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PRIMARY PREVENTION OF INFANT GROWTH AND
DEVELOPMENT DYSFUNCTION: THE PROMOTION OF
POSITIVE PARENTING PRACTICES

presented by

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Major professor

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PRIMARY PREVENTION OF
INFANT GROWTH AND DEVELOPMENT DYSFUNCTION:
THE PROMOTION OF POSITIVE PARENTING PRACTICES

By
D. Kay Taylor

A DISSERTATION
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ABSTRACT

PRIMARY PREVENTION OF INFANT GROWTH AND DEVELOPMENT DYSFUNCTION: THE PROMOTION OF POSITIVE PARENTING PRACTICES

By

D. Kay Taylor

There exists a national need for more primary prevention in child welfare. One in every four children in the United States lives in poverty. Low socioeconomic status characterizes the infant vulnerable for problematic developmental outcomes. The purpose of this study was to evaluate a primary prevention effort directed at the enhancement of parent caretaking and relational skills in an at-risk population. It was hypothesized that such an enhancement would influence infant growth and developmental outcomes. A posttest-only control group design was employed for this study. Eighty mother-infant pairs were randomly assigned to either the control or experimental groups. Control families obtained routine hospital services and the receipt of education material packets; experimental families obtained the aforementioned services plus a series of home visits which provided direct instruction, modeling techniques, and social support. Post and follow-up assessment procedures were employed at three-months and six-months postpartum. Infants of the experimental families fared better on developmental scores at three-months, but there was no difference at six months and no effect on growth at either measurement period. Future directions for parenting programs are discussed.

To the memory of my grandparents

ACKNOWLEDGEMENTS

I wish to acknowledge the support and guidance provided by my committee: Robert Caldwell, Anne Bogat, Hiram Fitzgerald, and Frank Floyd. As the committee chairperson, Bob's counsel and direction was especially significant.

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Heartfelt thanks to my family for their love and encouragement: Mom, Dad, Linda, Ed, John, James, Vick, and Jenny; Mom, Dad, Jim, Nancy, Carmen, Jordan, Aaron, Jill, Mike, Jason, and Debbie. And to my husband, Jay, my son, Josh, and my daughter, Tara--I love you for your endless support and patience.

TABLE OF CONTENTS

	Page
LIST OF TABLES	viii
CHAPTER	
I INTRODUCTION	1
Statement of the Problem	2
At-Risk Populations	2
Parent Education	3
Rationale	3
Delivery Mode	4
Content	5
Caretaking skills	6
Relational skills	6
Mechanism	7
Effectiveness	10
Justification for Study Implementation	10
Theoretical Arguments/Concerns.	10
Entry point.	10
Program content.	16
Methodological Arguments/Concerns	23
Subjects	23
Sample size	23
Risk status	23
Design	24
Random assignment	24
Procedures	26
Data collection	26
Measurement.	27
Analysis	28
Utility Arguments/Concerns.	29
Summary	31
Scientific Rationale	31
Service Rationale.	33
II METHOD	37
Hypotheses	37
Setting.	40
Subjects	42
Restrictions.	42
Number.	44
Demographics.	45
Equivalency of Groups	46
Design	46

	Page
Procedures	48
Recruitment	48
Intake and Informed Consent	48
Assignment to Conditions.	49
Data Collection	50
Conditions	50
Control Condition	50
Experimental Condition.	52
Training of student nurses/parent aides.	53
In-hospital services	54
Aftercare services	54
Measures	57
Caretaking Skills	58
Feeding.	58
Formula preparation	58
Feeding questionnaire	61
Hygiene.	64
Safety	66
Organization of environment	66
Safety questionnaire.	66
Health	68
Clinic records.	68
Health questionnaire.	70
Relational Indices.	71
Child-rearing Attitudes.	71
PARI.	71
Avoidance of restriction/punishment	75
Developmental Knowledge.	78
Expectancy scale.	78
Competency.	81
Mother-Infant Interaction.	81
Verbal stimulation.	81
Emotional/verbal responsivity	83
Infant Outcomes	85
Growth Indices	85
Developmental Skills	89
Additional Evaluation Areas	95
Implementation/Process	95
Efficiency	96
Unintended Outcomes.	97
Successful/Unsuccessful Participants	98
Summary.	99
III Results	101
Condition/Time Effects	101
Caretaking Measures	103
Feeding.	103
Formula preparation	103

	Page
Feeding questionnaire	103
Safety	106
Health	106
Relational Measures	106
PARI	106
Developmental Knowledge.	105
Expectancy questionnaire.	105
Competency interview.	108
Interaction.	108
Infant Measures	108
DDST	108
Growth	108
Summary	111
Predictors of Optimal Infant Outcomes.	111
Three-Months Postpartum	113
Infant Development	113
Infant Growth.	113
Six-Months Postpartum	115
Infant Development	115
Infant Growth.	116
Implementation/Process Considerations.	116
Implementation.	116
Process	118
Efficiency Considerations.	119
Unintended Outcomes.	121
Successful Program Participants	121

III DISCUSSION

Condition/Time Effects	125
Caretaking Skills	125
Relational Indices	127
Infant Outcomes	128
Predictors of Optimal Infant Outcomes	129
Implementation/Process Considerations	130
Implementation	130
Process	131
Efficiency Considerations	132
Unintended Outcomes	134
Successful Program Participants	135
Implications and Conclusions	137
Study Strengths	137
Study Weaknesses	138
Future Directions for Research	141

	Page
IV REFERENCES	144
V APPENDICES	
A. Informed Consent	147
B. Student Nurse Contract	149
C. Training Schedule	150
D. Program Materials	152
E. Measures	183
F. Coding Guide	215

LIST OF TABLES

Table	Page
1. Examination of Published Studies	34
2. Comparison of Services	51
3. Home Visit Topic Areas	56
4. Caretaking Skills Measurements	59
5. Measurement Refinement Outcomes: Caretaking . .	60
6. Internal Consistency (Formula Preparation) . . .	62
7. Internal Consistency (Feeding - 3 Months). . . .	63
8. Internal Consistency (Feeding - 6 Months). . . .	65
9. Internal Consistency (Safety - 3 Months)	67
10. Internal Consistency (Safety - 6 Months)	69
11. Internal Consistency (Health - 6 Months)	72
12. Relational Indices Measurements	73
13. Measurement Refinement Outcomes: Relational . .	74
14. Internal Consistency (Attitude - 3 Months) . . .	76
15. Internal Consistency (Attitude - 6 Months) . . .	77
16. Internal Consistency (Expectancy - 3 Months) . .	79
17. Internal Consistency (Expectancy - 6 Months) . .	80
18. Internal Consistency (Competency)	82
19. Internal Consistency (Verbal Stimulation) . . .	84
20. Internal Consistency (Emotional/Verbal)	86
21. Infant Outcome Measures	87
22. Measurement Refinement Outcomes: Infant	88
23. Internal Consistency (Growth - 3 Months)	90
24. Internal Consistency (Growth - 6 Months)	90

	Page
25. Internal Consistency (DDST - 3 Months)	92
26. Internal Consistency (DDST - 6 Months)	93
27. Scope of Evaluation	100
28. Summary of Means and Standard Deviations	102
29. Analysis of Variance (Formula Preparation)	104
30. Repeated Measures (Feeding Questionnaire).	106
31. Repeated Measures (Safety Questionnaire)	106
32. Repeated Measures (PARI)	107
33. Repeated Measures (Expectancy Questionnaire)	109
34. Analysis of Variance (Competency)	109
35. Repeated Measures (DDST)	110
36. Summary of Results	112
37. Stepwise Regression (DDST - 3 Months)	114
38. Stepwise Regression (DDST - 6 Months)	117
39. Projected Program Budget	120
40. Unintended Outcomes	122
41. Summary of Comparison Variables	123

CHAPTER I

INTRODUCTION

In their review of the history of the developmental study of infants, Kopp and Krakow (1983) identified four research phases. First, from 1920 to World War II, research about risk conditions showed diverse themes. The articles were scattered in a variety of journals, and were often produced by professionals other than developmentalists. Second, during the postwar years, research focused on the cognitive and emotional consequences of various handicaps, particularly cerebral palsy and poliomyelitis. Third, the 1960s produced research about the characteristics of infants and children at risk. This period of research mirrored the social and political consciousness of the times. Study findings emphasized the link between poor developmental outcomes and disadvantaged environments--involving infants largely of the poor, the black, and the very young. Finally, the 1970s onward is viewed as the "growth" decade for developmental research. The entry of new ideas, theoretical perspectives, and models marks this era. Directed by the knowledge gained in the previous decade of those factors which threaten optimal development, researchers turned toward the task of implementing primary

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prevention strategies. However, the emergence of the design and testing of interventions with the objective of preventing the consequences of risk has been slow in spite of the great need.

Statement of the Problem

At-Risk Populations

Any one of the following characteristics are generally believed to predispose an infant to health and developmental problems: (a) young age of mother, (b) single-parent status, and (c) low socioeconomic status of family (Olds, Henderson, Chamberlin, & Tatelbaum, 1986). Family environments and social conditions appear to exert a significant influence on the health and development of children. Economic hardship is known to be associated with a variety of physical and psychological problems in children (Lempers, Clark-Lempers, & Simons, 1989). Developmental effects or outcomes associated with high-risk families and environments include increased health/medical problems (Michigan Department of Social Services and Public Health, 1989; Wise & Meyers, 1988), lower intellectual/cognitive status (Sameroff & Seifer, 1987; Schweinhart & Koshel, 1986), and lags in language development (Leventhal & Midelfort, 1986; Walker, 1989). Children of these high-risk environments are subject to greater inflicted trauma, accidental trauma, nonorganic failure to thrive,

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failure to thrive, and poisoning (Newberger, Hampton, Marx, & White, 1986; Parker, Greer, & Zuckerman, 1988).

Consequently, these families are targeted for inclusion in primary prevention studies.

Parent Education

The major objectives of primary prevention are the promotion of healthy development and reduction of vulnerability. Research or program efforts have generally focused on parent education. It has been thought that the promotion or enhancement of competencies in this arena would serve to buffer the children of high-risk families from potential developmental dysfunctions.

Rationale

It is generally assumed that parenting skills are instinctive, or develop naturally as a part of having been a member of a family. However, changes in family structure have prompted many professionals to challenge such an assumption (Boger, 1983; Hicks & Williams, 1981; Hughes & Durio, 1983;) The large extended family of two or three generations ago provided ample opportunity for experiences with young children that today's small, mobile, nuclear family cannot offer. Urbanization has isolated individual families from their supportive extended families. Also, families are smaller with fewer adults and fewer children. Other structural changes include the dramatic increase of

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both parents in the labor market, single parents, and reconstituted families. It is assumed that if parents are provided with knowledge, skills, and support, they can respond more positively and effectively to their children (Roberts, Wasik, Casto, & Ramey, 1991).

Delivery Mode

In recent years there has been a rapid growth in parent education activities. The most popular strategies for dissemination of child care information include the print (magazines, books) and television mediums. In addition to these avenues, parenting workshops or programs have been made available to parents. Program methods in general use include teaching parents in groups, singly, by means of directed observation of children, and/or the use of special devices such as reading assignments. Educational methods include lecture, discussion, role play, and simulation. The lecture method is perhaps the most overused and highly ineffective means of acquiring information (Hicks & Williams, 1981). Hughes and Durio (1983) have questioned the effectiveness of these modes of parent information dissemination. Other researchers have echoed such sentiments (Clarke-Stewart, 1978; Kazdan, 1979; Stevens, 1978;). Abram and Dowling (1979) have also pointed out that these avenues of parent education/training are especially unsuited for the less well-educated or low

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socioeconomic parent--who may be in greatest need of such instruction. Hughes and Durio (1983) concluded that research has provided us with guidance as to what types of information are important, however, the techniques for delivering this information are fraught with many problems. Advocates for low socioeconomic families stress the effectiveness of the home as a setting for intervention/education activities (Roberts et al., 1991). Recent years have seen an increase in home visiting services. This trend is expected to continue.

Content

Although conclusive research data are limited regarding the effectiveness of the various approaches to parent education, there exists within the profession a general consensus that certain types of parenting patterns are detrimental whereas others are conducive to a happy, "normal" growth and development (Hicks & Williams, 1981). There is a sizeable body of knowledge concerning parental skills, knowledge, and attitudes that is related to optimal family outcomes. Information that is selected for inclusion in parenting programs can be divided into two broad categories: (a) caretaking skills information, and (b) relational skills information.

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Caretaking Skills

Program participants generally receive instruction in the feeding of infants (breast feeding, formula preparation, feeding techniques, amounts, schedules, common feeding problems and recommended solutions), hygiene regimens (cord care, diapering practices, bathing), and health guidelines (institution of safety precautions in the home environment, caring for the ill infant, immunization schedules, well-baby visits, nutrition).

Recent studies have demonstrated the importance of caretaking proficiency to infant development. Egeland and Farber (1984) in their study of infant-mother attachment in a high-risk population (=economically disadvantaged families) found that qualitative differences in mother caretaking skills were more highly related to optimal infant outcomes than were mother nurturant behaviors. Similarly, Taylor's (1989) study of mother-infant interaction (in a feeding session utilizing Egeland's tool) found that caretaking skill level best discriminated between organic and nonorganic failure-to-thrive infants.

Relational Skills

Program topics generally include child development norms (e.g., stages of personal or social development), child management techniques (e.g., methods of discipline), and parent-child relationship development (e.g., emotions

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It is important to note that many professionals feel that a successful program must not only contain the "factual" information about parenting (the process of routine caretaking skills), but must focus on the affective domain (Marion, 1982). Ruger and Wooten (1982) reported that changes in their family life education program has extended the content far beyond information to emphasize the interactional aspects of parenting. Dietrich, Starr, and Weisfeld (1983) concluded that attempts to improve the quality of caretaker-child interaction through teaching and modeling can play an important role in preventing a breakdown in adequate caretaking. Boger (1983) is critical of programs which are highly "how to" oriented--stressing the importance of a parent/infant transaction and infant capabilities focus. Parenting is defined as a "holistic" process that may require extensive support, education, and modeling of behavior. Caregiving skills are important, but an understanding of the physical, psychological, and social capabilities of the newborn is also necessary.

Mechanism

While the major objectives of primary prevention are the promotion of healthy development and the reduction of vulnerability--how is it that parent education programs are predicted to accomplish these goals in a high-risk

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population? In general, educational strategies for intervention have grown from a transactional model of child development. Parker, Greer, and Zuckerman (1988) offered a recent account of this model of development in their analysis of the impact of poverty on early child development:

In a low SES environment, more risk factors for adverse developmental and behavioral outcomes are likely to be present. The most pertinent of these include increased stress, diminished social support, and maternal depression. These risk factors, in turn, exert their influence on the child through the quality of the home environment and the parent-child interactions, to name two of the most widely studied mechanisms. Changes in maternal depression) can create positive transformations any aspect of the ecology of the child's world (e.g., in another (e.g., environmental stimulation). (p. 1229)

In Jolly's (1988) assessment of the impact of deprivation in the child's environment, he also offered the following point of hope:

One does not need to look far to find some surprising strengths in many situations which persist in a context of poverty. The ability of many households to fulfil the needs of the child, despite situations which put the child at risk, points to avenues which should be identified, encouraged, and studied for application. (p. 24)

Jolly named the identical "avenues" which Parker et al. (1988) detailed. He concluded that the quality of care provided by the parent, and the affective quality of the early parent-child relationship were the basic characteristics which encouraged, fostered, and stimulated optimal infant and child growth.

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Advocates for children from high-risk families stress the need to focus on those factors that promote successful adaptation in children. Parent educational services/programs are intended to enhance the quality of caregiving thereby ameliorating risk factors (e.g., inadequate social support) and enhancing protective mechanisms (e.g., improving the health status of children).

Weiss (1989) offered the following summary in her review of preventive family support and education programs to strengthen families:

Based on the ecological premise that factors outside the family affect the family's capacity to nurture and rear its children, these programs frequently fill an empty niche in the continuum of community services. They provide a variety of types of social support to achieve a set of interrelated ends. These include the enhancement of child health and development; prevention of various child and family dysfunctions, such as abuse and neglect; enhancement of parental knowledge, self-esteem, and problem solving; and promotion of informal and formal community support for families. (p. 32)

The primary intent of Weiss' paper was to emphasize the growth of public interest in programs and policies that provide support and education to high-risk families. She also outlined critical areas identified as "challenges" inherent in the proliferation of such programs including concerns of family privacy and the implementation of a nondeficit service delivery ideology. Although she did not question the need to assess the effectiveness of these programs, this certainly should be a primary concern.

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Effectiveness

The effectiveness of parent education in producing the changes hoped for in parents and children is simply an unknown. Reported research is meager. Most programs in published reports list vaguely stated goals, contain no measurement of behavioral change, are limited in scope, and/or fail to utilize an experimental design. The following review should serve to highlight the major problems which have hampered progress in demonstrating the effectiveness of prevention programs. Each of the reviewed studies represent educational interventions which include an evaluation of impact on the infant. This review is divided into the three major sections of theoretical, methodological, and utility arguments/concerns.

Justification for Study Implementation

Theoretical Arguments/Concerns

Entry point

One-half of the reviewed studies failed to intervene during the critical early postpartum period--the time when adjustment to parenthood is at its peak. Substantial research has shown the vulnerability of this period (Ali & Lowry, 1981; Boger, 1983; Danziger, 1979; Garbarino, 1980; Heinicke, Diskin, Ramsey-Klee, & Given, 1983; Klaus, Jerauld, Kreger, McAlpine, Steffa, & Kennell, 1972; Lozoff, Brittenham, Trause, Kennell, & Klaus, 1977; Rising, 1974;

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Rubin, 1975; Stranik & Hogberg, 1979). This judgment of "vulnerability" is based on evidence of increased stress/anxiety experienced at this time, a greater receptivity to ideas/assistance, and the predictive value of early parenting behavior regarding later parent-child interactions.

Dickie and Gerber (1980) studied the effects of a parent-training program designed to increase parent-infant competence (parent competence involving the anticipation of infant needs, reading of infant cues, and responding contingently, as well as initiating contacts with the infant; infant competence involving the provision of readable, predictable cues to parents, elicitation of responses from the environment, and responding often and contingently to parents and the environment). Experimental parents attended a training program which included discussions and lectures on child development, infant temperament and individuality, parent feelings and needs, contingent responding, and problem solving. The program, which consisted of a total of 16 hours over 8 weeks, was initiated when infants were between four and twelve months. It is interesting to note that although observation measures indicated that the experimental parents responded more appropriately to infant cues, and provided more frequent verbal and non-verbal contingent

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responses, self-report measures of competence was not affected by training. Perhaps if the training had been initiated earlier--it may have served to impact on the perception of competence.

Larson (1980) sought to evaluate the preventive potential of prenatal and postpartum home visits on infant health and development with working class families. Program objectives included well-child care, enhancement of home environment, and the promotion of more positive mother-infant interaction patterns. Subjects (115 mother-infant pairs) were assigned to one of three experimental conditions: group A received a prenatal home visit during the seventh month of pregnancy and a postpartum hospital visit followed by nine home visits during the child's first 15 months of life; group B received 10 home visits beginning during the infant's sixth week of life through 15 months of life; and group C served as the control and received no visits or other forms of intervention. Larson reported higher scores for assessments of home environment and maternal behavior and lower prevalence of interaction or feeding problems in group A (in which visits were begun prenatally), however, Group B (in which home visits began when infants were six weeks of age), appeared to have gained little when compared to control pairs. Larson subsequently claimed that these results demonstrated

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the efficacy of a home visitor program if begun during pregnancy. But because groups A and B differed on multiple dimensions, it is not possible to claim group A's success on the single issue of prenatal contact. Larson failed to recognize--or attach significance--to the issue of the early postpartum period. Group B's visits did not begin until after 6 weeks postpartum--thus excluding a recognized critical time of adjustment for the new family.

Metzl (1980) utilized her Infant Language Program (ILP) in an intervention designed to teach middle-class parents a strategy for enhancing infant development. In this program, the parent was encouraged to provide the infant with varied and increasingly complex stimuli and experiences. It was hypothesized that instruction which emphasized the infant's early potential for interaction, and the provision of techniques for generating and responding to these subtle early interactions could create a higher quality relationship between parent and child. Subjects (60) were randomly assigned to one of three groups: control, mothers receiving the ILP, and mothers and fathers receiving the ILP simultaneously. A trainer made home visits for instruction when the infants were 6, 12, and 18 weeks old. Testing at 6 weeks and 6 months revealed that infants in groups two and three scored higher on the Bayley Mental Standard Scores, and the environments of both

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groups were rated higher on the HOME index. (Beneficial effects were greater when both parents had received the training.) An examination of mean scores, however, revealed that the actual impact of training was minimal. For example, Group 1 and Group 2 differed by only four points on the Bayley scores, and only two points separated Group 1 and Group 3 on the Caldwell scores. Stronger treatment effects may have been obtained if the point of entry had differed. By choosing to initiate home visits when the infant reached 6 weeks of age, the recognized critical adjustment period of the early postpartum days/weeks was ignored.

Resnick (1985) examined the effects of two prevention programs for sole-support mothers (single mothers living on government assistance) with pre-school-aged children. A non-randomized design was employed with select measures occurring before, after, and one year following participation in the two intervention groups and for the group of matched comparison subjects. Both experimental programs (Opportunity for Advancement and New Directions for Mothers) were similar in nature. Each consisted of 14 weekly groups sessions. Program objectives were esteem building and goal setting with an emphasis on strengthening support networks. Program philosophy stated that improvement in the individual's life skills would result in

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improved parenting. Project results were disappointing. There were no significant differences in parent attitudes or parent-child interactions. Resnick concluded that the lack of long-term competency enhancement effects appeared to be a function of the short-term, low-intensity program approach. However, an equally "valid" interpretation would be that women with pre-school-aged children have established parenting practices which most likely resist change.

