

Teaching Mothers Through Videotape Modeling to Change Their Children's Behavior¹

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Thirty-five mothers and their children age 3-5 were randomly assigned to either a treatment group or a waiting-list control group. The children's baseline behaviors were obtained through videotapes of children playing with their mothers. Mothers in the experimental group attended a series of four weekly 2-hour videotape modeling sessions. At the end of treatment, results showed a significant decrease in children's negative affect behaviors and submissive behaviors and a significant increase in children's positive affect behaviors when the experimental group of children was compared with the control group. Also, results showed that mothers in the experimental group reported significantly fewer and less intense behavior problems than the control group mothers. Two months later, follow-up assessment indicated that the children's behaviors continued to improve. The study was subsequently replicated with the control group. Results suggest that education of groups of parents by a videotape modeling program has powerful secondary effects in changing children's behaviors.

There has been a recent increased emphasis in the use of performance-training methods to increase the effectiveness of parent-training programs. One such method has been the use of live modeling, a technique whereby the experimenter or another parent demonstrates the behaviors the parents are to acquire. This method has been shown to be a powerful agent to

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enhance the effectiveness of parent-training programs (Johnson & Brown, 1969; Mash & Terdal, 1973; Rose, 1969; Seitz & Terdal, 1972; Twentyman & Martin, 1978). Another recent development in performance-based parent-training approaches has been the use of videotape feedback. Typically, parents and their family members are videotaped while interacting with their children in problematic situations and then shown the videotapes and instructed how to improve. This method, using individually prepared videotapes for each family, has also been shown to be a powerful tool for improving parents' appropriate discrimination and responding skills (Bernal, 1969; Bernal, Duryee, Pruett, & Burns, 1968; Bernal, Williams, Miller, & Reagor, 1972; Forehand & King, 1977; Kogan & Wimberger, 1971). However, most of these performance-training programs have been based on an individualized treatment model and have been costly, time consuming, and inefficient. Consequently, they have been available only to small numbers of clinic parents with disturbed children and therefore are incapable of meeting the increasing demands for parent-training programs in nonclinic populations.

Nonetheless, the success of such individualized videotape feedback and live modeling programs suggests the possibility that a standardized videotape modeling program which could be shown to parents in groups might also be effective. If a videotape modeling program were shown to be effective, it would offer some advantages over other performance-training techniques. First, it has the potential for a more efficient cost-effective program because it can be widely disseminated to large numbers of parents. Second, automated techniques provide a more flexible method for treatment because they can portray a variety of modeling sequences that might be difficult to create consistently within the live modeling situation. In addition, videotape scenes provide a convenient way to present multiple models while using a minimum of models' time, and they can be used repeatedly with a variety of parent groups. Also, periodic retraining or maintenance training would become a routine, inexpensive process, as the program would have the capacity for repeated review. Hence, parent education based on videotape modeling could represent an important technological advancement in applied service and provide a tool for creative programs.

Research on videotape modeling as a method of parent training, however, is limited. One of the first studies by Nay (1976) compared the effectiveness of videotape modeling, lecture, written presentation, and videotape modeling coupled with role-playing, in teaching parents to use a Time Out procedure. Nay (1976) found videotape modeling to be superior to written or lecture presentations and comparable with modeling plus role-playing when assessing parents with an audiotaped simulation in the

laboratory. Flanagan, Adams, and Forehand (1979), in a similar study assessing parents' application of Time Out skills in the home setting, found parents trained by videotape modeling to be more skillful than those trained by written presentation. In a series of two studies (O'Dell, Mahoney, Horton, & Turner, 1979; O'Dell, Krug, O'Quinn, & Kasnetz, 1980), also comparing various instructional techniques for teaching Time Out to parents, O'Dell et al. (1979) and O'Dell, Krug, O'Quinn, and Kasnetz (1980) found videotape modeling plus brief individual checkout to be superior to written materials as well as to live modeling combined with role-played rehearsal. However, a third study (O'Dell, Krug, Patterson, & Faustman, 1980) did not replicate these differences when training included a written take-home manual for all parents.

