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Randomized Trial of Two Parent-Training Programs for Families With Conduct-Disordered Children

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Clinic mothers of 35 conduct-disordered children were randomly assigned to a waiting list control group, 9 weeks of individual therapy, or 9 weeks of therapist-led group therapy based on a standardized videotape modeling program. Mothers and their children were assessed at baseline, immediately after treatment, and 1 year later by home visits, twice-per-week telephone reports, and questionnaires. One month after treatment, both groups of treated mothers showed significant attitudinal and behavioral improvements compared with untreated controls. Additionally, the children in the two treatment groups showed reductions in child noncompliance compared with control children. At the 1-year follow-up, not only were most of the changes in mothers' behaviors maintained, but both treatment groups of children continued to show significant reductions in noncompliant and deviant behaviors. There were no significant differences on any of the attitudinal or behavioral measures between individual and videotape modeling group discussion therapies at the immediate or 1-year follow-up. Total therapist time was approximately 251 hr for the entire individual group and 48 hr for the entire videotape discussion group. Although both treatments seem to offer equivalent and sustained improvements for parents and conduct-disordered children, the therapeutic efficiency of the videotape modeling group format is more cost-effective.

In response to the large numbers of children with conduct disorders and the shortage of professional personnel, there has been an increasing emphasis on training parents as therapists for their own children. Several excellent reviews (Berkowitz & Graziano, 1972; Graziano, 1977; Johnson & Katz, 1973; Moreland, Schwebel, Beck, & Wells, 1982; Pawlicki, 1970) have concluded that behavioral parent training is an effective intervention for conduct-disordered children. The majority of these parent training programs have been based on individual therapy and have incorporated direct feedback techniques such as live modeling, role playing, and behavioral rehearsals. However, these individualized programs are costly, time consuming, and inefficient and therefore are incapable of meeting the increasing demands. In a recent review McIntyre et al. (1983) noted that none of the 43 studies of therapy for conduct-disordered children had considered an analysis of cost-effectiveness. There is a clear need to enhance the cost efficiency of parent training programs if they are to be more widely available.

Potentially efficient and cost-effective training methods can be based on group therapy with the use of standardized videotape modeling programs. Videotape approaches have the advantage of mass dissemination and low individual training costs. Videotape modeling programs designed to teach parents the use of the time-out technique have been evaluated in four studies. Nay (1976) found videotape modeling alone to be as good as videotape modeling plus role playing and better than written presentation or a lecture in teaching parents time-out skills. Flanagan, Adams, and Forehand (1979) found videotape modeling to be superior to written presentation, lecture, and role playing. O'Dell, Mahoney, Horton, and Turner (1979) and O'Dell, Krug, Patterson, and Faustman (1980) found videotape modeling plus individual checkout with a trainer to be superior to live modeling combined with role-played rehearsal. O'Dell, O'Quin, Alford, O'Briant, Bradlyn, and Giebenhain (1982) also found that videotape modeling was equal to live modeling with rehearsal in teaching parents reinforcement skills. However, one limitation of all these studies was the emphasis on a single target-parent behavior rather than on evaluating the effects in terms of child behavior changes or parent–child interactions.

Webster-Stratton (1981a, 1981b, 1982) developed and evaluated a comprehensive, standardized, therapist-led, videotape modeling discussion program that trained groups of parents in general ways of interacting and communicating with children and in a variety of operant techniques for handling behavior problems. The program resulted in significant attitudinal and behavioral improvements in both the mothers and children when compared to controls. Moreover, most of the mother and child interactional changes were maintained 1 year later.

However, despite these promising results with the use of videotape modeling methods for groups of well-educated, nonclinical parents, there have been no studies with less well-educated clinical parents who have children with clinically significant behavioral problems. Moreover, it is unknown whether the videotape modeling therapist-led group discussion approach is as effective as the more widely utilized individualized parent training based on direct feedback techniques.

The purposes of this randomized study were (a) to evaluate the short- and long-term effectiveness of a standardized, therapist-led, videotape modeling, group discussion program in altering parent attitudes and parent–child interactions in a clinical population and (b) to compare the effectiveness and cost efficiency of such a videotape-based program with the more widely utilized individualized therapy that employs feedback, rehearsal, and live modeling.