In summary, Dickie and Gerber's (1980) parent-training program designed to increase parent-infant competence was initiated when infants were between four and twelve months; Larson's (1980) home visitor program (designed to improve infant health and development outcomes) included one study group in which home visits began when the infants were six weeks of age; Metzl (1980), who utilized her Infant Language Program in an intervention to teach parents a strategy for enhancing infant development, also choose to begin intervention at six weeks postpartum; and Resnick (1985) targeted pre-school-aged children with a program designed to improve parent-child interactions. The rationale for point of entry was not detailed in any of these studies. Furthermore, it is interesting to note that there was no consideration of "delayed" entry when authors explored reasons for the failure of the intervention.

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Early intervention does not in itself guarantee success. This timing may not be essential--but the evidence certainly reveals that it is beneficial. The early postpartum period--because it is regarded as a time of high vulnerability--should be approached as a time of ideal opportunity. When designing primary prevention efforts, attention to entry or timing may serve to lend power or force to the planned intervention. The study/intervention detailed here "seized" this opportunity by initiating intervention in the hospital setting following the birth of the infant.

Program Content

Three-fourths of the reviewed studies failed to recognize the significance of caretaking proficiency. Intervention components were of a relational competency nature. A very small percentage of programs included information about basic child care skills. It appeared that in general researchers have assumed either that caretaking proficiency was unimportant, or that the target population was not in need of instruction in this area. Recent studies, however, have demonstrated the importance of caretaking proficiency to infant development. Egeland and Farber (1984) in their study of infant-mother attachment in a high-risk population (=economically disadvantaged families) found that qualitative differences

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in mother caretaking skills were more highly related to optimal infant outcomes than were mother nurturant behaviors. Similarly, Taylor's (1989) study of mother-infant interaction (in a feeding session utilizing Egeland's tool) found that caretaking skill level best discriminated between organic and nonorganic failure-to-thrive infants.

Gutelius and Kirsch (1975) described a parent-infant education program in which the mothers of 92 firstborn African-American infants were randomly assigned to high and routine contact groups. High contact groups received a series of home visits by a nurse during the first 3 years of life. Visits numbered eight, six, and four in the first, second, and third years of life. The purpose of these visits was to provide instruction in the visual, auditory, tactile, and motor stimulation of infants. Although this study contained some ideal design features--such as early point of entry--its scope was much too limited. The narrow focus on infant stimulation ignored other important areas of parenting skills. Instructional sessions did not address/explore caregiving basics. An analysis of project data revealed that although experimental infants scored significantly higher at 3 years of age on the Stanford-Binet Intelligence Test, Form L-M (a mean score of 102 versus a mean score of 96), there were no significant differences on mother or child interactive behaviors.

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As described previously, Dickie and Gerber's (1980) parent-training program involved parents of infants age four to twelve months attending a series of discussions and lectures on child development, infant temperament and individuality, parent feelings and needs, contingent responding, and problem solving. Self-report measures of competence was not affected by training. Again, it may be important to consider the scope of the intervention. For although the majority of a parent's time (during the infancy period) may be devoted to caretaking behaviors-- caretaking skills were not addressed.

Field, Widmayer, Stringer, and Ignatoff (1980) provided a home-based, parent-training program for teenage, lower-class, African-American mothers and their preterm infants. Home visits were made biweekly by a two-person team (including a trained interventionist and a teenage, African-American female work/study student). Program goals were as follows: (a) to offer instruction in developmental milestones and child rearing practices, (b) to teach age-appropriate stimulation techniques/exercises for facilitating sensorimotor and cognitive development in infants, (c) to enhance mother-infant interactions with hopes of developing communication skills and creating more

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positive mother-infant relationships. Field et al. (1980) reported that the preterm infants of teenage mothers who received intervention showed more optimal growth, Denver Developmental scores, and face-to-face interactions at 4 months. Also, mothers rated their infants' temperaments more optimally, expressed more realistic developmental milestones and child rearing attitudes, and received higher ratings on face-to-face interactions. At 8 months, this group received superior Bayley mental, Caldwell (HOME Inventory), and infant temperament scores. These results are impressive (although certain methodological concerns will be addressed later)--but again, program goals neglected the enhancement of basic caregiving skills. One cannot help but ponder the potential for impact if a more holistic approach had been adopted.

As described previously, Metzler (1980) utilized her Infant Language Program (ILP) in an intervention designed to promote infant development through the provision of varied and increasingly complex stimuli to infants. Project results, although statistically significant, were minimal (i.e., increases in mean scores were small). The focus of the intervention was quite limited. The restricted emphasis on relational skills ignored the importance of the potential contribution of enhancement of caretaking skills.

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Velasquez, Christensen, and Schommer (1984) examined the following three questions: (a) Can intensive, early intervention with high-risk mothers result in reduced incidence of abuse, neglect, and out-of-home placement? (b) Do their infants attain normal/optimal growth and development? (c) Does intervention lead to improvement in parenting skills and a parent's ability to develop a supportive network? High-risk status was determined by a number of family-background indicators such as childhood history of abuse, foster home placement, high school non-graduate, alcohol or drug abuse, involvement with police as an adolescent. Twenty-three women were assigned to the experimental group which received intensive health care services (= 2 to 4 hours of contact with nurses and social workers every week for a minimum of 18 months). Thirty-two women were assigned to the comparison group which received less intensive health-related services (=visits at two-week to four-week intervals with termination at approximately 13 months). Services included teaching mothers about infant growth and development, feeding patterns and practices, maternal concerns, health, and attachment issues between mother and infant. Reported outcomes included a reduced incidence of child abuse and neglect as well as out-of-home placement (based on reported incidents with the area social services department), the promotion of normal growth

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of the infant (based on measurements of weight and height), and the promotion of normal development (based on scores from the Denver Developmental Screening Test).

Statistically significant differences were not obtained on the outcomes of parenting skills and support networks (both of these outcomes were measured by two scales developed by the project investigators). Although the credibility of any of the project outcomes is highly suspect--as the study design and implementation contained gross methodological flaws--it is interesting to note the lack of program effects on parenting skills. Perhaps this failure was the result of limited attention to basic child care skills. It appeared that some feeding issues were addressed, but other important child care practices such as hygiene and safety were ignored.

As described previously, Resnick (1985) attempted to improve parenting outcomes through the improvement of the individual's "life skills" (e.g., esteem building and goal setting). Project results were disappointing. Involvement in the model programs did not appear to impact on parent attitudes or parent-child interactions. Again, attention to a wider range of parenting skills--including caretaking basics--may have served to produce the long-term competency enhancement effects hoped for.

In summary, the parent-training programs evaluated by

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Gutelius and Kirsch (1975), Field, Widmayer, Stringer, and Ignatoff (1980), and Metzl (1980) primarily focused on stimulation techniques aimed at facilitating the sensorimotor and cognitive development in infants. Dickie and Gerber (1980) stressed infant and parent feelings and needs--while Resnick (1985) concentrated on parent life skills. Finally, the intervention designed by Velasquez, Christensen, and Schommer (1984) addressed a greater number of parenting issues, however, there was limited attention to basic child care skills.

An examination of program content revealed that the significance of caretaking proficiency was generally ignored. The scope of the model programs was non-holistic. Intervention components were most often of a relational competency nature. This lack of attention to basic child care skills is unfortunate when one considers the amount of time devoted to caretaking activities in the early parenting period. This study/ intervention viewed parenting as a holistic process. The importance of both relational and caretaking skills was recognized. Intervention components represented an attempt to strengthen or enhance each area.

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Methodological Arguments/Concerns

Subjects

Sample size.

One-half of the reviewed studies based conclusions on sample sizes of which at least one treatment or condition consisted of only 10 to 23 group members. Dickie and Gerber (1980) compared two groups with 19 subjects each; Metzl (1980) compared three groups with 20 subjects each; Velasquez et al. (1984) compared two groups with 23 and 32 subjects; and Resnick (1985) compared three groups with 10, 10, and 13 subjects. (Although for some of the aforementioned studies the original sample size was greater, the figures presented here represent the number on which completed data was obtained.) This study generated two treatment groups with forty members in each condition. Completed data was obtained on 72 subjects--or 90 percent of the original sample.

Risk status.

More than one-third of the reviewed studies targeted low-risk individuals--although common procedures for target estimation (including the key informant and the indicators approach) highlight the vulnerability of infants and children living in poverty. Rossi, Freeman, and Wright (1985) argue that evaluation will be most efficient when the targets reached are restricted to units that need the

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intervention. Random sampling may be appropriate for providing descriptive information, but practical constraints reduce the utility of random sampling for impact evaluations (St. Pierre & Cook, 1983). Intervention with single, poor, or unmarried women appears to result in more significant program effects than that offered to other subgroups (Roberts et al., 1991). (It is interesting to speculate if the difficulties inherent in working with poverty families serves to deter researchers from such a focus.) This study recruited only low-income mother-infant pairs.

Design

Random assignment.

Approximately 40 percent of the reviewed studies did not randomly assign subjects to treatment conditions. In Larson's (1980) project, it was claimed that a pilot study had shown that mothers who received a hospital visit had shared their experience with other women in the same room--therefore, group A mothers were not included in the randomization in order to avoid the effect these women might have on the hospital experience of mothers in groups B and C. (Such a trade-off seems questionable, for although a possible reduction in potential "contamination" was gained, the ability to infer causation was lost.) Assignment to groups B and C was random--followed by the

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enrollment of group A mothers until a predetermined date. The group A intervention represented the experimental model. (Group B was thought of as a control for the timing of intervention, and Group C as a control for the intervention.) Because the group A program was the most intense (demanding the greatest time commitment from the mothers), it seems plausible that those women who volunteered for that group may have been more serious, or interested, or enthusiastic. Consequently, their superior performance may be the result of these motivational factors rather than the experimental condition.

Velasquez et al. (1984) claimed that "although random assignment of subjects to concurrent treatment and control groups would have produced more credible results, this alternative was neither possible or desirable". The stated reason for this decision was a concern that the project's staff would be prevented from discussing their services with other health care professionals--thus the treatment (= intensive health services) and control (= less intensive health services) groups received intervention at different times. It was felt that if discussion between health care professionals took place--the differences between the services would have gradually become less distinct. In summary, the rationale for not incorporating random assignment into the study design was that it would

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interfere with "legitimate testing of the treatment approaches". As with the Larson study, such a trade-off seems questionable--for although a possible reduction in potential contamination may have been gained, the ability to infer causation was lost.

Finally, Resnick's (1985) study--although it was stated that certain hypotheses were "tested"--was pre-experimental or correlational in nature. Women were recruited from two existing prevention programs (Opportunity for Advancement and New Directions for Mothers) which targeted impoverished families. A control group consisted of volunteers solicited from posters and advertisements in local newspapers and radio.

The presented study design incorporated random assignment of subjects to conditions thus permitting causal inferences.

Procedures

Data collection.

In one-fourth of the reviewed studies there was evidence that blind raters were not employed in the administration of tests. The status of those who administered measures was not clearly stated in Resnick's study (1985), and testers were aware of group assignment/membership in the Velasquez et al. project. This situation existed because the same individuals who

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acted as interventionists also collected data. This would appear to be especially dangerous when examining reported incidence of abuse and neglect (which the authors claimed to be reduced in the experimental group) since the interventionists were also the ones to report such concerns to the authorities. A legitimate questions would be whether or not they would be more likely to report a control family (=those who received less intensive health-related services) than an experimental family (=those who received intensive health care services). Awareness of group membership could of course introduce bias. Also, the timing of administration differed between the groups. For example, growth rates for infants in the experimental group were measured quarterly, while such rates were measured at intake and closing for the "majority" of infants in the comparison group. In this study, assessments were conducted by trained research assistants who were blind to group membership.

Measurement

A representative sample of studies drawn from published program evaluation literature has shown that the neglect of validity and reliability issues are common problems (Lipsey, Crosse, Dunkle, Pollard, & Stobart, 1985). In this current review, such measurement concerns were also evident. Although most researchers employed

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multiple dependent measures (which generally included a behavioral or observational assessment technique), repeated measures were not undertaken in one-half of the reviewed studies (Dickie & Gerber, 1980; Field et al., 1980; Metzl, 1980; Resnick, 1985)--and one-half failed to utilize multiple methods (Gutelius & Kirsch, 1975; Metzl, 1980; Velasquez et al., 1984; Resnick, 1985). Recent reviews of research on links between parents' ideas and parents' actions (revealing only modest correlations) highlight the need to employ multiple methods of testing (Goodnow, 1988). In this study, the majority of measures were conducted at both three- and six-months postpartum, and included multiple assessment techniques. (A detailed plan of the addressment of reliability and validity issues is included in the Method section.)

Analysis

The evaluation of model programs generally focuses on an assessment of impact--or treatment effectiveness. Lipsey et al. (1985) have criticized this narrow focus--in particular with respect to the neglect of treatment implementation issues. Rossi, Freeman, and Wright (1982) detail three major program evaluation areas: 1) implementation, 2) process, and 3) utility (including measures of both program effectiveness and efficiency)--emphasizing the importance of developing a comprehensive

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evaluation plan. Finally, Davidson (1989) also suggests an examination of unintended outcomes. In this study, a primary objective was to include multiple levels of analysis. Implementation, process, utility, and unintended outcomes were addressed. (The scope of the evaluation process is detailed in the Method section.)

Utility Arguments/Concerns

Of the studies reviewed, there was one study which met all of the aforementioned theoretical and methodological "criterion". Olds, Henderson, Chamberlin, and Tatelbaum (1986) randomly assigned high-risk families (=primiparas who were either teenagers, unmarried, or of low socioeconomic status) and low-risk families (=primiparas) to one of four conditions: (a) provision of developmental screening of child at one and two years of age (=control group); (b) provision of free transportation for regular pre-natal and well-child care at a local clinic plus developmental screening of child at one and two years of age; (c) provision of a nurse home visitor during pregnancy plus screening and transportation services; and (d) provision of a nurse home visitor during pregnancy and throughout the child's first two years of life plus screening and transportation services. (A total of 400 families participated in the study.) With respect to treatment conditions three and four, the nurses served both

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an educational and support function. The home visitation program was designed to prevent a wide range of childhood health and developmental problems, including abuse and neglect. For the analysis, treatment groups one and two were collapsed and referred to as the comparison group; treatment groups three and four were collapsed and referred to as the nurse-visited group. The nurse-visited group had fewer instances of verified maltreatment, were observed in their homes to restrict and punish their children less frequently, provided more appropriate play materials, and their babies were seen in the emergency room less frequently during the first year of life. During the second year of life, the nurse-visited group infants were seen in the emergency room fewer times, and were seen by physicians less frequently for accidents and poisonings than comparison group infants. Finally, there was improved intellectual functioning of 9 to 11 points on the developmental tests for children from the highest risk families. These results are fairly impressive (although it was unclear as to the rationale for collapsing groups for analysis). There was random assignment, a large sample size, employment of multiple methods and repeated measures, early entry, and the inclusion of both caretaking and relational skills information. However--in light of the intense length of contact/intervention (= 2 years)--the

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question of feasibility must be addressed.

It would seem doubtful that such a program could be implemented on a wide scale basis. The cost would be extremely high. Fairweather (1980) has advised social scientists to always consider the issue of feasibility when designing an intervention program. To maximize utilization, it is imperative to consider program efficiency. If costs appear to heavily outweigh benefits, it is unlikely that such a program would be adopted. Of course--perhaps some families may require long-term involvement with a supportive program. In those cases--it would probably be better if agencies worked together to plan such a long-term commitment. (For example, one program may target the newborn phase--while a second program would "step in" at the time of mobility.) In this study, an examination of efficiency (=program cost per family) was performed.

Summary

Scientific Rationale

Typically, the major objectives of primary prevention are defined as the promotion of healthy development and reduction of vulnerability. But the concept of primary prevention remains abstract and ambiguous. Cowen (1977) referred to it as a religio-spiritistic ideal in search of concrete operational practices. Although the idea of

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primary prevention has widespread appeal--doing it is the problem. The damnation of primary prevention is that it is all inclusive (DeWild, 1980). If a multitude of factors influence an outcome--then those same factors can be subject to preventive programming. And yet it would be unfortunate if this complexity was to block efforts to design, implement, and test prevention strategies. But indeed--a review of the literature reveals a scarcity of primary prevention efforts. Furthermore, an examination of published studies reveals a number of theoretical, methodological, and utility concerns.

Theoretical issues include the selected time of program entry, and the scope of program content. Methodological issues include flaws with respect to subjects, design, procedures, measurement, and analysis. With respect to subjects, conclusions were generally based on relatively small samples, and study groups frequently represented low-risk populations--thus making it more difficult to detect program effects. With respect to design, random assignment of program participants to treatment conditions was not always present. Regarding procedures, there were problems in the administration of measures--in which the status of those who administered measures was not always clear, or the timing of administration differed for the experimental and control

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groups. Regarding measurement, repeated measures were frequently not undertaken--and investigators failed to utilize multiple methods. And with respect to analysis, the scope of evaluation was generally quite narrow examining only treatment effects. Finally, utility issues include the question of program efficiency--and thus the feasibility of program adoption. Cowen's (1983) evaluation of primary prevention programs appears to be starkly accurate--they have been underresearched and inadequately researched. For although a study may "excel" in one or two particular areas--it contains flaws in other key areas. The intent of the study presented here was to successfully address each of the theoretical, methodological, and utility considerations as outlined in this review. (Refer to Table 1 for a summary of these considerations.)

Service Rationale

There exists a national need for more primary prevention in child welfare. One in every four children in the United States live in poverty (Bumpers, 1984). And it is this variable which characterizes the infant vulnerable for problematic developmental outcomes (Leventhal & Midelfort, 1986; Parker, Greer, & Zuckerman, 1988; Sameroff & Seifer, 1987; Schweinhart & Koshel, 1986; Singer, Drotar, Fagan, Devost, & Lake, 1983; Walker, 1989; Wise & Meyers, 1988). Parker et al. (1988) appraised this vulnerability

Table 1
Examination of Published Studies:
Theoretical and Methodological Considerations

Table 1

Examination of Published Studies:
Theoretical and Methodological Considerations

	Random Assignment	Sample Size	Risk Status	Multiple Methods	Repeated Measures	Blind Raters	Entry Point	Program Content
Gutelius & Kirsch (1975)	X	X	X		X	X	X	
Dickie & Gerber (1980)	X			X		X		
Field et al. (1980)	X	X	X	X		X	X	
Larson (1980)		X		X	X	X		X
Metzl (1980)	X					X		
Velasquez et al. (1984)			X		X		X	
Resnick (1985)			X					
Olds et al. (1986)	X	X	X	X	X	X	X	X

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Children living in poverty experience double jeopardy. First, they are exposed more frequently to such risks as medical illnesses, family stress, inadequate social support, and parental depression. Secondly, they experience more serious consequences from these risks than do children from higher socioeconomic status. It is the synergistic double jeopardy of increased exposure to and greater sequelae from environmental risks that predispose children living in poverty to adverse developmental outcomes. (p. 1227)

The physical and emotional growth and development of young children proceeds on a time-table which is rarely disturbed for long without permanent implications. The nuclear family is the critical unit for the nurture, protection, and socialization of young children (Steward, Farquhar, Dicharry, Glick, & Martin, 1986; Roberts et al, 1991). Appropriate caretaking has been identified as one essential requirement of normal growth and development. Thus it is recommended that disturbances in the caretaking process should be sought, predicted, and corrected, with persistence (Kempe, 1970).

In formulating a strategy to obtain needed information about mediators of risk influences, Kopp and Krakow (1983) suggested an examination of the external child conditions of caregiving and social support through educational programs. Other family/parenting professionals have also issued this challenge (Jolly, 1988; Parker et al., 1988; Weiss, 1988). The intervention detailed here

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represented such a program. Each of the planned program components--delivered in the home setting by highly trained parent aide volunteers who functioned in both an educational and supportive role, were designed to work in an integrated, complementary fashion to promote or enhance parenting skills and developmental outcomes for infants in socially disadvantaged families.

It is recognized that parenting and infant outcomes are most likely multiply determined and therefore cannot be satisfactorily explained by single-factor theories--or addressed by single-level interventions. This project represented a population welfare model of primary prevention. In this approach, supportive services were made available to a population presumed at risk. This model did not necessarily view the targeted individual as being somehow defective, but rather as one who would fare better with the provision of particular resources. It is the damaging climate of poverty--or the child-rearing environments represented by these families--that is believed to exert a destructive influence on infant development. At present, however, the feasibility of altering that environment is questionable. This model program offered an economical--and theoretically valid--treatment/intervention modality to serve this at-risk population.

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CHAPTER II

METHOD

Hypotheses

It was hypothesized that:

1. Participation in the model program would promote the enhancement of infant caretaking skills.

a. Compared to control mothers, participant mothers would be more likely to prepare and store infant formula according to suggested guidelines

b. Compared to control mothers, participant mothers would be more likely to gain greater knowledge concerning appropriate feeding techniques including scheduling and amounts

c. Compared to control mothers, participant mothers would be more likely to gain greater knowledge concerning appropriate infant hygiene including bathing and diapering practices

d. Compared to control mothers, participant mothers would be more likely to implement recommended safety practices in the home environment and to exhibit greater knowledge about such practices

e. Compared to control mothers, participant mothers would be more likely to adhere to recommended health practices by completing the infant's well-baby visits

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2. Participation in the model program would promote the enhancement of relational skills.

a. Compared to control mothers, participant mothers would be more likely to gain greater understanding or knowledge of infant behavior and thus express more realistic developmental milestones

b. Compared to control mothers, participant mothers would be more likely to adopt a more positive set of beliefs or attitudes concerning child-rearing

c. Compared to control mothers, participant mothers would be more likely to recognize the infant's potential for interaction and thus become more responsive to the mutual transmission of messages

d. Compared to control mothers, participant mothers would be more likely to display greater competency in the parenting role

3. Participation in the model program would promote the optimal growth and development of infants.

a. Compared to infants of control mothers, infants of participant mothers would be more likely to exhibit greater physical or motor capabilities

b. Compared to infants of control mothers, infants of participant mothers would be more likely to exhibit greater mental or cognitive capabilities

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In addition to these comparisons of the experimental and control groups, the following additional research hypotheses were examined:

1. Caretaking proficiency would be more highly related to optimal infant outcomes than will relational capabilities.

2. The quality of support provided by the interventionist would influence both parent caretaking and relational skill acquisition.

