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ABSTRACT

The New Orleans model for parent-infant education involves the use of non-professional workers, trained by professional staff, who teach general concepts of child development and child management to groups of disadvantaged mothers. Two themes are stressed: the parent is now and will be the child's most important teacher, and all the baby's time is learning time. In the long range view, research at the Parent Child Cener is designed to investigate whether or not educational intervention needs to be implemented from the first year of life for optimal success and also to evaluate two systems of delivering services (in a center versus home visits). Results are as yet inconclusive. (DP)

Variations of this Paper were presented at the Society for Research in Child Development, April, 1973 and at the American Orthopsychiatric Association Conference, June, 1973.

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The New Orleans Parent and Child Development Center is an attempt to change parents' child rearing attitudes and behavior towards their infants. Hopefully, this program of intervention will be reflected in the course of their infants' development. The structure and status of our research design can be seen in Table 1.

Insert Table 1 about here

From the information provided in Table 1, it can be seen that we will ultimately have data for three waves of mothers and infants. The first of these is our pilot wave, about which this report is largely concerned. The pilot wave consists of a group of mothers (the Center group) who come to our center for information about child development, as well as other activities involving various aspects of family life. These include health, nutrition, social activities, home economics, etc. A second group of mothers, (the Home Visit group) does not come to the center, except for evaluation purposes and health care which is available to all participants, including comparison groups. They receive information regarding child development from a home visitor. A third comparison group of mothers and infants comes to the Center only for periodic testing. The Center mothers, Home Visit mothers, and the comparison group which we

call the Serial Control group return to the Center for testing approximately every two months. Because the testing sessions are so frequent, and so intensive, it was considered desirable to include a group of mothers who come but once a year for evaluation purposes. This group is called the Yearly Control group. The Pilot wave of infants was approximately 16 months of age as of the time data were analyzed (February 15). They and their mothers had been in the program for 14 months. Perhaps this implies a word of caution. The pilot group of mothers and infants had to suffer through an administrative, educational, and research staff who are relatively less prepared than at the current time to manage a complex psycho-educational research and development effort.

Table 1 indicates that a second wave of infants are now being admitted into our program at about one year of age. These infants have previously been seen for serial testing, i e., every two months, and it is at this time that they are being admitted to a Center and Home Visit program.

Our third wave of mothers and infants are newly recruited when infants were two months of age. This is a replication of our pilot group and was added because it is felt that our staff, not excluding the administrative staff, is better trained and therefore considerably more capable of providing a test of our educational intervention. The third wave of mothers and two month infants include a Center group, a Home Visit group, and

a new Serial Control group

The design as shown in Table 1 of the New Orleans PCDC was an attempt to gain information regarding two major problems. The first of these is whether parent information and education (as an intervention) needs to be delivered from the first year of life in order to be optimally "successful". Successful is a word which is in quotation marks because our definitions for success are admittedly operational and arbitrary. They refer to social and cognitive competence. Perhaps, it is possible and feasible to achieve equivalent results with mothers whose infants are older: For us, this is one year of age. The nature of our evaluation design is also crucial in that it is an attempt, in the public health sense of the word to assess two delivery systems: the Center based program vs a less expensive, logistically simpler Home Visit program.

Before beginning a description of the program, which will include a description of our intervention program and a resume or our evaluation efforts, it is necessary to report about the practicality of the model as such. One manner of measuring a model's feasibility is to note the results of our recruitment efforts. Some data regarding recruitment appear in Table 2. Approximately one-third of those approached for inclusion in our Center and Home Visit program accept our approach and became program participants.

Insert Table 2A and 2B about here

We are very much interested in reasons for non-participation. These vary and for the most part consist of intention of returning to work or returning to school. There are, fortunately, few instances of refusal to participate because of hostility towards our program and its implications. This last point is all important because our participants are inter-city residents who are below the poverty level. They are, defacto, black.

It is possible that a model based upon evening or weekend scheduling would be attractive for many. Certainly, a model based upon providing stipends for attendance would greatly enhance our recruitment efforts. For those who do not participate because of a desire to further their education, one readily thinks of the school curricula including some of the concepts which we try to introduce in our PCDC center. Attrition rates are less than 30% after 16 months of program operation. Reasons for dropping from our program involve disinterest and subsequent non-attendance.