Method

Subjects

The study was conducted in a psychiatric and behavioral clinic in a pediatric hospital. To encourage referrals, the clinic announced that it had a specialized program for the treatment and evaluation of children with conduct problems. Subject children were screened by an intake call followed by an office appointment. Criteria for study entry were the following: (a) The child was between 3 and 8 years old. (b) The child had no debilitating physical impairment, intellectual deficit, or history of psychosis. (c) The primary referral problem was the child's oppositional behaviors (e.g., refusal to follow requests, tantrums, aggression). (d) Parents agreed to home visits, weekly telephone calls, and random assignment to specific treatment groups. Because the program was offered as part of a regular clinic service, the families had to pay the regular therapy fee, from $5 to $50 per session, depending upon family income.

Forty families referred by pediatricians, psychiatrists, school or mental health personnel, nurses, or parents themselves were admitted to the study. Once subjects were accepted for entry, a phone call was made to the project secretary, who opened a sealed envelope designating the assigned group (waiting list control, individual therapy, or videotape modeling group therapy). Families were continuously assigned at random to one of the three groups. Three subjects dropped out during baseline observations prior to starting treatment, and 2 subjects dropped out after the first two treatment sessions. Thus data will be presented on the 35 subjects who completed immediate posttreatment assessments.

Study children included 25 boys and 10 girls, with a mean age of 4 years, 8 months. Nineteen of the 35 children (54%) were from father-absent families. The mother's mean age was 30 years and the father's was 32 years. The average number of children per family was 1.9. The mean socioeconomic status score was 51.8 (Social Class 4) indicating that the average family was lower middle to lower class, as determined by Hollingshead and Redlich's (1958) Two-Factor Index of Social Position. Fifteen of the families indicated that they had had recent contact with Child Protective Services because of child abuse reports. Table 1 presents the characteristics of parents and children for the entire sample and for each of the three treatment groups. There were no significant differences between groups on any of the demographic variables.

Procedure

Baseline assessment, which consisted of two home observations, twice-per-week telephone reports of child behaviors, and paper-and-pencil questionnaires, was completed by 35 families. After baseline data collections, the two treatment groups attended a series of nine weekly therapy sessions while the waiting list control group had no parent training contact except for the twice-per-week telephone reports of their child's behaviors. Three months

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after baseline all three groups were again retested on the same measures. Subsequently, each parent in the waiting list control group was randomly assigned to individual therapy or the videotape modeling group therapy and then assessed immediately after treatment on the same measures. To determine long-term treatment effects, 31 of 35 original subjects were retested on most of the same measures at 1 year after treatment.

Treatment

Training curriculum. The training curriculum was kept as similar as possible across the two parent-training programs. For the first 4 weeks, both programs included a modification of the interactional model (Hanf & Kling, 1973; Kogan & Gordon, 1975), and for the last 5 weeks both focused on teaching parents a specific set of operant techniques. Parents in the videotape modeling, therapist-led group discussion program attended a mean of 8.5 (±1.3) sessions for a total of 16.8 (±2.6) hr, and parents in the individual treatment attended 9.1 (±.60) sessions for a total of 15.8 (±3.5) hr.

Training methods. Although the content and sequencing of training were comparable for both programs, the process of training differed markedly. In the videotape modeling, therapist-led group discussion program, parents observed (in groups of 8–10 parents) videotapes of modeled parenting skills. The program consisted of 180 videotape vignettes showing parents and children engaged in both desirable and problematic interactions at the dinner table, in the living room or bathroom, during telephone calls, and so forth. After the presentation of one or more 2-min parent–child vignettes, the therapist led a focused discussion of the important interactions and skills and elicited parents' reactions, ideas, and questions about the material. Because the children did not attend the sessions, the parents did not receive any direct feedback on their interactions with their children, nor did they rehearse the modeled skills. A more complete description of this program has been reported by Webster-Stratton (1981b).

The individual treatment consisted of one-to-one sessions between the therapist, parent, and target child. In these sessions the therapist modeled "live" many of the parent-training skills. Parents role-played and rehearsed the modeled skills with their child while the therapist watched through a one-way mirror and gave direct feedback to the parent via a "bug-in-the-ear." In addition to providing general parent training concepts, the individual sessions also focused on training directly related to the target child's specific behavior problems.