Finally, there were additional research questions of great interest, however, it was not possible to generate predictions because of the lack of prior foundation work (i.e., there is no theoretical groundwork). These included the following:

1. Which aspects of caretaking competence or mastery (feeding, hygiene, safety, or health) are most predictive of positive infant outcomes?

2. Which aspects of relational competence or mastery (developmental knowledge, child rearing attitudes, or quality of interaction) are most predictive of positive infant outcomes?

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The time of hospitalization for delivery has been identified as an ideal target for initiation of a planned intervention due to the ready accessibility of the population (Gordon & Gordon, 1979). In addition to this practical consideration, the early postpartum period represents a beginning from which future parent-child transactions spring (Boger, 1983). Patterns of behavior emerge which can influence or shape relations (Ali & Lowry, 1981; Heinicke, Diskin, Ramsey-Klee, & Given, 1983). It can be thought of as the foundation of the parent-child relationship. The potential for reinforcing positive transactions at the beginning of parenting function exists. This period also represents an ideal time to introduce or develop positive caretaking skills. In distinguishing between dysfunctional and non-dysfunctional parenting, there is evidence that adeptness in caretaking may be of greater significance than the display of nurturant behaviors (Egeland & Farber, 1984; Taylor, 1989).

The entry point of intervention in this field experiment was the hospital--where the event of birth generally takes place. The early postpartal period represents an ideal target for intervention. It is felt that an interruption or alteration in hospital routine could prove to be of enormous benefit because of the

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vulnerability of this period. The hospital's role or responsibility in promoting positive parenting must go beyond "permitting" practices that enhance the parent-infant relationship, it should entail seizing the opportunity to promote such enhancement (Garbarino, 1980).

This study was conducted at Hurley Medical Center, a 500-bed teaching hospital of Michigan State University, located in Flint, Michigan. Flint is a moderately populated (250,000) city in the mid-Michigan area. It is disturbed by various social problems including high crime and unemployment. The hospital serves a cross section of the population. The number of births annually is approximately 3,000--the greatest number of the city's five hospitals. Approximately one-third of these births involve Medicaid patients--who are typically categorized as being at risk for various parenting dysfunctions as a result of their low socioeconomic status (Leventhan & Midelfort, 1986; Newberger, Hampton, Marx, & White, 1986; Olds, Henderson, Chamberlin, & Tatelbaum, 1986; Singer, Drotar, Fagan, Devost, & Lake, 1983).

In summary, the hospital setting was ideal in that it allowed entry at a critical point--thus lending power or force to the intervention. Other advantages included the availability of the target population, their readiness or interest being maximum to participation, and the status of

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the medical profession serving to sanction that participation.

Subjects

Study participants were maternity-ward patients. Participation in the study was restricted to women who: (a) were 18 years of age or older; (b) were judged to be of good health; (c) were primiparous; (d) whose method of payment was Medicaid.

Restrictions

The final two restrictions reflected the study's concern with primary prevention. With respect to parity, the first-time parent experiences the greatest degree of stress or anxiety (Boukydis & Burgess, 1982; Grossman, Eichler & Winichoff, 1980; Rollins & Galligan, 1978; Weinberg & Richardson, 1981). Also, Olds (1984) found that such a focus (i.e., first-time parents) increased the likelihood of subjects embracing program goals. Such parents were more likely to be open to offers of help. They had not established deeply ingrained attitudes about child-rearing that would interfere with program goals. Boger (1983) also emphasizes the high readiness to learn surrounding the arrival of the first child. In summary, the first-time parent represents not only the greatest need, but there also exists the potential for the greatest impact. With respect to method of payment, Medicaid (or

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low socio-economic) mothers appear to be at greater risk for numerous parenting dysfunctions including child maltreatment (Egeland & Brunquell, 1979; Newberger, Hampton, Marx, & White, 1986), failure to thrive (Gordon & Vazquez, 1985; Singer, Drotar, Fagan, Devost, & Lake, 1983), and children who exhibit significant developmental delays (Ruger & Wooten, 1982; Leventhan & Midelfort, 1986). In developing a high-risk family profile, Newberger et al. found that welfare dependency was most highly related to negative outcomes for children.

Health status was determined by projected length of hospital stay. This information was obtained from attending physicians and ward nurses. Mothers (or their infants) who were not expected to be discharged at the routine target data were excluded from recruitment procedures. Since home intervention commenced immediately upon discharge--and entailed the presence of both the mother and her infant--health problems which delayed hospital discharge, consequently prevented their participating in the study.

The age restriction was imposed as a result of existing programs operating in the community which targeted adolescent mothers and their newborns.

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Number

A total of 97 women were approached with requests for participation in the study. Eighty women volunteered to participate. (The majority of those who declined to participate would not provide a rationale for their decision.) Non-volunteers (=17) were examined (through the use of hospital records) on six variables (including age, race, marital status, prenatal care, delivery mode, and sex of infant). Six comparisons were made and no significant differences were observed. Therefore, at least on the basis of these six demographic variables tested, there was no evidence that this non-participant group differed from the study participants.

Seventy-two women completed the post assessment. Measures could not be completed on eight women (three experimentals and five controls). These included five refusals (three experimental and two controls), two out-of-state (both controls), and one lost to follow-up (a control). Sixty-one women completed the follow-up assessment. Measures could not be completed on 11 women (four experimentals and seven controls). Six women moved out of state (one experimental and five controls), four could not be located (two experimentals and two controls), and one refused the evaluation (an experimental).

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Demographics

Various demographic variables were collected on the participant group including age, race, marital status, education level, religion, and length of residence. In addition, the family history variables of parental employment and number of siblings were collected. Medical or treatment variables collected included prenatal care, pregnancy complications, and delivery mode. With respect to the infant, the variables of sex, gestational age, weight, APGAR scores, and birth complications were collected. Finally, the quality of the residence was assessed.

The 72 women who participated had the following characteristics: age ranged from 18 to 32 with a mean of 21 and standard deviation of three; 43 percent were African-American and 57 percent were Caucasian; 83 percent were single and 17 percent were married; 16 percent had not graduated from high school, 43 percent were high school graduates, and 41 percent had some college experience; 56 percent were affiliated with a church and 44 percent stated no religious affiliation; length of residence in the Flint area ranged from one to 28 years with a mean of 15 and standard deviation of eight; 59 percent of their mothers had been employed and 73 percent of fathers; number of siblings ranged from none to 12 with a mean of three and

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standard deviation of two; 54 percent had received routine prenatal care and 46 percent had not received such care; 27 percent experienced pregnancy complications and 72 percent had no complications; and 68 percent had vaginal deliveries while 32 percent had caesarean deliveries.

Infant characteristics were as follows: 44 percent were male and 56 percent were female; gestational age ranged from 35 to 42 weeks with a mean of 38 and a standard deviation of two; weight ranged from 2420 grams to 5488 grams with a mean of 3449 and a standard deviation of 563; and 64 percent of the births were problem-free while there were complications in 36 percent of the cases. Finally--when rating the home (or subsequent caretaking) environments--14 percent were rated as excellent, 30 percent as good, 28 percent as fair, and eight percent as poor.

Equivalency of Groups

In order to evaluate the success of random assignment in creating equivalent groups, a number of chi-square tests were performed. No significant differences were found out of six comparisons (examining the aforementioned demographic variables).

Design

A Posttest-Only Control Group design was employed for this study. Eighty mother-infant pairs were randomly

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assigned to either the control or experimental groups. (Random assignment was intended to maximize the internal validity of the study.) Recruitment procedures involved a period of three months in both the Fall of 1989 (in the months of October, November, and December) and the Winter of 1990 (in the months of January, February and March).

Post and follow-up assessment procedures were employed at three-months and six-months postpartum. The effectiveness of the experimental group was compared with traditional hospital services on multiple outcome criteria. With the first objective of this project to increase competency in the parenting role, the following caretaking outcome criteria were selected for examination: appropriate formula preparation and feeding techniques, proper hygiene including bathing and diapering practices, adherence to suggested well-baby clinic visits, and the implementation of necessary safety precautions in the home environment. Second, with the objective of promoting happier and healthier parent-infant relations (thus reducing the risk of breakdown between parent and child) the following outcome criteria were selected for examination: greater knowledge of infant/child development, the adoption of more positive child-rearing attitudes, increased competency in the parenting role, and increased quality of interaction between parent and infant. Finally, it was predicted that

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the enhancement of infant caretaking skills and parent relational skills would promote optimal infant growth and development. The following infant outcome criteria were selected for examination: physical or motor capabilities (including fine motor and gross motor performance), mental or cognitive capabilities (including personal/social and language performance), and growth (including length, weight, and head circumference measures). These infant outcome criteria represented the critical dependent variables of interest.

Procedures

Recruitment

Introduction and request for participation in the research project occurred approximately one to two days postpartum (dependent on the condition of vaginal or caesarean delivery). All mothers were approached by the Recruitment Coordinator accompanied by the Project Director. Prior to the contact, the six demographic variables specified earlier for comparison purposes between participants and non-participants were extracted from the medical chart of the patient.

Intake and Informed Consent

Information was provided to prospective participants via a handout and a prepared script detailing the project's particulars including a brief description of the two

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service components they might receive, the random assignment procedure, the measure-taking process, and the complimentary infant products they would receive in appreciation of their participation. Volunteers signed an informed consent form approved by the Michigan State University Committee on Research Involving Human Subjects and the Hurley Medical Center Institutional Review Board (see Appendix A).

Assignment to Conditions

The Recruitment Coordinator (under the supervision of the Project Director) assumed the task of randomization--drawing cards (labeled Service Group 1 or Service Group 2), placing these in envelopes, sealing and numbering envelopes. The randomized assignments were completed in blocks of four. There was no plan to stratify or block on any variable on the random assignment procedure. A review of subject demographics (from the one-year pilot phase of the proposed study/program) revealed that participants were very similar with respect to marital status, education level, and age. The vast majority of mothers were single, had completed either 11th or 12th grade, and were between the ages of 20 and 25 (again--no minors were involved). With respect to race, it was an approximately equal division between African-American and Caucasian. This was also true with respect to sex of infant.

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Data Collection

All data was collected by two research assistants who were blind to group membership. (A "team" approach was implemented due to the nature and number of measures.) The Project Director was responsible for the training and supervision of project staff in data collection techniques.

Conditions

Two services or conditions were compared in this study. The control condition was labeled as Service Group 2 (or Educational Materials) which included routine hospital services and the receipt of education material packages; the experimental condition was referred to as Service Group 1 (or Parent Aide Intervention) which included the aforementioned services plus a series of home visits which provided direct instruction, modeling techniques, and social support. (For a detailed comparison of services provided to experimental and control subjects, refer to Table 2.)

Control Condition

Subjects in the control condition received those services routinely offered to postpartum patients plus the receipt of parent educational materials. Current hospital-based services included a brief introduction to infant bottle-feeding techniques and an infant bath demonstration

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Table 2

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Comparison of Services

ExperimentalControl

In-hospital	Introductory meeting with Parent Aide	
	**General feeding instructions	**General feeding instructions
	**Bath demonstration	**Bath demonstration
1-week postpartum	Home Visit 1	Education Packet 1
	Home Visit 2	Education Packet 2
2-weeks postpartum	Home visit 3	Education Packet 3
3-weeks postpartum	Home visit 4	Education Packet 4
4-weeks postpartum	Home visit 5	Education Packet 5
8-weeks postpartum	Home visit 6	Education Packet 6
12-weeks postpartum	Home visit 7	Education Packet 7

*Both groups received incentive packages at each of the
above eight visits.

**Services routinely offered to postpartum patients.

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by a ward nurse. The dispensing of parent educational materials was performed by key research staff persons adhering to the same home visitation schedule regimen for Group 1. These visits were extremely brief as they served only two functions: (a) to provide the mother with the written materials; (b) to provide the mother with the project incentive package of baby care products.

Experimental Condition

The experimental model consisted of special in-hospital and aftercare services spanning a three-month period (what is generally considered a time period when adjustment to parenthood is at its peak). Central to the innovative model was the parent aide volunteer. She/he functioned as the family's advocate, friend, and educator.

The volunteer parent aides were recruited from two "student" sources: 1) Hurley Medical Center School of Nursing; and 2) Mott Community College School of Nursing. (Both schools are located in the city of Flint. The programs are similar with respect to program goals, curriculum, and student profile.) The Project Director negotiated with key administrative persons at each school to allow students to receive compensatory time for the hours devoted to the study. Student involvement in the research project was credited as clinical experience. The Project Director was not responsible for any evaluation of

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student nurse performance. (See Appendix B for nurse contract.)

Students who expressed an interest in community nursing or home care were especially appropriate for such a commitment. Participation in the study was of particularly great value/benefit to these students. (It should be noted that many professionals in the health care field view community nursing or home care as the future direction for nursing in light of shortened hospital stays.) Each student was assigned a total of two families or mother-infant pairs.

Training of Student Nurses/Parent Aides

Screening and training of student nurses was performed by key members of the research team. Ten students were selected from each of the schools/institutions (Hurley Medical Center and Mott Community College-Flint) for a total of 20 parent aides. (This number broke down to five students per semester per school.) Training of students involved 12 hours additional classroom time over a two-week period (consisting of eight one-and-one-half hour sessions) with students working through program manuals, outside readings, and class exercises/role plays. These students had received formal training in such vital areas as postpartum care, child development, family dynamics, and empathy skills. (See Appendix C for training schedule.)

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In-Hospital Services

In-hospital services--in addition to those services routinely offered to postpartum patients (the general feeding instructions and bath demonstration) included an introductory meeting with the parent aide volunteer. This meeting was intended to serve two important functions. First, it provided an opportunity for the parent aide and family to become acquainted. Second, it provided a formal opportunity for an "active" resolution of the labor and birth experience through intense discussion with the parent aide regarding all details of the mother's ordeal. The purpose of this focus was to enhance the mother's feeling of her own worth and of the value of her infant. At the close of this initial meeting, the parent aide scheduled the first home visit.

Aftercare Services

In addition to contact within the hospital setting, the parent aide volunteer made a total of seven home visits at one, two, three, four, eight, and twelve weeks postpartum. (Two visits were scheduled during the first week postpartum.) Volunteers traveled in pairs. (Utilization of a team approach for home visitation satisfied any safety concerns of the hospital, school, and university.) This extended contact into the home

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environment was seen as essential--permitting the volunteer to figure prominently in the family's support network. Each visit was approximately one hour in length. A variety of issues or topics were explored--which the parent aide was responsible for managing or coordinating. She/he followed the manual provided in training. Home visits were audio taped for purposes of supervision (thus insuring the fidelity of the experimental model), and to aid the researchers in understanding more fully the process of the intervention. These tapes were reviewed by undergraduate interns employed in the Department of Research at the medical center.

Topics explored during the home visits included such areas as baby care basics, infant development issues and utilization of community resources. (Refer to Table 3 for a detailed account of home visit topic areas.) It is important to note here that the mothers were not viewed (or treated) as passive recipients of knowledge--but rather were encouraged to adopt an active learning role in each of the scheduled home visits. The material was structured in such a fashion--containing numerous thought questions and learning exercises. Although direct instruction was a part of the teaching process, the observation and modeling of appropriate behavior was central to this intervention. For example, the parent aide volunteer and the mother worked

Table 3

Home Visit Topic Areas

<u>Visit</u>	<u>Topic</u>
One	Formula preparation Feeding schedules/amounts
Two	Nutrition Common feeding problems
Three	Baby care basics Soothing techniques
Four	Infant development Modified Brazelton
Five	Baby's health Immunization record
Six	Baby's safety Home environment check
Seven	Parenting concerns Community resources

together in preparing formula so that the mother could learn proper preparation and storage techniques. Also, the parent aide demonstrated such things as burping techniques. (See Appendix D for educational materials.)

Measures

The experimental model represented an attempt to intervene during the critical adjustment period (early postpartum) for high-risk, first-time parents and their infants. The provision of support and education was seen as being vital to the success of this adjustment phase. The major objectives of the planned intervention were to enhance parent caretaking skills and interactive behaviors thereby promoting optimal infant growth and development. There were three primary measurement areas: caretaking skills, relational indices, and infant outcomes. In order to simplify the analysis and interpretation of the large number of variables in this study, various scale construction and item analysis strategies were employed. Initially, the response frequency of all scale items were reviewed. Low variance items were discarded from further analysis. Specifically, if 90 percent or more of the respondents provided a single response, the item was deleted. (Since such items do not affect the variability of test scores, they contribute nothing to the reliability or validity of the test.) Next, reliability coefficients

were reviewed. Specifically, the item total correlations and internal consistency of the scales were examined. Problem items (those of low correlative value) were eliminated. This strategy was based on a desire to help characterize the behavior domain or trait sampled by the test (thus contributing to its construct validity). However, throughout these refinement steps the logical-conceptual intent of the scales and items were also weighed when a decision was made to modify a standard or rationally constructed scale.

Caretaking Skills

The caretaking skills of infant feeding (formula preparation and feeding techniques), hygiene (bathing and diapering practices) safety (organization of home environment) and health (adherence to clinic well-baby visits and provision of immunizations) were examined. (See Table 4 for an overview of the administration of these measures, and Table 5 for a summary of the measurement refinement outcomes.)

Feeding

Formula preparation.

A criterion checklist was developed to evaluate formula preparation performance. The checklist consisted of the 11 steps specified by Meade Johnson for proper formula preparation. At three months, research staff questioned the mother about procedures of formula

Table 4

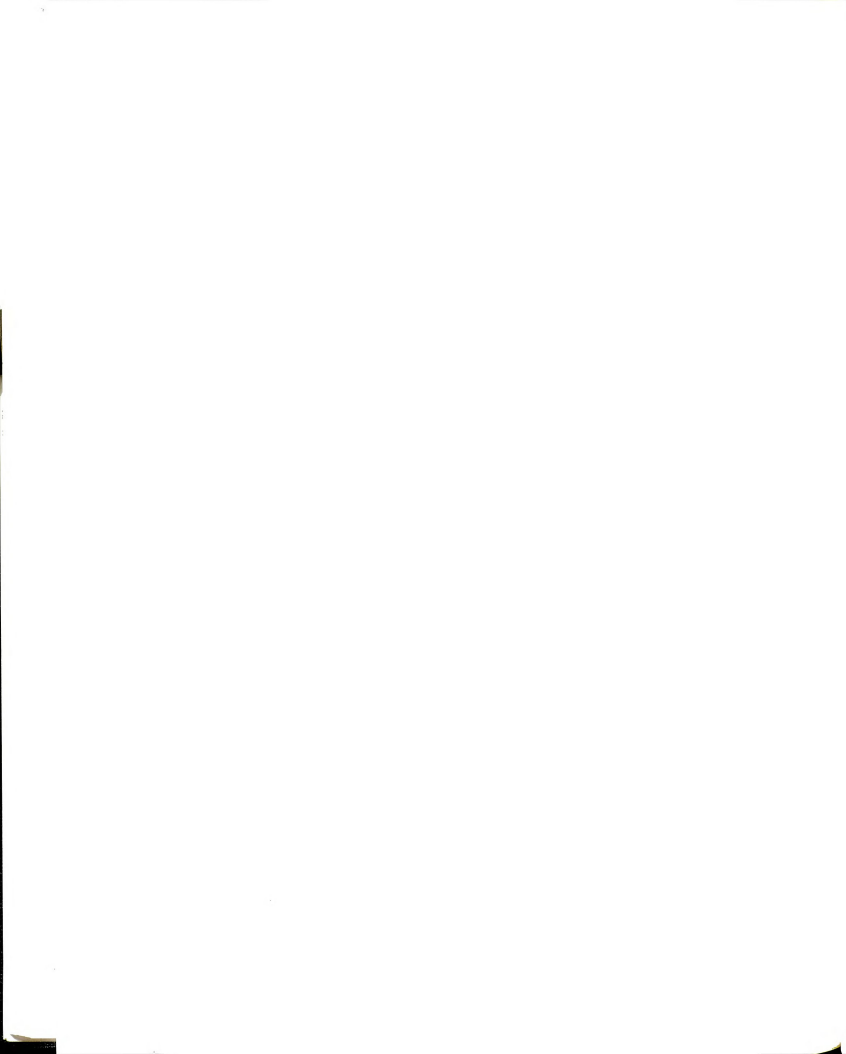
Caretaking Skills
Measurements

<u>Skill</u>	<u>Instrument</u>	<u>Time</u>	<u>Reliability</u>
Feeding	Formula Preparation Performance Criterion Checklist	3 months	Inter- rater
	Feeding Questionnaire	3, 6 months	Test- retest
Hygiene	Infant Care Questionnaire	3, 6 months	Test- retest
Safety	Safety Questionnaire	3, 6 months	Test- retest
	HOME (Organization of Environment)	6 months	Inter- rater
Health	Health Questionnaire	3, 6 months	Test- retest
	Clinic Records Checklist	3, 6 months	Inter- rater

Table 5

Measurement Refinement Outcomes:
Caretaking Skills

<u>Instrument</u>	<u>Decision</u>	<u>Number of Items</u>	<u>Alpha</u>
Formula Preparation Criterion Checklist	Retain	7	.49
Feeding Questionnaire			
Three-Month	Retain	17	.69
Six-Month	Retain	18	.65
Infant Care Questionnaire			
Three-Month	Eliminate	7	.37
Six-Month	Eliminate	7	.42
Safety Questionnaire			
Three-Month	Retain	14	.61
Six-Month	Retain	15	.70
HOME (Organization of Environment)	Eliminate	2	.32
Health Questionnaire			
Three-Month	Eliminate	5	.15
Six-Month	Retain	6	.75
Clinic Records Checklist	Retain	2	.81



preparation. Her responses were audiotaped. Two student interns (trained to 90 percent reliability) assessed the audiotapes checking either passed or failed for each step. (When final calculations were performed on their scores, a 95 percent agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.)

