

Self-Administered Behavioral Parent Training: Enhancement of Treatment Efficacy Using a Time-Out Signal Seat

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The effectiveness of a time-out Signal Seat used in conjunction with a self-instructional parent training manual and audiotape was investigated with parents of behavior problem children between the ages of 2 and 7 years. Twenty-seven parent-child pairs were randomly assigned to one of three conditions: Parent-administered Treatment plus Signal Seat (PAT-SS), Parent-administered Treatment plus Seat (PAT-S), or Wait-list Control (WLC). Parents reported daily rates of child compliance, the intensity and problematic nature of frequently occurring child behavior problems, and perceptions of the target child during separate baseline, treatment, and 2-month follow-up periods. A post-treatment questionnaire assessed specific aspects of the program at the conclusion of the treatment phase. When the Signal Seat was used with the self-instructional materials, results indicated that: (a) parental report of the number and intensity of child behavior problems decreased, (b) perceptions of the target child became more positive, and (c) reported rates of child compliance to parental commands increased. Results are discussed in relation to the practical implications of the Signal Seat and the need for more cost-effective methods in behavioral parent training programs.

Parent Training programs based on behavior therapy principles have proven effective in assisting parents to modify the problematic behaviors of their children (cf. Graziano, 1977; Hamilton, MacQuiddy, Brown, Story, Braun, & Johnson, 1983; Moreland, Schwebel, Beck, & Wells, 1982). Although the scope and format of training programs vary, they frequently focus on the use of positive reinforcement and time-out (Forehand & McMahon, 1981).

A program developed by Hanf (1969) which is oriented toward the reduction of child noncompliance, teaches parents to attend to (e.g., praise, reinforce) their child's desirable behaviors and to

implement a simple time-out procedure (i.e., placing the child on a chair in the corner for 3 minutes) whenever noncompliance occurs. Other researchers (e.g., Eyberg & Robinson, 1982; Forehand & King, 1977; Peed, Roberts, & Forehand, 1977) have demonstrated that parents trained in this approach have been successful in increasing their rate of reinforcement, decreasing their child's noncompliant behavior, and developing more positive attitudes toward their child.

Until recently, the specific components which contribute to the success of behavioral parent training have received little attention. While personal values, ethical responsibilities, and maintenance issues may require the inclusion of positive reinforcement as an intervention component (Forehand, Sturgis, McMahon, Aguar, Green, Wells, & Breiner, 1979; Roberts, Hatzenbuehler, & Bean, 1981; Wahler, 1969), Roberts et al. (1981) found time-out to be the primary factor responsible for increasing compliant child behavior. This finding clearly highlights the importance of adequate instruction in time-out and consistent use of the strategy.

When a child resists remaining in time-out, however, effective implementation of the strategy requires a parent to continually monitor the child's time-out behavior. Results of empirical

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studies have demonstrated that preschool children quickly and repeatedly leave the time-out chair when consequences for escape behavior are not imposed (Bean & Roberts, 1981; Roberts, 1982). Although the time-out strategy has been useful to many parents, dropout rates in some programs incorporating this procedure have been high (Wahler, 1976), and maintenance of parental behavior change has been difficult to achieve (Forehand & Atkeson, 1977). The need for continual monitoring during time-out may contribute to these disappointing results. Constant parental attention may potentially reinforce the child's disruptive behavior while in time-out and also make the disciplinary strategy less aversive. Moreover, if procedural implementation is time-consuming and stressful, parents may either use the time-out procedure inconsistently or abandon it altogether.

In view of the need for a time-out strategy that obviates the need for continual parental monitoring and which provides a cue for both the parent and child that inappropriate escape behavior has occurred, the Signal Seat was developed (Hamilton & Golden, 1982). The Signal Seat, a time-out chair which emits an auditory signal whenever the child leaves the chair without permission, was designed to minimize the inconvenience of time-out and, thereby, encourage parental consistency. The current study assessed the Signal Seat's impact on the overall level of inappropriate child behaviors, reported rates of child compliance, and parental attitudes toward the target child and the training program.