Despite the suggestion from these studies that videotape modeling is an effective technique, there are methodological and measurement problems which limit the interpretability of these findings. One of the main difficulties with these studies is that they focused primarily on parents' ability to modify a few deviant child behaviors by teaching parents to use the Time Out technique. It is not known how effective videotape modeling would be in teaching content other than Time Out. Additionally, the focus on teaching parents Time Out skills so that they can eliminate undesirable targeted behaviors in the child does not mean that adaptive or prosocial behaviors were learned by the child. None of the above studies attempted to assess outcome in terms of direct changes in children's behaviors. In fact, Nay (1976), O'Dell et al. (1979), and O'Dell, Krug, O'Quinn, and Kasnetz (1980) did not observe parents interacting with their own children. Consequently, it is not known how effective a videotape modeling program would be in helping parents change their children's general behaviors and ways of interacting. Clearly, more studies are needed with videotape modeling training content other than Time Out and to assess more broadly the children's behavior changes.

Therefore, the purpose of this study was to determine if a videotape modeling group discussion program which focused on providing parents with a broad range of skills and ways of interacting with their children would produce significant changes in children's general behaviors. It was predicted that direct observations of the children of parents who had received the videotape modeling program would show more positive affect and acceptance behaviors and fewer negative, nonacceptance, and submissive behaviors than a comparable group of children whose mothers had not attended the program. It was also predicted that parents who attended the videotape modeling program would report fewer and less intense behavior problems in their children than would a control group of parents.

METHOD

Subjects

The participants in the study were 35 mothers and their 3- to 5-year-old children. The mothers were recruited for this program by a flyer announcing a parent-training program. In terms of group means on demographic variables, the mothers in the study were 33 years old, had 4 years of college education, and two children. Socioeconomic status ranged from lower middle to upper middle class. Study children included 23 boys and 12 girls, with an overall average age of 3 years 11 months.

In addition to social and demographic data, information was obtained from mothers as to whether they had taken previous parent-education courses and, if so, the amount and type of courses taken. Surprisingly, 75% of the total sample had attended some form of parenting program before. Of the total group, 69% were members of parent cooperatives. Thus, the majority of mothers in this study were among those who seek out parenting programs whenever possible.

Parents were also asked to identify the particular problems they felt they faced with their parenting skills. Over 66% of the sample said they were concerned with setting limits and handling misbehavior; 20% were concerned with sibling rivalry; 8% with developmental issues; and 6% with communication ability.

Procedure

Behavioral, attitudinal, social, and demographic data were collected on all mothers and children at the beginning of the study (Time I). On completion of these baseline data, the subjects were assigned at random to two experimental groups, Group A ($n = 16$), the early treatment group, and Group B ($n = 19$), the waiting-list control group. Three additional subjects were randomly assigned to Group B because it was anticipated that several subjects might drop out during the waiting period prior to treatment.

After Time I baseline data collection, Group A attended a series of four weekly 2-hour videotape modeling discussion sessions which were conducted over four consecutive weeks, while Group B received no treatment. Immediately after the program was completed (Time II), all subjects were retested on all measures. Two weeks after Time II data collection, Group B attended the same 4-week program, while Group A received no further treatment. All subjects were then retested at Time III, to determine immediate posttreatment results for Group B and 6-week follow-up data for Group A. Two months after Time III data collection, all

mothers evaluated the training program by means of an extensive questionnaire.

Treatment

A videotape modeling group discussion program was designed to provide parents with a broad base of knowledge and skills in ways of interacting and communicating with their children and in handling their children's behavior problems. For example, videotape vignettes were shown of nonstudy parent models who were nurturant, playful, and sensitive to the individuality of their children in contrast to other vignettes of parent models who were rigid, controlling, and concrete with their children.