Endorsement frequencies dictated the deletion of four items. Although the internal consistency of the remaining seven-item scale was only .49, the decision was made to keep these seven items. (See Table 6 for a complete listing of the scale items and the internal consistency analyses.)

Feeding questionnaire.

A feeding technique questionnaire was developed to assess knowledge concerning formula preparation, scheduling, and amounts, and the handling of common feeding problems. The questionnaire consisted of 25 multiple choice items. It was administered at three and six months. Completed forms were scored twice by independent raters (who were in perfect agreement).

At three months, endorsement frequencies dictated the deletion of five items. An examination of item total correlations resulted in the deletion of three additional items. The internal consistency of the new 17-item scale

Table 6

Internal Consistency Analysis:
Formula Preparation

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q2	Boiled bottles and nipples for five minutes	.16
Q3	Boiled water for five minutes	.27
Q4	Let water cool to touch	.39
Q5	Wiped can	.32
Q6	Shook can, poured formula into pitcher	.29
Q10	Made sure that formula was not too hot	.20
Q11	Threw out formula left in bottle	.03

Alpha = .49



Table 7

Internal Consistency Analysis:
Feeding Questionnaire
Three-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q3	Starting solid foods early	.30
Q4	Water is important for baby	.44
Q5	Most infants need approximately	.34
Q6	Baby will need --- feedings	.32
Q7	--- babies will probably need	.14
Q10	To help with colic, I might	.21
Q11	A healthy infant may spit up	.28
Q13	It may take --- to complete	.22
Q14	If baby is vomiting, I should	.17
Q15	If baby is constipated	.25
Q16	It is best to burp baby	.33
Q17	To burp baby it is best to	.13
Q18	If baby does not finish	.44
Q19	Bottles and equipment should	.32
Q20	Prepared formula should be	.42
Q24	You should prop a bottle	.39
Q25	Baby may have a three-meals	.14

Alpha = .69

was .69. (See Table 7 for a complete listing of the scale items and the internal consistency analyses.)

At six months, endorsement frequencies dictated the deletion of six items. An examination of item total correlations resulted in the deletion of only one additional item. The internal consistency of the new 18-item scale was .65. (See Table 8 for a complete listing of the scale items and the internal consistency analyses.) The correlation between the three-month and six-months scores was .80 yielding a .001 significance level.

Hygiene

An infant care questionnaire was constructed to appraise knowledge of bathing and diapering practices. The questionnaire consisted of 10 multiple choice items. It was administered at three and six months. Completed forms were scored twice by independent raters (who were in perfect agreement).

At three and six months, endorsement frequencies dictated the deletion of the same three items. And at both three and six months, an examination of item total correlations resulted in the decision to eliminate the entire scale. (The internal consistency of the seven-item scales was .37 and .42 respectively.)

Table 8

Internal Consistency Analysis:
Feeding Questionnaire
Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q1	Baby may be fed	.29
Q3	Starting solid foods early	.29
Q4	Water is important for baby	.32
Q5	Most infants need approximately	.17
Q7	--- babies will probably need	.12
Q8	Can tell babies are hungry	.16
Q9	To help with hiccups, I might	.19
Q10	To help with colic, I might	.31
Q11	A healthy infant may spit up	.18
Q13	It may take --- to complete	.56
Q14	If baby is vomiting, I should	.24
Q16	It is best to burp baby	.20
Q17	To burp baby it is best to	.11
Q18	If baby does not finish	.44
Q19	Bottles and equipment should	.33
Q20	Prepared formula should be	.37
Q21	When preparing formula	.10
Q25	Baby may have a three-meals	.15

Alpha = .65

Safety

Organization of environment.

Section III, Organization of Environment, of the HOME (Home Observation for Measurement of the Environment) instrument was utilized to evaluate safety. This subscale of the HOME measure consisted of six dichotomously scored items. At six months, the research team (trained to 90% reliability) observed conditions in the study participant's home--checking either yes or no for each item (e.g., Child's play environment appears safe and free of hazards). (When final calculations were performed on their scores, a 93 percent agreement rate was established.)

Endorsement frequencies dictated the deletion of four items, and the examination of item total correlations resulted in the decision to eliminate the entire scale. (The correlation of the remaining two items was only .32.)

Safety questionnaire.

A safety questionnaire was also developed to assess knowledge of "babyproofing" practices in the home environment. The questionnaire consisted of 20 multiple choice items. It was administered at three and six months. Completed forms were scored twice by independent raters (who were in perfect agreement).

At three months, endorsement frequencies dictated the deletion of three items. An examination of item total

Table 9

Internal Consistency Analysis:
 Safety Questionnaire
 Three-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q1	If baby is choking	.18
Q2	If baby has swallowed	.35
Q3	To prevent baby from getting	.19
Q4	When bathing baby	.23
Q5	Parents need to babyproof	.10
Q8	When the stove is not in use	.17
Q9	If furniture has sharp edges	.32
Q10	When driving in a car	.32
Q11	The car safety seat should	.34
Q13	Best to keep crib equipped	.23
Q14	A good location for the crib	.29
Q15	Plastic bags should be	.27
Q17	To protect baby from basement	.19
Q20	Because baby may try to chew	.26

Alpha = .61

correlations resulted in the deletion of three additional items. The internal consistency of the new 14-item scale was .61. (See Table 9 for a complete listing of the scale items and the internal consistency analyses.)

At six months, endorsement frequencies dictated the deletion of five items. It was not necessary to delete any items based on the examination of item total correlations. The internal consistency of the new 15-item scale was .70. (See Table 10 for a complete listing of the scale items and the internal consistency analyses.) The correlation between the three-month and six-months scores was .63 yielding a .01 significance level.

Health

Clinic records.

A clinic records checklist was developed to evaluate the number and "content" of both routine and sick/emergency visits. The routine visit checklist examined adherence to the suggested immunization schedule, and any documented general care comments made by the health care provider (including hygiene, attitude of mother, and overall well being of infant). The sick/emergency checklist examined the presenting problem, and any documented general care comments made by the health care provider (including hygiene, attitude of mother, and overall wellbeing of infant).



Table 10

Internal Consistency Analysis:
Safety Questionnaire
Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q2	If baby has swallowed	.11
Q3	To prevent baby from getting	.29
Q4	When bathing baby	.27
Q5	Parents need to babyproof	.44
Q8	When the stove is not in use	.28
Q9	If furniture has sharp edges	.18
Q10	When driving in a car	.48
Q11	The car safety seat should	.27
Q12	Crib slats can't be more	.27
Q13	Best to keep crib equipped	.36
Q14	A good location for the crib	.29
Q15	Plastic bags should be	.45
Q17	To protect baby from basement	.15
Q18	Glass or ceramic knickknacks	.12
Q20	Because baby may try to chew	.49

Alpha = .70

At three and six months, two research staff (trained to 90% reliability) extracted and recorded this data. (When final calculations were performed on their scores, a 92 percent agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.) Low variance resulted in the deletion of general care comments. Also, it was unnecessary to separately examine adherence to suggested immunization schedule and adherence to recommended well-baby visits--since physicians always immunized infants brought in for routine visits. Remaining variables included total number of routine and sick visits.

Health questionnaire.

A health questionnaire was also developed to assess knowledge of recommended health practices including well-baby visits, immunizations, and nutrition. This questionnaire consisted of 10 multiple choice items. It was administered at three and six months. Completed forms were scored twice by independent raters (who were in perfect agreement).

At three months, endorsement frequencies dictated the deletion of five items. An examination of item total correlations resulted in the decision to eliminate the entire scale. (The internal consistency of the five-item scale was .15.)

At six months, however, it was not necessary to delete any items based on endorsement frequencies. The examination of item total correlations resulted in the loss of four items. The internal consistency of the new six-item scale was .75. (See Table 11 for a complete listing of the scale items and the internal consistency analyses.)

Relational Indices

The relational indices of child-rearing attitudes, knowledge of infant/child development, and play interactions were examined. (See Table 12 for an overview of the administration of these measures, and Table 13 for a summary of the measurement refinement outcomes.)

Child-Rearing Attitudes

PARI.

Ten scales of the Parental Attitude Research Instrument were utilized to assess attitudes concerning child rearing. The 10 scales tested were Strictness, Breaking the Will, Irritability, Fostering Dependency, Martyrdom, Comradeship and Sharing, Approval of Activity, Acceleration of Development, Intrusiveness, and Seclusion of the Mother. Items consisted of statements on a four-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree". Thirty items were administered at each data collection period. Completed forms were scored

Table 11

Internal Consistency Analysis:
Health Questionnaire
Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q3	You can telephone the doctor	.66
Q4	Immunizations usually begin	.38
Q5	During a regular check-up	.74
Q8	Records of baby's immunizations	.74
Q9	Good nutrition is	.20
Q10	A good diet will help baby	.23

Alpha = .75

Table 12

Relational Indices
Measurements

<u>Index</u>	<u>Instrument</u>	<u>Time</u>	<u>Reliability</u>
Child-rearing attitudes	PARI	3, 6 months	Split half
	HOME (Avoidance of Restriction and Punishment)	6 months	Inter-rater
Developmental knowledge	Expectancy scale	3, 6 months	Test retest
	Competency scale	6 months	Inter-rater
Mother-infant interaction	Stimulation scale	3 months	Inter-rater
	HOME (Emotional and Verbal Responsivity of Mother)	6 months	Inter-rater

Table 13

Measurement Refinement Outcomes:
Relational Indices

<u>Instrument</u>	<u>Decision</u>	<u>Number of Items</u>	<u>Alpha</u>
Parental Attitude Research Instrument			
Three-Month	Retain	15	.71
Six-Month	Retain	14	.67
HOME (Avoidance of Restriction/Punishment)	Eliminate	2	.11
Expectancy Scale			
Three-Month	Retain	15	.64
Six-Month	Retain	14	.68
Competency Scale	Retain	8	.57
Stimulation Scale	Retain	11	.58
HOME (Emotional and Verbal Responsivity)	Retain	7	.84

twice by independent raters (who were in perfect agreement).

Endorsement frequencies revealed variance on all items. However, an examination of item total correlations and the internal consistency of the scales resulted in the collapsing of scales. At three months, the examination of item total correlations resulted in the loss of 15 items. The internal consistency of the new 15-item scale was .71. (See Table 14 for a complete listing of the scale items and the internal consistency analyses.) At six months, the examination of item total correlations resulted in the loss of 16 items. The internal consistency of the new 14-item scale was .67. (See Table 15 for a complete listing of the scale items and the internal consistency analyses.) The correlation between the three-month and six-months scores was .32 yielding a .01 significance level.

Avoidance of restriction and punishment.

Section II, Avoidance of Restriction and Punishment, of the HOME (Home Observation for Measurement of the Environment) instrument was also utilized to assess child-rearing attitudes. This subscale of the HOME measure consisted of eight dichotomously scored items. At six months, the research team (trained to 90% reliability) observed behavior in the study participant's home--checking either yes or no for each item (e.g., Mother does not

Table 14

Internal Consistency Analysis:
 Attitude Questionnaire
 Three-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q2	..child thinks parent is wrong	.21
Q3	..business to know everything	.30
Q4	..right to rebel and be stubborn	.31
Q7	..encouraged to undertake	.26
Q8	..make up a lot of stories	.37
Q9	..keep control of their temper	.33
Q10	..feeling she is tied down	.25
Q12	..rather than punishment	.22
Q16	..take all the time he wants	.30
Q17	..give up their own happiness	.33
Q19	..should never keep a secret	.35
Q20	..parent should be concerned	.24
Q23	..training should be put off	.57
Q27	..should admit it to his child	.45
Q28	..should protect their child	.27

Alpha = .71

Table 15

Internal Consistency Analysis:
 Attitude Questionnaire
 Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q2	..children are just so bad	.32
Q8	..children bother you	.33
Q9	..children is an easy job	.37
Q10	..parent feels held down	.38
Q16	..parents have to give up	.34
Q17	..situations on their own	.15
Q20	..parents are pretty content	.40
Q21	..child resent his parents	.27
Q22	..always be loyal to them	.18
Q23	..make a child behave	.17
Q24	..trained to use the potty	.33
Q25	..child's deepest thoughts	.24
Q26	..don't owe their mothers	.35
Q30	..feels that she can't get out	.28

Alpha = .67

express overt annoyance with or hostility toward child).
(When final calculations were performed on their scores, a
93 percent agreement rate was established.)

Endorsement frequencies dictated the deletion of six
items. An examination of item total correlations resulted
in the decision to eliminate the entire scale. (The
correlation of the remaining two items was only .11.)

Developmental Knowledge

Expectancy scale.

An expectancy scale was utilized to evaluate
knowledge about the motor and social development of
infants/children. Two tests consisting of 30 parallel
multiple choice items were administered at three and six
months. Completed forms were scored twice by independent
raters (who were in perfect agreement).

At three months, endorsement frequencies dictated
the deletion of 12 items. An examination of item total
correlations resulted in the deletion of three additional
items. The internal consistency of the new 15-item scale
was .64. (See Table 16 for a complete listing of the scale
items and the internal consistency analyses.)

At six months, endorsement frequencies dictated the
deletion of 13 items. An examination of item total
correlations resulted in the deletion of three additional
items. The internal consistency of the new 14-item scale

Table 16

Internal Consistency Analysis:
 Expectancy Questionnaire
 Three-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q4	Follows simple instructions	.36
Q5	Can become spoiled	.28
Q8	Rooting reflex observed	.27
Q9	First words appear	.10
Q10	Some self-feeding	.11
Q11	Colic seems to disappear	.22
Q13	Soft spot in head will close	.22
Q15	Associate actions with words	.26
Q16	Begins to imitate sounds	.15
Q17	Can now pick up small objects	.28
Q20	Stack blocks	.38
Q22	May sleep through the night	.29
Q23	May use a spoon and fork	.45
Q24	Babinski reflex observed	.39
Q30	Can turn toward sound	.18

Alpha = .64

Table 17

Internal Consistency Analysis:
Expectancy Questionnaire
Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q2	May remain dry through night	.20
Q3	Can see, hear, smell, taste	.21
Q4	Understands some adult commands	.37
Q5	Insists on having own way	.22
Q8	Sucking reflex observed	.18
Q9	May say first words	.40
Q10	Mastered partial self-feeding	.32
Q17	Grasping very small objects	.14
Q19	May be able to stand unaided	.24
Q20	Piling objects on top	.25
Q23	Feeds self with little mess	.48
Q24	Plantar grasp reflex	.38
Q29	Begins negative stage	.37
Q30	Startle reaction is observed	.40

Alpha = .68

was .68. (See Table 17 for a complete listing of the scale items and the internal consistency analyses.) The correlation between the three-month and six-months scores was .30 yielding a .02 significance level.

Competency.

An open-ended questionnaire consisting of eight items was also utilized to assess developmental knowledge. The intent of the questions was to elicit suggestions/options to posed child rearing problems. Questions were posed verbally (with responses audio taped) at six months. Two student interns (trained to 90% reliability) independently assessed each audio tape (adding up the number of options provided by the parent). (When final calculations were performed on their scores, an 89 percent agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.) The internal consistency of the eight-item scale was .57. (See Table 18 for a complete listing of the scale items and the internal consistency analyses.)

Mother-Infant Interaction

Verbal stimulation.

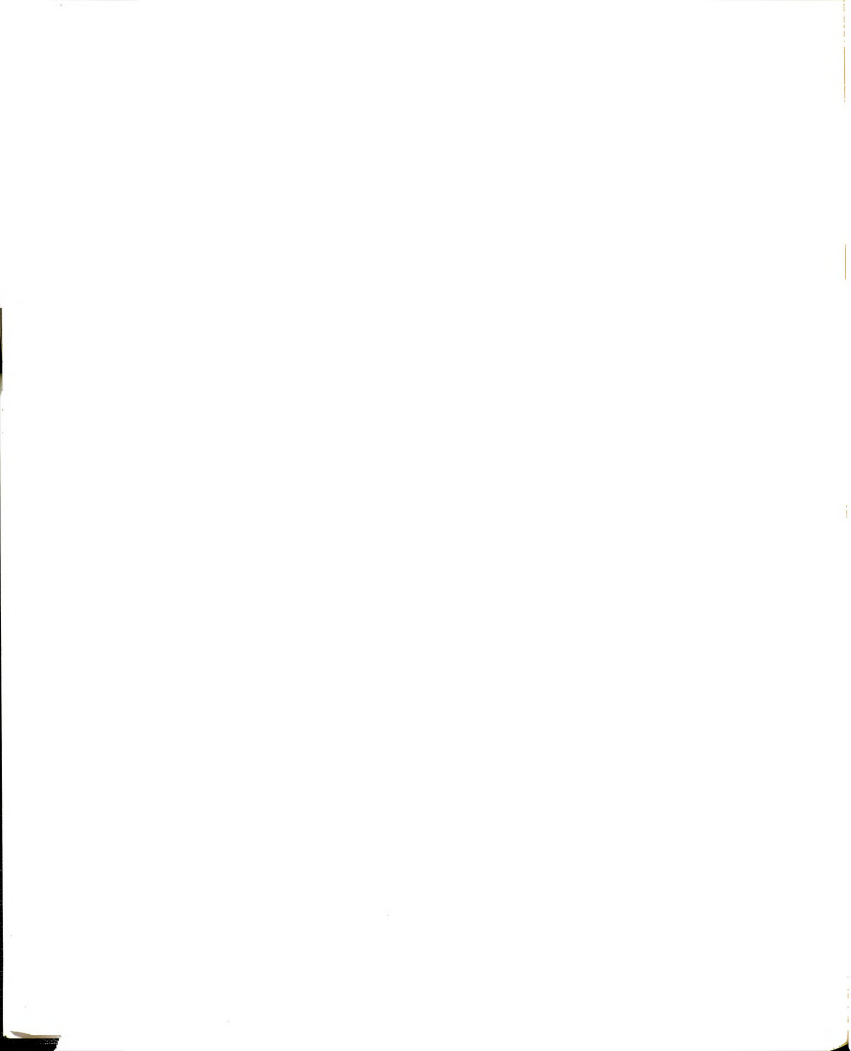
A verbal stimulation scale was employed to evaluate the quality of mother-infant interaction. A ten-minute videotape of a play interaction between mothers and infants was filmed at three months. Films were viewed by two

Table 18

Internal Consistency Analysis:
Competency Scale

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q1	..check when baby awakes..	.37
Q2	..suggestions offer new mother..	.26
Q3	..persons might contact..	.15
Q4	..changes make in home..	.34
Q5	..conditions contact doctor..	.34
Q6	..introducing solid foods..	.54
Q7	..methods of discipline..	.42
Q8	..how to reduce stresses..	.08

Alpha = .57



independent raters trained to 90% reliability. (When final calculations were performed on their scores, a 96 percent agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.) Raters (blind to group membership) scored a total of 15 items (e.g., Mother attempts to imitate infant's vocalizations). Scoring was based on an interval scale (i.e., an actual counting of the number of times a behavior was observed).

Endorsement frequencies dictated the deletion of two items. An examination of item total correlations resulted in the deletion of two additional items. The internal consistency of the new 11-item scale was .58. (See Table 19 for a complete listing of the scale items and the internal consistency analyses.)

Emotional and verbal responsivity.

Section I, Emotional and Verbal Responsivity of Mother, of the HOME (Home Observation for Measurement of the Environment) instrument was also utilized to assess the quality of mother infant interaction. This subscale of the HOME measure consisted of 11 dichotomously scored items. At six months, the research team (trained to 90% reliability) observed routine activity in the study participant's home--checking either yes or no for each item (e.g., Mother caresses or kisses child at least once during

Table 19

Internal Consistency Analysis:
Verbal Stimulation

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q1	Parallel talk	.48
Q2	Mood expression	.39
Q4	Back talk	.30
Q5	Musical	.19
Q8	Informative	.36
Q9	Personhood	.17
Q11	Admiration	.19
Q12	Investigate	.50
Q13	Responsive	.32
Q14	Global	.52
Q15	Need	.46

Alpha = .58

visit). (When final calculations were performed on their scores, a 93 percent agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.)

Endorsement frequencies dictated the deletion of four items. It was not necessary to delete any additional items based on the examination of item total correlations. The internal consistency of the new seven-item scale was .84. (See Table 20 for a complete listing of the scale items and the internal consistency analyses.)

Infant Outcomes

Infant outcomes that were assessed included growth indices (length, weight, and head circumference) and developmental skills (fine motor, gross motor, personal/social, and language capabilities). (See Table 21 for an overview of the administration of these measures, and Table 22 for a summary of the measurement refinement outcomes.)

