placebo versus social learning effects in parent training procedures designed to alter the behavior of aggressive boys. *Behavior Therapy*, 1973, 4, 361-377.
- Weinrott, M. R., Bauske, B. W., & Patterson, G. R. Systematic replication of a social learning approach to parent training. In P. O. Sjoden & S. Bates (Eds.), *Trends in behavior therapy*. New York: Academic Press, 1979.
- Wiltz, N. A., & Patterson, G. R. An evaluation of parent training procedures designed to alter inappropriate aggressive behavior of boys. *Behavior Therapy*, 1974, 5, 215-221.

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