For the treatment program, both Groups A and B were randomly subdivided into two groups of eight or nine parents. The videotape vignettes were shown to each group in approximately 2-minute segments following which the mothers discussed their observations. One graduate student therapist with extensive group work training conducted all four groups. The therapist had a prepared script for each vignette to ensure that the same content was discussed with all the groups and also to allow for future replication studies. A more complete description of the program development and execution has been reported elsewhere (Webster-Stratton, 1981). However, it is noteworthy that the parents attending the program did not have the opportunity to practice directly under supervision what they had observed on the videotapes.

Measures

In order to be able to compare this program with others, a combination of parent reports, attitudinal measures, and direct observational data were employed:

The Eyberg Child Behavior Inventory (ECBI). The ECBI is a valid and reliable 36-item inventory applicable for children 2-16 years and covers a variety of parental concerns (Eyberg & Ross, 1978; Robinson, Eyberg, & Ross, 1980). Sample items include "refuses to do chores when asked," "whines," "dawdles or lingers at meal time," "hits parents." The response format was constructed to assess each of the 36 items on two dimensions: the frequency of its occurrence and its identification as a problem. The frequency ratings range from (1) "never occurs" to (7) "always occurs" and are summed to yield an overall problem behavior Intensity Score. The problem identification measure requires the parent to circle "yes" or "no" when asked, "Is this behavior a problem for you?" and is summed to give a total Problem Score.

Behavior Measure (IBCS). Behavior observations were obtained by videotaping each mother-child dyad for 30 minutes in a playroom via a one-way mirror. The videotapes were analyzed according to the Interpersonal Behavior Construct Scale (IBCS) (Kogan & Gordon, 1975), which consists of 23 categories of behaviors which are coded as present or absent for each 40-second segment. Eight of these 23 categories were not analyzed since no predictions were made for these behaviors. Ratings in the remaining 15 categories for all time segments were summed to form the five main dimensions of child interactions with their parents, as described by Kogan and Gordon (1975).

The first dimension, Positive Affect Behavior, includes such behaviors as smiling, animated voice, praise, stating personal pleasure, physical closeness, and expression of affection.

The second dimension, Negative Affect Behavior, includes pouting, frowning, negative voice, ridicule, teasing, and direct hostility such as slaps, snatches, threat gestures, and other aggressive acts.

The third related dimension, Nonacceptance Behavior, includes behaviors such as frustration, ignoring, and negative content involving active nonacceptance or opposition to something the parent has said or done.

The fourth dimension, which focuses on the amount of control, or Dominance in a relationship, reflects various manifestations of efforts to dictate the other person's behavior by contradicting, criticizing, correcting, or refusing to comply; by intruding physically into ongoing activity by issuing commands or arbitrary rules; or by expressing the intention to compete.

The fifth dimension, Submissiveness, refers to behaviors which include seeking permission, help or approval for an activity. This category requires an explicit submissive quality accompanying each act in order to be checked. It also includes behaviors or statements which are mixed messages and contain elements of being both controlling and submissive.

Four experienced coders, blind to the hypotheses and group membership of the subjects, analyzed the videotapes. Throughout the study they received training sessions to maintain accuracy. All videotape analyses were rechecked by a second coder who independently analyzed 8 of the 45, 40-second units comprising a complete videotape. An average interrater reliability of 91% (range 80-98%) was maintained by coders (number of agreement/number of agreements plus disagreements).

Follow-up Questionnaire. A 41-item questionnaire prepared by the author was mailed to the parents 2 months after Time III data collection. The parents' feeling of confidence as a result of the program; continued child behavior improvement due to the program; generalizability of the program to novel situations and to other children; usability of this educational technique; and whether parents would recommend this program to other parents, were assessed on a 4-point Likert scale (strongly

agree to strongly disagree). Half of the items were scored in the reverse direction.

