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ABSTRACT

Effects of family-oriented early intervention on the home environment were explored in a 6-month study of 23 handicapped children (ages birth to 5) and their families, who participated as members of an experimental or control group. The Home Observation for Measurement of the Environment (HOME) Inventory was administered to evaluate differences in home environment variables before and after systematic family-oriented intervention. Intervention provided to the experimental group included transdisciplinary assessment and development of an individualized education program (IEP); free-play observation of parent and child; assessment of family needs and development of an individualized family plan; sessions with a family therapist; and optional participation in parent and sibling groups. Families carried out play and learning activities at home between weekly intervention visits. As measured by HOME Inventory, maternal involvement, availability of play materials, and overall home environment ratings significantly increased for the experimental group. Scores for the comparison group did not change over the 6-month period. (Author/JW)

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EFFECTS OF FAMILY-ORIENTED INTERVENTION
ON HOME ENVIRONMENT VARIABLES
WITH YOUNG HANDICAPPED CHILDREN

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Running Head: HOME ENVIRONMENT INTERVENTION

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Abstract

The home environment variables with effects of family-oriented early intervention on home environment variables with birth to 5 year old handicapped children and their families were evaluated in this research. Twenty-three families participated in the study. The systematic family-oriented intervention provided to the experimental group included: transdisciplinary assessment and IEP development, a free play observation of parent and child, an assessment of family needs, an Individualized Family Plan, sessions with a family therapist, and optional participation in various parent and sibling groups. Families carried out the play and learning activities at home between visits. Significant differences in the experimental group and comparison group were evident in analyses of home environment variables. Specifically, maternal involvement, availability of play materials and overall home environment ratings significantly increased for the

experimental group which received the family-oriented intervention. Scores for the comparison group did not significantly change over the six month period. The results of this study suggest that family-oriented intervention which recognizes the needs of families can be effective as measured on the HOME, particularly in regard to appropriate play materials and maternal involvement with the child.

EFFECTS OF FAMILY-ORIENTED INTERVENTION
ON HOME ENVIRONMENT VARIABLES
WITH YOUNG HANDICAPPED CHILDREN

Traditionally, intervention programs for handicapped children have focused on the individual child; however, current trends in psychological research indicate that the individual's problems are best understood and treated within the context of the family (Minuchin, 1974; Apley, Mackeith and Meadows, 1977; French, 1979). Similarly, child development literature indicates that the quality of the family environment is a central factor in determining if a "high-risk" child will develop to his full potential (Waterman, 1982). In response to these empirical and theoretical developments, innovative early intervention programs are adopting a family-oriented approach to the treatment of handicapped children.

Involvement of parents in their child's treatment is considered a critical feature of successful early

intervention programs. Parents of handicapped children need support and special skills to cope with their child's needs (Beckman-Bell 1981). In surveying the early intervention literature, several trends emerge from studies of effective programs.

Early intervention programs have been scrutinized closely for positive effects. The Consortium for Longitudinal Studies concluded that children in early intervention maintain some improvement in terms of school performance and social behavior. These children were less likely to be in special education classes and more likely to be in the correct grade than children in the control group (Consortium for Longitudinal Studies, 1983). Another early intervention study which demonstrated the effectiveness of early intervention for disadvantaged preschoolers was a longitudinal study of the participants in the Ypsilanti Perry Preschool Project. This study showed that the children made significant gains by age 15 (Schweinbart and Weikart, 1980). The children scored higher in academic areas and

showed a reduction of 50% in regard to need for special education services. In spite of the variability of the population served in early intervention programs, it is still concluded that early intervention is effective (Bricker, 1985).

What features of family involvement help programs serve families of handicapped children? A crucial feature of a family-oriented program is assessment of the specific needs of family members. A family system is a diverse and complicated system. Family members may be at different points in the acceptance process. A therapeutic approach using professionals trained in counseling techniques and the use of a family therapist for parents facing major crises is useful.

Providing individualized intervention which targets family needs is important. Altering interaction patterns is many times indicated because many parents feel rejecting or resentful of their handicapped child. Helping parents develop coping skills through the use of parent support groups is crucial. Direct teaching of

how to use toys with the child helps create an environment which is optimal for the young handicapped child at home. Realizing that altering the home environment is an essential part of intervening with the handicapped child, the purpose of this research was to evaluate a family-oriented intervention program.

Method

The purpose of this research was to evaluate the effects of systematic, family-oriented intervention on the home environment of handicapped young children. Children from twenty-three families participated in the study as part of the experimental or comparison group. Differences in home environment variables were evaluated prior to and subsequent to participation in planned interventions.

Subjects

Six boys and six girls were participants during the experimental phase of the project. Four of the children were black and eight were white. Similar number of boys and girls (4 and 2 respectively) were

distributed across both racial groups in the sample ($\phi = 0.0$, $p > .01$). The average age of the children upon entering the program was 27 months (SD = 11 months) and the average gestation age was 34 weeks (SD = 6 weeks); six of the children were premature at birth. The children's parents were well-educated, using number of years of schooling as a criterion; however, approximately 60 percent of the families earned less than \$10,000 a year.