Although many of the factors contributing to the success or failure of behavioral parent training are still unclear, the potency of behavioral strategies with many clinic parents has led some researchers to suggest that it is time to focus attention on cost-effectiveness issues. Although the number of parenting guides has rapidly increased in recent years (Bernal & North, 1978; Clarke-Stewart, 1978), few of these self-administered parent training programs have received adequate empirical confirmation (Clarke-Stewart, 1978) and existing studies of self-help manuals have generally been confounded by at least minimal therapist intervention (Glasgow & Rosen, 1978; McMahon & Forehand, 1980). Moreover, when multiple clinic and/or home observations are included as part of a comprehensive treatment evaluation, both internal and external validity may be compromised due to the methodologically and clinically significant effects produced by observer reactivity (cf. Haynes & Horn, 1982). Regrettably, researchers are often forced to choose between rigorous evaluation procedures

with multiple outcome measures and a methodology more accurately approximating a real-life self-instructional parent training format (i.e., where parents read and then apply suggested treatment strategies with minimal contact from treatment personnel).

Therefore, in conjunction with the assessment of the Signal Seat's impact on the implementation of time-out, the present investigation was designed as a *preliminary* test of a self-instructional package (MacQuiddy & Hamilton, 1983) based on the Hanf parent-training model. Three conditions were compared on parent attitude and parent home observation measures: Parent-administered Treatment plus Signal Seat (PAT-SS), Parent-administered Treatment plus Seat (PAT-S), and a Wait-list Control (WLC). To minimize the amount of therapist contact and to establish a treatment context most like the natural environment, no experimenter-imposed clinic or home behavioral observations were included in this initial study.

Method

Subjects

The availability of a free parent training program was announced in local newspapers, on radio stations, and at community day care centers. Interested persons were asked to contact the University's Psychological Services Center for additional information. Letters describing the program and requesting attendance at an initial organizational meeting were sent to all interested parents.

The organizational meeting was attended by 29 parents (approximately half were accompanied by spouses), and 27 chose to participate. To be admitted into the program, each parent agreed to: (a) accept assignment to any of the three experimental conditions, (b) study the self-instructional materials, (c) complete all outcome measures, and (d) deposit a \$20 fee, refundable at the completion of the program. The mother in each of the participating families accepted responsibility for data collection. Demographic information concerning parents and children in each of the experimental conditions is presented in Table 1.

Outcome Measures

Parent attitude measures. The Eyberg Child Behavior Inventory (ECBI) (Eyberg & Ross, 1978) was administered to assess parental perception of behavior problems displayed by the target child. The ECBI, a 36-item inventory of frequently occurring child behavior problems, asks the respondent to rate the intensity of each behavior of the target child and to indicate if that behavior is per-

Table 1. Characteristics of Participants by Experimental Condition

Characteristic	Experimental Condition								
	PAT-SS			PAT-S			WLC		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Age of Target Child	3.55	1.13	2-5	3.22	1.48	2-7	4.33	1.41	2-7
Percentage Male	78.00	—	—	56.00	—	—	67.00	—	—
Percentage Anglo ^a	100.00	—	—	100.00	—	—	78.00	—	—
Percentage Married Parents	67.00	—	—	67.00	—	—	67.00	—	—
Social Class ^b	2.67	1.12	1-5	3.00	1.00	2-5	2.44	1.24	1-5

^aTwo parents in the WLC condition were foreign-born, English-speaking, graduate students.

^bSocial class was determined by Hollingshead's two-factor index which is based on educational background and current occupational status (Myers & Bean, 1968). The socioeconomic status of families ranged from university professors and upper level professionals (Class I) to welfare recipients and unskilled laborers (Class V).

ceived as problematic. Internal consistency coefficients of .98 for both the intensity and problem scales and test-retest reliability of .86 for the instrument have been reported (Robinson, Eyberg, & Ross, 1980). Eyberg and Ross (1978) have also demonstrated the ECBI's ability to discriminate accurately between "problem" and "nonproblem" children.

The Becker Bi-polar Adjective Checklist (Becker, 1960), as modified by Patterson and Fagot (1967), was used to determine parents' general impressions of the target child. The Becker, a 47-item checklist, samples parent attitudes toward the child on five factors: Tense Disposition, Withdrawn/Hostile, Aggression, Intellectual Deficiency, and Conduct Problems. Lobitz and Johnson (1975a) found that a summary score composed of Factors I, III, and V correctly classified 90% of a sample of clinic referred and nonreferred children.