RESULTS

Baseline Differences

There were no significant differences on social, demographic, attitudinal, or behavioral measures between Groups A and B at the beginning of the study (Time I). A comparison of the demographic variables for Groups A and B is presented in Table I. Means and standard deviations of all dependent measures for Groups A and B at Time I are presented in Table II.

Table I. Comparison of Demographic Variables for Groups A and B^a

Demographic variables	Group A	Group B
Mother's mean age	32.3 ± 3.3	33.8 ± 3.5
Mean number of children	2.0 ± .52	1.94 ± 6.2
Child's mean age (months)	48.0 ± 8.2	46.3 ± 10.0
Mother's education (%)		
Some college	18.8	26.4
Completed college	81.3	73.7
Father's education (%)		
Some college	21.4	21.1
College, post MA	57.1	63.2
PhD	21.4	15.8
Income (%)		
\$5,000-15,000	12.9	10.6
\$15,000-20,000	25.0	21.1
\$20,000 above	56.3	68.4
Child's sex (%)		
Male	68.8	63.2
Female	31.3	36.8
Birth order (%)		
Firstborn	62.5	57.9
Later born	37.5	42.1

^aNo comparisons are statistically significant at the $p < .05$ level as tested by Student's unpaired t for continuous and chi square for discontinuous variables.

Table II. Means and Standard Deviations for Child Behaviors at Time I, II, and III

Dependent measures	Time I		Time II		Time III	
	A (n = 16) (not treated)	B (n = 19) (not treated)	A (n = 16) (treated)	B (n = 19) (not treated)	A (n = 16) (both groups treated)	B (n = 16) (both groups treated)
Eyberg Child Behavior Inventory						
Problem score	8.1 ± 4.4	7.7 ± 4.7	5.6 ± 4.0	6.8 ± 4.5	3.9 ± 3.6	4.2 ± 3.0 ^a
Intensity score	118.0 ± 22.3	117.7 ± 23.5	107.5 ± 20.2 ^c	119.1 ± 22.5	105.6 ± 21.6	105.1 ± 20.5 ^b
Behavior summary scores (IBCS)						
Child positive affect	21.7 ± 9.0	21.1 ± 9.3	29.6 ± 9.4 ^c	24.5 ± 8.5	30.6 ± 9.0	31.7 ± 6.5 ^a
Child negative affect	1.6 ± 2.9	.58 ± 1.3	.62 ± 1.2 ^c	2.6 ± 4.1	.50 ± .97	1.4 ± 2.5
Child nonacceptance	9.7 ± 5.5	7.7 ± 5.6	8.3 ± 5.4	11.4 ± 5.6	7.1 ± 3.8	7.8 ± 2.9 ^a
Child dominance	21.6 ± 10.4	18.8 ± 9.7	22.7 ± 7.5	20.0 ± 8.4	20.7 ± 8.5	18.0 ± 6.8
Child submissiveness	16.0 ± 7.3	17.5 ± 7.3	6.9 ± 5.1 ^d	18.5 ± 8.4	7.3 ± 7.0	7.7 ± 5.2 ^b

^a*p* < .01, Group B posttreatment Time III vs. pretreatment Time II.

^b*p* < .001, Group B posttreatment Time III vs. pretreatment Time II.

^c*p* < .05, Group A posttreatment Time II vs. Group B pretreatment Time II (ANCOV).

^d*p* < .001, Group A posttreatment Time II vs. Group B pretreatment Time II (ANCOV).

Changes After Treatment

Because there is an increased probability of obtaining significant results by chance when several univariate analyses of covariance are performed, a multivariate analysis of variance (MANOVA) was initially used to obtain an overall significance level for the two ECBI and five IBCS variables combined at Time II. If the overall Hotelling's T was significant, analysis of covariance was then carried out with Time II data, using the pretest scores as covariate (Huck & McLean, 1975). At Time II there were two univariate tests for the ECBI and five univariate comparisons for the IBCS. At Time III (after both groups were treated), paired t -tests for Time II to III were performed to describe change within each group. For these tests the level of significance was corrected to .01 to correct for the probability of increased significance when multiple univariate tests are run.

