

Modification of Mothers' Behaviors and Attitudes Through a Videotape Modeling Group Discussion Program

CAROLYN WEBSTER-STRATTON

University of Washington

Parent training programs developed for nonclinic populations have largely relied on verbal training methods such as group discussion, didactic lectures, and reading materials. However, these methods have been unreliable in producing changes in nonclinic parents' behaviors. Also they may be inappropriate for some parents who have deficiencies in either reading, education or general intellectual level (Chilman, 1973; Green, Budd, Johnson, Lang, Pinkston, & Rudd, 1976; O'Dell, Note 1; O'Dell, Flynn, & Benloto, 1977). Additionally, much of the research assessing verbal training approaches in nonclinic populations is limited because it has evaluated effectiveness primarily in terms of attitudinal changes, which are subjective measures and do not necessarily reflect changes in behaviors (Freeman, 1975; Hereford, 1963; Schofield, 1976; Stearn, 1971).

In contrast, training programs for clinic parents have focused on performance-training techniques. One such technique has been the use of videotape feedback, a process whereby families are videotaped in problematic situations and are then instructed in different behaviors using the videotapes. This method, using individually prepared videotapes for each family, has been shown to be a powerful tool for improving clinic parents' appropriate discrimination and responding skills (Bernal, 1969; Bernal, Duryee, Pruett, & Burns, 1968; Bernal, Williams, Miller, & Reagor, 1972; Forehand & King, 1977). However, these individualized treatment programs have been time consuming, costly, and not widely available. Consequently they are incapable of meeting the increasing demands for parent training programs in nonclinic populations. Nonetheless, the success of such individualized videotape feedback programs suggests the possibility

Appreciation is expressed to John R. Stratton, M.D., and Elizabeth Robinson, Ph.D., for their assistance and support. Portions of this paper were presented at the American Psychological Association, September 1980. Requests for reprints should be directed to Carolyn Webster-Stratton, University of Washington, School of Nursing SC-74, Seattle, WA 98195.

that a standardized and less costly videotape modeling program which could be shown to parents in groups may also be effective in changing parents' behaviors.

To date, a few studies have directly assessed the effectiveness of a standardized videotape modeling program (e.g., Nay, 1976; O'Dell, Mahoney, Horton, & Turner, 1979). These studies demonstrated that videotape modeling was superior to written materials, lecture, live modeling, or rehearsal. However, methodological and measurement problems limited the interpretation of these findings. In particular, the only outcome assessed was the parents' learning of the time out technique. No research has assessed the effectiveness of videotape modeling in changing parents' general behaviors or attitudes. Moreover, whether nonclinic populations may benefit from this approach has not been determined. Therefore, the purpose of this randomized control group study was to determine if a standardized videotape modeling group discussion program would produce significant changes in both maternal attitudes and behaviors in a nonclinic population. It was predicted that the videotape modeling program would lead to more positive maternal attitudes and to fewer maternal dominating, nonaccepting, and negative affect behaviors and more positive affect behaviors.

METHOD

Subjects

The participants in this study were 35 mothers and their 3-5-year-old children. The mothers were recruited for this program by a flyer announcing a parent training program. The mothers in the study had a mean age of 33 years, 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, 21 firstborns, and 14 secondborns with an overall average age of 3 years, 11 months.

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 continuously 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 data collection, Group A attended a series of four weekly, 2-hour videotape modeling discussion sessions which were conducted over 4 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 im-

mediate posttreatment results for Group B and 6-week follow-up data for Group A. Both groups evaluated the training program by means of a consumer satisfaction inventory at Time III.

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 to nine parents. The videotape vignettes were shown to each group in approximately 2-min 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).

Measures

Attitudinal measure (PAS). The Parent Attitude Survey (PAS) is a 75-item parental attitude instrument developed by Hereford (1963). The PAS was used to measure five dimensions which were felt to characterize the parents' perceptions of the parent-child interaction: confidence, causation, acceptance, understanding, and trust.