Parent home observation measures. The Daily Checklist, a 4-item questionnaire, assessed estimated level of functioning in the following areas: (a) percentage of time the child responded compliantly to direct commands, (b) percentage of time the parent provided positive attention to the child when he/she was compliant, (c) degree of self-control the parent felt when disciplining the child (i.e., 0 = completely out of control, 100 = completely in control), and (d) amount of time the parent spent checking on the child during a typical 3-minute time-out period (i.e., 0, 1-30 seconds, 31-60 seconds, etc.). Questionnaire items were verbally clarified upon distribution, and written instructions for each item, including behaviorally-anchored definitions and sample responses, were provided. To increase the reliability and validity of parental self-report, data were collected twice each week, and verbal and written instructions (in the form of prompts and cueing statements) reminded parents of the importance of honest and accurate monitoring and recording. All of these

strategies (i.e., assessment training, verbal and written cueing statements, use of prepared data sheets, and regular data collection) have been shown to reduce demand characteristics and enhance the veridicality of self-report data (Bornstein, Hamilton, Carmody, Rychtarik, & Veraldi, 1977; Bornstein, Hamilton, Miller, Quevillon, & Spitzform, 1977; Hamilton, 1981; Hamilton & Bornstein, 1977).

Posttreatment questionnaire evaluation. The Posttreatment Questionnaire addressed specific aspects of the treatment program (i.e., problems in the implementation of time-out and use of back-up consequences) as well as reactions to the self-instructional package.

Procedure

An organizational meeting to describe the fundamentals of the parent-training program and to present the evaluative aspects of the current study was held for potential participants. A brief description of the self-instructional materials, a demonstration of the Signal Seat, and a list of data collection responsibilities were provided. Parents who expressed a desire to participate were asked to complete a program application, a subject consent form, the ECBI, and the Becker. Each parent was given a recording form for item one of the Daily Checklist and asked to monitor child compliance for the next seven days.

At the conclusion of the pretreatment assessment phase (Week 1), nine parents were randomly assigned to each of the three experimental conditions. During Week 2, parents in the PAT-SS and PAT-S groups picked up the training package at the psychology clinic and began studying the self-instructional materials. Parents were told, however, not to implement any of the strategies until the following week.

Data for the treatment phase were collected during Weeks 3 through 5. PAT-SS and PAT-S parents recorded their responses to all Daily

Checklist items each evening, while the WLC group continued to monitor item one only. Four trained undergraduate assistants, who were aware of the general purpose of the investigation but blind as to participant's assignment to PAT-SS or PAT-S conditions, telephoned parents twice each week (at random intervals) to collect the data.

Posttreatment assessment occurred during Week 6. In addition to continuing with Daily Checklist observations, parents came to the psychology clinic to complete the ECBI and Becker. Parents in the PAT-SS and PAT-S groups also received the Posttreatment Questionnaire at this time. To minimize experimenter contact, the clinic secretary distributed and collected the evaluation forms. Parents in the WLC group were instructed to return to the clinic the following week to receive their training materials and refundable deposit.

At the 2-month follow-up evaluation (Week 13), the Daily Checklist, ECBI, and Becker were mailed to the PAT-SS and PAT-S groups. Upon completion of the follow-up evaluation measures and return of the time-out seat, the program deposit was refunded.

Experimental Conditions

Parent-administered Treatment plus Signal Seat (PAT-SS). Parents in the PAT-SS group received a self-instructional manual, audiotape, and Signal Seat. The 33-page manual, based on the parent-child interaction training program of Hanf (Forehand & McMahon, 1981; Hiers, Cole, Ross, & Eyberg, 1977), presents positive reinforcement and time-out strategies in a detailed, stepwise manner. The manual outlines the rationale for positive reinforcement and then defines seven specific skills: describing behavior, reflecting feelings, praising, ignoring undesirable behavior, avoiding continual questioning, avoiding criticism, and physically expressing affection. Similarly, after the rationale for time-out is presented, instruction in decision-making, giving direct commands, and implementation of a 3-minute time-out strategy is provided. Examples of each skill and practice exercises are included.

The 20-minute audiotape supplements the training manual. Parents listen to short vignettes in which positive reinforcement and time-out skills are demonstrated. Additional practice exercises are also included.