No Group A mother dropped out of the Program. Two Group B subjects dropped out after Time II data collection and their data are included. One other subject completed the program and the videotaped behavioral observations but failed to return the Eyberg Child Behavior Inventory at Time III.

At Time II (Group A treated and Group B not treated), multivariate analyses indicated that Groups A and B differed significantly on the five observational and two attitudinal variables taken together as a group by Hotelling's T , $T = 3.8$, $F(7, 27) = 32.85$, $p < .005$. As would be expected, at Time III after both groups were treated, Groups A and B were no longer statistically different on the seven child variables combined by Hotelling's T , $T = .43$, $F(7, 27) = 3.8$, ns. Further univariate analysis was then conducted comparing Groups A and B on the separate behavioral and attitudinal variables at Time II and Time III.

Eyberg Child Behavior Inventory. The ECBI consists of two scores: (a) a Problem Score which requires the parent to state whether a particular behavior is a problem, and (b) an Intensity Score, for which the parent reports the frequency of occurrence of specified behavior problems.

At base line the mean ECBI Problem Score for all children in this sample was 7.9 ± 4.4 (range 2 to 19) and the mean Intensity Score was 118.5 ± 21.5 (range 68 to 160). As would be expected, these means did not fall within the range of the clinic, conduct-disordered children described by Eyberg and Ross (1978). Nonetheless, the overall means for the current sample were significantly higher, $t(52) = 2.85$, $p < .01$, than the "normals" who were reported by Eyberg and Ross (1978) as having a mean problem score of 4.1 ± 5.4 and a mean Intensity Score of 100 ± 26.8 . Thus, this sample represents children with a wide range of behavior problems, with 29% of the group ($n = 10$) being more than 1.5 standard deviations above the mean for behavior problems in the nonclinic population.

At Time II, analyses of covariance revealed that the treated Group A mothers reported significantly less intense and less frequent behavior problems than did the untreated Group B mothers, $F(1, 33) = 5.92, p < .02$. There was no significant difference in the total number of behavior problems, although there was a strong trend in the predicted direction, $F(1, 33) = 3.01, p < .09$.

At Time III after Group B was treated, it was further found that Group B mothers reported significant (.01) decreases in both the Problem Score, $t(15) = 3.01, p < .009$, and the Intensity Score, $t(15) = 3.38, p < .001$ when pretreatment Time II scores were compared with posttreatment scores. Follow-up assessment of Group A at Time III indicated that the Problem Score continued to decrease significantly 6 weeks later, $t(15) = 2.16, p < .05$. In addition, the significant improvement noted on the Intensity Score immediately posttreatment was maintained over this period.

In summary, these results were consistent with the predictions that the experimental group would report fewer and less intense behavior problems than the waiting-list control group at Time II. The Intensity Score seemed to give a more sensitive picture of the immediate effect of the program on children's behavior problems because it was possible for a mother to report that a behavior problem continued to occur but to rate its occurrence as less frequent or less intense. Moreover, the program's effectiveness was nearly identically replicated with Group B at Time III. Follow-up assessment also indicated that the treatment effects were stable 6 weeks later. In fact, follow-up assessment suggested that the program's effectiveness was even more significant at Time III than immediately after treatment. Figure 1 presents a graphic representation of the statistical interaction of ECBI Intensity and Problem Scores for Groups A and B at Times I, II, and III. Table II presents the means and standard deviations for each time period.