Behavior measure (IBCS). Behavior observations were obtained by videotaping each mother-child dyad for 30 min in a playroom via a one-way mirror. The videotapes were analyzed according to the Interpersonal Behavior Construct Scale (IBCS) (Kogan & Gordon, 1975a,b), which consists of 23 categories of behaviors which are coded as present or absent for each 40-sec segment. Ratings in the 23 categories for all time segments are summed to form the seven main dimensions of the parent-child interactions. The first five dimensions, positive affect, negative affect, non-acceptance, dominance, and submissiveness, are called "frequency constructs." The submissiveness dimension was not analyzed since no predictions were made for these behaviors. The final two dimensions, leadtaking and mother watch are called "duration constructs" and are checked only if their duration characterizes 70% of the 40-sec time unit.

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-sec units comprising a complete videotape. Average agreement levels of 85%–98% were maintained by coders (number of agreements/

TABLE I
MEANS FOR MOTHER BEHAVIORS AND ATTITUDES AT TIME I, II, AND III

Dependent measures	Time I		Time II		Time III	
	A(n = 16)	B(n = 19)	A(n = 16)	B(n = 19)	A(n = 16)	B(n = 16)
<i>Parent attitude survey (PAS)</i>						
Confidence	7.3	7.9	9.2 ⁺	7.4	8.6	9.9 [*]
Causation	16.1	16.4	17.2	15.3	17.9	17.3
Acceptance	18.1	17.1	17.1	15.9	18.0	14.7
Understanding	20.9	20.8	19.9	19.1	20.4	21.2
Trust	19.3	15.4	19.9	13.4	19.4	16.1 [*]
<i>Behavior summary scores (IBCS)</i>						
M watch	17.1	24.9	26.8 ⁺⁺	27.2	27.2	31.1
M leadtaking	5.5	3.9	.8 ⁺⁺	5.5	1.2	1.8 ^{**}
M positive affect	27.7	30.4	47.6 ^{**}	33.9	47.4	53.3 ^{**}
M nonacceptance	4.4	4.4	1.6 ^{**}	7.1	2.7	2.9 ^{**}
M dominance	31.4	33.0	11.4 ⁺⁺	29.9	12.9	13.4 ^{**}

^{**} $p < .001$ Group B posttreatment Time III vs pretreatment Time II.

^{*} $p < .05$.

⁺⁺ $p < .001$ Group A posttreatment Time II vs Group B pretreatment Time II (ANCOV).

⁺ $p < .05$.

number of agreements plus disagreements). All areas of disagreement were reviewed jointly by two raters to determine a consensus reading. If a disagreement persisted, which was rare since usually the error was obvious upon reviewing the tape, a third judge independently rated the tape section and the final scoring was based on the agreement of two of three judges.

Consumer satisfaction measure (ATTQ). At Time III, parents completed an Attitude Toward Training Questionnaire (ATTQ) which assessed parents' immediate reactions to and satisfaction with the program (O'Dell, 1974).

RESULTS

Baseline Measures

There were no significant differences on social, demographic, or attitudinal measures between Groups A and B at the beginning of the study. On the behavior measures, Group B had more mother watch behaviors, $t(34) = -2.31, p < .03$. Means of the raw data for all measures are presented in Table I.

Changes after Treatment

Because there is an increased probability of obtaining significant results by chance when multiple univariate analyses of covariance are performed, a multivariate analyses of variance was initially used to obtain

overall significance levels for PAS and IBCS data 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 five univariate tests for the PAS and six potential univariate comparisons for the IBCS. One IBCS variable, negative affect behavior, was dropped because these behaviors did not occur at the initial baseline videotape observations of mothers. Only those variables found to be significant at Time II by covariance analyses were analyzed further at Time III. At Time III, 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 since five univariate tests were 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.)