Growth Indices

The research team (trained to 90% reliability) measured and weighed the babies at three and six months. Measurement included length and head circumference. Weight was measured with a portable scale. Length and head circumference was measured with a tape. (When final calculations were performed on their scores, a 95 percent

Table 20

Internal Consistency Analysis:

Section I, Emotional and Verbal Responsivity of Mother,
of the HOME (Home Observation for Measurement of the
Environment)

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
Q1	Spontaneously vocalizes	.73
Q2	Responds to child's vocal	.72
Q3	Tells child the name of object	.40
Q5	Initiates verbal interchange	.71
Q6	Expresses ideas freely	.74
Q8	Praises child's qualities	.62
Q10	Caresses or kisses child	.35

Alpha = .84

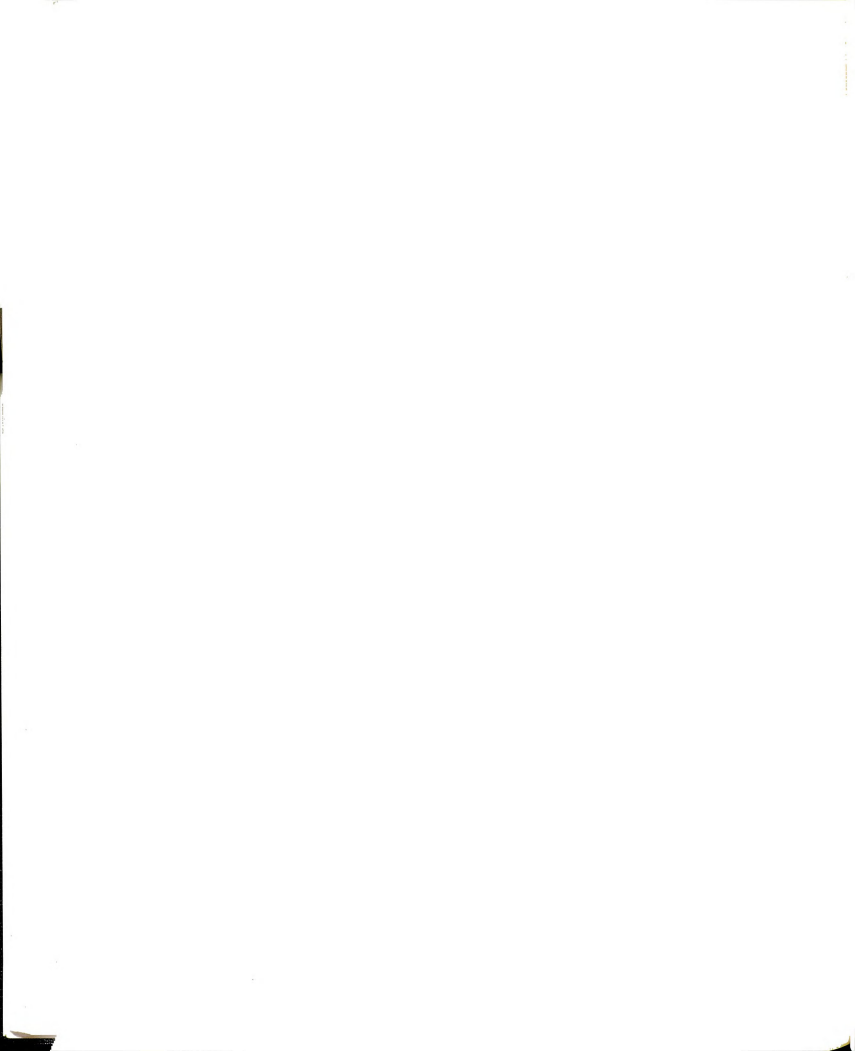
Table 21
 Infant Outcome
 Measures

<u>Skill</u>	<u>Instrument</u>	<u>Time</u>	<u>Reliability</u>
Fine Motor	Denver Developmental Screening Test	3, 6 months	Test-retest
Gross Motor	Denver Developmental Screening Test	3, 6 months	Test-retest
Personal/ Social	Denver Developmental Screening Test	3, 6 months	Test-retest
Language	Denver Developmental Screening Test	3, 6 months	Test-retest
Growth	Length	3, 6 months	Inter-rater
	Weight	3, 6 months	Inter-rater
	Head Circumference	3, 6 months	Inter-rater

Table 22

Measurement Refinement Outcomes:
 Infant Measures

<u>Instrument</u>	<u>Decision</u>	<u>Number of Items</u>	<u>Alpha</u>
Denver Developmental Screening Test			
Three-Month	Retain	13	.75
Six-Month	Retain	13	.74
Growth Score			
Three-Month	Retain	3	.32
Six-Month	Retain	3	.12



agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.) Results were graphed onto assessment charts developed by the National Center for Health Statistics (NCHS). Two growth scores were generated (one at three-months and one at six-months postpartum) which indicated the number of physical growth indices (0-3) which fell above the 90th percentile or below the 10th percentile of the physical growth NCHS guidelines. Although the internal consistencies of the three-item scales were quite low (.32 at three-months and .12 at six-months) the decision was made to retain the growth scores. (See Tables 23 and 24 for a complete listing of the scale items and the internal consistency analyses.)

Developmental Skills

The Denver Developmental Screening Test (DDST) was employed to evaluate fine motor, gross motor, personal/social, and language skills. The DDST consists of a series of developmental tasks which are used to determine if a child's development is within the normal range. This instrument has been used to screen the development of young children (one month to six years of age) in more than 20 countries around the world. Validity studies show that the test correctly identifies children likely to have developmental problems 92 percent of the time. The test

Table 23

Internal Consistency Analysis:
Growth Indices
Three-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
1	Length	.07
2	Weight	.22
3	Head Circumference	.26

Alpha = .32

Table 24

Internal Consistency Analysis:
Growth Indices
Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
1	Length	-.11
2	Weight	.08
3	Head Circumference	.23

Alpha = .12

was administered at three and six months by the research team member who had previous training in this area.

At three months, five personal-social, 12 fine motor-adaptive, seven language, and six gross motor items were deleted due to low variance. The remaining 13 items (=four personal-social, three fine motor-adaptive, one language, and five gross motor) were retained. (An examination of item total correlations based on subscale groupings resulted in the decision to generate one developmental score.) The internal consistency of the new 13-item scale was .75. (See Table 25 for a complete listing of the scale items and the internal consistency analyses.)

At six months, eight personal-social, 11 fine motor-adaptive, five language, and 11 gross motor items were deleted due to low variance. One language item was deleted due to low item total correlations. The remaining 13 items (= three personal-social, four fine motor-adaptive, two language, and four gross motor) were retained. (Again--fine motor, gross motor, personal/social and language subscales were combined.) The internal consistency of the new 13-item scale was .74. (See Table 26 for a complete listing of the scale items and the internal consistency analyses.) The correlation between the three-month and six-month scores was -.1 yielding a .56 significance level.

In summary, there were three primary measurement



Table 25

Internal Consistency Analysis:
 Denver Developmental Screening Test
 Three-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
PS	Feeds self crackers	.35
PS	Works for toy out of reach	.60
PS	Plays peek-a-boo	.38
PS	Resists toy pull	.26
FM	Follows 180o	.35
FM	Regards raisin	.39
FM	Reaches for object	.52
L	Turns to voice	.38
GM	Sto-head up 90o	.28
GM	Sto chest up arms support	.52
GM	Rolls over	.35
GM	Pull to sit no head lag	.34
GM	Bear some weight on legs	.11

Alpha = .75

Table 26

Internal Consistency Analysis:
Denver Developmental Screening Test
Six-Months

<u>Item No.</u>	<u>Item</u>	<u>Corrected Item/ Total Correlation</u>
PS	Feeds self crackers	.42
PS	Plays peek-a-boo	.35
PS	Initially shy with strangers	.10
FM	Passes cube hand to hand	.45
FM	Sit looks for yarn	.28
FM	Sit takes two cubes	.45
FM	Rakes raisin attains	.42
L	Dada or mama nonspecific	.28
L	Imitates speech sounds	.53
GM	Sits without support	.45
GM	Stands holding on	.44
GM	Pulls self to stand	.28
GM	Gets to sitting	.27

Alpha = .74

areas: caretaking skills, relational indices, and infant outcomes. Approximate time required for administration of all measures was one hour and thirty minutes for each testing period. (See Appendix E for copies of all measures/instruments.) Infant outcomes represented the critical dependent variables of interest. Multivariate analysis of variance (for the formula preparation, health questionnaire, clinic visit, competency, verbal stimulation, and HOME measures), and repeated measures analysis of variance (for the feeding, safety, PARI, and expectancy questionnaires, and the DDST and growth score measures) was performed to assess group differences. In addition to testing the effectiveness of the model program, stepwise multiple regression analysis was employed to examine predictors of optimal infant outcomes. Caretaking skills, relational indices, demographic, medical history, and treatment variables were entered into the analysis. The primary intent of the regression was to examine the influence and relative importance of each independent variable on the dependent variables (=infant development and growth scores) thus the entry of a large number of variables. Whereas the goal of the multivariate and repeated measures analysis of variance was to test hypotheses--the goal of the multiple regression analysis was to generate hypotheses.

Additional Evaluation Areas

In this study, an objective was to include multiple levels of analyses. Thus in addition to the assessment of infant outcomes--program implementation, process, efficiency, and unintended outcomes were explored.

Implementation/Process

Home visits were audio taped for purposes of supervision (thus insuring the fidelity of the experimental model), and to aide the principal investigator in understanding more fully the process of the intervention. These tapes were evaluated by undergraduate interns (trained to 90% reliability) employed in the Department of Research at the medical center. (When final calculations were performed on their scores, a 92 percent agreement rate was established. A coin was tossed to determine one rater's scores for analysis purposes.)

With respect to implementation issues, tapes were carefully reviewed to determine that the student nurses had indeed taught (or "covered") assigned material with the program participants. Regarding process issues, tapes were carefully reviewed to determine the level or quality of support provided by the student nurses to the program participants. The areas of emotional aide, advice/information, and socialization were assessed. (See Appendix F for the implementation/process coding guide.)

Emotional aide included incidents of student nurse empathy/sensitivity, facilitation of information gathering, and positive regard. Advice/information represented the number of additions in educational instruction to the program material. Socialization equalled the number of minutes devoted to the home visit. A total of 185 tapes were evaluated. (Forty-eight tapes were inaudible; nineteen visits were not recorded.) A mean score for each support area (and a global support score) was calculated. The reason for this averaging process was twofold. First, some visits could not be scored because a tape was inaudible--or a student nurse failed to record a visit. (Thus the calculation of a mean score allowed for fair comparisons between subjects with seven individual scores and subjects with six individual scores.) Second, the averaging helped to simplify the analysis of the support data. It is also important to note here that an examination of support scores across visits revealed no particular pattern (i.e., scores were approximately equal thus the collapsing of scores posed no threat to the interpretation of the data).

Efficiency

Cost considerations were important to this study. First--there were limited funds available to implement the services (both experimental and control "programs".)

Second--the likelihood of program adoption by the institution (medical center) would be highly influenced by the balance of costs and benefits. Fairweather (1980) has advised social scientists to always consider the issue of feasibility when designing an intervention program. To maximize utilization, it is imperative to consider program efficiency. In this study, an examination of efficiency (=program cost per family) was performed. Budget items necessary for operations included the salary for a Program Coordinator, secretarial support, participant incentive items, and office space, supplies, and equipment. This figure would represent the dividend in the cost equation. An estimate of the number of families which could be served by such a program was based upon an annual total volunteer staff (= Parent Aides) of 50 individuals. This figure would represent the divisor in the cost equation. The "quotient" would represent the cost per family. Costs were estimated for programs with and without an evaluation component attached.

Unintended Outcomes

At six-months postpartum, the following two open-ended questions were posed to all program participants:

- 1) "As you think back on the past six months, what are your feelings or thoughts about becoming a parent?"
- 2) "What do you think about your involvement in this study?"

Subject responses were audiotaped. Because the intent of this evaluation component was strictly qualitative in nature--and its purpose was to explore unintended outcomes, it was not possible to detail the manner of assessment in advance. The principal investigator carefully reviewed the tapes. Key words or phrases from the responses were recorded. These words/phrases were studied to determine if some common theme or themes existed. Regarding the first question, it was decided to simply collapse the responses into "negative" and "positive" appraisals. With respect to the second question, it was decided to collapse responses into "helpful" and "enjoyment" appraisals. Percentages were calculated (based on group assignment) to provide descriptive information about experimental and control mothers.

Comparison of Successful and Unsuccessful Participants

Finally, a determination of a "successful" program participant was generated in order to examine what factors or variables characterized such individuals. Descriptive statistics were executed on all dependent measures (= eight caretaking, seven relational, and four infant outcome measures). Subjects received one "success" point for each measure in which they scored more than one standard deviation above the mean. Frequencies were executed on the number of success points. (Subjects' totals ranged from

one to ten.) Based on the examination of these frequencies, it was decided to assign those subjects with five or more success points ($N=25$) to the successful program participant group. (If the cutoff had been placed at four--the number of successful participants would have exceeded half of the total number of subjects; if the cutoff had been placed at six--the number of successful participants would have only equalled one-fifth of the total number of subjects.) Chi-square analyses were executed on the following variables: education, marital status, age, race, prenatal care, religion, employment history (mother and father), parenthood appraisal, and group assignment (experimental vs. control).

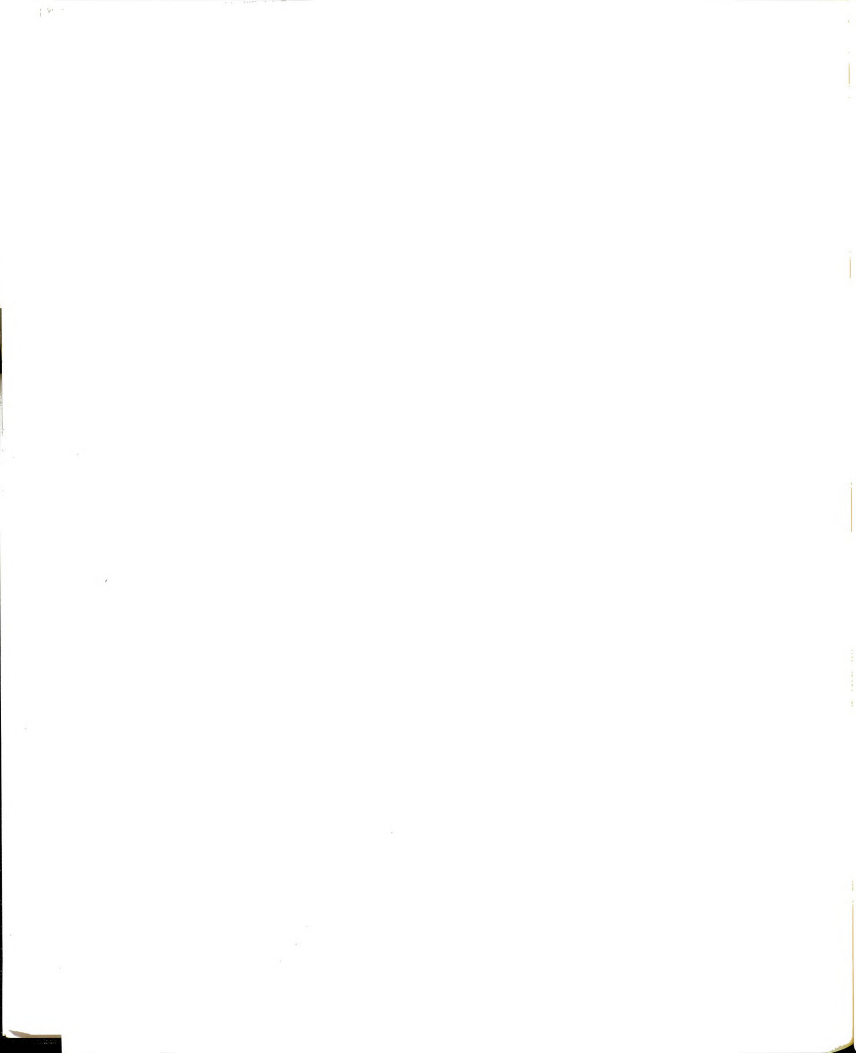
Summary

A study goal was to include multiple levels of analyses. Program utility (including effectiveness and efficiency), implementation, process, and unintended outcomes were evaluated. Finally, a comparison of successful and unsuccessful program participants was conducted. (See Table 27 for an overview of the evaluation process.)

Table 27

Scope of Evaluation

Implementation	Review of audiotaped visits to determine coverage of program material
Process	Review of audiotaped visits to assess level/quality of nurse support
Effectiveness	Assess parent caretaking, relational skills Assess infant growth, developmental outcomes
Efficiency	Calculate cost per family to provide program/service
Unintended Outcomes	Examine responses to open- ended questions
Exploratory	Comparison of successful and unsuccessful program participants



CHAPTER III

RESULTS

Condition/Time Effects

As a result of the various refinement steps, eight caretaking outcome variables remained: two scale scores for the feeding questionnaire (for each data collection period), the formula preparation score, two scale scores for the safety questionnaire, one scale score for the health questionnaire (at six-months postpartum), and two clinic measures (number of routine and sick visits). Seven relational outcome variables remained: two scale scores for the attitude questionnaire, two scale scores for the expectancy measure, one scale score for the competency measure, one scale score for the stimulation scale, and one scale score for the HOME. Finally, four infant outcome variables remained: two DDST scores (fine motor, gross motor, personal/social and language subscales were combined at each collection period), and two growth scores (indicating the number of physical growth indices which fell above the 90th percentile or below the 10th percentile of the National Center for Health Statistics percentile guidelines). The means and standard deviations for all measures are presented in Table 28. Only those measures with significant results are detailed in the text.

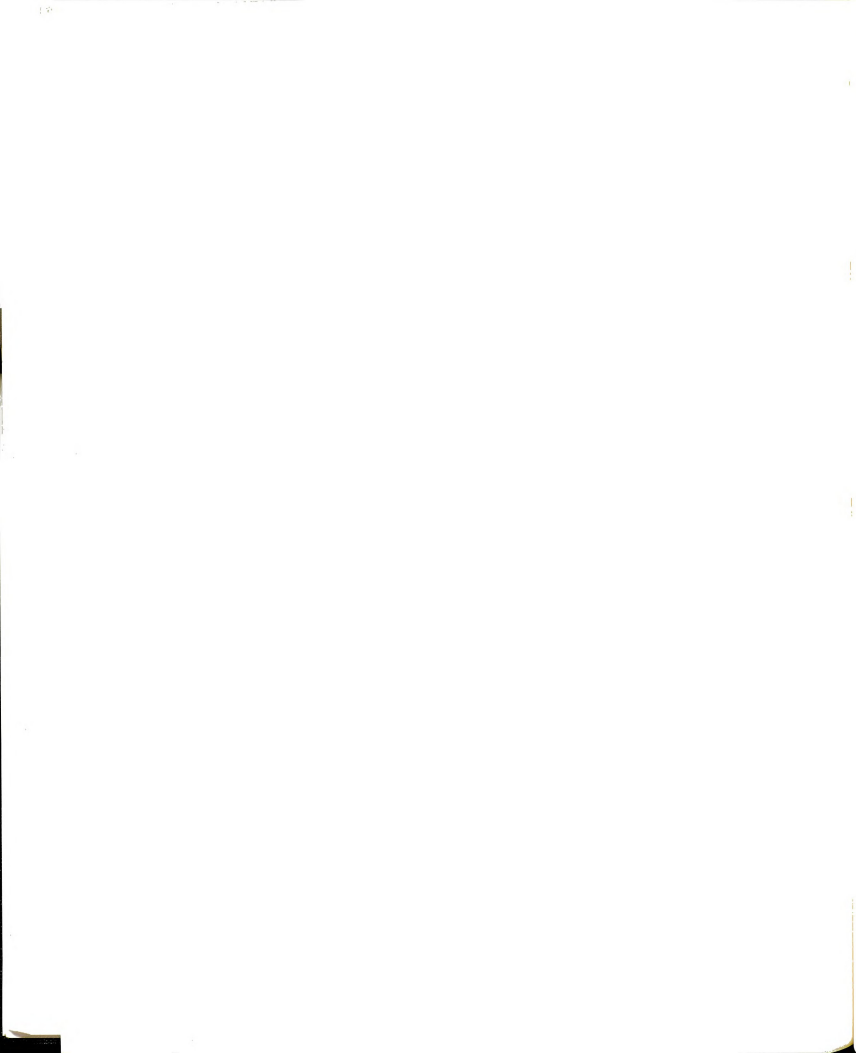
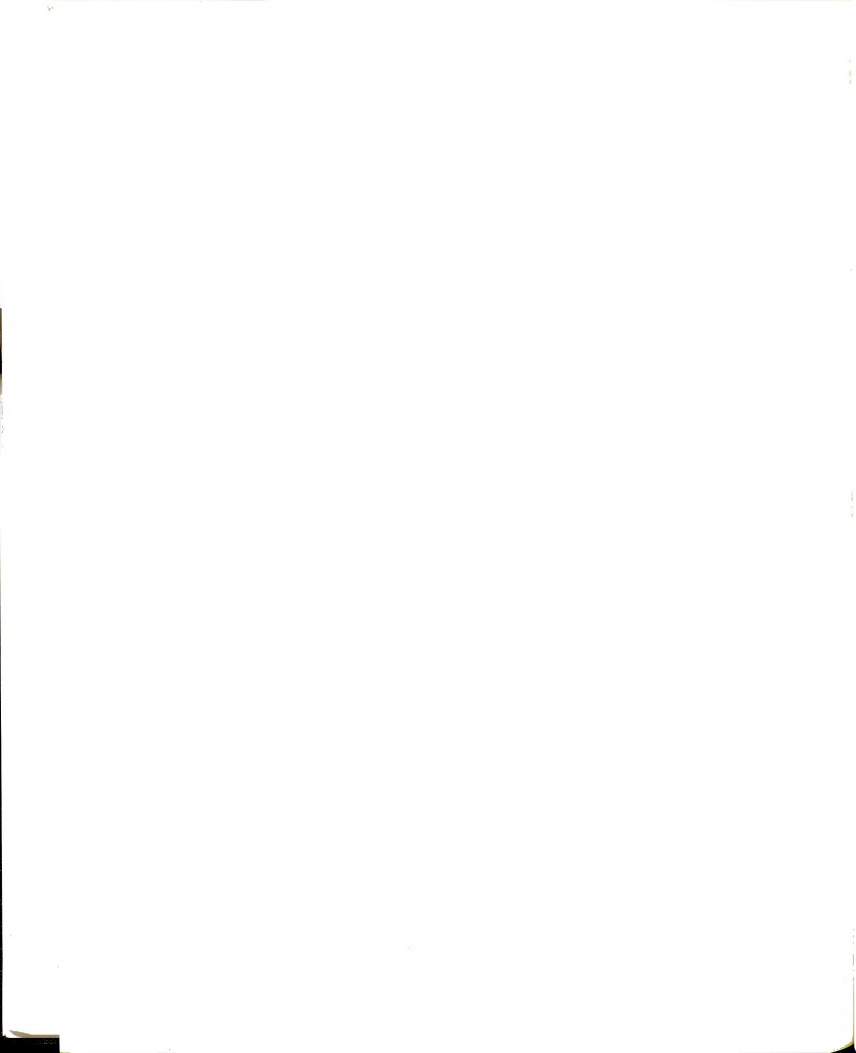


Table 28

Summary of
Means and Standard Deviations

	Experimental		Control	
	Mean	SD	Mean	SD
Formula Preparation	5.25	1.34	3.72	1.11
Feeding Questionnaire				
Three-Month	12.81	2.53	9.78	2.49
Six-Month	13.81	2.16	9.69	2.32
Safety Questionnaire				
Three-Month	10.47	1.66	7.03	2.02
Six-Month	12.09	1.86	8.14	2.40
Health Questionnaire				
Six-Month	4.94	1.46	4.76	1.70
Clinic Visits				
Routine	1.54	1.72	1.18	2.14
Sick	.80	1.30	.68	1.53
PARI				
Three-Month	44.28	5.83	43.92	11.26
Six-Month	38.06	6.51	37.76	4.63
Expectancy Questionnaire				
Three-Month	10.06	2.28	7.42	2.81
Six-Month	10.07	2.47	7.61	2.71
Competency Interview	13.31	4.94	10.17	4.12
Verbal Stimulation	47.53	29.37	51.39	31.17
Emotional Responsivity	5.41	1.90	4.89	2.17
Denver Developmental				
Three-Month	9.56	2.39	6.35	2.40
Six-Month	8.72	2.90	8.07	2.58
Growth Score				
Three-Month	.86	.88	.61	.90
Six-Month	.78	.71	.77	.82



MANOVA (multivariate analysis of variance) was employed. The variables of formula preparation, health questionnaire, competency measure, stimulation scale, HOME, and the clinic measures of routine and sick visits were examined. Strong treatment effects were detected. Repeated measures were employed for those variables administered at both time periods. These included the feeding, safety, PARI, expectancy, DDST, and growth measures. Again, strong treatment effects were detected as well as both time and interaction effects. The univariate tests for the individual variables are examined in the text.