Table 1
Demographic Variables for the Randomly Assigned Treatment and Control Groups

Demographic variable	Group: Total (n = 35)	Waiting list control (n = 11)	Individual treatment (n = 11)	Videotape modeling discussion (n = 13)
Child's mean age (months)	58.2 (17.6)	59.1 (15.4)	62.5 (23.8)	53.7 (13.1)
Mean number of children in family	1.9 (0.8)	2.2 (1.1)	1.5 (0.5)	2.0 (0.7)
Mother's mean age (years)	30.6 (5.7)	31.5 (7.2)	31.4 (4.6)	29.1 (5.3)
Socioeconomic status[a,b] (ns)				
Social Class 2	1	0	0	1
Social Class 3	10	2	5	3
Social Class 4	13	4	4	5
Social Class 5	11	5	2	4
Mean total score	51.8	57.6	48.1	49.7
Child's sex[b] (ns)				
Male	25	8	6	11
Female	10	3	5	2
Marital status[b] (ns)				
Single/divorced	19	6	6	7
Married	16	5	5	6
Income[b] (ns)				
Welfare	11	3	3	5
$9,000–$20,000	11	5	4	2
$20,000+	13	3	4	6
Child protective referral[c] (n)	15	4	6	5

Note. Numbers in parentheses are standard deviations. There were no significant differences between the three groups.
[a] Based on Hollingshead and Redlich's (1958) Two Factor Index of Social Position (education and occupation).
[b] Reflects actual numbers of families in each category.
[c] Number of parents who indicated at baseline that they had previously been reported to Child Protective Services for child abuse.

Therapists. In order to control for therapist effects across the two treatment programs, there were only two therapists (one female, one male) who both led the videotape modeling discussion program and then equally divided the mothers in the individual treatment. Both were doctorally trained psychologists who had specialized education and previous experience in counseling and parent training. Total therapist time was approximately 251 hr for the entire individual treatment and 48 hr for the entire videotape group.

Parent Report Measures

Achenbach Child Behavior Checklist (CBCL). The CBCL, consisting of 118 behavior-problem items, has been shown to discriminate clinic-referred from nonreferred children. Intraclass correlations were 0.98 for interparent agreement, 0.84 for 1-week test–retest reliability, and 0.95 for interinterviewer reliability (Achenbach & Edelbrock, 1981).

Eyberg Child Behavior Inventory (ECBI). The ECBI, a 36-item inventory, is applicable for children 2–16-years-old. The inventory has been shown to correlate well with independent observations of the children's behaviors and to differentiate between clinic-referred and nonclinical populations. Reliability coefficients for the ECBI scales range from 0.86 (test–retest) to 0.98 (internal consistency) (Eyberg & Ross, 1978; Robinson, Eyberg, & Ross, 1980).

Parent Daily Telephone Reports (PDR). The PDR developed by Chamberlaine (1980) consists of a list of 19 negative and 19 prosocial behaviors commonly expressed by children. During intake, parents were asked to select those negative and aggressive behaviors they felt were major problems and those positive behaviors that would be particularly pleasing to them if performed by their child. These shorter, individually tailored checklists were used as the basis for the phone calls conducted biweekly from the time of intake until the posttreatment assessment. During phone calls, the checklist was read to the mothers, who were then asked to report on the occurrence or nonoccurrence of the specific behaviors for the previous 24 hr. After asking about the positive and negative behaviors on the PDR, the interviewer then asked about the occurrence of spanking. Families in the control group were also called throughout the period of the study. All telephone calls were made by the same interviewer throughout the course of the study. Previous studies (Chamberlaine, 1980; Patterson, 1974) have reported test–retest reliability of the PDR from 0.60 to 0.82.

Home Observations

All families were observed according to the Dyadic Parent–Child Interaction Coding System (DPICS; Robinson & Eyberg, 1981). The DPICS consists of 29 separate behavior categories covering parent and child behaviors that are coded as present or absent for each 5-min segment. Because many of these families had only one parent living at home and only one child, only mother–problem child dyadic interactions were analyzed. From the 29 behavior categories, five separate variables were formed for the behavior of mothers: total praise (labeled and unlabeled praise), total critical statements, total commands (direct and indirect commands), total no opportunities (vague, interrupted, or chain commands given by parents in such a way that there is no opportunity for the child to comply), and direct command ratio (direct commands/total commands, including no-opportunity commands). For the target child there were two variables: total child deviancy (whine + cry + hit + swear + yell + destroy), and noncompliance ratio [noncompliance/(compliance + noncompliance)]. Noncompliance was defined as failure to respond to a command within 5 s after a command was issued.