Demographic data presented on Table 3 includes some of the

Insert Table 3 about here

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characteristics of those who dropped out of our program. Such data should be useful in that we might ascertain the population for whom a PCDC is designed. Obviously, the PCDC model is not for everyone. Those who dropped our program do not seem to differ with respect to age or education, compared to those who have remained. There are some data to be discussed later, concerning scores on a "Self-Evaluation" scale but these are inconsistent. Consequent to the small numbers

of cases of mothers who leave the program, we cannot draw any hard and fast conclusions. It would be eminently desirable to have intensive interview data comparing mothers retained with those who leave our program, but we do not yet have such information

We pre-selected for inclusion into our study only those infants who were not premature, did not have congenital defects, and those mothers who did not have major complications of pregnancy or labor. Further, we excluded mothers who are less than 17 years of age, and also mothers who had more than five (5) siblings. To the extent that mothers were black, had infants who were biologically healthy, as far as medical records would predict, and who lived within the same area of New Orleans, we feel that we are dealing with a fairly homogeneous group. Our experimental and comparison group mothers should be quite equivalent. Data will not be presented here, but mothers in the various study groups demonstrated in Table 1 were not different with regard to age, marital status, parity, nature of residence, education, need for welfare assistance, and other such sociologic or demographic variables.

Staff educators are nonprofessional workers who have been trained by the Center's supervisory staff. Much of this training is in conjunction with a local college and carries college credit. Curricula manuals have been prepared for much of our training program. These materials are being made available as they are developed and can be obtained at cost by writing to

Mrs. Melba Rabinowitz. The curricula have been prepared by the educators. This serves the purpose of both training the educators for their task of teaching, as well as providing a record of the educational activity of our center. We feel that by writing this daily curricula, the educators will not only remember rote facts about child development, and daily activities to be utilized, but will understand and impart the theoretic underpinning of child development. We believe that active participation by the educator in curriculum development is an efficient device for internalizing child development principles.

The education model consists of fairly formal didactic teaching sessions focused on learning processes such as the necessity of discrete stimuli for building attention, reinforcement, curiosity, imitation and attachment and trust. Using these concepts as learning emphases, the educator builds specific, practical demonstrations relating to child management such as how the mother uses reinforcement to build language and behavior; how the curiosity drive manifests itself in the form of a young scientists, using the kitchen, livingroom and bathroom for his laboratory; the development stages of attachment and trust and how the environment can facilitate this process. We deal with specific daily management issues such as leaving baby with strangers, and using fear ("I'm gonna get the doctor to give you a shot") as way for controlling behavior.

Daily caretaking such as feeding, diapering and bathing are included regularly under each learning emphasis as well as

health and safety precautions. However, teaching focuses on using these experiences to enhance curiosity, and language development and how the mother can use reinforcement and imitation as her alley in developing the infants' skills.

The New Orleans Model for Infant Education is perhaps unique in its attempt to deal with a broad base of child development management information as well as language and cognitive development. Other models focus more directly on cognitive and language type interventions with the mother. This difference in educational emphasis should be of future interest.

Two of the underlying themes that are taught in many ways, many times each week are: the parent is now and will be the child's most important teacher (transmitter of attitudes, values and skills); all the baby's time is learning time (everything the parent does with the baby can make a difference, can aid or hinder his development.)

The method of teaching includes field trips with infants and mothers to grocery store, parks, and department store to buy books for baby; role play of such instances as "The Case of the Spilled Milk," as well as many demonstrations of infants responses to various activities involving cleanliness and safety.

Data on Tables 4A and 4B reflects the strength of our intervention in that the attendance records of those in the Center and Home Visit programs are presented. Approximately 56 to 60 percent of the scheduled visits in the Center and in our Home Visit program are kept. There are a

group of parents who cannot keep their appointments for medical reasons, including pregnancy, or because they have temporarily decided to seek employment. We had hoped that attendance would be of the order of 80 percent, and it is our intention to utilize data from this pilot years experience to enhance our parents' attendance. In public health programmatic research, it is sometimes felt that parents who do not attend a given program are alienated, apathetic, etc. The more commonly held view (which we share) is that parents' attendance at a given public health program is a function of the desirability and attractiveness of the program. Given the fact that we are now analyzing our pilot years experience, it is encumbent upon us to increase the attractiveness of the educational and social aspects of our program.

Insert Table 4A and 4B

Plans for incentives and stipends while desirable, would be ineffective without intrinsic motivation for attendance based upon the desirability of our educational efforts.

Evaluation and documentation of the Parent and Child Development Center is a complex affair. Initially, those of us charged with the responsibility for evaluating our program spent much of our thinking in terms of final outcome measures, namely those measures related to change in mother's behavior and changes in infants' behavior. We have realized that evaluation of a program such as the PCDC must produce documentation not only of the final outcome

measures, but of other steps about the psychoeducational process necessary for determining both the effectiveness of the program, and also for replicating the educational process. The chart shown in Table 5 implies the various stages necessary for evaluation. To begin with, it will be noted that our program begins with supervisory child development educators training nonprofessional workers in the content of child development, and also in terms of how to relate and how to teach this content.