The Signal Seat is a cylindrical plastic stool with a 9-volt battery-powered buzzer attached beneath the top of the seat, which is spring loaded. When the child is placed on the stool, the parent activates the buzzer circuit. At this point, if the child gets off the stool before the buzzer is deactivated,

an auditory signal is emitted. To prevent an industrious child from deactivating the circuit, the on/off switch can only be activated with a wooden dowel inserted 8 inches into a small tube in the side of the stool. After the circuit is turned on, the parent takes the dowel and leaves the area for the duration of the 3-minute time-out period.

Parent-administered Treatment plus Seat (PAT-S). Parents in the PAT-S group received the self-instructional manual and the audiotape. They were also provided with a plastic stool, identical in size and shape to the Signal Seat, but without the signal attachment.

Wait-list Control (WLC). The WLC group received the self-instructional manual and audiotape at the conclusion of the posttreatment evaluation period.

Results

A one-way analysis of variance was performed on pretreatment data from the ECBI, Becker, and item one of the Daily Checklist (i.e., child compliance). No significant pretreatment differences were found (see Table 2). As suggested by Huck and McLean (1975), pretreatment scores were covaried against posttreatment scores for all three conditions and against follow-up scores for the PAT-SS and PAT-S groups. Newman-Keuls' analyses were performed on the adjusted treatment means when the analysis of covariance revealed significant differences between the three experimental conditions at posttreatment. Within group change from pretreatment to posttreatment and pretreatment to follow-up was assessed by *t* tests for related measures.

Eyberg Child Behavior Inventory

Significant differences were found on the ECBI problem intensity score at posttreatment ($p < .005$). Multiple comparisons revealed significantly lower intensity scores in the PAT-SS condition than in the PAT-S ($p < .05$) and WLC ($p < .01$) conditions. No significant posttreatment differences were found between PAT-S and WLC. At follow-up, differences were again found between the two treatment groups ($p < .05$), with lower intensity scores occurring in the PAT-SS condition. Within-group comparisons revealed a significant decline in the intensity of child problem behaviors at both posttreatment, $t(8) = 4.21, p < .01$, and follow-up, $t(8) = 4.02, p < .01$, for the PAT-SS condition. PAT-S showed no significant decline in problem intensity at either evaluation period.

Analysis of ECBI problem frequency indicated significant differences between groups at post-

Table 2. Means, Standard Deviations, and F Values for Pretreatment ANOVA, Pretreatment/Posttreatment ANCOVA, and Pretreatment/Follow-up ANCOVA

Variable	Experimental Condition						F
	PAT-SS		PAT-S		WLC		
	M	SD	M	SD	M	SD	
ECBI Problem Intensity Score							
Pretreatment	144.78	29.44	145.33	24.83	149.56	23.85	.09 ^a
Posttreatment	107.92	16.39	127.08	13.52	143.57	25.74	9.16 ^{b***}
Follow-up	107.91	14.29	125.76	15.25	--	--	6.30 ^{c*}
ECBI Problem Frequency Score							
Pretreatment	15.89	4.31	16.56	8.26	16.56	6.77	.03 ^a
Posttreatment	7.57	3.12	10.66	5.63	14.77	8.54	4.47 ^{b*}
Follow-up	7.01	4.73	9.66	6.40	--	--	1.14 ^c
Becker Summary Score							
Pretreatment	12.56	13.01	20.44	10.71	16.56	20.34	.46 ^a
Posttreatment	-1.52	13.32	7.33	13.43	13.09	16.71	3.26 ^b
Follow-up	-.20	9.47	6.75	14.23	--	--	1.27 ^c
Daily Checklist (Compliance)							
Pretreatment	37.89	21.76	45.97	14.52	48.25	16.33	.84 ^a
Posttreatment	88.23	4.47	72.23	19.19	51.98	17.37	18.99 ^{b****}
Follow-up	82.87	5.66	60.17	21.96	--	--	10.50 ^{c***}

Note: Means at pretreatment are unadjusted; means at posttreatment and follow-up are adjusted for covariance.