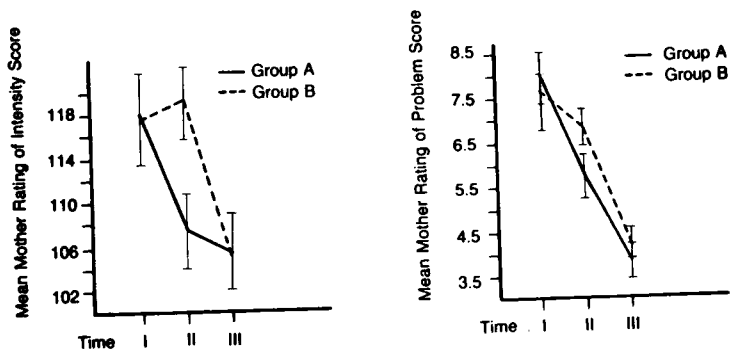


Fig. 1. Changes in Eyberg Child Behavior Inventory.

Behavior Observations. The IBCS consists of five main dimensions of child behaviors. At Time II analyses of covariance revealed that the treated Group A children showed significantly fewer submissive behaviors, $F(1, 33) = 19.77, p < .001$, significantly fewer negative affect behaviors, $F(1, 33) = 5.09, p < .03$, and significantly increased positive affect behaviors, $F(1, 33) = 3.88, p < .05$, when compared with the untreated Group B children at Time II. In contrast to Group A, Group B children showed a significant increase in negative affect behaviors while they waited for their program to begin, $t(18) = -3.53, p < .02$. The difference between Group A and B children in nonacceptance behaviors was not significant. Nevertheless, there was a trend for Group A children to improve in the predicted direction, showing a reduction in nonacceptance behaviors, whereas the waiting-list control Group B children, on the other hand, deteriorated, showing an increase in nonacceptance behaviors. The difference between Groups A and B on child dominance behavior was not, however, significant, $F(1, 33) = .762, ns$.

At Time III (both groups posttreatment), further analyses comparing Group B pretreatment Time II scores with posttreatment scores revealed that Group B children showed significant decreases in mean submissive behaviors, $t(16) = 5.24, p < .0001$ and nonacceptance behaviors, $t(16) = 2.46, p < .02$, as well as a significant increase in positive affect behaviors, $t(16) = 3.43, p < .003$. However, the change in Group B negative affect behavior was not significant, although a trend was in the predicted direction. Six-week follow-up assessment with Group A children at Time III indicated that the treatment effects noted at Time II were maintained.

In summary, three of five behavior summary variables for Group A children showed significant changes in the predicted direction. The program's effectiveness was nearly identically replicated with Group B children at Time III. Follow-up assessment showed that the treatment effects noted for Group A children continued to be maintained. In fact, Group A children showed a continued trend toward increased positive affect behaviors, decreased negative affect behaviors, and decreased nonacceptance behaviors 6 weeks posttreatment. Figure 2 presents graphically a composite of the statistical interaction of the different behavior summary scores for Group A and B children at Times I, II, and III. The parallel change in Group A when it was treated from Time I to Time II, with Group B from Time II to Time III following its respective treatment program is a striking feature of all these figures. Table II presents the means and standard deviations for each time period.

Mothers' Evaluation Two Months Later. More than 87% of the parents indicated strong agreement that the program had helped them feel more confident; 13% indicated moderate confidence. More than 80% of parents felt that the program had not only helped improve their child's behavior but that there had been continued improvement since the

