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## Parents as Teachers: An Application of a Behavioral Systems View of Development

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*This study was influenced by a behavioral systems approach to development. Seven sets of parents with developmentally disabled and behaviorally challenged children were given 9 hours in 6 weekly classes of behavioral parent training using the Positive Parenting Skills (PPS) program. A feature of the program was home-based coaching. The Child Behavior Checklist (CBCL) was administered at the beginning and end of the program. CBCL scores showed significant decline in the internalizing, externalizing and overall scales suggesting that intervening with parents has effects on their perceptions of children's problem behaviors. Limitations of the study were discussed.*

### Parents as Teachers: An Application of a Behavioral Systems View of Development

Dynamical systems approaches to development focus on how transactions between individuals affect each of the individual's development. The behavioral systems approach (Novak; 1996, 1998; Novak & Pelaez, 2004) combines this dynamical systems view with the emphasis on environmental influences identified by behavior analysis. This approach expands behavior analysis by incorporating the principle of bi-directional influences. Further, a behavioral systems approach to development includes the principle of systems of influence. In this principle, a change in one system can produce an emergent response in a different system. Parent-child interactions provide an exemplary area to investigate these principles.

Bi-directional influences between parents and children have been investigated for some time, having formed a central part of Bijou & Baer's (1961, 1978) theory of development. Patterson's coercive family process (1982) is a good example of an analysis emphasizing bi-directional influences between parents and children. Such bi-directional influences are clearly illustrated in the identification of reinforcement traps and escape contingencies. What the behavioral systems approach to development can add to these principles is how this particular type of parent-child interaction affects other systems. For instance, research that focused on how child characteristics are affected by changes in particular parenting styles or methods would be supportive of the behavioral systems approach to development. In the first study, the system that was targeted for intervention was parenting skills. The system that was evaluated was clinical symptomatology of the child.

In the current study, a parenting skills program was delivered to 14 parents. This program was based on teaching behavior analytic principles to the parents of children with developmental disabilities. This program, *Positive Parenting Skills (PPS)* was developed at California State University, Fresno by Wilhite and Wilson (2003). This program differs from many behaviorally based programs because it contains a coaching

portion in which parents have a coach present during teaching and have periodic home visits from the coach over the course of training.

While most parenting programs focus on changes in parenting behaviors as a result of training, this study went a step further and examined parents perception of child characteristics. Parent reports on the Child Behavior Checklist, (CBCL) (Achenbach & Edelbrock, 1983) were collected before and after parent training. It was hypothesized that childhood symptomatology would decrease as a result of changes in parenting practice. These outcomes are not commonly examined in parenting program investigations. Typically, children's compliance and/or task completion as well as changes in parent behavior are the examined outcomes of parenting programs. Most often, these outcomes show positive change as well. In the current study, we were interested in how the behaviors of children outside the context of parenting might change.

### Method

#### Participants

The *Positive Parenting Skills (PPS): Learning and Practicing Behavior Change Techniques That Work* (Wilhite & Wilson, 2003) was used with 14 high-need families with children with maladaptive behaviors and developmental disabilities. Because of problems in data collection, CBCL scores were obtained only for 7 families. Developmental diagnoses included Autism (Asperger's syndrome), PDD, and mild mental retardation.

Four were Hispanic and three were Caucasian. Five were girls and two were boys. Their mean age was 7.31 years (SD = 3.02) and three had family incomes under \$20,000 per year while four had family incomes greater than \$30,000.

#### Procedure

A graduate student delivered the PPS classes. Three graduate students and three upper classmen served as parent coaches. Case Managers at Central Valley Regional Center (CVRC) located in Merced, California were notified of the parenting class and recruited parents from their client list. Parents voluntarily signed up for the parenting program through their case manager.

This program taught parents to alter their responses to their children's behavior through the teaching of basic behavior principles. These principles included effective use of positive reinforcement, time out, praise, and the use of antecedent behavior and consequences (ABC) sequences to target behavior. In addition, this program utilized ignoring, extinction, and shaping procedures that teach replacement behaviors. The program was conducted over a 6-week period with a total of 9 classroom hours.



The PPS supported parents' learning by incorporating three home visits across the program. Parents worked in collaboration with their coach and targeted a maladaptive behavior within their natural environment. During the home visit the coach and parent discussed questions regarding the course and reviewed any misunderstood or unclear material. In addition, the coach observed the parent-child interactions to reinforce changed behavior as well as to offer ways in which further change could be accomplished.

### Measures

#### Child Behavior Checklist (CBCL)

The CBCL is a standardized measure used to assess children with behavioral and emotional problems (Achenbach, & Edelbrock, 1983). Parents or caregivers who interact with the children complete the assessment. This measure was written at a fifth grade level and comes in different languages.

The parent or caregiver completed the CBCL on the first and last class meetings. The CBCL was completed on average in 20 minutes. The parent answered questions based on their child's behavior within the last 6 months. There were 113 questions to fill out. Answers ranged from 0 = Not True (as far as you know), 1 = Somewhat or Sometimes True, or 2 = Very True or Often True.

The two summary scales of the internalizing and the externalizing behaviors were scored along with the overall score from the Total Problems scale. The internalizing scale is made up of symptoms of withdrawal, somatic complaints and anxiety or depression. The externalizing scale focuses on delinquent and aggressive behaviors.

The measure was scored by computer. Clinical significance for each of the behavior subscales and summary scales is based on T scores of 70 or higher, which represents approximately the 98<sup>th</sup> percentile. The lowest score attainable on a subscale is 50. If a child scores between 58 and 62 in the summary scales (Internalizing, Externalizing, and Total Problems), they are considered to be in the borderline clinical range; therefore the higher the score, the more problems within that area.

### Results

A paired *t* test was utilized to compare the pre and post scores on the CBCL. A computer program was provided by the developer of the CBCL computed *T* scores. The *T* scores from the CBCL were derived for three areas: Total problems, Internalizing, and Externalizing Paired *t*-tests revealed significant decreases for the total problems scores,  $t(6) = 1.94, p < .05$ , the internalizing scores,  $t(6) = 1.94, p < .05$ , as well as the externalizing scores,  $t(6) = 1.94, p < .05$ . See Table 1 for means.

Table 1. Means and Standard Deviations for CBCL scores.

	M (SD)		t-value	df	Significance
	Pre	Post			
Total Problems	72.29	65.29	2.20	6	0.035*
Internalizing	63.71	54.43	2.09	6	0.040*
Externalizing	70.00	60.43	2.66	6	0.020*

### Discussion

These results support the hypotheses that childhood symptomology can be affected without direct intervention on the child, but by intervening in the family system through teaching and coaching parents in behavioral methods. Further, in addition to being statistically significant, the changes were clinically important as well. The total and externalizing scores dropped from being clinically significant in the pretest to borderline in the posttest. The internalizing score dropped from being of borderline clinical significance to the normal range.

The results show that applying a behavioral systems approach by focusing on parenting can provide useful information regarding child outcomes. It should be noted that these results are based on a small sample size.

A further caution to the current results is that only parent reports were obtained. Future studies should obtain scores from multiple sources. Most importantly, it would have increased the validity of the findings if we had been able to obtain self-reports from the children. Finally, these results should not be taken to provide causal information regarding how parenting influences childhood symptomology. It could be that true childhood symptomology did not change; however parental perception of symptomology was effected. Further research will be required before causation can be applied. However, these results should encourage researchers interested in pursuing systems level effects and non-linear growth.

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