Insert Table 5 about here

Secondly, the educators must impart their new knowledge to the mothers in this program. At this point, questions such as, Have mothers learned the content of the curriculum? Do they believe (in some attitudinal sense) the education communication? Finally, have they changed their behavior towards infants in a direction suggested by the curriculum? A final measure of program effectiveness concerns changing patterns of child development. As noted, all mothers and infants pairs are evaluated at two month intervals. Our evaluation program is outlined in Table 6. On each testing occasion, the Uzgiris-Hunt Development Scales are administered. In addition, mothers and infants are observed from behind a one-

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Insert Table 6 about here

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way mirror in order to rate mother and child interactions. At certain ages (6 months and 12 months) mothers and children are observed in a structured teaching interaction, such as that utilized

by Hess. At 7 months of age and at 13 months of age, infants are administered the Bayley Developmental Scales. These are but some of the measures the results of which are now available and can be discussed. The entire evaluation schedule and manual is available upon request from Mrs. Susan Andrews. We would like very much to present data relating to mother's personality and other background factors. However, at this moment, data from one such measure is available. At infants age 2 months and 12 months, mothers were administered a 16 item scale, which is labeled "Self-Evaluation," for lack of a better term. Items on this scale refer to mother's sense of powerlessness and competance. Paraphrased, the items might read "I am a failure; Things just happen to me; I have nothing to be proud of; I am not satisfied with my life; I feel useless, etc." Apart from this Self-Evaluation Scale, we plan to provide data from two other scales regarding mothers' characteristics. One of these is a scale, currently being administered, regarding external "stress" situations. These scales will include items about housing, marital difficulties, problems with illness and deliquency, etc. Another scale involves mother's view of how they themselves were raised.

We had previously mentioned that it is critical to measure some aspects of the educational and programmatic process, primarily in order to be able to replicate those aspects of our program which proved effective. Some of these measures have been shown or are developed and consist of attendance data, mothers' active participation, and her interest and cooperation . Other critical

descriptors of our educational process are in a stage of development. These will include educators' ability to deliver the child development curriculum, and mothers being able to absorb the content of this curriculum. One can conceive of a variety of ways in which such measures can be designed. It would be fruitful to know those areas of mothers' behavior which educators reinforce, both positively and negatively.

For the present, we would like to present data concerning only four sources of information. These data consist of 2 scores on mothers' self-evaluation as measured at the onset of the program when infants were age 2 months and again when infants were age 12 months. Secondly, Uzgiris-Hunt Scale scores at age 10, at 12, 14 and 16 months are available. Other data consists of Bayley Developmental Scale scores obtained when infants were 13 months of age. A fourth source of data presented here consist of mother-child interaction observations, as shown in Table 7. Such observations

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Insert Table 7 about here

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were made every two months, but we will present 12 month observations only. The group to be compared will be the Center and Serial Control groups. The total number of mother-infant cases in the Center group is 22. This group will be compared to the Serial Control group which numbered 19 when data were analyzed. It should be emphasized that our findings are those based on our initial pilot group of infants and mothers. Pending replication, our number of cases is not large. For these reasons, the results are most tentative and perhaps only suggestive of what might be forthcoming. To date, the body of psychological knowledge indicates that there is little or no reason to expect programmatic effects when using infants'

cognitive developmental quotients as a criterion. Ideally, we would predict that our program, if it is to have an effect, would show changes in mother's attitudes and behavior after at least one year of intervention, and perhaps 2 years intervention. Those of us familiar with the attitude change literature (or psychotherapy, for that matter) realize, and are painfully aware, of the fact that deeply meaningful change is difficult to produce, particularly on a lasting basis.

As the New Orleans PCDC evaluation story unfolds, we first examined scores of the two groups in question based on the Uzgiris-Hunt Scales, as shown in Figure 1. Results were as expected. At 12 months of age, the Center group was inferior, but not significantly so, to the Control group.

Insert Figure 1 about here

At 16 months of age, the Center group was superior to the Control group, in a nonsignificant way. The net change between groups was not significant. We might conclude that using the Uzgiris-Hunt Scales, our infants at age 12 to 16 months did not seem to be a affected by our program. Should they be? Our next stage in analysis was to compare each of 37 variables of mother-child interaction data for programmatic effects. Once again, at 12 months when these observations were made, there were no significant differences discriminating the Center group as compared to our

Control group. As noted, not one of the 37 mother-child interactions measures distinguished the two groups of mothers and infants. Again our discouragement was tempered only by the fact that perhaps one should not expect meaningful changes in child rearing attitudes after so relatively brief an intervention. A third step in our analysis was to note "Self Evaluation" scores of mothers in our experimental and control groups. We had observed at the inception of our program, that mothers in the Center groups seemingly had a higher "Self Evaluation" than other mothers in the control groups. This did not surprise us because despite attempts to equate subjects in various groups, mothers who volunteered to attend a demanding program might have some attribute, correlated with a high self evaluation not seen in other mothers. In analyzing scores at 12 months in comparison with those at 2 months, we noted a tendency for Center mothers to become more self critical whereas mothers in other groups became significantly less self critical. We had pre-tested our self evaluation scale and after three weeks test-retest, the correlation between scores for 25 women was .80.