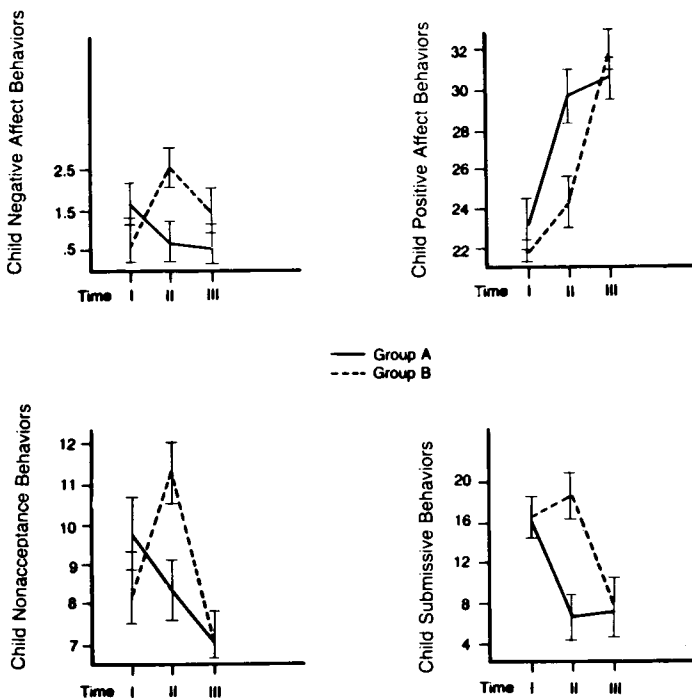


Fig. 2. Changes in child behaviors for Groups A and B.

program's completion; 19% indicated moderate agreement that their child's behavior had improved. No one felt that the program did not help their child's behavior. More than 70% of parents indicated that they felt strongly that they had been successfully able to use the principles learned in novel situations or with new behavior problems; 29% indicated moderate ability. To 100% of the parents, the program had made a difference and would be recommended to other parents. It is also noteworthy that no parent dropped out of the program, and all of them attended all four programs.

The responses to the course evaluation indicated that parents perceived positive changes in themselves and their children as a result of their participation in the videotape modeling program. In fact, the program seemed to have bolstered the parents' self-esteem. The most frequent change listed by parents was increased confidence in their role as parent. Other behavioral changes included improved child behavior, improved relationships, improved play with child, and improved communication skills.

DISCUSSION

This study further demonstrates the application of social learning theory to parent training by examining the effectiveness of a parent-training program based on group discussion of videotape models. The main purpose of this training program was to reduce children's behavior problems and negative behaviors as well as to improve their prosocial behaviors and general ways of interacting with their mothers. Results indicated that children's behaviors became significantly less negative, less noncompliant, and less submissive as well as more positive and friendly. The significant decrease in submissive behaviors could be interpreted as an increase in self-confidence or independence. It is also noteworthy that while the children did become less submissive, they did not become more domineering in their interactions with their mothers. In addition, the improvements in children's behaviors reported by independent unbiased observers corresponded with the ECBI mother report data indicating that mothers also perceived a reduction in the number and intensity of child behavior problems posttreatment. The fact that so many significant behavioral and attitudinal changes were seen with only 8 hours of videotape modeling group discussion and without personalized feedback from the therapist lends support to the efficiency and cost-effectiveness of the program. Parent training based on videotape modeling discussion appears to have potential for use by therapists or parent educators to disseminate information about parenting, not only to meet the increasing needs of parents and children with problems, but also to prevent children's behavior problems and promote positive parent-child relationships.

One limitation of the study is that it is difficult to determine which "ingredient" of the treatment program was responsible for the significant changes in mother attitudes and child behaviors. The program incorporated two main components: videotape modeling and therapist-led group discussion of vignettes. The study was not designed to assess the relative roles of these factors independently in producing predicted changes. In view of the highly significant changes, further studies are necessary to ascertain the relative contribution of each individual component of the program. Such studies would include a comparison of alternative treatments, such as a videotape modeling program without group discussion, a videotape modeling program plus group discussion, and a discussion-only program. Based on current theorizing, discussion should facilitate attention to the model and verbal labeling of the critical model behavior and thereby should increase the effectiveness of the videotape modeling intervention. However, the question of whether the discussion process has an incremental effect on the videotape modeling remains to be determined. In addition, it is not known if this videotape program has any incremental assistance over

other more traditional parent-training approaches. Research is needed to assess the efficacy of videotape modeling compared with other treatments such as individual videotape feedback, rehearsal, or live modeling.