These behavior observations were obtained by making two home visits at each assessment period. All observations took place for 30 min between 4:30 p.m.–7:30 p.m., with all family members present. Mothers were instructed to maintain their daily routine as much as possible except that they were requested to remain in two rooms, to ignore the observer, and to avoid having visitors, making or receiving telephone calls, or watching television. Home observations were made by extensively trained observers who were blind to the hypotheses and group membership of the subjects. To maintain accuracy, observers had weekly training sessions and practiced on videotaped interactions. To assess reliability, two observers were used on approximately 50% of all observations. Reliability was calculated in two ways: agreements/(agreements + disagreements) and Pearson product-moment correlations between raters for each individual behavior dimension. Mean overall interrater agreement was 78.6%, and the product-moment correlations calculated between observers for each behavior are shown in Table 2.

Teacher Report Measures

Behar Preschool Questionnaire (PBQ). The PBQ was completed only at the 1-year follow-up assessment because so few of the children were in preschool the previous year. It is a 36-item measure designed to be filled out by preschool teachers of children who are 3–7-years-old. Test–retest reliabilities have ranged from .60 to .99 (Behar, 1977).

Social Validity Measures

Consumer satisfaction questionnaire. This measure, adapted from the work of Forehand and McMahon (1981), consisted of 40 items with a 7-point Likert scale response format. This measure was given 3–4 weeks after treatment and at 1-year follow-up and was not administered by the therapist. Parents were told their responses would be anonymous. Statements were made to which the parent could respond from *strongly agree* to *strongly disagree*. Responses were transformed into scores 1 to 7, with 7 being the most positive. There were six subscales that measured parents' perceptions or attitudes about the following: child behavior improvement after treatment (11 items); format of treatment difficulty (5 items); treatment usefulness (5 items—live modeling, role playing, rehearsals, use of videotapes, group discussion); difficulty (7 items), and usefulness (7 items) of specific parenting content and skills taught (ignore, time-out, play skills, commands); and the therapists (5 items). Internal consistency of the six individual subscales ranged from .71 to .90.

Results

Immediate Posttreatment Effects

Analysis of covariance (ANCOVA) was used to statistically compare posttreatment scores

Table 2
Interrater Reliability Coefficients for Each Behavior Dimension on Home Visits

Behavior category & subject	Reliability coefficient[a] Range	*Mdn*
Mother		
Total commands	.92–.98	.97
Total no opportunities	.73–.92	.83
Direct commands	.83–.94	.90
Total critical statements	.87–.99	.94
Total praise	.92–.99	.95
Child		
Total deviancy	.91–.98	.91
Noncompliance	.72–.94	.89

Note. Behavior categories are from the Dyadic Parent–Child Interaction Coding System (Robinson & Eyberg, 1981).
[a] Reliability coefficients computed as the median correlation between scores from two observers during home visits.

adjusted for baseline values. The decision to adjust for initial baseline scores was based on the existence of differences at baseline on some variables that could have masked differential treatment effects. A one-way three-group ANCOVA was first performed on each of the dependent variables followed by preplanned comparisons. Both treatment groups combined were compared with the control group, and then each treatment group was separately compared to the control group as well as to each other. For each dependent variable the Dunn–Bonferonni tables were used to determine the critical values in order to correct for the number of individual comparisons. The error term from the three-group ANCOVA was employed using Finny's correction for adjusting for mean differences in the covariate (Winer, 1962). Because of the small sample sizes, multivariate analysis of covariance was not used. The number, magnitude, and consistency of significant differences with the small sizes suggest that the contribution of multivariate tests to controlling alpha level would not change the interpretation of the results.