We analyzed our child development data and our mother-child interaction data as a function of experimental group and changes in self criticism. Consistent statistical interactions between comparison groups and self criticism changes were noted. Typically in the Center group, mothers who were becoming more self critical had infants with superior developmental scores. The opposite was true for the Control group. For example, significant interactions

occurred at 10 months of age on the Uzgiris-Hunt Scale measuring gestural imitation. At 14 months of age, the Uzgiris-Hunt demonstrated an interaction between experimental group and mothers' increasing self-criticism on a scale measuring means-end relationships. At 16 months of age, the Uzgiris-Hunt Scale measuring object permanence produced a significant interaction between experimental group and mtoher's self-criticism scores. The Bayley Scale score differences were significant at 13 months of age, particularly scores on the psycho-motor scale.

It should be emphasized that the data show a consistent, characteristic pattern. Those mothers in the Center whose self criticism increased had infants with higher child development scores. Those mothers in the Serial Control group whose self criticism declined, had children with superior development. This finding was obtained with the same pattern at four different ages using four independent estimates of infants' development. It is felt that these data are meaningful, particularly because of their consistency..

We then analyzed mother-child interactions scores in a similar way and one score seemed to follow the same pattern of that obtained by the child development scores. This score was a ratio of time spent by a mother in encouraging vs discouraging a child's behavior. It would appear that increased self-criticism, however these scores are interpreted, is associated with a high degree of a mother's encouraging her child's behavior if the mother was in the Center program. Decreasing self criticism appears associated with mother's encouragement in the Control group.

In summary, the mothers who showed changing scores on a scale proporting to indicate increasing self-criticism, while in our Center experimental program, show a greater tendency to utilize encouragement over discouragement in their relationship with children. Their children as a result would seemingly show greater developmental changes on a variety of tests given at a variety of ages. The reverse of this is true for mothers in our Control group.

Our final data indicates the behavioral correlates of encouragement over discouragement ratio. This was noted for both the Center and Control groups. Since our N is small, we noted only those correlation coefficients were greater than .50. One can discern that for the Center group, the tendency to encourage children displayed by self critical mothers, is very highly related with use of language for teaching, failure to use language for negative reinforcement, total use of time in teaching, and a lack of overall negative reinforcement behavior. A given group of Center mothers learned from our program, and their children show it - so it would seem.

We remarked earlier that these results are tentative and, in fact, are a little bit confusing to us. The substance of what we have to say about these initial tentative data depend upon the interpretation we give to self criticism scale scores.

It is suggested that within the Control group, which receives no intervention other than that of routine medical care, self criticism

scale scores measure some degree of feelings of self worth. It is not surprising that such mothers have children who at an early age might be functioning relatively better than those mothers who showed a declining pattern of self worth. Using independent samples of controls, this has been partially replicated. The going gets a bit sticky when we attempt to comprehend desirable attitudinal changes on the part of our experimental mothers. These are associated with mothers whose self criticism increases and whose children would seem to be performing at an efficient level. It seems likely that the Self Criticism Scale scores for these mothers measures a more reflective attitude. Whereas, initially for all mothers and for control mothers at both testing occasions, the response to questions such as "I don't feel as good as others" might reflect self worth. The response for a Center mother who has just spent 10 months of thinking of herself and her child-rearing attitudes is more thoughtful. One might say the Center mother will not respond emphatically "yes sir" or "no sir" but rather might respond with a "Well, perhaps yes" or "perhaps no." We suggest that one interpretation of these findings is that a self criticism scale given to an experimental mother, after intervention, measures a self questioning attitude. If this interpretation is correct, it appears that providing mothers with an experience in which they are being taught a new method of child-rearing has made them perhaps more contemplative, and that a contemplative attitude is one factor facilitating attitude

change regarding child rearing practices. Pending further verification of these findings, we feel that it is necessary to find new ways of instructing mothers who do not seem introspective, or who do not criticize themselves readily.

Regardless of how these data are interpreted, it is evident, and logical, that not all mothers will benefit from a specific intervention program. It is eminently desirable to research those personality factors facilitating change, to use such information in program construction.