Caretaking Measures

Feeding

Formula preparation.

Significant condition effects were detected. Experimental subjects were more likely to prepare and store formula according to suggested guidelines (see Table 29).

Feeding questionnaire.

At both three and six-months postpartum, experimental subjects were more likely to display greater knowledge concerning appropriate feeding techniques including scheduling and amounts. In addition to treatment effects, there was an interaction (condition by time) effect which revealed that experimental subjects' scores

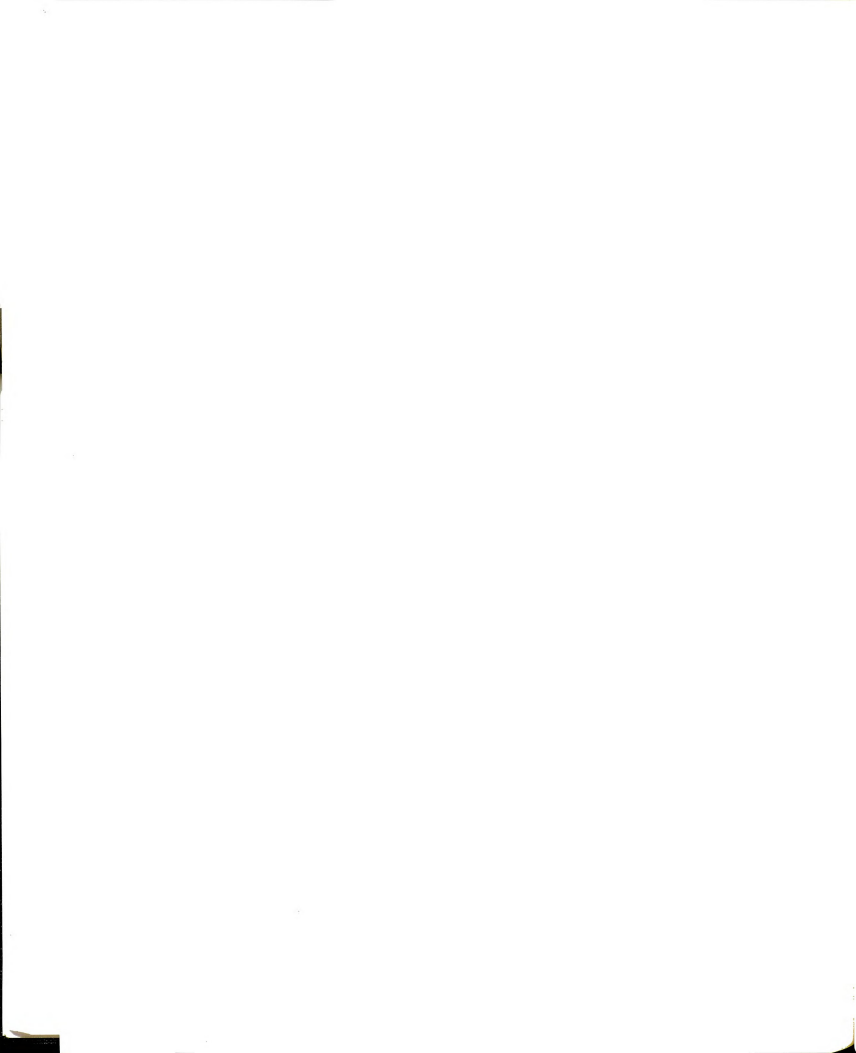
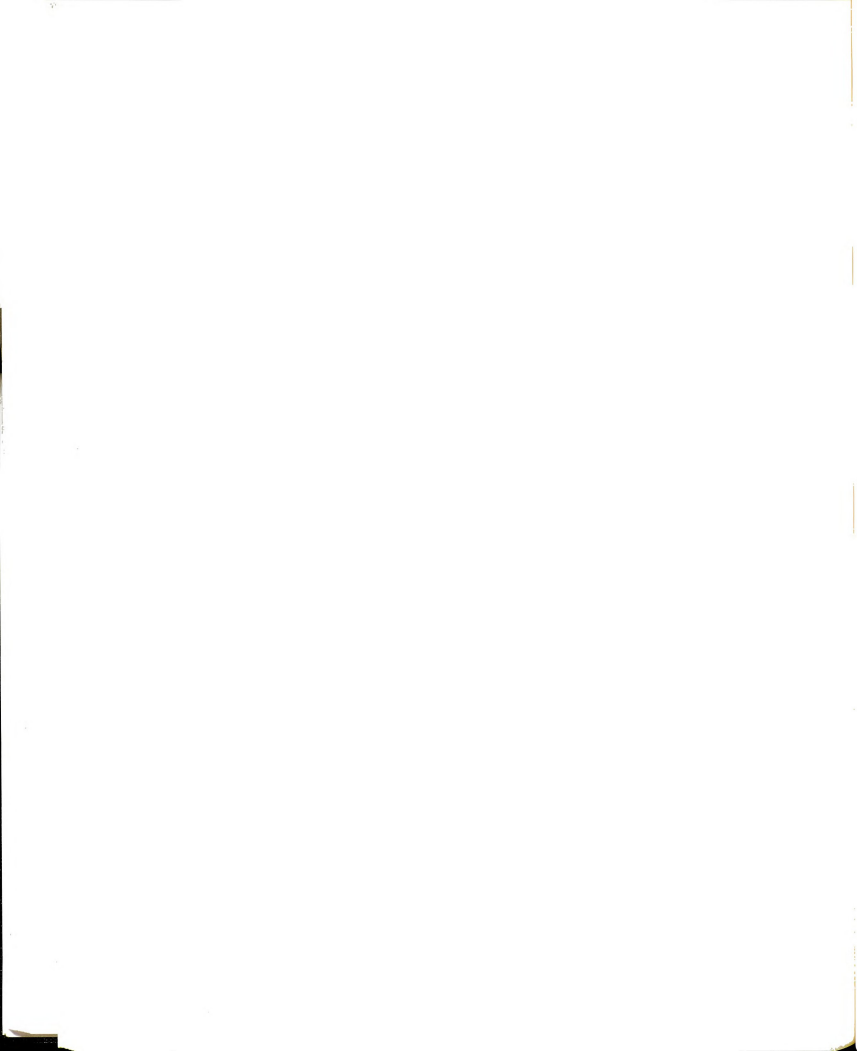


Table 29

Analysis of Variance:
Formula Preparation
by Experimental Condition

Source	Df	Ms	F	Sign.
Between conditions	1	42.01	27.75	.001
Within conditions	70	1.51		



were significantly improved at six-months postpartum (see Table 30).

Safety

At both three and six-months postpartum, experimental subjects were more likely to exhibit greater knowledge concerning recommended safety practices. In addition to these treatment effects, there was an effect for time which revealed that both experimental and control subjects' scores were significantly higher at six-months postpartum (see Table 31).

Health

There were no significant differences between groups on the health measures.

Relational Measures

PARI

There were no significant differences between groups on the attitude measure at either three or six-months postpartum. There were, however, time effects which revealed that both experimental and control subjects' scores were significantly lower at six-months postpartum (see Table 32).

Developmental Knowledge

Expectancy questionnaire.

At both three and six-months postpartum, experimental subjects were more likely to express realistic

Table 30

Repeated Measures
Analysis of Variance:
Feeding Questionnaire

Source	Df	Ms	F	Sign.
Condition	1	418.58	43.32	.001
Time	1	5.21	2.98	.089
Condition by Time	1	10.46	5.99	.017

Table 31

Repeated Measures
Analysis of Variance:
Safety Questionnaire

Source	Df	Ms	F	Sign.
Condition	1	438.26	85.27	.001
Time	1	59.80	21.05	.001
Condition by Time	1	.78	.28	.601

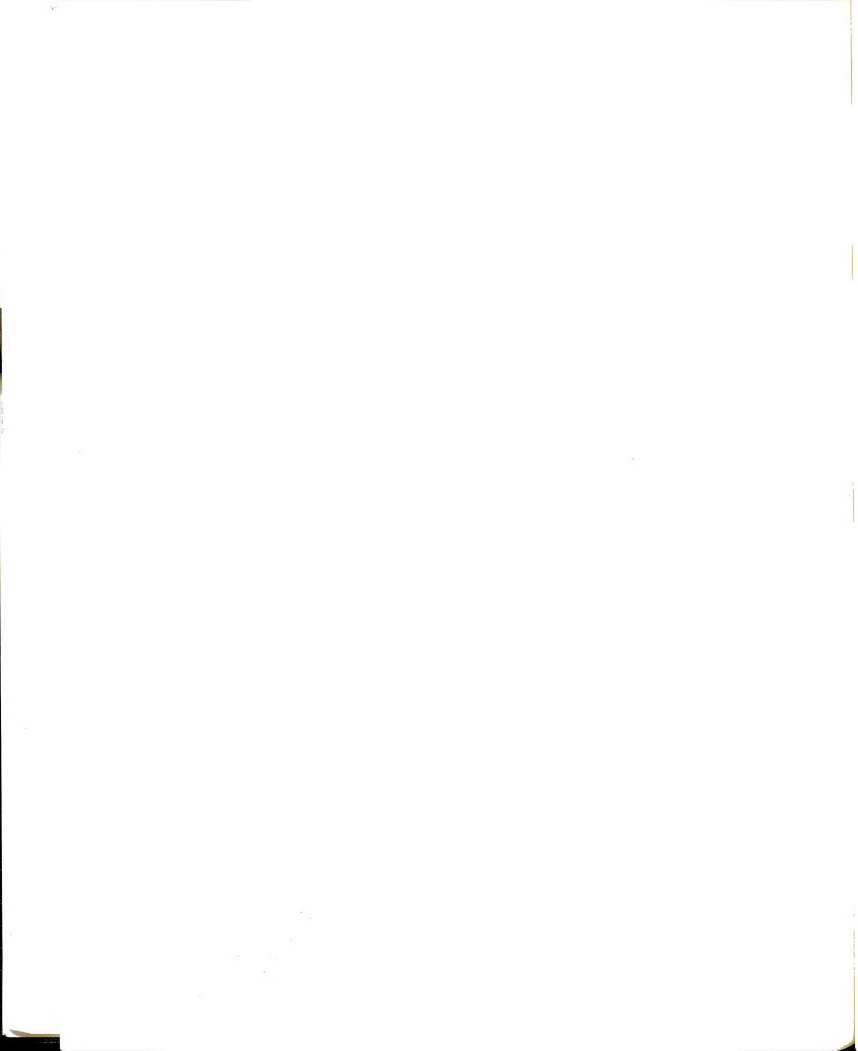


Table 32

Repeated Measures
Analysis of Variance:
PARI

Source	Df	Ms	F	Sign.
Condition	1	24.77	.54	.467
Time	1	798.19	39.51	.001
Condition by Time	1	6.19	.31	.582



developmental milestones. There were no time or interaction effects detected (see Table 33).

Competency interview.

Significant condition effects were detected. Experimental subjects were more likely to offer a greater number of options to posed child rearing problems (see Table 34).

Interaction

There were no significant differences between groups on the mother-infant interaction measures.

Infant Measures

DDST

At three-months postpartum, infants of experimental subjects were more likely to show evidence of developmental progress, however, there were no significant differences between groups on the DDST at six-months postpartum. There were, however, time effects detected which revealed that control subjects' scores were significantly improved at six-months postpartum (see Table 35).

Growth

There were no significant differences between groups on the growth assessment at either testing period. In addition, there were no time or interaction effects detected.

Table 33

Repeated Measures
Analysis of Variance:
Expectancy

Source	Df	Ms	F	Sign.
Condition	1	184.34	25.93	.001
Time	1	.13	.02	.882
Condition by Time	1	.03	.00	.947

Table 34

Analysis of Variance:
Competency Interview
by Experimental Condition

Source	Df	Ms	F	Sign.
Between conditions	1	124.81	6.37	.01
Within conditions	59	19.59		

Table 35

Repeated Measures
Analysis of Variance:
Denver Developmental Screening Test

Source	Df	Ms	F	Sign.
Condition	1	95.26	17.23	.001
Time	1	5.68	.74	.393
Condition by Time	1	38.14	4.97	.030

Summary

An examination of condition effects included eight caretaking, seven relational, and four infant outcome variables. Significant condition effects were found for the formula preparation and competency measures, the feeding, safety, and expectancy questionnaires (at both three and six-months postpartum), and the Denver Developmental Screening Test (at three-months postpartum). Table 36 presents a summary of these results.

Significant time effects were detected on the safety questionnaire (with both experimental and control subjects' scores increasing over time), and the attitude measure (with both experimental and control subjects' scores decreasing over time).

Significant interaction effects were detected on the feeding questionnaire (with experimental subjects' scores increasing over time), and the Denver Developmental Screening Test (with control subjects' scores increasing over time).

Predictors of Optimal Infant Outcomes

In addition to testing the effectiveness of the model program, stepwise multiple regression analysis was employed to examine which aspects of parenting were most related to better infant outcomes (i.e., caretaking

Table 36

Summary of Results:
Caretaking, Relational, and Infant Outcomes

<u>Measurement Area</u>	<u>3-Month</u>	<u>6-Month</u>
Caretaking Skills		
Formula Preparation	*	--
Feeding Questionnaire	*	*
Safety Questionnaire	*	*
Health Questionnaire	--	NS
Well-Baby Clinic Visits	--	NS
Sick Clinic Visits	--	NS
Relational Indices		
PARI	NS	NS
Expectancy Questionnaire	*	*
Competency	--	*
Verbal Stimulation	NS	--
HOME	--	NS
Infant Outcomes		
DDST	*	NS
Growth Score	NS	NS

* = $p < .01$, hypothesis confirmed.

proficiency or relational capabilities). Demographic, medical history, and treatment variables were also entered into the analysis.

Three-Months Postpartum

Infant Development

In an effort to examine infant developmental status (dependent variable = DDST score at three-months postpartum), the following independent variables were included in the analysis: the three-month feeding, formula preparation, and safety scale scores (= caretaking outcome variables); the three-month attitude, expectations, and interaction scale scores (= relational outcome variables); mother's age, race, level of education, and marital status, and sex of infant (= demographic variables); mother's prenatal care status, and pregnancy and birth complications, and the infant's gestational age, weight, and APGAR scores (= medical history variables); and group assignment (= treatment variable). Only the treatment variable met the significance level for entry ($p < .001$) accounting for 36 percent of the variance (see Table 37).

Infant Growth

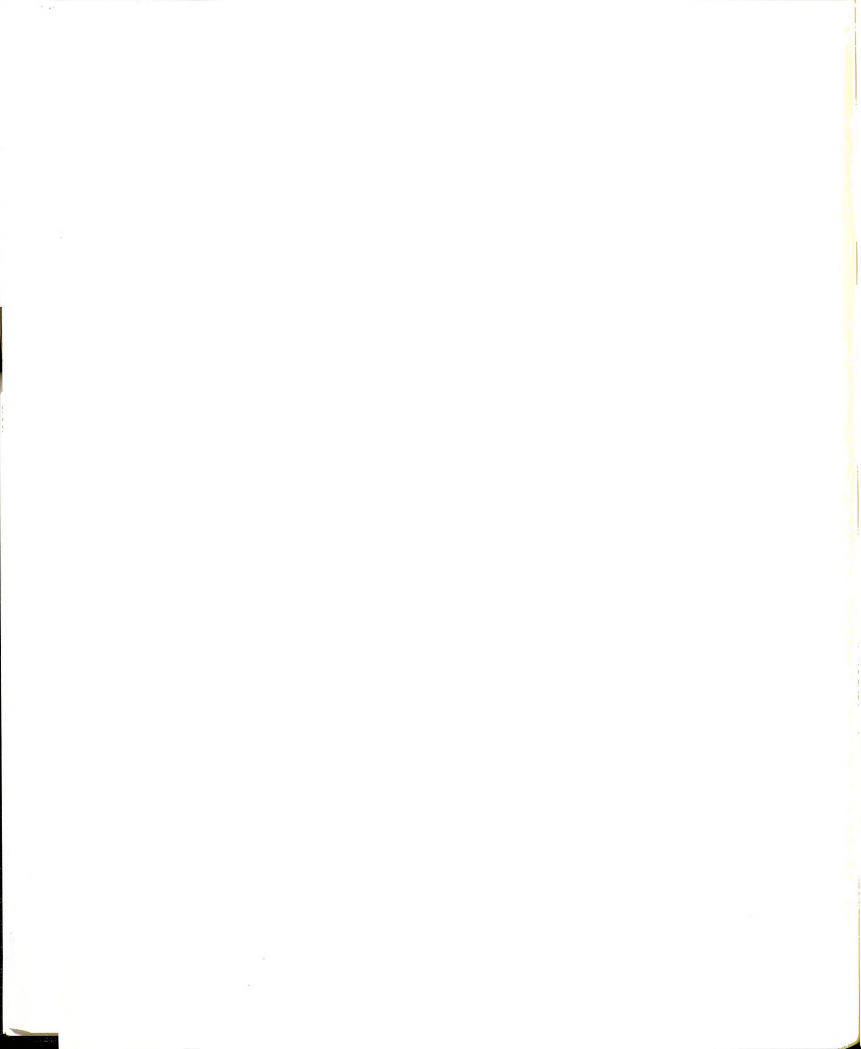
In an effort to examine infant growth status (dependent variable = growth indices score at three-months postpartum), the following independent variables were

Table 37

Stepwise Regression
to Predict DDST

Three-Months Postpartum

Variable Entered	R	RSQ	Increase in RSQ	Adjusted RSQ	Sign.
Group	.60	.36	.36	.59	.001



included in the analysis: the three-month feeding, formula preparation, and safety scale scores (= caretaking outcome variables); the three-month attitude, expectations, and interaction scale scores (= relational outcome variables); mother's age, race, level of education, and marital status, and sex of infant (= demographic variables); mother's prenatal care status, and pregnancy and birth complications, and the infant's gestational age, weight, and APGAR scores (= medical history variables); and group assignment (= treatment variable). No variables met the significance level for entry to predict growth at three-months postpartum.

Six-Months Postpartum

Infant Development

In an effort to examine infant developmental status (dependent variable = DDST score at six-months postpartum), the following independent variables were included in the analysis: the six-month feeding, safety, and health scale scores, and the two clinic measures (= caretaking outcome variables); the three-month attitude, expectations, competency, and HOME scale scores (= relational outcome variables); mother's age, race, level of education, and marital status, and sex of infant (= demographic variables); mother's prenatal care status, and pregnancy and birth complications, and the infant's gestational age,

weight, and APGAR scores (= medical history variables); and group assignment (= treatment variable). Only one caretaking outcome variable (= the health questionnaire score) met the significance level for entry ($p < .01$) accounting for 13 percent of the variance (see Table 38).