Behavioral observations. At Time II, Group A and B differed significantly on the five observational variables taken together as a group by Hotelling's T , $T = 3.7$, $F(5,29) = 21.34$, $p < .00001$. Univariate analyses of covariance further revealed that four of the five behavior summary variables changed in the predicted direction. When compared with the untreated Group B mothers at Time II, the treated Group A mothers showed significantly fewer leadtaking behaviors, $F(1,33) = 18.33$, $p < .001$, significantly fewer dominance behaviors, $F(1,33) = 50.10$, $p < .00001$, significantly fewer nonacceptance behaviors, $F(1,33) = 31.78$, $p < .00001$, and significantly increased positive affect behaviors, $F(1,33) = 19.05$, $p < .001$. There was no significant difference in mother watch behaviors, although the change was in the predicted direction.

At Time III (both groups posttreatment), Group A and B no longer statistically differed on the mother behavior variables combined by Hotelling's T , $T = .043$, $F(5,29) = .252$, $p < .935$. Further analyses comparing Group B pretreatment Time II scores with posttreatment scores, using paired t tests, revealed that Group B mothers showed significant (.01) decreases in leadtaking behaviors, $t(16) = 3.70$, $p < .002$, nonacceptance behaviors, $t(16) = 3.43$, $p < .003$, dominance behaviors, $t(16) = 7.32$, $p < .001$, and a significant increase in positive affect behaviors $t(16) = 5.21$, $p < .001$. Again there was no significant change noted in mother watch behaviors. Thus, the study was identically replicated for all five summary variables for Group B mothers. Six-week post-treatment assessment of Group A at Time III indicated that the changes noted at Time II were maintained. Fig. 1 illustrates the changes in behavior summary scores. The parallel changes in Group A and B following their respective treatment programs is a striking feature of all these figures.

Parent attitude survey. At Time II, Group A and B did not differ significantly on the five attitudinal variables taken as a group, by Hotelling's T , $T = .362$, $F(5,29) = p < .09$. However, there was a trend for Group A's Confidence scores to change in the predicted direction at Time II (see Table 1).

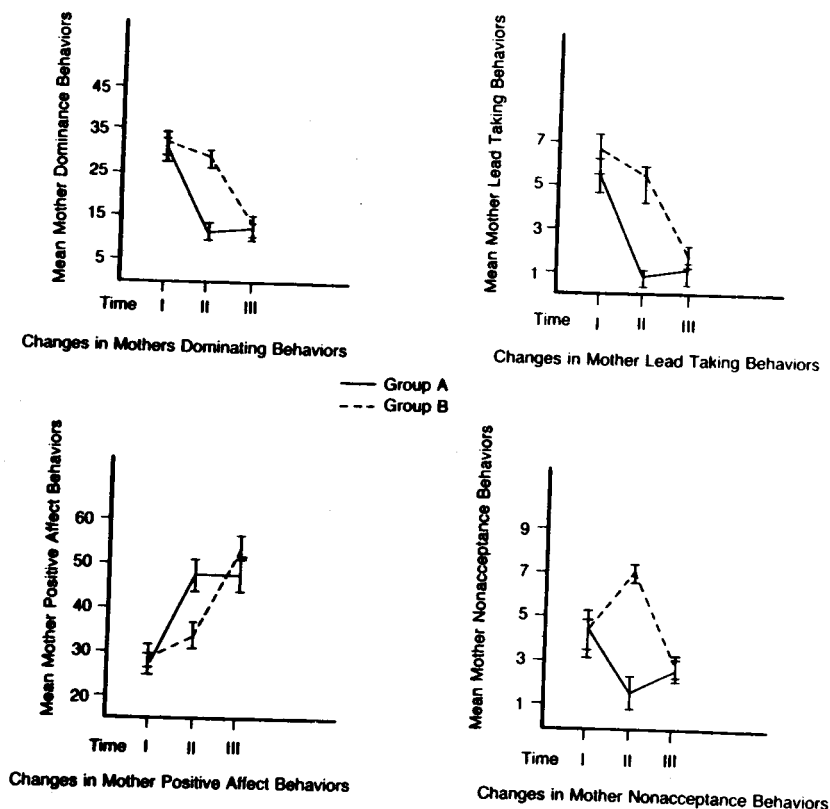


FIG. 1. Changes in mother behaviors for Groups A and B.