TABLE 1

Status of Experimental Design as of 3/1/73

	Center	Home Visit	Serial Control	Yearly Contro
Pilot Group (Wave 1) (Age 2 mos. when admitted)				
No.	25	18	20	21
Average Age (Mos.)	18	15.5	15.5	14
*New one Year old (Wave 2)				
No.	34	21		
Average Age	14.5	13		
**New Infants (Wave 3)				
No.	31	22	32	
Average Age	4	4	4	
TOTAL	90	61	52	21
Grand Total Research	151	Grand Total Controls		73

*The New One year olds have been in the program since age 2 months for serial testing only. They have been research children since age 12 months or for approximately 2 months.

**New infants were admitted when 2 months of age and have been in the program for two months. Recruitment is not yet completed.

TABLE 2A

Initial Screening of Central City Babies Born at Charity Hospital For Entire Program.

			No.	Percent
(B)	Eligible for Contact		263**	50
(C1)	Rejected by PCDC Before Initial Contact*	TOTAL	260	50
			523	100%

* Initial Screening Criteria:

1. Baby's health - birth weight must be 4½ lbs.

   apgar score must be 7/8

   other factors at the discretion of the nurse

2. Mother must be at least 17½ years old at time of birth

3. Number of siblings in the family cannot be greater than 5

4. A history of toxemia, diabetes, or mental illness in the mother makes the family ineligible

** This figure doesn't correspond to the total number of families approached for the center and home visit groups because some of the births included in this figure are being recruited for groups to be added to the program, and because a few of the cases had to be eliminated for matching purposes.

NOTE: The same type of initial screening was done on the births outside the central city area which are used for the yearly and serial control groups. The results of this screening showed similar percentages of families not suitable for contact.

TABLE 2B

Recruitment of Families Eligible for Contact for Pilot Wave of Center, Home Visit and Serial Congrol Groups.

	CENTER AND HOME VISIT GROUPS		SERIAL CONTROL GROUP	
	No.	Percent	No.	Percent
Unable to Contact (moved, letter returned etc.)	41	23.0	18	22.0
Refused Program	53	30.0	25	29.0
Accepted Program, But Never Came In	20	11.0	5	6.0
Accepted and Enrolled In Program	66	37.0	35	42.0
TOTAL	180	101.0	83	99.0

TABLE 3

Families Dropped From The Pilot Wave

Group	N	Mother's Age	Time in Program	Self Evaluation Scale Score	Mother's Education
Center	10	23 (N=9)*	257 days (N=10) (8.56 mos.)	40 (N=8)	10.4 (N=10)
Home Visit	8	20 (N=8)	208 days (N=8) (6.93 mos.)	45 (N=7)	11.38 (N=8)
Serial Control	8	21.8 (N=7)	111.28 days (N=7) (3.7 mos.)	35.3 (N=6)	10.14 (=7)
Yearly Control	11	21.7 (N=11)	267.9 days (N=11) (8. 93 mos.)	40.8 (N=5)	9.7 (N=10)

* Number of subjects entered in calculation

TABLE 4A.

Attendance for Initial Center Pilot Group of Mothers From September 1971 - February 1973.

	NO. OF MOTHERS	AVERAGE NO. SCHEDULED VISITS	AVERAGE PARENT ATTENDANCE
GROUP A	14	103	57
GROUP B	7	103	41
GROUP C	4	103	26

A. Refers to mothers who are enrolled, and have had no special problems relating to attendance.

B. Refers to mothers who are enrolled, but due to illness, pregnancy or temporary employment have not been able to participate fully.

C. Refers to mothers currently enrolled in the program, but who will be dropped for disinterest.

TABLE 4 B

Attendance Data for Pilot Home Visit Group for Ten Month Period Ending January, 1973.

Number of Mothers	Visits Complete*		Visits Incomplete	
17	Number	Percent	Number	Percent
	675	63	397	27

*Refers to visits made and curriculum unit complete.