A related limitation to the study is that there are also other nonspecific factors irrelevant to the videotape modeling treatment per se that may have contributed to the treatment effects. In order to attribute the assessed changes to the videotape modeling, it is necessary to rule out the influence of factors such as therapist attention, placebo, or other "demand characteristics." A placebo control group whereby parents would come in for the same amount of time in groups to watch an irrelevant film would help control for parent expectancy factors.

A second limitation of the study is that the sample's demographic and other characteristics largely limit the generalizability of the findings to similar groups of motivated parents. The high motivation of these parents is attested to by their 100% class attendance and participation in all data collection. In part, this high motivation may have been due to the perception on the part of the participants that the program was highly worthwhile. However, it is reasonable to assume that less motivated parents either would not seek out parenting programs in the first place or would not have as dramatic behavioral changes once in the program. Therefore, it is not currently known if the program would be appropriate with other racial or socioeconomic populations or with clinic populations. Since there is some evidence from previous research (Chilman, 1973; Green, Budd, Johnson, Lang, Pinkston, & Rudd, 1976) that group discussion by itself is somewhat unreliable as a method for altering parent or child behaviors, it may in fact be that videotape modeling is an especially useful technique to increase the effectiveness of many of the existing verbally based programs, especially for those less verbally oriented parents with limited education or general intellectual level. However, this hypothesis remains to be tested by further research with different populations.

Nonetheless, the sample studied is probably representative of the increasing numbers of motivated nonclinic parents who are enrolling in parent education classes. Do such nonclinic parents have serious questions about their skills and perceive their children as having significant problems? This may be suggested by the fact that 75% of the parents in this study group were veterans of other parenting programs, and that 66% of these mothers described child misbehaviors they were seriously concerned about. Also, comparison of the ECBI Problem Score and Intensity Score showed this sample to have a significantly higher number of behavior problems than the "normals" reported by Eyberg and Ross (1978), with a third of the group falling within the range of the clinic, conduct-disordered children. Thus, while parents participating in most community-based parenting programs may not have problems as severe as clinic populations, they are not

necessarily "normal" and without significant problems. As shown by this study, these children appeared to be a "borderline conduct disorder" group who were at high risk for future referral. Consequently, early intervention with parents such as these may potentially prevent maladjustment from increasing in severity or from developing in the first place.

A final concern with external validity is the extent to which data derived from a structured observation situation can be generalized to a natural environment. There was no question that after instruction, demonstrable behavior changes were reflected in the laboratory situations, but it is not known, without making observations in a natural environment, whether the behavior changes seen in the structured environments would also be seen in the home environment. Several assessment procedures were used in this study in an effort to determine if changes in the laboratory were also seen outside the laboratory. Parents' reports of changes on the ECBI and the evaluation responses indicated that they perceived a variety of behavioral changes in other than the laboratory settings. These findings add support to the notion that there was setting generality.

In conclusion, for those who are interested in developing videotape modeling programs for parents, many aspects and decision points need consideration. Few clear guidelines are available to indicate what model characteristics facilitate modeling treatment effects for parents. This videotape modeling program used multiple parent models who were the same sex and had children the same age as those parents attending the program. Vignettes were always shown first of the models behaving inappropriately followed by the same models behaving appropriately. The vignettes were kept short and model context was sufficiently simple to insure attention to the critical model behaviors and to avoid overwhelming the parent observer. Group discussion was also used to give parents a chance to report their observations and to "discover" the appropriate model behaviors. At present these guidelines for a videotape modeling program are necessarily speculative, since there is little comparative research on videotape modeling parent training programs. It would be a positive and timely contribution to the modeling field if researchers would assess and identify considerations that are critical in developing videotape modeling programs for parents. Nonetheless, these initial results suggest that parent training based on videotape modeling may have a promising future.

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