Infant Growth

In an effort to examine infant growth status (dependent variable = growth indices score at six-months postpartum), the following independent variables were included in the analysis: the six-month feeding, safety, and health scale scores, and the two clinic measures (= caretaking outcome variables); the six-month attitude, expectations, competency, and HOME scale scores (= relational outcome variables); mother's age, race, level of education, and marital status, and sex of infant (= demographic variables); mother's prenatal care status, and pregnancy and birth complications, and the infant's gestational age, weight, and APGAR scores (= medical history variables); and group assignment (= treatment variables). No variables met the significance level for entry to predict growth at six-months postpartum.

Implementation/Process Considerations

Implementation

No omissions of program material were detected. The only type of error noted was that of "order". For example,

Table 38

Stepwise Regression
to Predict DDST

Six-Months Postpartum

Variable Entered	R	RSQ	Increase in RSQ	Adjusted RSQ	Sign.
Health	.36	.13	.13	.12	.01

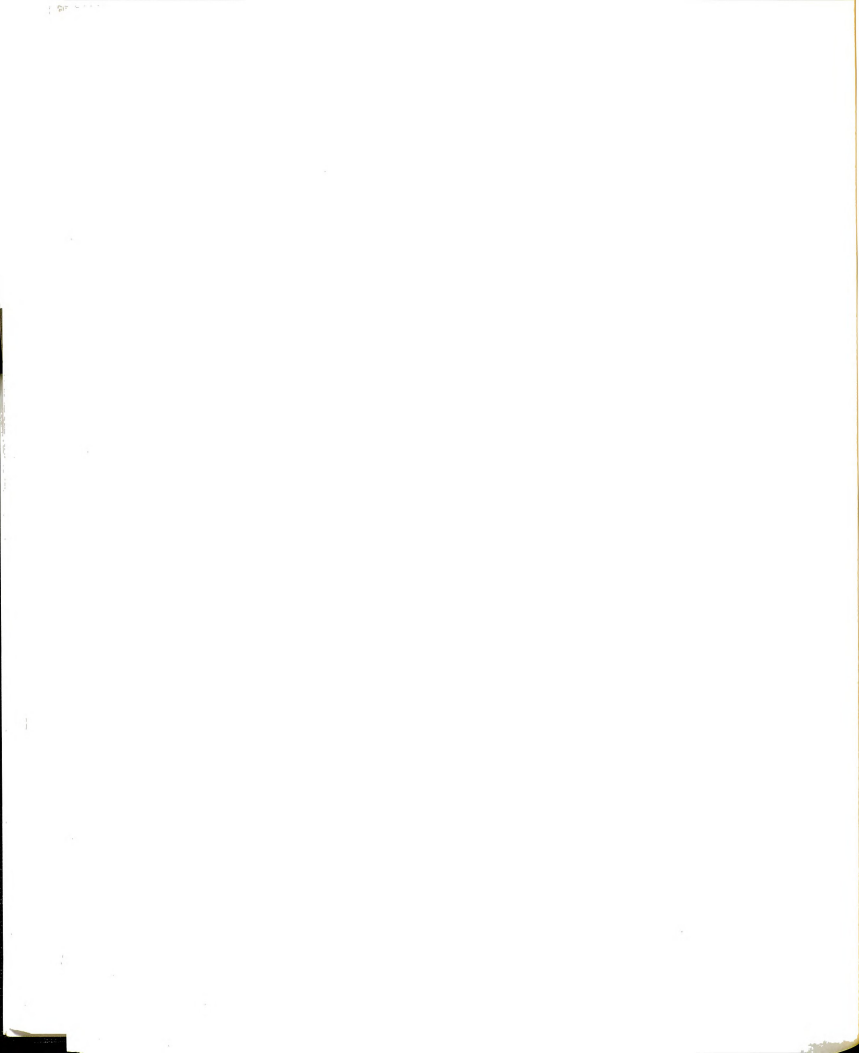
in reviewing "Infant Soothing Techniques" in home visit three, a nurse mentioned singing prior to talking. Or in home visit five, a nurse first discussed page two of the "Birth to Birthday Safety" booklet--and then returned to page one. These order errors were not regarded as serious.

There are four likely reasons for the lack of omissions: 1) home visits were audio taped (and student nurses were aware that their "performance" would be evaluated), 2) program material was relatively brief, 3) program participants were also given a copy of the materials--and reviewed the pages with the student nurse, and 4) student nurses were highly motivated, skilled individuals.

Process

The mean score for emotional aide was 5.0 with a standard deviation of 2.2. The mean score for advice/information was 1.75 with a standard deviation of 2.0. Finally, the mean score for socialization was 66.7 with a standard deviation of 12.5. Global support scores ranged from a total of 46 to 94 with a mean score of 73.4 and a standard deviation of 15.8.

Correlational analyses revealed no significant relationship between global support scores and the infant outcome measures of growth and development. Chi-square analyses revealed no significant relationship between low



vs. high support scores and key demographic variables.

Efficiency Considerations

It was projected that a total of 200 families could receive program services in a one-year period. (This figure represents the divisor in the cost estimate equation.) This estimate was generated from an expected annual volunteer staff (= Parent Aides) of 50 individuals. Each volunteer would be required to service four families through the year. The total projected budget required to operate the program (= amount requested) would be \$15,000.00 (see Table 39). (This figure represents the dividend in the cost estimate equation.) Thus--the program cost per family would be approximately \$75.00. (This figure represents the quotient in the cost estimate equation.)

This estimate does not represent the actual expenses incurred during the implementation of the research project. (If a comprehensive evaluation component is "attached" to the service program--the cost per family is significantly higher.) The total budget for a one-and-one-half year period was \$31,300. (The Community Foundation of Greater Flint funded the Program Director, Recruitment Coordinator, and Research Assistant positions, and miscellaneous expenses. The Junior League of Flint, Inc. funded the

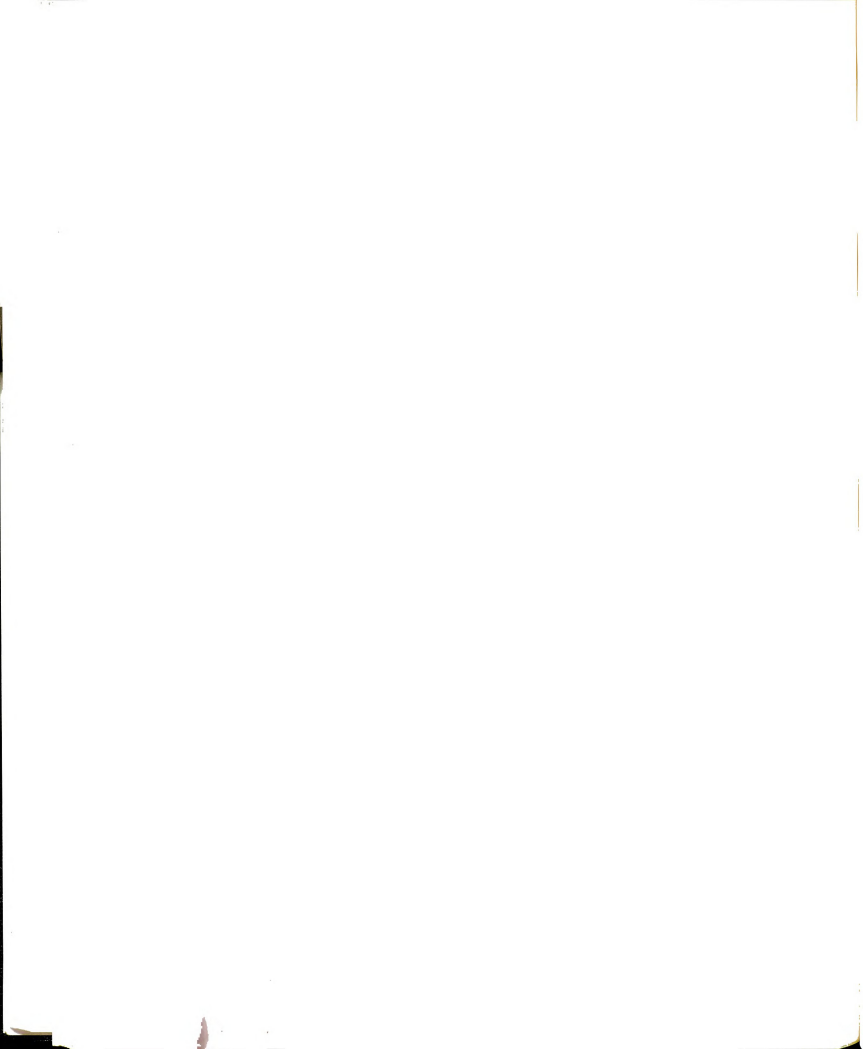
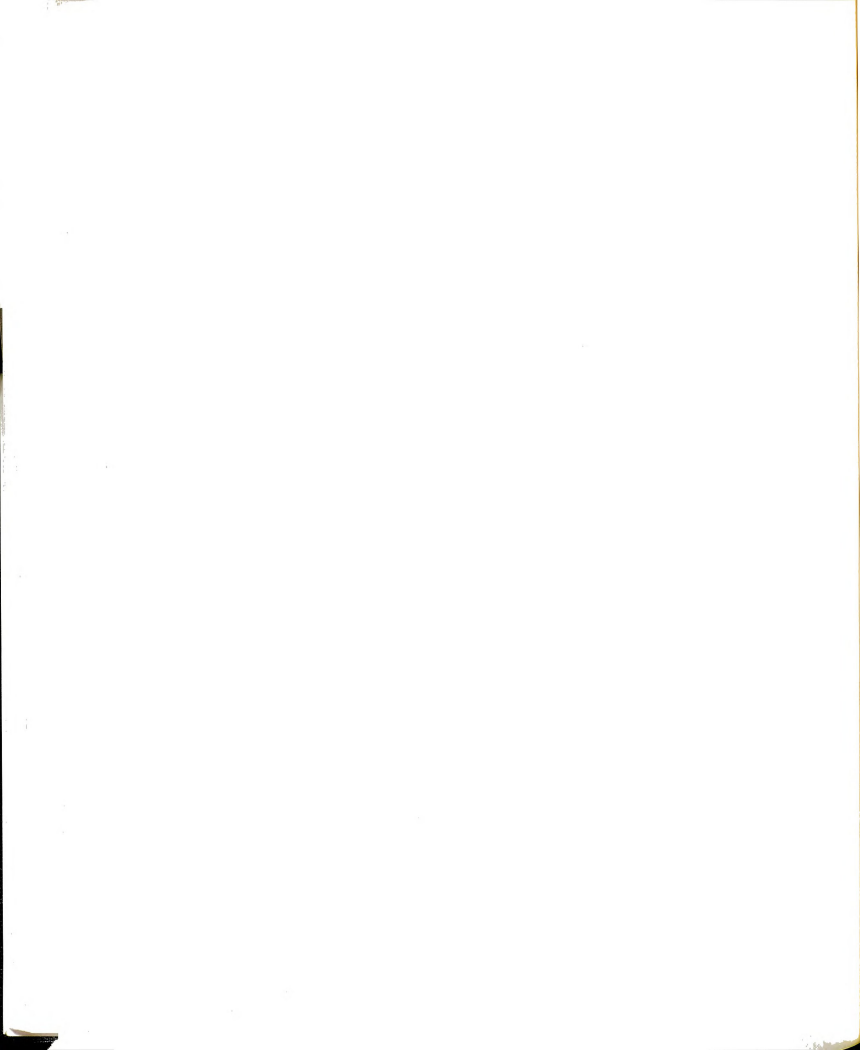


Table 39

Projected Program Budget

	Cost	Amount Requested
Program Coordinator Salary	15,000.	15,000.
Secretarial Support	500.	----
Incentive Items	4,000.	----
Office Space	4,200.	----
Office Supplies	1,000.	----
Office Equipment	1,000.	----
	(\$25,700.)	\$15,000.



Volunteer Coordinator position.) Eighty families received services. Thus--the program cost per family was \$391.25.

Unintended Outcomes

In response to the question, "As you think back on the past six months, what are your feelings or thoughts about becoming a parent?", 82 percent of the responses were positive in nature (84 percent of experimental subjects, 79 percent of control subjects) while the tone was more negative for 18 percent of subjects (16 percent of experimental subjects, 21 percent of control subjects). In response to the question, "What do you think about your involvement in this study?", the responses were evenly divided between a focus on the learning value of the program (48 percent) and the fun or enjoyment of participation (52 percent). Sixty-three percent of experimental subjects stressed the learning opportunity while only 31 percent of control subjects focused on this value (see Table 40).

Examination of Successful Program Participants

A comparison of successful and unsuccessful program participants is presented in Table 41. Chi-square analyses revealed two statistically significant relationships:

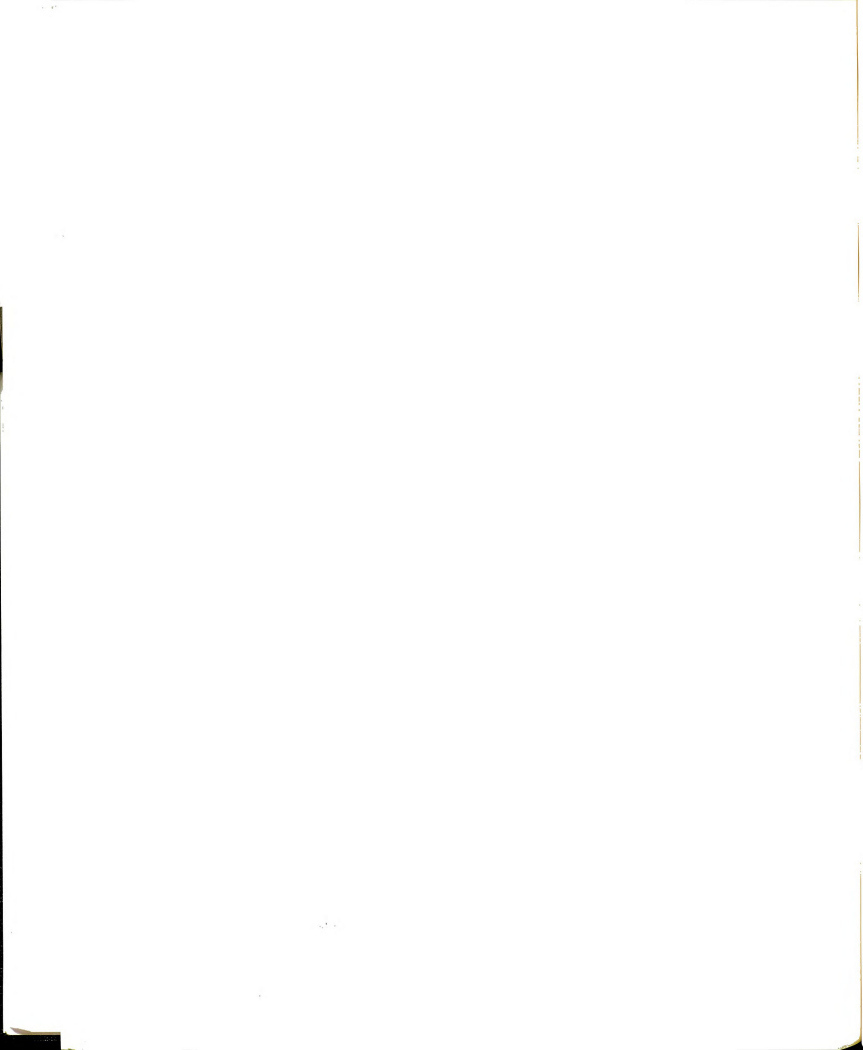


Table 40

Unintended Outcomes

	Control	Experimental
Positive feelings about parenthood	79%	84%
Negative feelings about parenthood	21%	16%
- - - - -	- - - - -	- - - - -
Learning value of program	31%	63%
Pleasure value of program	69%	37%

Table 41

Summary of Comparison Variables

	Unsuccessful Participants	Successful Participants
Group		
Experimental	33%	80%
Control	67%	20%
Education		
Non-graduate	20%	12%
High school	47%	36%
Some college	33%	52%
Marital Status		
Single	89%	76%
Married	11%	24%
Age		
< 21	41%	28%
=> 21	59%	72%
Race		
African-American	56%	24%
Caucasian	44%	76%
Prenatal Care		
Routine	50%	58%
Non-routine	50%	42%
Religion		
Affiliated	50%	64%
Non-affiliated	50%	36%
Mother Employed		
Yes	56%	60%
No	44%	40%
Father Employed		
Yes	72%	76%
No	28%	24%
Appraisal		
Positive	76%	86%
Negative	24%	14%

1) condition ($\bar{X} = 11.08$, $p = .001$), and 2) race ($\bar{X} = 4.79$, $p = .02$).

CHAPTER IV

DISCUSSION

The purpose of this study was to evaluate a primary prevention effort directed at the enhancement of parent caretaking and relational skills in an at-risk population. It was hypothesized that such an enhancement would influence infant growth and developmental outcomes. There were three primary measurement areas: caretaking skills, relational indices, and infant outcomes. Infant outcomes represented the critical dependent variables of interest. In addition to testing the effectiveness of the model program, predictors of optimal infant outcomes were examined. Caretaking skills, relational indices, demographic, medical history, and treatment variables were considered. Finally, additional areas of analyses included program implementation, process, efficiency, unintended outcomes, and an examination of successful program participants.

Condition/Time Effects

Caretaking Skills

Three feeding, two safety, and three health measures were retained for analysis. Experimental subjects performed better on the feeding questionnaires (at both three and six-months postpartum) and the formula

preparation measures. Involvement in the model program impacted on knowledge about appropriate feeding techniques including scheduling and amounts, common feeding problems and possible solutions, and the proper preparation and storage of infant formula. Also, significant time effects were detected on the feeding measures with experimental subjects' scores increasing over time. This may have been a result of the strong emphasis placed on feeding in the home visits. Experimental subjects also performed better on the safety questionnaires (at both three and six months postpartum) than the control mothers. Involvement in the model program impacted on knowledge about safety practices in the home environment including preventive measures (= the "babyproofing" of rooms) and emergency actions (for choking, electrical shock, and poisoning). Significant time effects were also detected on the safety measures with both experimental and control subjects' scores increasing over time. This was most likely the result of a heightened sensitivity to safety issues as the infant gained in mobility. No differences were observed between groups on the health measures. The lack of program effects on adherence to well-baby visits was quite discouraging. An examination of the number of routine and sick visits revealed that the infants of both groups were underserved. Whereas pediatricians recommend that a healthy infant

should see a doctor approximately four times in the first six months of life, the study infants had a mean number of routine visits of 1.6. The most immediate concern with the lack of adherence to well-baby visits is that these infants were not adequately immunized. In hypothesizing probable reasons for this non-compliance, it is possible that these women did not appreciate or understand the importance of routine health care for their infants. However, an examination of the study area might also suggest that problems in transportation may account for poor health care follow-up. It may be necessary for home visitation programs to incorporate on-site medical care in the services offered to impoverished families.

Relational Indices

Two child-rearing attitude, three developmental knowledge, and two mother-infant interaction measures were retained for analysis. Experimental subjects fared better than control on all knowledge measures including the expectancy questionnaires (at both three and six months postpartum) and the competency interview. Involvement in the model program impacted on knowledge about the motor and social development of infants/children, and on problem-solving abilities related to common child-rearing dilemmas. No differences were observed between groups on the attitude or interaction measures. The absence of program effects on

the interaction measures was a major disappointment--since these represented true behavioral indices. With respect to the attitude measure, it was interesting to note that over time--both experimental and control subjects' scores significantly decreased. This decline may be the result of increased pressures/demands as the infant enters the "mobility" phase of development.

Infant Outcomes

Two growth and two developmental scores were analyzed. These infant outcomes represented the critical dependent variables of interest. Involvement in the model program did not impact on the growth measures. With respect to developmental status, experimental infants did perform better on the DDST at three-months postpartum--but no differences were detected at six-months postpartum. And the repeated measures analysis of variance revealed that control subjects' scores were significantly improved at six-months postpartum (having an approximate mean value of six points at three-months postpartum and an approximate mean value of eight points at six-months postpartum). It appeared that these infants "caught up" with their accelerated experimental counterparts--but of course it is not known whether or not the experimental infants would have continued to make strides if the intervention had continued (and thus possibly remained ahead of the control

infants). Since DDST scores were higher at the post measure for experimental infants (and no program effects were detected at the follow-up)--it may be necessary to remain involved with target families for a greater length of time in order to sustain early program effects. These results suggest that early intervention may be important, but may not be adequate for continued success. At-risk families may require ongoing support.

Predictors of Optimal Infant Outcomes

In addition to the comparisons of experimental and control groups to detect treatment effects, an additional research area centered on an examination of parenting functions. Two research questions of great interest were as follows: 1) Which aspects of caretaking competence or mastery (feeding, hygiene, safety, or health) are most predictive of positive infant outcomes (= growth and developmental status)?; and 2) Which aspects of relational competence or mastery (developmental knowledge, child rearing attitudes, or quality of interaction) are most predictive of positive infant outcomes?. It was theorized that caretaking proficiency would be more highly related to optimal infant outcomes than would relational capabilities.

Multiple regression analysis was employed to examine these questions. (Demographic, medical history, and treatment variables were also entered into the analysis.)

Group assignment was significantly related to infant developmental status at three-months postpartum, and health care knowledge was significantly related to developmental status at six-months postpartum. No variables met the significance level for entry to predict growth at either three or six-months postpartum.

These results did not provide any clear direction in assessing parenting factors. First, only one variable was significant at each time period. Second, this single variable differed at each time period. It might be claimed that each variable represented a "caretaking proficiency" factor. (With respect to group assignment--the experimental model primarily focused on the enhancement of caretaking skills. And the health measure was categorized as a caretaking skill indicator.) However--it appears to be of little value to argue such a claim--since the evidence to support the caretaking skills hypothesis in this study was too weak.