Table 5

Conceptualization Of P.C.D.C. Evaluation Research

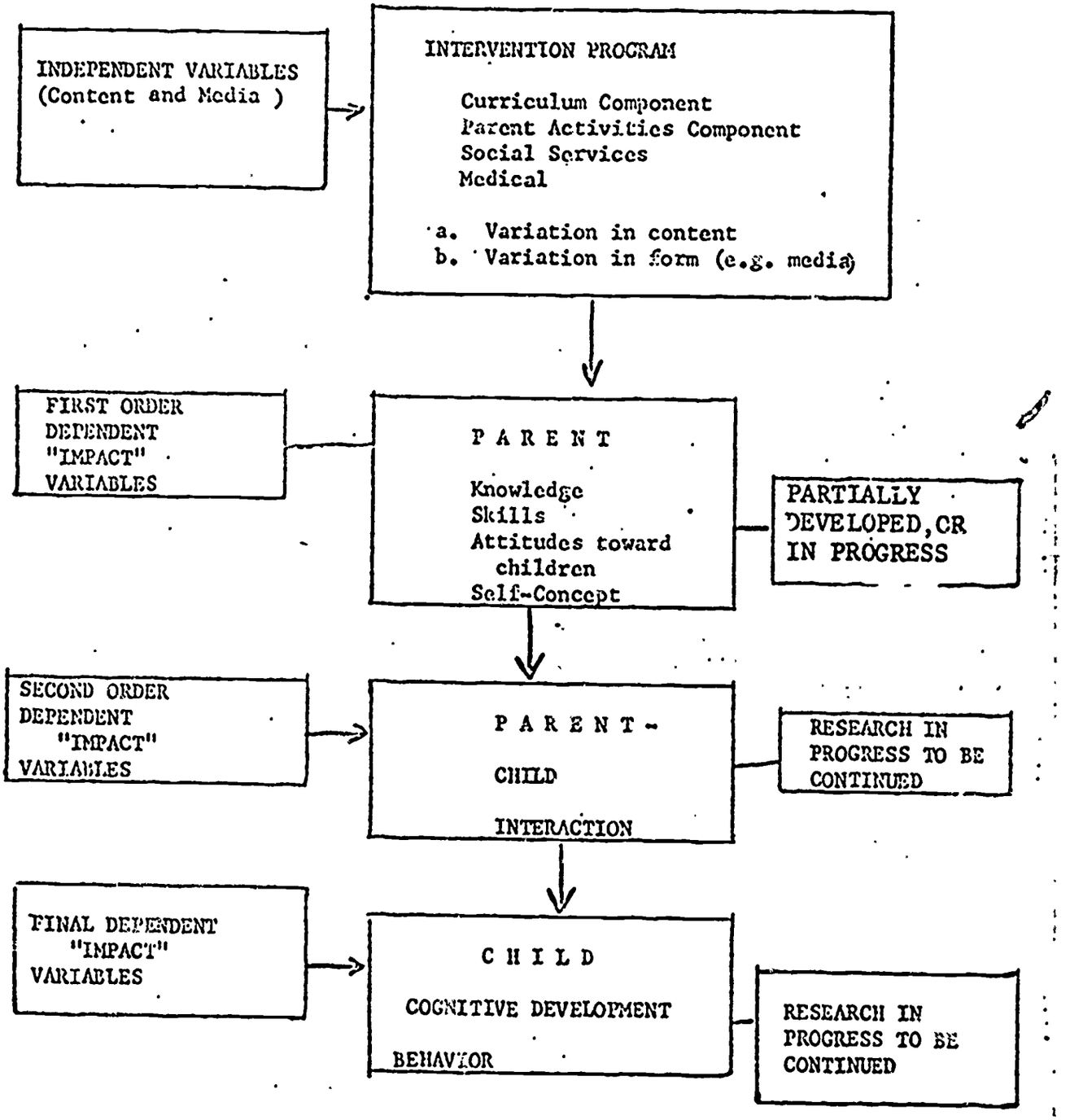


TABLE 6

Lists of Tests and Measures given to Pilot Groups during the First 2 Years of Intervention

I. Outcome Measures on the Child

A. Measures of Cognitive Development

1. Uzgiris-Hunt Scales of Infant Ordinal Development (every 2 months from 2 months to 24 months).

2. Bayley Scales of Infant Development (7 months, 13 months, 19 months, 25 months).

B. Measures of Personality Attributes.

1. Rating Scale of 7 personality attributes. (adapted from Golden). (Every 2 months from 8 months to 24 months).

II. Measures of Mother Behavior and Attitudes

A. Measure of Mother's View of Self

1. Self-Evaluation Scale (2 months, 12 months).

B. Measure of General Child Rearing Attitudes.

1. Psychological-Mindedness Interview (Adapted from Engel) (10 months, 24 months)

C. Measure of Mothers Behavior Toward Child

1. Mother-Child Interaction Observation

a. Waiting room situation - (6 minutes every 2 months from 2 months to 24 months).

b. Home observation - (1 hour, every 2 months)

2. Structured-Teaching Interaction Observation (6 minutes, at 6 months, 12 months, 18 months, 24 months).

D. Measures of Mother's Functional Use of Language

1. Language function catagories are scored from Interaction Observation typed Protocols.

III. Demographic Measures.

A. Socioeconomic-Status Questionnaire

Part I - Office Interview (2 months)

Part II - Home Interview (12 months)

IV. Measures for Educational Process Evaluation

A. Measures of Attendance

B. Evaluation of Educators

1. Psychological-Mindedness (given to Educators after 1 year of inservice training).

2. Structured Teaching Interaction Observation (Given to Educators after 1 year of in-service training)

TABLE 7 *

List of Operational Definitions of Mother-Child Interaction Variables Scored at 12 MONTHS of age.