Parent attitudinal measures. There were significant differences on all six of the parent report variables by the three-group ANCOVA. Compared to controls, the combined treatment group of mothers reported significantly lower scores on the Achenbach Total Child Behavior Problem Scale, $t(31) = 2.99$, $p < .05$; and significantly fewer total number and intensity of behavior problems on the Eyberg Inventory, $t(31) = 3.11$, $p < .05$, and $t(31) = 4.39$, $p < .001$. The telephone reports of target behaviors also indicated that treated mothers observed significantly fewer negative behaviors in their children, $t(31) = 5.05$, $p < .001$, and significantly more prosocial behaviors, $t(31) = 2.75$, $p < .05$, than the control mothers. In addition, treated mothers reported significantly less use of spanking, $t(31) = 3.36$, $p < .01$.

Further analyses compared each treatment group separately to the control group. For the individualized treatment group, as compared to the control group, four out of six variables significantly improved in the predicted directions. For the videotape modeling discussion group, as compared to the control group, five out of six variables improved significantly. Those variables that did not achieve significance using the conservative Bonferonni did show change in the predicted directions. When the two treatment groups were compared, neither was significantly different from the other on any of the six attitudinal variables. Table 3 presents mean scores and standard deviations for each of the attitudinal measures.

Behavior summary variables. All five behaviors by mothers showed significant differences by three-group ANCOVA. Behavioral data (DPICS) for the combined treatment groups revealed that four of five behavior summary variables significantly changed in the predicted direction. The combined treatment groups exhibited significantly fewer total commands, $t(31) = 4.15$, $p < .001$, fewer ineffective commands, $t(31) = 3.07$, $p < .05$, fewer critical statements, $t(31) = 3.41$, $p < .01$, and significantly more praise, $t(31) = 3.11$, $p < .05$, than the untreated control group of mothers. Only the direct command ratio did not change in the predicted direction.

Additionally, child behavior variables changed in the predicted direction toward less child deviancy and noncompliance for the combined treatment groups. Total child noncompliance was significantly lower for the treated group than for the control group, $t(31) = 3.04$, $p < .05$. However, the noncompliance ratio, which took into consideration the number of commands, was of bordetline significance, $t(31) = 2.39$, $p < .08$. Similarly, total child deviancy was lower, but not at a statistically significant level, $t(31) = 2.19$, $p < .10$.

Each treatment group was next separately compared to the control group. For the individual therapy group, two out of five mother behaviors changed significantly in the predicted direction. For the videotape modeling discussion group, four of five changed in the predicted direction. Each group of treated children showed a significant reduction in total child noncompliance. However, the decrease in the noncompliance ratio in each treatment group did not reach significant levels. Although both treatment groups had a definite trend toward fewer child deviancy behaviors, it was not statistically significant in either group.

Despite the fact that the videotape modeling treatment group seemed to be slightly more effective on the behavioral measures for mothers, when the two treatment groups were compared, there were no significant differences on any of the mother or child behavioral measures except for the mother direct command ratio, which was significantly lower for the videotape modeling treatment group. Table 4 presents the means and standard deviations for each of the behavioral measures.

One month after treatment, each treatment group evaluated its program. All treated mothers reported positive evaluations in terms of usability, acceptability, usefulness, and child

Table 3
Attitudinal Measures Before Treatment (Pre) and Immediately After Treatment (Post)

Parent attitude score and group	Means Pre	Unadjusted means post	Adjusted means post	Dunn-Bonferroni multiple comparison (*t*) BTG vs. CON	VTG vs. CON	IT vs. CON	VTG vs. IT
Achenbach Child Behavior Inventory							
CON	73.0 (28.8)	60.7 (33.6)	55.90				
VTG	65.0 (19.1)	41.5 (16.2)	43.70	2.99*	2.40	2.79*	0.50
IT	64.9 (31.6)	38.9 (28.5)	41.16				
Eyberg Child Behavior Inventory Problem score							
CON	17.9 (8.2)	15.1 (8.9)	16.58				
VTG	21.8 (6.9)	9.7 (5.9)	9.12	3.11*	2.61*	2.81*	0.05
IT	22.3 (4.9)	9.0 (7.9)	8.12				
Intensity score							
CON	147.8 (29.9)	131.5 (29.7)	138.91				
VTG	151.6 (27.2)	104.5 (20.6)	106.51	4.39***	3.89**	3.76**	0.02
IT	168.7 (21.3)	112.6 (18.6)	106.31				
Daily telephone reports							
Negative behaviors							
CON	6.6 (4.4)	6.1 (4.2)	6.21				
VTG	7.1 (2.5)	3.2 (1.3)	3.09	5.05***	4.47***	4.34***	0.06
IT	6.9 (1.4)	3.1 (1.4)	3.06				
Spanking							
CON	3.2 (3.9)	2.4 (1.8)	2.37				
VTG	3.1 (4.1)	.18 (4.0)	.20	3.36**	3.46**	2.42	0.94
IT	4.5 (5.3)	.81 (1.8)	.79				
Prosocial behaviors							
CON	12.3 (16.7)	13.7 (22.6)	8.55				
VTG	6.2 (4.1)	8.3 (6.1)	11.44	2.75*	2.71*	2.10	0.53
IT	6.8 (2.5)	8.8 (3.4)	10.88				