^adf = 2,24 unadjusted one-way analysis of variance

^bdf = 2,23 adjusted for covariance

^cdf = 1,15 adjusted for covariance

* $p < .05$

** $p < .01$

*** $p < .005$

**** $p < .001$

treatment ($p < .05$), with Newman-Keuls' comparisons revealing lower problem scores in the PAT-SS than in the WLC condition ($p < .05$). The two treatment groups did not differ significantly on the problem frequency score at posttreatment or follow-up. Within-group comparisons revealed significantly fewer behavior problems at posttreatment, $t(8) = 6.90$, $p < .001$, and at follow-up, $t(8) = 4.15$, $p < .01$, for the PAT-SS group. PAT-S showed no significant change at posttreatment, but follow-up scores indicated significantly fewer behavior problems than at pretreatment, $t(8) = 3.04$, $p < .05$.

Becker Bi-polar Adjective Checklist

Despite the more positive child perceptions reported by parents in the PAT-SS and PAT-S conditions (see Table 2), statistical analyses revealed no significant posttreatment or follow-up differences between groups on the Becker summary score (Factors I, III, and V). Within-group analyses, however, showed significant improvement for the PAT-SS condition at both posttreatment, $t(8) = 3.38$, $p < .01$, and follow-up, $t(8) = 2.89$, $p < .05$, while the PAT-S condition improved significantly only at posttreatment, $t(8) = 2.33$, $p < .05$.

Daily Checklist (for child compliance)

Analyses of children's percentage of compliance with direct commands at posttreatment revealed significant differences between groups ($p < .001$). Newman-Keuls' comparisons indicated higher reported compliance rates in the two treatment conditions than in the control ($p < .01$) and significantly higher compliance among PAT-SS children than PAT-S children ($p < .05$). These differences between the two treatment groups continued at follow-up ($p < .01$). Figure 1 presents the weekly mean compliance rates reported by parents for each of the three experimental conditions.

Within-group comparisons revealed significant improvement in compliance rates at posttreatment, $t(8) = 8.44$, $p < .001$, and at follow-up, $t(8) = 7.77$, $p < .001$, for the PAT-SS group. Similarly, PAT-S children showed significant improvement at both posttreatment, $t(8) = 6.84$, $p < .001$, and at follow-up, $t(8) = 3.12$, $p < .05$.

Daily Checklist (for parent behavior)

An analysis of variance for repeated measures was performed on data collected daily by parents in the two treatment conditions. Daily scores for each item (i.e., two, three, and four) were averaged

ed so that a single data point was plotted for each parent during each of the three evaluation periods (i.e., treatment, posttreatment, follow-up).

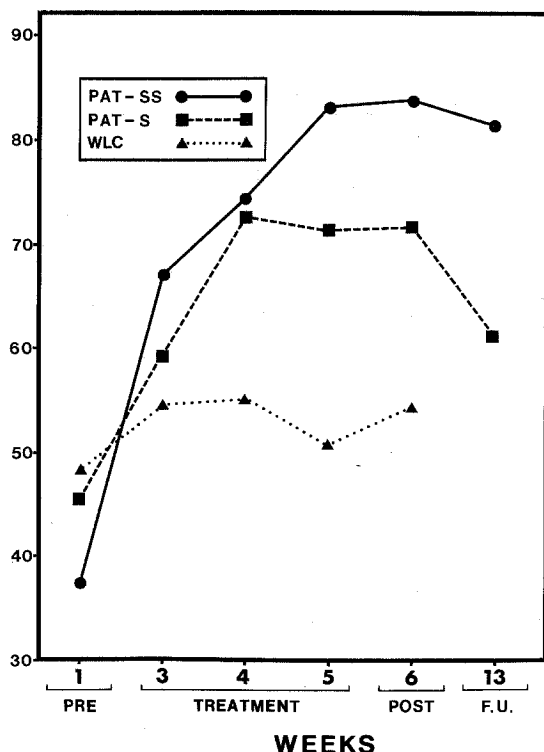


Figure 1. Weekly parent-reported compliance rates (means) by experimental condition from pretreatment to follow-up.

Analyses revealed that PAT-SS parents felt a greater degree of self-control when using the time-out procedure ($M = 85.76$) than parents in the PAT-S condition ($M = 75.14$), $F(1, 16) = 9.59$, $p < .01$. Time of evaluation and the treatment by time interaction were not significant ($p > .05$). No differences between groups were found on items two and four. Parents in both groups reported providing positive attention approximately 75% of the time for appropriate child behavior and spending between 0-30 seconds checking on the child during a typical time-out period.