1. Verbal Restriction - This technique indicates the focal effort of the other person is to verbally prohibit or restrict the child's behavior. [S chews on a toy dog. M says, "you don't eat dogs."]

2. Negative Reinforcement - This technique indicates that the focal effort of other person is to physically restrain the child's behavior, or to express hostility or aggression to the child. [S bites M. M spanks S's hand.]

3. Distraction or Ignoring - The other person's effort is to divert the child's attention from a given task or behavior to a more desirable task or behavior. This technique was also coded if the other person was deliberately ignoring the child's efforts at seeking attention. [S whines. M distracts: "We are going bye-bye soon."]

4. Refusal to Help or Comply - Other person is discouraging child's request for help by refusing it, or postponing it to a later time. [S tries to open piece of candy and goes to M for help. M is busy and says: "I'll help you in a minute."]

* Additional information regarding these categories, and scoring techniques can be obtained from Mrs. Susan Andrews.

5. Commenting on Disapproved Child Behavior - This is a special case of use of the general information giving technique for discouraging. [S picks up a toy ring and bangs it on the mirror. M says, "You're bad."]

6. Comforting When Child is Crying or Tantrumming - This is a special case of use of the positive reinforcement or affection technique to discourage child's crying. [S is crying because she fell down. M cuddles and rocks S.]

7. Focusing on Task Which Child is Distracted From - This is a special case of the use of the focusing technique. The other person is trying to discourage the child's attention in the distraction and refocus attention on the previous task. [M and S are reading a book. S is distracted by the T.V. M says, "No, look at the book."]

8. Positive Reinforcement Or Affection - This technique indicates that the focal effort of the other person is to actively promote the child's endeavors in an ongoing behavior, or to demonstrate affection to child. [S correctly fits a block into the shape-sorting box. M says, "Good for you, S."]

9. Justification of Statement of a Rationale - The focal effort of the other person is to provide explanations or reasons to the child. [M caution S: "Don't touch the iron. It is hot; you will get hurt."]

10. Suggestion or Command - The other person's focal effort is to direct the child to do a certain task or to behave in a certain way. [M says to S: "Will you pick up the toys now?"]

11. Didactic Teaching - This technique indicates that the focal effort of the other person is to instruct the child. Teaching may be accomplished by labeling, reading, demonstrating, explaining, etc. [M and S are looking out the window. M says "See the doggie? Doggie.

19. Total Use of Discouragement Techniques -

This is a summary category including variables 1 - 7. Although negative reinforcement verbal restriction, refusing help etc. are techniques which are generally negative and discouraging in tone, the distraction and comforting child when crying are generally positive and discouraging in tone.

20. Total Use of Positive Reinforcement or Affection -

This is a summary category which includes only technique 8 and is self-explanatory.

21. Total Use of Positive Control Techniques -

This is a summary category including technique variables 9 and 10.

22. Total Use of Teaching Techniques -

This is a summary category including techniques 11 - 14.

23. Total Use of Neutral Techniques -

This is a summary category including techniques 15 - 18.

24. Encouragement of Child Initiation -

This category reflects the percentage of time the mother encouraged a child initiated activity.

25. Verbal Index - This category reflects the percentage of time the mother or other person used language of any type during the interaction observation.

26. Use of Language for Negative Reinforcement -

This variable reflects the percentage of the mother's total language that was used to discourage a child's behavior.

27. Use of Language for Positive Reinforcement or Affection -

The percentage of mothers total language that was used for expressing affection or rewarding the child's behavior.

28. Use of Language for Positive Control -

The percentage of the mother's total language used for justification or suggestion or commands.

29. Use of Language for Teaching -

The percentage of the mother's total language used for any teaching purposes including labeling, explanation, reading, or providing feedback.

30. Use of Language for Neutral Techniques-

The percentage of the mother's total language that accompanied observing play, changing the child's location or providing services or materials.

31. Cluster I Activities -

This category includes activities of the child which are persumed to be highly likely to promote intellectual development. These include verbal, symbolic learning, spatial, perceptual and fine motor learning, concrete reasoning, expressive skills and executive skills. [M & S read Curious George and they labeled the pictures; S studies her reflection in the mirror; S pretends to serve tea with a toy tea set.]

32. Cluster II Activities -

This category includes child behaviors and experiences which are presumed to be moderately likely to promote intellectual development. These activities include exploration of and play with household items, play with toys, exploration of nature and giving general and routine information. [S takes container of powder and shakes it briefly, then throws it on the floor.]

33. Cluster III Activities -

This category clusters non-intellectual activities involving basic care, large motor learning and unspecific activities. [M changes S's diaper; S crawls around the room.]