The categorical labels and extent of impairments for most of the children participating in the project were developmentally delayed (43%) or cerebral palsy (33%). Half of the children performed in the 69 - 84 range of cognitive abilities and the performance of 42 percent of those remaining was below 53. Seventy-five percent of the children evidenced more than a six month delay in language abilities and only one third displayed normal motor development. Most of the children had normal vision and hearing (75%, 92%

respectively) but some (approximately 60%) exhibited mild to severe behavior problems.

Five boys and six girls were participants during the comparison phase of the project. Three of the children were black and seven were white. Similar number of boys and girls were distributed across both racial groups in the sample ($\phi = 0.47$, $p > .01$). The children were slightly younger than those participating during the initial project year, averaging 20 months chronological age (SD = 11 months) upon entering the project; however, the average gestation age (MEAN = 35 weeks, SD = 5 weeks) was similar to that of the initial experimental group. The children's parents were well-educated, using number of years of schooling as a criterion; however, more than two-thirds of the families earned less than \$10,000 a year.

The categorial labels and extent of impairments of the comparison group children were similar to those in the experimental group. Most were classified as developmentally delayed (82%). About one third of the

children performed in the 69-84 range of cognitive abilities and performance of 46 percent of the children evidenced more than a six month delay in language abilities and 55% experienced motor impairments. Almost all of the children in the comparison group had normal behavior problems, normal vision and normal hearing.

Procedures

During an initial interview each child was screened to determine if the basic criterion of acceptance into the project (i.e., three months delay in two skill areas) was to be met. The transdisciplinary team screened the child's development in cognitive, communication, motor, social, and self-help skills. The Denver Developmental Screening Test (DDST), Developmental Assessment Screening Inventory (DASI), Receptive-Expressive Emergent Language Scale (REEL), and informal testing by the Occupational Therapist and Speech-Language Pathologist were used for this screening. In addition to these tools, each child was observed in play with the staff

and parent; and, the parent completed an interview administered by the Project Coordinator about the child's development and family needs.

Once the child was accepted into the project, he was normally assessed by the transdisciplinary team and consulting Educational Psychologist. Recognizing that different levels of delay and handicapping conditions exist in the population, a wide variety of assessment tools were used. Since a comprehensive intervention plan was formulated from the assessment results, it was important that an accurate profile of the child's strengths and weaknesses be obtained. Often, the assessment procedure was completed over several sessions.

A case manager wrote a comprehensive Individualized Education Plan (IEP). The long term goals of the IEP had a targeted completion date of 6-12 months from the beginning of the intervention period. These long term goals were developed based on several factors: a) the prioritized areas of intervention

identified in the Clinical Case Conference, b) specific evaluation results; c) the child's degree of developmental delay and assumed rate of progress, d) parent request; and e) consideration of the social interaction patterns with the child and his family. Each long term goal was divided into small steps (usually 3-4) which constitute the short term goals.

Parents and professionals formed a partnership in working with the child on developmental goals. Parents participated in the intervention visit and carried over intervention at home between visits. Intervention was consistent over time and responsive to the child's needs, which were always considered in the context of the home environment and the parents' style of teaching.

Visits with the child and family were scheduled weekly. Case managers tried to make this the same day and time each week. A monthly calendar was given to the parent with appointments for the month. Consistent

contact was very important for the child's progress. In some situations, contacts were scheduled twice a week.

The visit with the child and family lasted an hour. The first few minutes were spent greeting the child and talking to the family. Then the case manager positioned the child at the table to work on the activities for the day. Lesson plans were prepared directly from prioritized long and short term goals. Lesson plans were written in a format which was comfortable and usable for the case manager. Sometimes the same lesson plan was used over two or three visits; often a checklist was formulated to facilitate record-keeping.

Each family was administered the Home Observation for Measurement of the Environment (HOME) Inventory (Bradley & Caldwell, 1976) which contains 45 items that comprise 6 subscales of information about the environment. It was developed as an index of the quality of stimulation found in the family surroundings of young children.

The validity of Home Inventory was evaluated in a series of predictive studies. HOME subscale scores have been found to correlate with measures of socio economic status, parent education, family income, mental test scores, and language test scores, although many of the reported correlations were low. (i.e., less than .60). Other predictive studies illustrated that HOME scores were more sensitive indicators of 20 point or more positive changes in mental test performance than for positive changes of less than 20 or decrease in mental test scores. Internal consistency reliability estimated (i.e., coefficient alpha) reported in the test manual range from .38 to .89 and test-retest correlation coefficients reported were from .24 to .77. There is some evidence that the HOME Inventory has been used with families of handicapped children.

Results

Means and standard deviations for HOME Inventory scores are presented in Table 1. In general, the scores obtained from home environments of the children

participating in the project were similar to those of families participating in the standardization sample. In fact, only the items related to availability and use of play materials were less likely to be found in the homes of some of the participating children. In general, the scores obtained from home environments of the children in the comparison group were similar to those of families participating in the sample (i.e., they were less than one standard deviation different) than the experimental group.