Note. BTG = both treatment groups; CON = waiting list control ($n = 11$); VTG = videotape group discussion ($n = 13$); IT = individual therapy ($n = 11$). Numbers in parentheses are standard deviations.
* $p < .05$. ** $p < .01$. *** $p < .001$.

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the number of commands, was of borderline significance, $t(31) = 2.39$, $p < .08$. Similarly, total child deviancy was lower, but not at a statistically significant level, $t(31) = 2.19$, $p < .10$.

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VTG	7.1 (2.5)	3.2 (1.3)	3.09	5.05***	4.47***	4.34***	0.06
IT	6.9 (1.4)	3.1 (1.4)	3.06				
Spanking							
CON	3.2 (3.9)	2.4 (1.8)	2.37				
VTG	3.1 (4.1)	.18 (4.0)	.20	3.36**	3.46**	2.42	0.94
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Prosocial behaviors							
CON	12.3 (16.7)	13.7 (22.6)	8.55				
VTG	6.2 (4.1)	8.3 (6.1)	11.44	2.75*	2.71*	2.10	0.53
IT	6.8 (2.5)	8.8 (3.4)	10.88				

Note. BTG = both treatment groups; CON = waiting list control ($n = 11$); VTG = videotape group discussion ($n = 13$); IT = individual therapy ($n = 11$). Numbers in parentheses are standard deviations.
* $p < .05$. ** $p < .01$. *** $p < .001$.

indicating that the significant mother behavioral improvements reported immediately posttreatment were maintained 1 year later. However, child noncompliance and deviancy behaviors, which had shown only borderline decreases immediately posttreatment, continued to show decreases 1 year later (see Table 7).

At 1 year, there were no significant differences between the two treatment groups in terms of the mothers' evaluations of their treatment programs. Moreover, there was no change in the mothers' evaluations from immediate posttreatment to 1 year later. Mothers still perceived their children's behaviors as significantly improved and the parenting skills they had learned as highly acceptable and useful.

Out of the 31 treated families, 27 (87%) expressed no major concerns about their children 1 year later and did not wish further therapy. However, 4 families still perceived problems and felt the need for continued therapy. Three of these families were from the individualized therapy group and 1 from the videotape modeling therapy. Over the previous year these 4 families and 2 others had asked for and received further parent training assistance with the project; 5 were from the individualized therapy group and received an average of 20 hr of additional parent training, and 1 family was from the videotape modeling discussion therapy and received 1 hr of additional therapy.

Table 6
Short- and Long-Term Results of Attitudinal Measures for the Videotape Modeling Therapy Group and the Individualized Therapy Group

Attitudinal measure and group	Pre-treatment		Immediate posttreatment		1-year follow-up[a,b]	
	M	*SD*	*M*	*SD*	*M*	*SD*
Parent reports Achenbach Child Behavior Inventory						
VTG	61.67	18.2	37.00	14.2	36.33	17.8*
IT	71.00	33.9	42.69	29.7	34.44	25.4*
Eyeberg Child Behavior Inventory						
Problem score						
VTG	19.47	7.9	8.67	6.2	8.47	5.8*
IT	22.37	5.6	9.13	8.6	6.56	8.0*
Intensity score						
VTG	144.0	30.3	102.87	22.2	104.27	23.3*
IT	166.62	22.9	115.13	19.3	117.38	31.3*
Consumer Satisfaction Scale						
Behavior improvement[c]						
VTG			69.2	6.6	67.9	6.8
IT			68.3	6.2	68.7	8.0
Difficulty of skills[d]						
VTG			36.6	9.1	36.4	7.0
IT			35.6	11.0	37.6	6.2
Usefulness of skills[d]						
VTG			46.8	3.4	44.8	5.2
IT			43.3	6.1	43.3	6.4
Teacher reports						
Behar Preschool Questionnaire						
VTG					17.43	8.5
IT					15.73	8.1