34. Cluster IV Activities -

This category includes any social-emotional expression, positive, negative or neutral in the child's activity experience. [M finishes diapering S. She bounces S and kisses her; S bumps his head and cries. M picks S up and comforts him.]

35. Encouragement/Discouragement Ratio-

This variable reflects the ratio of the total amount of time mother spends encouraging her child's activities versus discouraging them.

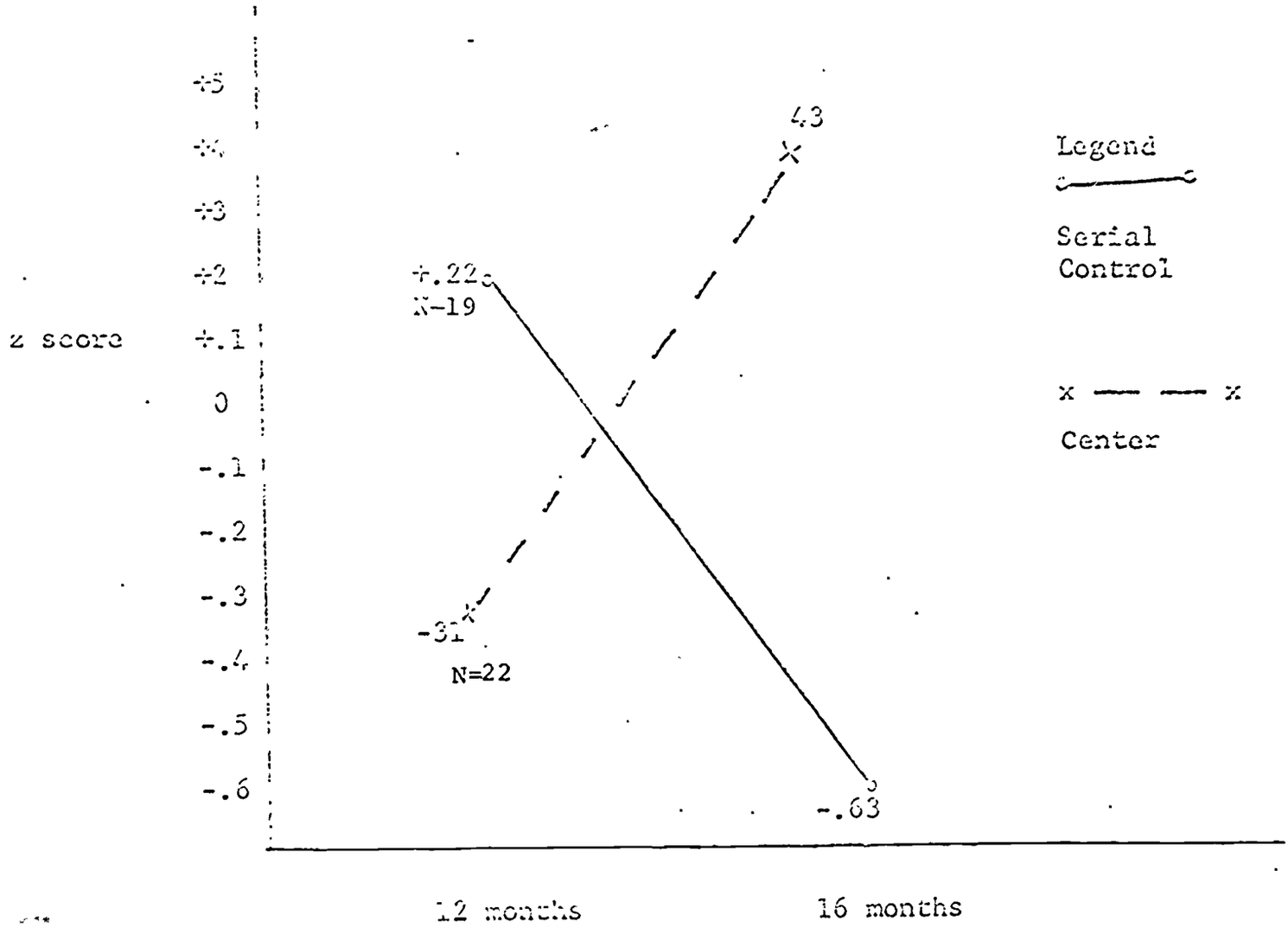
36. Child Versus Mother Initiation Ratio -

This variable reflects a ratio of the number of child initiated activities versus the number of mother initiated activities.

37. Sex - This category is self-explanatory and simply reflects the sex of the target child.

FIGURE 1

Changes in Uzgiris Hunt Total Scores in Center and Serial Control Groups at 12 and 16 months.



Note: The differential net change for each group was not significant. Each of the differences at any point of time was not significant.

Each of 5 subtests were standardized ($z=x-m/\sigma$) and added.