Attitude toward training questionnaire. One hundred percent of the mothers felt "very positive" about the program and perceived positive changes in themselves and their children as a result of their participation in the program. The most frequently listed change was increased confidence in their role as a parent.

DISCUSSION

The principle issue addressed by this study was whether a relatively short and inexpensive performance-based parent training program would produce significant changes in maternal attitudes and behaviors. The program was designed to produce maximal changes and thus incorporated two main components: standardized videotape modeling vignettes and therapist lead group discussion of these vignettes. The study was not designed to assess the relative roles of these factors independently in producing change. In view of the highly significant behavioral changes,

further studies are necessary to ascertain the most efficient and effective component of the program. Such studies need to compare a discussion-only group, discussion-plus-videotape-modeling group, and a videotape-only group. The long term effectiveness also needs to be evaluated. Currently a 1-year follow-up is being conducted.

The reason for the disparity between the marked behavioral changes, but only small attitudinal changes, is uncertain. One possibility is that these middle class, well motivated parents had such positive attitudes about parenting at baseline that a ceiling effect was present. Indeed, parents were significantly higher on PAS attitudinal measures at baseline than published norms (Hereford, 1963). Another possibility is that the PAS is an insensitive and outmoded scale. A third possibility is that attitudinal changes lag behind behavioral changes.

One limitation of the study is that the sample's population characteristics limit generalizability of the findings. Specifically, it is not known if the program would be appropriate with other racial or socioeconomic populations, with clinic populations, or with less verbally skilled parents. Potentially, the latter group might benefit greatly from a videotape modeling program, but this hypothesis requires testing.

Nonetheless, the sample studied is probably representative of the increasing numbers of motivated nonclinic parents who are enrolling in parent education classes. It is not clear why so many "normal" parents are seeking out parenting programs. Such parents may have serious doubts about their skills and perceive their children as having significant problems as suggested by pretest data in this study which revealed that 66% of the mothers described child behavior problems they were "seriously" concerned about. In addition, comparison of the parents' behaviors with normative data compiled by Kogan (1972) on a similar population showed that the parents in this study exhibited significantly less positive and more submissive behaviors.¹ Thus, while parents participating in community-based parenting programs may not have problems as severe as clinic populations, they are not necessarily "normal" and without significant problems.

The videotape modeling group discussion method used in this study has implications as a preventive model which may be efficient and cost effective. Although the videotapes are initially costly, they can be disseminated to groups of parents with a minimum of professional time. They also provide a flexible method of treatment because they can portray multiple models in different situations. Periodic retraining and maintenance training at low cost would be feasible as the program has capacity for repeated review. In this study, a total of 32 hours of training were given to 35 parents, that is, approximately 1 hour of therapist time per parent. With the development of a manual to accompany the vignettes, it may also be possible for trained paraprofessionals to offer the program,

¹ A more complete description of the sample is available from the author. Also, videotape vignettes with accompanying training manual may also be obtained from the author.

further reducing the cost. Whether a self-administered videotape modeling program of even lower cost would be as effective as videotape modeling combined with therapist-led discussion remains to be determined. If the preventive aspect of parent training is to be realized, further research is needed into effective, performance-based training programs which can be made available to large numbers of parents.

REFERENCE NOTE

1. O'Dell, S. L. A comparison and evaluation of methods for producing behavior change in parents. Paper presented at the Annual Convention of Association for Advancement of Behavior Therapy, Chicago, 1978.