Note. VTG = videotape group discussion (n = 15); IT = individualized therapy (n = 16).
[a] Comparisons between 1-year follow-up and pretreatment; critical values from Dunn's multiple comparison tests. [b] All comparisons between VTG and IT at 1-year follow-up were nonsignificant. [c] Range of possible scores = 11–77. [d] Range of possible scores = 7–49.
* $p < .001$.

Discussion

The principal issue addressed by this study was the comparison of a low-cost, videotape modeling, therapist-led, group-discussion parent training program to a high-cost, individualized, one-to-one parent training program with a clinical population. The group studied was "high risk" from a number of viewpoints, including the high number of single parents, the low socioeconomic status, the low mean education, the high prevalence of child abuse, and the deviant nature of the child. The mean number of child behavior problems at baseline was 67.6, which is well above Achenbach and Edelbrock's (1981) cutoff score for child deviancy (a score of 42 represents the 90th percentile for this age group).

Multiple assessment procedures were used to compare the effectiveness of the two treatment groups. Two findings emerged consistently. First, at the immediate posttreatment assessment, both treatment groups of mothers showed significant attitudinal and behavioral improvements when compared with untreated controls. In addition, the children in the treatment groups showed reductions in deviant and noncompliant behaviors compared with control children, but these changes were of bor-

Table 7
Short- and Long-Term Results of Home Visit Behavioral Measures for the Videotape Modeling Therapy Group and the Individualized Therapy Group

Behavioral measure and group	Pre-treatment		Immediate posttreatment		1-year follow-up[a,b]	
	M	*SD*	*M*	*SD*	*M*	*SD*
Mother behaviors						
Total commands						
VTG	26.97	14.1	19.03	12.0	19.30	13.2
IT	32.06	23.9	29.59	21.2	24.78	24.6
Number of no opportunities to respond						
VTG	8.27	5.7	5.73	5.1	8.30	8.0
IT	11.19	10.1	11.56	10.7	10.31	11.4
Direct command ratio						
VTG	.53	.18	.47	.16	.42	.19
IT	.50	.10	.52	.49	.49	.16
Critical statements						
VTG	10.10	5.8	4.03	2.3	5.43	4.6*
IT	11.22	10.5	8.06	6.8	5.25	5.8*
Total praise						
VTG	2.87	2.9	11.63	6.3	8.93	4.3**
IT	1.94	1.9	12.53	9.8	9.87	8.4**
Child behaviors						
Total noncompliance						
VGT	6.43	3.8	3.23	2.7	1.77	1.4***
IT	7.09	6.6	2.81	2.6	1.97	2.9**
Noncompliance ratio						
VTG	.38	.19	.23	.16	.18	.13*
IT	.29	.19	.14	.09	.10	.08*
Total deviance						
VTG	15.9	12.2	4.80	4.6	1.90	2.5**
IT	12.28	13.3	4.78	1.4	1.44	2.1*

Note. VTG = videotape group discussion (n = 15); IT = individualized therapy (n = 16).
[a] Comparisons between 1-year follow-up and pretreatment; critical values from Dunn's multiple comparison tests. [b] All comparisons between VTG and IT at 1-year follow-up were nonsignificant.
* $p < .05$. ** $p < .01$. *** $p < .001$.

derline significance. One year later most of the changes in the mothers and children were maintained. Both groups of treated mothers continued to be significantly more positive, less critical, and less negative in interactions with their children. Both groups of mothers continued to report their children as having significantly fewer and less intense behavior problems. Most important, 1 year later both treatment groups of children showed significant reductions in noncompliant and deviant behaviors. Thus the independent observations of children's behaviors were congruent with the mothers' reports of improved child behaviors. The only deterioration from immediate to 1-year follow-up was a slight drop in mothers' praises, but these behaviors were still significantly higher at follow-up than at baseline.