Posttreatment Questionnaire

Five questions on the posttreatment questionnaire were targeted (apriori) for statistical evaluation (see Table 3). *T* tests comparing the two treatment conditions demonstrated no significant differences between groups on the first two items which focused on the utility and convenience of the Signal Seat. The next three items emphasized the type of back-up consequence used when the child left time-out without permission. While there was no difference in the tendency for parents to rely on additional chair time or the loss of

privileges as back-up consequences, parents in the PAT-SS condition reported using significantly less spanking ($p < .05$). Tests of significance were not performed on the remainder of the posttreatment questionnaire items listed in Table 3. These items, which probed the length of time the child spent in time-out and overall program effectiveness, were included to guard against misuse of the self-instructional package and to provide preliminary information on its applicability.

Discussion

The Signal Seat used in conjunction with the self-instructional materials (PAT-SS condition) appeared to be effective in decreasing parental report of the number and intensity of child behavior problems, promoting more positive attitudes toward the target child, and increasing perceived rates of compliance to parental commands. Significant gains were maintained in each of these areas at the 2-month follow-up evaluation. Results of treatment with the self-instructional materials and ordinary time-out seat (PAT-S condition) were less conclusive. Although gains in each of the three target areas were noted, only the percentage of compliant behavior showed significant improvement at both posttreatment and follow-up. However, both treatment groups reported significantly greater compliance rates after treatment than the Wait-list Control, and parents using the Signal Seat reported significantly fewer and less intense behavior problems than control subjects.

The results of this investigation suggest that when the Signal Seat and self-instructional materials are used in tandem, positive changes in both child and parent behavior occur. Parents using the Signal Seat reported significantly higher rates of child compliance and a greater decline in the intensity of other problem behaviors than parents without the signal attachment. Although anecdotal comments indicated that parental preference for the Signal Seat varied, none of the parents believed that the auditory signal had any adverse side effects. Scores on Tense Disposition, the Becker factor which would best reflect any negative psychological consequences, tend to support this perception. Seven of the nine parents utilizing the Signal Seat actually saw their child as being more relaxed and less fearful at the conclusion of the treatment program. Parents who used an ordinary time-out seat noted a similar change in disposition in six of the nine cases.

Individual differences and lack of instrument sensitivity may account for the absence of statistically significant differences between the two treatment conditions on several other measures.

SELF-ADMINISTERED PARENT TRAINING

Surprisingly, parents who used an ordinary seat did not spend significantly more time checking on their child during time-out than parents with the Signal Seat. Moreover, these parents did not suspect that their child was off the time-out chair more frequently or report that time-out implementation was more inconvenient than parents with the signal attachment. Nonetheless, this study may have important implications for practitioners working with parents who excessively employ physical punishment and feel out of control when disciplining their children. Parents trained with the Signal Seat reported a greater degree of self-control and employed significantly less spanking (as a back-up consequence) than parents using the ordinary time-out seat.

Although it is premature to draw any firm conclusions, the results of this preliminary test of the self-instructional package are encouraging for

practitioners who are searching for more cost-effective parent-training strategies. In addition to more traditional assessment methods, Kazdin (1977) recommended that social validation be considered as an index of therapeutic change. When the reports of parents trained in this study are compared to those of parents trained individually via direct ongoing contact with skilled professionals, the potency of the self-instructional package is highlighted. Using the parent-child interaction training model, Eyberg and Ross (1978) provided individual clinic treatment for 10 parent-child pairs (*M* number of sessions = 8.9). The decline in ECBI problem intensity and problem frequency scores found in the current study is comparable to that found by Eyberg and Ross using therapist-administered treatment. The Eyberg and Ross investigation also established ECBI cut-off scores (intensity = 127; problem frequency =

Table 3. Means, Standard Deviations, and *t* Values for Posttreatment Questionnaire Items