Insert table 1 about here

Means and standard deviations for Home Inventory scores obtained before and after participation in the family intervention program are presented in Table 2. The HOME raw score significantly increased ($p < .05$) as did the score reflecting appropriate play materials

in the home environment and maternal involvement. The directional differences for most other specific domain scores favored changes due to participation in the training program. HOME Inventory scores over a six month period for families not participating in the STRETCH Program are presented in Table 3. The HOME raw score and specific domain scores for these families did not significantly change during the time period evaluated.

Insert tables 2 and 3 about here

In general, the outcome analysis favored those families who participated in the systematic intervention sessions. HOME inventory scores for families not participating in specially guided programs remained the same after six months time, while the home environments of participating families were improved.

Specifically, maternal involvement, availability of play materials and overall home environment ratings significantly increased for families participating in the project.

Discussion

When a handicapped child is born into a family, changes and adaptations have to be made. Utilizing a family systems approach, programs can maximize the child's development by helping the family cope with the child. When an intervention specialist works with a handicapped child or a child who has developmental delays, it is important to remember that the child is a part of a family system. Knowledge of family dynamics and how the family develops coping mechanisms is important for the child's progress. Monitoring of the family process is essential when the goal is to help the family augment and accept the developmental changes in the child and assist the family in functioning constructively. In this research, systematic, family-oriented interventions were provided to provide

educational experiences for handicapped young children as well as support and training for family members.

An assumption guiding the research was that parents need to be trained in facilitating their child's development. This is especially critical for the generalization and carry-over of newly learned skills. The goal of training parents to enhance their child's development is best accomplished in a program which focuses on the child and family together. Family interaction patterns can be observed and altered through modeling. Parents can be taught how to use toys to stimulate growth in the child in a playful manner. To provide responsive programming for families of young handicapped children, individualized services are needed which assess family needs and provide intervention based on those needs. This study adds to the knowledge base of research about intervening with families of young handicapped children. Responsive, individualized intervention for families can significantly alter the home environments of the

children to provide optimal support and learning experiences.

Home Environment Intervention

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Home Environment Intervention

TABLE 1

Means and Standard Deviations for
Home Observation For Measurement of the Environment
Inventory Scores

	Experimental Group (N = 12)	Comparison Group (N = 6)
HOME Raw Score	x = 31.08 (31.20) s = 9.01 (7.31)	x = 34.33 s = 7.69
Emotional and Verbal Response	x = 8.58 (8.48) s = 2.15 (2.09)	x = 9.17 s = 1.47
Avoids Punishment	x = 5.42 (5.57) s = 2.28 (1.72)	x = 6.00 s = 2.10
Physical Environment	x = 5.75 (4.84) s = .62 (1.13)	x = 4.83 s = .75
Play Materials	s = 3.83 (5.98) s = 1.95 (2.39)	x = 6.17 s = 2.40
Material Involvement	x = 3.08 (3.45) s = 1.83 (1.62)	x = 4.50 s = 1.64
Stimulation	x = 3.50 (2.78) s = 1.00 (1.25)	x = 3.67 s = 1.21

Note: Numbers in parentheses are means and standard deviations for HOME Inventory standardization sample.

Home Environment Intervention

Table 2
Means and Standard Deviations for
HOME Inventory Scores
(Experimental Group Subjects)

<u>Score Domain</u>	<u>Pretest</u>		<u>Posttest</u>
HOME Raw Score	M =	30.67	35.67*
	SD =	9.23	8.23
Emotional and Verbal Response	M =	8.58	9.50
	SD =	2.15	1.88
Avoids Punishment	M =	5.42	6.08
	SD =	2.28	1.78
Physical Environment	M =	5.58	5.75
	SD =	0.79	0.62
Play Materials	M =	3.75	6.50*
	SD =	2.01	1.98
Maternal Involvement	M =	3.12	4.33*
	SD =	1.80	1.72
Stimulation	M =	3.25	3.25
	SD =	0.97	0.97

Note. Number of subjects in these analyses was 12.

*Difference between means is significant at 0.05 level of confidence.

HOME Environment Intervention

Table 3

Means and Standard Deviations for
HOME Inventory Scores
(Comparison Group Subjects)

<u>Score Domain</u>	<u>Pretest</u>	<u>Posttest</u>
HOME Raw Score	M = 35.20 SD = 8.26	34.40 8.39
Emotional and Verbal Response	M = 9.20 SD = 1.64	9.80 1.64
Avoids Punishment	M = 5.80 SD = 2.28	5.40 1.95
Physical Environment	M = 5.00 SD = 0.71	4.60 1.14
Play Materials	M = 6.60 SD = 2.41	6.40 2.19
Maternal Involvement	M = 4.80 SD = 1.64	4.40 2.30
Stimulation	M = 3.80 SD = 1.30	3.80 1.64

Note. Number of subjects in these analyses was 6.