The second important finding that emerged consistently was that there were no significant differences between the two treatments on any of the attitudinal measures and on only one of the behavioral measures immediately after treatment, and there were no differences on any measures at the 1-year follow-up. Three procedural variables distinguished the two treatment programs: (a) context of treatment (group vs. individual), (b) modeling (live vs. videotaped), and (c) presence or absence of rehearsal. Because the individualized program offered direct feedback elements and greater flexibility to focus on the parents' and child's unique problems, it might have been expected that individualized therapy would have been superior to the videotape modeling, therapist-led discussion group, which offered less opportunity for individual parent attention and no opportunity for direct feedback via bug-in-the-ear rehearsal. However, despite these differences, the two treatments were strikingly comparable in the changes induced in both the attitudinal and behavioral measures. Even the behaviors identified on the tailored problem checklist were reduced to an equal extent by the videotape modeling treatment and the individualized therapy. Moreover, although other researchers (McMahon & Forehand, 1983) have reported that parents are more satisfied in individual than in group treatment programs, in the current study there were no differences in parent evaluations between individual and videotape modeling treatments. Both groups were highly satisfied. In addition, attendance for both groups was excellent, and only 2 treated subjects dropped out, one from each of the treatment groups.

Consistent with earlier videotape modeling studies that were limited to teaching time-out and reinforcement skills (Nay, 1976; Flanagan et al., 1979; O'Dell et al., 1979; O'Dell et al., 1980; O'Dell et al., 1982), videotape modeling, therapist-led group discussion appears to be highly effective in training parents. The effectiveness was underscored in this study because parents with a wide variety of characteristics were well trained. There are a number of possible explanations for the potency of this type of training. First, the group itself serves as a powerful source of support, reinforcement, and ideas. Second, standardized videotape vignettes, unlike live modeling, can portray a wide variety of models in different settings and situations. The variety of issues raised for discussion by the videotapes may contribute to the parents' ability to generalize skills to new situations and problems, despite the lack of direct feedback.

More families assigned to individualized therapy sought out additional therapy over the subsequent year than did parents assigned to the videotape modeling group therapy. It is possible that clients from individualized programs are more attached to or dependent on their therapist to help them solve their specific parenting problems, whereas the videotape modeling, therapist-led group discussion approach may help parents solve problems more independently. It is also possible that parents trained in groups may be better able to turn to other parents for advice and support when new problems arise.

There are several limitations to the study. First, because of the ethical issue of withholding treatment from families with conduct-disordered children, the control group was subsequently treated after a 4-month waiting period. As noted earlier, both treatment groups were significantly different from the controls immediately after treatment. However, at 1-year follow-up no comparisons were possible with a control group, because everyone had been treated. Therefore it cannot be stated with certainty that the continued mother and child behavior improvements observed at 1 year were due to the treatment programs alone as opposed to maturational or other effects. However, the changes noted at 1 year were strikingly similar to the immediate posttreatment results, strongly suggesting that the long-term changes were secondary to the program. In addition, there is considerable longitudinal research to suggest that conduct-disordered children, if left untreated, do not outgrow their problems but continue to escalate in negative and destructive interactions (Patterson, 1980). Most of the mothers and children in this study seemed to have broken the "coercive cycle" (Patterson, 1980).

Both treatment groups consisted of several components. A second limitation of the study is that it is unknown exactly what was the critical ingredient in either program. In particular, for the videotape program, it is unknown whether the videotapes, the group discussion, or the combination was the active agent. Likewise, it is difficult to interpret or compare the effective components of the individualized treatment.

Nonetheless, the principal purpose of this research was to develop a cost-effective, widely applicable program of treatment for families of conduct-disordered children. In the past decade there has been little increase in the efficiency of relatively costly traditional parent-training approaches. The videotape modeling, therapist-led group discussion program described in this study was more cost-effective and efficient than the individualized treatment. Total therapist time was approximately 251 hr for the entire individual group and 48 hr for the entire videotape group. With videotape modeling group discussion, the same amount of therapist time (approximately 16 hr) was used to train five or six families as was used to train one family with individual treatment. Therefore, videotape modeling discussion groups enable therapists to train more families in the same amount of time. Although some individuals may benefit from the inclusion of individual training in their therapy, the data presented here strongly suggest that videotape modeling, therapist-led small group discussion is effective with a wide variety of parents of conduct-disordered children.

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