Item	Treatment Condition						<i>t</i>
	P A T - S S			P A T - S			
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	
Percentage of time child suspected to be off chair without permission	5.56	5.27	0-10	11.11	6.01	0-20	2.09
Trouble in using the time-out procedure ^a	1.22	.97	0-3	2.56	1.94	0-6	1.85
Percentage of time spanking used as back-up consequence ^b	3.33	7.07	0-20	41.11	49.61	0-100	2.27*
Percentage of time additional chair time used as back-up consequence	44.44	44.75	0-100	34.44	45.58	0-100	.47
Percentage of time loss of privilege used as back-up consequence	6.67	16.58	0-50	13.33	33.17	0-100	.54
Average number of minutes in a time-out period ^c	4.72	2.20	3-10	3.78	.97	3-5	
Most number of minutes in a time-out period	8.00	3.54	3-15	8.39	5.40	3-20	
Least number of minutes in a time-out period	2.67	.71	1-3	2.78	.44	2-3	
Understood manual ^a	9.89	.33	9-10	9.56	.53	9-10	
Value of manual ^a	9.00	1.00	7-10	8.00	2.35	3-10	
Understood audiotape ^a	9.67	.50	9-10	9.78	.44	9-10	
Value of audiotape ^a	7.00	2.35	3-10	6.44	3.61	0-10	
Would recommend this training to a friend ^a	9.56	.73	8-10	9.11	1.05	8-10	

^aItems are scaled from 0 to 10 as the least trouble/understood/valued/recommended response.

^bResponses reflected the percentage of time spanking, additional chair time, and loss of privilege were selected as the back-up consequence when a consequence was needed. 44% of the PAT-SS parents and 11% of the PAT-S parents did not need any back-up consequence during the treatment period.

^cParents were instructed to use a three-minute time-out period. When a child indicated she/he was not ready to comply with the parent's directive at the conclusion of the initial three-minute period, parents were instructed to add three more minutes in time-out. Reported ranges for the most minutes in one time-out sequence indicate the need for the inclusion of cautionary statements about the appropriate use of the procedure.

**p* < .05

11) for discriminating between "problem" and "nonproblem" children. Results from the current study revealed that mean scores for both treatment groups were well within the "problem" category at pretreatment but declined to "nonproblem" status at follow-up. In fact, only two children in the PAT-SS group remained in the "problem" category at posttreatment. One of these children had a problem intensity score of 129 and the other a problem frequency score of 12, both scores clearly approaching the Eyberg and Ross cutoff points. The second score for each child (i.e., the problem frequency score of child one and the problem intensity score of child two) was within the normal range.

Certainly, the potential for more cost-effective parent-training strategies exists. Unlike therapist-administered individual and group training which has generally required between 5 and 12 hours of professional contact per parent (e.g., Christensen, Johnson, Phillips, & Glasgow, 1980; Eyberg & Ross, 1978), the present self-instructional program required approximately 1 hour and 15 minutes per parent. This included an average of 15 minutes of professional therapist contact for the organizational meeting and the distribution of training materials and about 60 minutes of undergraduate assistant time for the collection of data during the pretreatment through follow-up evaluation periods.

Many researchers (e.g., Christensen, et al., 1980; Forehand & McMahon, 1981; McMahon & Forehand, 1980) have noted that an objective measure of behavior change is essential to adequately assess the effectiveness of parent-training programs. At the same time, others have expressed concern that parents are able to bias home observations (Johnson & Lobitz, 1974; Lobitz & Johnson, 1975b) and that problems of reactivity may plague observational data (Bernal, Klinnert, & Schultz, 1980). The potential influence of direct professional contact in the assessment of self-instructional programs further compounds the measurement dilemma. Consequently, the present study included the least intrusive outcome measures requiring only minimal professional contact and chose to eliminate external behavioral observations.¹ Although parent-collected home observation data have been shown to correlate with

data obtained by external raters (cf. Patterson & Fleischman, 1979), future research will need to incorporate more objective behavioral measures while simultaneously assessing (rather than assuming) the potential for measurement reactivity.

As the public demand for cost-effective parent training grows, the need for empirically-validated self-instructional materials becomes more critical. The results of the current investigation are encouraging, but further research will be necessary to document the appropriate uses and limitations of this self-instructional package as well as its long-term effectiveness.

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¹Although random telephone contact between undergraduate assistants and parents may be more intrusive than other data collection procedures (e.g., twice-weekly mailing of data), experience has indicated that parents are often unreliable in maintaining and submitting daily records. A compromise between potential measurement obtrusiveness and consistent data collection was therefore agreed upon.

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