REFERENCES

- Bernal, M. E. Behavioral feedback in the modification of brat behaviors. *Journal of Nervous and Mental Disease*, 1969, 48(4), 375-385.
- Bernal, M. E., Duryee, J. S., Pruett, H. L., & Burns, B. J. Behavior modification and the brat syndrome. *Journal of Consulting and Clinical Psychology*, 1968, 32, 447-455.
- Bernal, M. E., Williams, D. E., Miller, W. H., & Reagor, P. A. The use of videotape feedback and operant learning principles in training parents in management of deviant children. In R. Rubin, H. F. Fensterheim, J. Anderson, & L. Uelman (Eds.), *Advances in behavior therapy*. New York: Academic Press, 1972.
- Chilman, C. S. Programs for disadvantaged parents. In B. U. Caldwell & H. N. Ricciuti (Eds.), *Review of child development research* (Vol. 3). Chicago: University of Chicago Press, 1973.
- Forehand, R., & King, H. E. Noncompliant children: Effects of parent training and attitude change. *Behavior Modification*, 1977, 1, 93-100.
- Freeman, C. W. Adlerian mother study groups: Effects on attitudes and behaviors. *Journal of Individual Psychology*, 1975, 31, 37-50.
- Green, D. R., Budd, K., Johnson, M., Lang, S., Pinkston, E., & Rudd, S. Training parents to modify problem child behaviors. In E. J. Mash, L. C. Handy, & L. A. Hamerlynck (Eds.), *Behavior modification approaches to parenting*. New York: Brunner/Mazel, 1976.
- Hereford, C. F. *Changing parental attitudes through group discussion*. Austin: University of Texas Press, 1963.
- Huck, S. W., & McLean, R. A. Doing a repeated measures ANOVA to analyze the data from a pretest-posttest design: A potentially confusing task. *Psychological Bulletin*, 1975, 82(4), 511-518.
- Kogan, K. L. Specificity and stability of mother-child interaction styles. *Child Psychiatry and Human Development*, 1972, 2, 160-168.
- Kogan, K. L., & Gordon, B. M. Interpersonal behavior constructs: A revised approach to defining dyadic interaction styles. *Psychological Reports*, 1975, 36, 835-846. (a)
- Kogan, K. L., & Gordon, B. M. A mother-instruction program: Documenting change in mother-child interactions. *Child Psychiatry and Human Development*, 1975, 5, 189-200. (b)
- Nay, R. W. A systematic comparison of instructional techniques for parents. *Behavior Therapy*, 1976, 6, 14-21.
- O'Dell, S. Training parents in behavior modification: A review. *Psychological Bulletin*, 1974, 7, 418-433.
- O'Dell, S., Flynn, J., & Benloto, L. A comparison of parent training techniques in child behavior modification. *Journal of Behavior Therapy and Experimental Psychiatry*, 1977, 8, 261-268.

- O'Dell, S. L., Mahoney, N. D., Horton, N. G., & Turner, P. E. Media assisted parent training: Alternative models. *Behavior Therapy*, 1979, 10, 103-110.
- Schofield, R. G. A comparison of two parent education programs: Parent effectiveness training and behavior modification and their effects on child's self-esteem. (Doctoral dissertation, University of Northern Colorado, 1976). *Dissertation Abstracts International*, 1976, 37, 2087A. (University Microfilms No. 76-23193)
- Stearn, M. B. The relationship of parent effectiveness training to parent attitudes, parent behavior, and child self-esteem. (Doctoral dissertation, United States International University, 1971). *Dissertation Abstracts International*, 1971, 32, 1885B-1886B. (University Microfilms No. 71-21, 506)
- Webster-Stratton, C. Videotape modeling: A method of parent education. *Journal of Clinical Child Psychology*, 1981, 10, 93-98.

RECEIVED: November 25, 1980

FINAL ACCEPTANCE: June 24, 1981