Implementation/Process Considerations

Implementation

No omissions of program material were detected. The only type of error noted was that of "order". For example, in reviewing "Infant Soothing Techniques" in home visit three, a nurse mentioned singing prior to talking. Or in home visit five, a nurse first discussed page two of the

"Birth to Birthday Safety" booklet--and then returned to page one. These order errors were not regarded as serious.

There were four likely reasons for the lack of omissions: 1) home visits were audio taped (and student nurses were aware that their "performance" would be evaluated), 2) program material was relatively brief, 3) program participants were also given a copy of the materials--and reviewed the pages with the student nurse, and 4) student nurses were highly motivated, skilled individuals.

Process

Although there were differences among the student nurses in the level of support provided to families--the relationship between quality of support and infant outcomes was not significant. Also, an examination of key demographic variables and level of support failed to reveal any significant relationships. It is interesting to note that the correlation between the nurse's support score for her first family and the support score for her second family was significant ($r = .67$, $p < .01$). Also, mean support scores across visits were very similar. This suggests that a helping or interaction style was quite stable.

In summary, student nurses adhered well to the training manual--providing participants with all program

material. Thus the implementation of the model program was very successful. With respect to the process of the intervention, an examination of level of support did not serve to clarify its role in assisting at-risk families. It appeared that the nurses were quite adequate as caring professionals. For example, the mean score of 5.0 for emotional aide breaks down to one "incident" every 12 minutes. Scores for information/advice were somewhat low, but this is understandable. The primary intent of the program was to provide families with critical caretaking information--and there was not a strong need to make additions to the program material. The final aspect of support--that of socialization--most likely represents the area in need of intensification. Although families received five home visits in the first month--they received only one visit in the second and third months.

Efficiency Considerations

The projected program cost estimate of \$75.00 per family is truly remarkable. This amount would include a total of eight service "contacts" (one hospital and seven home visits). Dividing these figures results in a cost of \$9.38 per visit/contact. Of course even when the cost is this low--a calculation of program benefits is still necessary. (Although for many human service programs there is no evidence regarding their actual "worth", it seems

essential that the introduction of a new program should result from a scientific demonstration of its value for the targeted population.) The study results revealed a short-term impact on developmental status (i.e., increased DDST scores). If these results were replicated in additional studies--than the value of such a program would appear to be sufficient. This would be especially true if the service could be viewed as an early or "first" segment in a "First-Year-of-Life Program". If various community agencies/organizations could coordinate their efforts to offer at-risk families a long-term assistance option--such an arrangement may solve two key problems. First, the division of costs would address the feasibility issue which was explored in the Introduction section (Justification for Study: Utility Concerns). Second, the provision of ongoing support may result in the sustainment of early program effects.

The most difficult task in establishing such a program would be the successful recruitment of a program director. The job would require a very enterprising individual. There are a number of problems inherent in a service program staffed by volunteers. The ongoing recruitment, screening, training, and monitoring of persons is an enormous responsibility. Also--volunteer programs had traditionally relied on "non-working" women. With the

majority of women now active in the work force--it is often difficult to acquire needed support (especially if the commitment is fairly extensive in nature). Also, there are problems inherent in the operations of a service program which targets poor families. Safety concerns for volunteers is a grim reality. And often it is difficult to maintain contact with families due to frequent moves and other disruptions. Finally, the half-time status of the program director position may represent an obstacle in attracting qualified applicants. The institution might consider assembling a "package" deal (i.e., two half-time positions). Such an offer may appear more attractive to qualified applicants.

Unintended Outcomes

The responses to the question, "As you think back on the past six months, what are your feelings or thoughts about becoming a parent?", were mostly predictable. The majority of mothers (regardless of group assignment) expressed their pleasure with parenthood. Typical replies included the following:

- "I love it."
- "My baby is the most important thing in my life."
- "I really enjoy it."
- "I wouldn't trade it."
- "It's the greatest thing in the world."

The percentage of negative responses--though much smaller--were rather disturbing. Examples of such replies included the following:

"I would rather have waited."
"She'll probably be an only child."
"If I had known it was going to be this much work, I wouldn't have done it."
"Everything is different now. I don't have as much time to myself as I used to."
"I guess some kids are worse."

It is somewhat sad to ponder how this early perception of one's infant might influence later parent-child relationships.

The responses to the question, "What do you think about your involvement in this study?", were easily categorized into two viewpoints. Mothers either stressed the learning value of the program, or the fun/enjoyment of participation. And the apparent difference between experimental and control mothers (with a greater number of experimental mothers offering an educational appraisal) was not surprising.

Examination of Successful Program Participants

The comparisons of successful and unsuccessful program participants (on the variables of condition, education, marital status, age, race, prenatal care, religion, family employment history, and parenting appraisal status) revealed two statistically significant relationships: 1) condition and 2) race.

Regarding the latter, Caucasian study participants fared better than the African-American women. In hypothesizing probable reasons for this outcome, it is suggested that the longer history of impoverishment experienced by the African-American women most likely contributed to the differences observed. An analysis of additional variables (including such factors as types of support offered by family members) could aid in understanding determinants of program success. Also, an examination of helper characteristics should be undertaken. In constructing a profile of the successful program participant--the older, better educated, Caucasian woman was represented. This profile "matches" the description of the "typical" Parent Aide helper. The majority of student nurse volunteers were over 25 years of age and Caucasian. Also--those students who volunteered for the project tended to be the "better" students (=higher grade point averages). It could be argued that the mothers and infants in greatest need of the model program (i.e., those women at greater risk for parenting dysfunctions, and those infants at greater risk for growth and developmental dysfunctions)--were least helped by the program. It may be necessary for programs to more actively recruit helpers similar in characteristics to the targeted population.

Implications and Conclusions

Study Strengths

In designing, implementing and evaluating this study--key theoretical, methodological, and utility arguments/concerns were addressed. With respect to theoretical issues, the entry point of intervention was early (recognizing the critical period of adjustment for new parents) and program content was holistic (including both caretaking and relational skill information). Regarding methodological concerns--an adequate sample size was obtained (with data collected on 90 percent of the original sample), at-risk families were targeted (whose infants are more vulnerable to problematic growth and developmental outcomes), random assignment was employed (thus permitting causal inferences), research assistants were blind to group membership (reducing the likelihood of rater bias), multiple and repeated measures were conducted (strengthening the validity and reliability of assessments) and multiple levels of analysis were employed (including program effectiveness, implementation, process, and unintended outcomes). Finally, utility concerns prompted an assessment of program efficiency (including cost estimates for programs with and without a comprehensive evaluation component).

Study Weaknesses

The major objective of the principal investigator was to assess the impact of the model educational-support program on parent caretaking and relational skills, and infant growth and developmental outcomes in an at-risk population. In assessing condition/treatment effects, it was noted that the greatest impact was on parent caretaking skills (with significant group differences obtained on five of eight measures). This outcome was quite understandable given that the major focus of the model program was on the enhancement of these skills. Although relational aspects of parenting were targeted, the emphasis was "secondary" (and significant group differences were obtained on only three of seven measures). The success ratio for infant outcomes--which represented the critical dependent variables of interest--was quite disappointing (with significant group differences obtained on only one of four measures). Furthermore--the differences detected in parent caretaking and relational skills were in knowledge attainment and not behavioral outcomes.

With respect to caretaking mastery, involvement in the model program did not serve to increase adherence to recommended health practices. It was hoped that program mothers would be more likely to follow important guidelines for well-baby visits. With respect to relational skills,

involvement in the model program did not serve to enhance the quality of mother-infant play interactions--nor were differences obtained on Section I, Emotional and Verbal Responsivity of Mother, of the HOME. (But it was interesting to note the high degree of variability on each of these interactive measures.) It was hoped that program mothers would be more aware of the interactive capabilities of the infant and would therefore display a greater sensitivity or responsivity toward their babies.

This program was not unique in its failure to link parents' ideas and parents' actions. In Goodnow's (1988) extensive review of "belief-behavior consistency", she concluded that the overall results from parenting programs were not encouraging. The relationship between ideas and actions were--at best--"quite modest".

Goodnow's introductory paragraph to her review was as follows:

Two recent reviews of research on links between parents' ideas and parents' actions end with the suggestion that developmentalists turn to social psychology in order to enrich a relatively atheoretical field and supply new methods and directions for research...The present article follows through on that suggestion and extends it to cover not only the issue highlighted by these reviews (i.e., belief-behavior consistency) but also some other issues basic to research on parents' ideas: the likelihood of change...and links to developmental outcomes.

(p. 286)

Goodnow's suggestions for the modification of models

included the consideration of two possibilities regarding the link between knowledge and behavior: 1) agreement is more likely to occur with some people rather than others; and 2) agreement is more likely to occur under some conditions than others.

With respect to the first consideration, there are reports of higher idea/action correlations for middle-income than for lower-income parents. (Goodnow also cites studies which show that middle-income parents are more likely to seek new information--and are more open to change.) However--since infant outcomes are more negative in impoverished families it would not make sense to alter the model in this manner (i.e., to target a low-risk group). Regarding the second consideration, cognitive dissonance and impression-management theories highlight the significance of "consistency" in establishing desired behaviors (based on a need to either make adjustments that avoid damaging one's image of oneself as consistent, or arranging one's actions so that we appear consistent to others). With respect to this consideration, certain changes could have been incorporated in the model program that may have increased the likelihood of success. For example--following a discussion of the importance of health practices (in which the student nurse would directly ask the mother if she understood the importance of maintaining

immunization schedules)--the student nurse could have been instructed to remind the mother about upcoming well-baby visit "deadlines". (And perhaps that they would discuss the mother's feelings about these doctor appointments on subsequent home visits.) This strategy may have prompted mothers to follow recommended guidelines for well-baby visits.

Future Directions for Research

In general, program effects were detected on knowledge as opposed to behavioral measures. The exception to this was the three-month DDST scores--although these differences were immediate or short-term. Two suggestions for the planning of future parent education programs are given. First, it may be necessary to remain involved with at-risk families for a greater length of time. (Although early intervention may be important--it may not be adequate since program effects were evident at the post but not the follow-up assessment time). This could be accomplished through a coordination of area services in which program "parts" are pieced together in order to offer families a long-term assistance option. Such an arrangement could successfully address the issue of cost feasibility. Second, it is necessary to continue to devote time and effort toward developing and refining educational components. Specifically, program components or strategies

are needed which succeed in producing true behavioral changes in at-risk families. This may require modifications in models based upon cognitive dissonance and impression-management principles. Future research in parenting programs should be directed at the application of these theories. Drawing from such fields as social psychology can be used to benefit research on parenting and child outcomes. If a link cannot be forged between parents' ideas or knowledge and actions or behavior--the likelihood of impacting on outcomes for children will be minimal.

In conclusion, this study represented a primary prevention effort directed at the enhancement of parent caretaking and relational skills in an at-risk population. It was hypothesized that such an enhancement would influence infant growth and developmental outcomes. Research or program efforts have generally focused on parent education activities. It has been thought that the promotion or enhancement of competencies in this arena would serve to buffer the children of at-risk families from potential developmental dysfunctions. Parent educational services/programs are intended to enhance the quality of caregiving thereby ameliorating risk factors (e.g., inadequate social support) and enhancing protective mechanisms (e.g., improving the health status of children).



Recent years have seen an increase in home visiting services--and this trend is expected to increase considerably over the next decade. Roberts et al., (1991) have stressed the need for research to answer the rather complex question, "What kinds of family support programs employing what kinds of staff serving what kinds of families with what kinds of needs achieve what kinds of results?" The model program examined here was moderate in intensity (consisting of a total of eight contacts over a three-month period), utilized trained student nurses (in the senior year of their training), targeted impoverished, first-time mothers and their infants, and was successful in impacting on parent caretaking and relational skills knowledge (although behavioral outcomes were somewhat disappointing). Future research should continue to address the above complex question--in particular, expanding on what kinds of changes result from specific program components, and which individuals appear to benefit from participation.

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APPENDIX A

Request for Participation

INFORMED CONSENT

Researchers at Hurley Medical Center are interested in studying parenting practices and infant growth/development in the first six months of life. The purpose of this project is to evaluate parent education programs for first-time parents. If I agree to participate in the study, I will take part in one of two programs (by means of random assignment) and thus agree to the following:

1. If enrolled in Group 1, I will receive 1 hospital visit and 7 home visits (in the first 3 months postpartum) by a trained Parent Aide Volunteer (who is a student nurse) that will include education and demonstration of various infant caretaking skills.

2. If enrolled in Group 2, I will receive a total of 7 specially designed educational packets (in the first 3 months postpartum) which contain printed materials about infant caretaking. These packages will be delivered to my home by a research staff member.

3. At 3 and 6 months postpartum, I will be asked to complete questionnaires about infant caretaking (such as feeding and bathing), and to allow researchers to videotape play interactions between myself and my baby. Also, growth information about my baby will be evaluated (such as fine and gross motor development). This should take about 90 minutes.

4. Medical information will be abstracted from mine and my baby's medical records including pregnancy and birth information from my obstetrical/postpartum records (number of prenatal visits, pregnancy complications, mode of delivery, birth complications, weight, gestational age, and APGAR scores of baby), and health information from my baby's clinic records (dates of visits, immunizations, general health comments of physicians, and length, weight, and head circumference of baby).

5. I will receive infant formula and various child care products for participating in this study at no charge.

6. My participation is voluntary. I may withdraw from the study at any time. My decision to participate or not to participate will in no way affect the care that I receive at Hurley Medical Center.

7. Any information that I share with researchers will be held in strictest confidence. My name will not appear on any completed questionnaire. Any papers, audio or video tapes will be identified by a random number. I am guaranteed complete confidentiality regarding all aspects of this study. This guarantee of confidentiality could be broken only in the event of some unforeseen emergency- for example, if the health/welfare of the child appeared to be in jeopardy. Participants remain anonymous in any report of research findings. Only group results are reported. Upon request, results of the project will be made available to you.

All interview sessions will be audiotaped so that content can be verified.

Video and audiotapes will be erased following scoring.

I also understand that if I have any further questions regarding this project, I can contact the Institutional Review Board at Hurley Medical Center by calling 257-9134, or I may contact the Project Director, Kay Taylor, by calling 257-9963. The Project Director is a graduate student in Psychology from Michigan State University.

Participant Signature

Date

Project Director (or Designee) Signature

APPENDIX B

STUDENT NURSE CONTRACT

Responsibilities:

- To honor your commitment to the project by attending the training sessions, and providing intervention services to two families.
- To preserve the fidelity of the model by carrying out the intervention as presented in training and detailed in the parent aide manual.
- To abide by the confidentiality code of research in regards to the rights of human subjects.

Date

Student Nurse

Rights:

- To receive the necessary preparation for successfully adopting the interventionist role.
- To have access to research staff for needed or additional support/guidance.
- To receive all necessary materials for training and service provision (notebooks, appointment cards, parent aide manual).

Date

Project Director

APPENDIX C

Training Schedule

- Session 1 Project Background
 Role Clarification
 Mechanics/Scheduling
 Life Styles/Empathy Review
 The Labor and Delivery Experience
 Role Play: Hospital Visit
- Session 2 Safety Concerns
 Teaching/Learning
 Promoting Recovery
 Infant Feeding Basics: Schedules/Amounts
 Formula Preparation Demonstration
 Role Play: Home Visit #1
- Session 3 Nutrition: Baby's First Year
 Common Feeding Problems and Solutions
 Burping Demonstration
 Role Play: Home Visit #2
- Session 4 Beyond Feeding: Baby Care Basics
 Diapering, Bath Demonstrations
 Infant Soothing Techniques
 Role Play: Home Visit #3
- Session 5 Infant States/Temperament
 Modified Brazelton Demonstration
 Film: The Amazing Newborn
 Infant Development
 Role Play: Home Visit #4
- Session 6 Preventive Medical Care
 Maintaining Immunization Records
 Role Play: Home Visit #5

Session 7 Safety in the First Year of Life
 Film: A Guide to Making Baby's World a Safer
 Place
 Home Check Demonstration
 Role Play: Home Visit #6

Session 8 Closure Issues
 Support Systems: Identifying & Building
 Utilizing Community Resources
 Role Play: Home Visit #7

APPENDIX D

HOSPITAL VISIT
CHECKLIST

1) Introduction

- Self

- > "My name is . . . I'm your Parent Aide!"

- Project Goal

- > "I will be making home visits to you over the next couple of months to share information about feeding and caring for your baby."

2) Labor/Birth Experience

- Mother

- > "How did things go for you?"

- Baby

- > "Tell me about the baby!"

3) Obtain Contact Information

- Address, telephone number of mother

- Address, telephone number of 2 "emergency" persons (friends; relatives)

4) Schedule Home Visit #1

- Establish date, time (within 24 to 48 hours)

- Leave appointment card

CONTACT INFORMATION

Mother's Address:

Telephone:

Relative's Address:

Telephone:

Friend's Address:

Telephone:

HOME VISIT #1
CHECKLIST

- 1) Promoting Recovery
 - Inquire about mother's health
- > "How are you feeling?"
 - Share recovery suggestions
- 2) Feeding Schedules/Amounts
 - Review when/how much material
 - Review material on pages 14, 15 in "Feeding Baby"
- > "Do you have any questions about feeding schedules/amounts?"
- 3) Formula Preparation
 - Review 12 steps
 - Demonstrate 12 steps
- > "Do you have any questions about formula preparation?"
- 4) Schedule Home Visit #2
 - Establish date, time
(= 1 week postpartum)
 - Leave appointment card

PROMOTING RECOVERY

* Diet/nutrition

It is important for you to eat well. Don't forget to include fruit and vegetables in your daily meals!

* Exercise

A little exercise can help to build your strength. Walking is very good for you.

* Time-out

You need time for yourself and the companionship of other adults. See if you can arrange for someone you trust to take over for a while with the baby.



WHEN DO I FEED MY BABY?

Your baby's stomach will be empty about every 1 to 4 hours. Each baby is different. Most newborn infants will need 6 to 8 feedings a day at about every 2 to 4 hours. This can depend on their size.

Larger babies can usually take enough formula at one feeding to last 4 to 5 hours. Smaller babies will probably drink less formula at a feeding, and therefore will need more feedings throughout the day.

Sometimes mothers learn to tell the difference between their baby's cries--and can tell when they are hungry or wet or just want to play.

But sometimes babies don't cry to tell mothers they are hungry. Then it is important for mother to know that her newborn will need about 6 to 8 feedings each day.

HOW MUCH SHOULD I FEED MY BABY?

Most infants need approximately 17 to 18 ounces of formula each day.

If the infant can take
about

2 ounces of formula
3 ounces of formula
4 ounces of formula

he/she will need

8 to 9 feedings
5 to 6 feedings
4 to 5 feedings

HOME VISIT #2
CHECKLIST

1) Nutrition

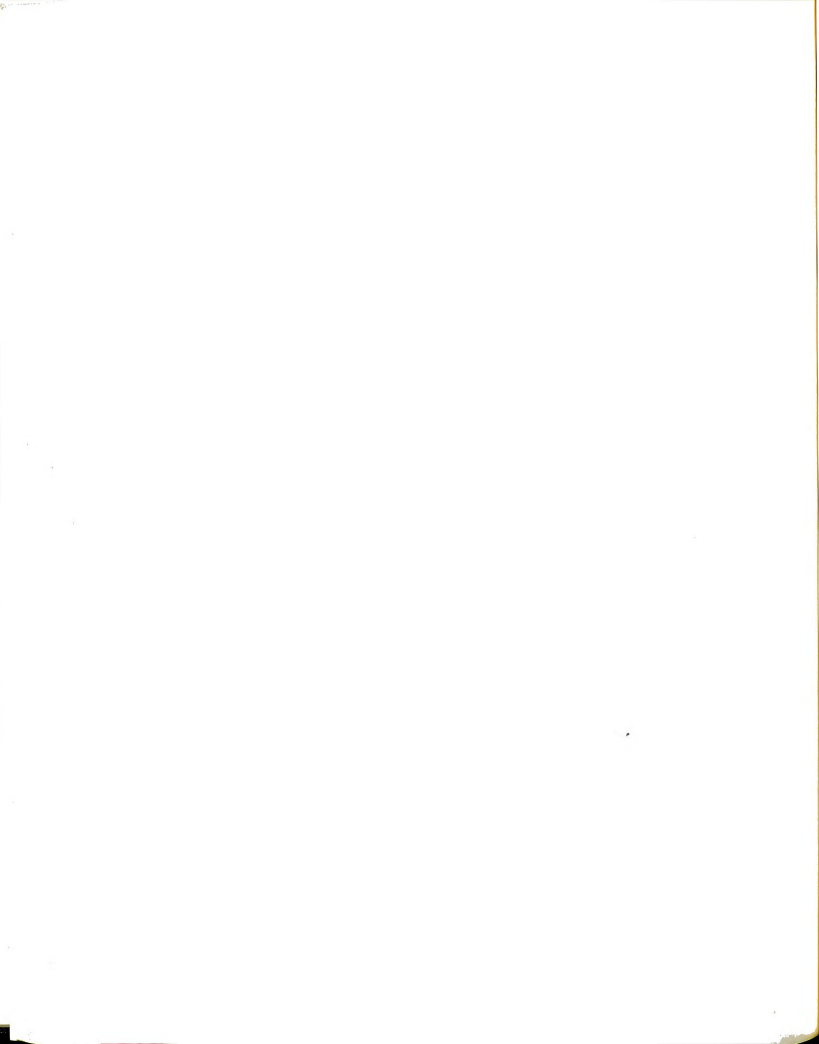
- Review nutrition materials
 - Review material on page 2 in
"Your Special Baby"
- > "Do you have any questions about nutrition?"

2) Feeding Problems

- Review common feeding problems
materials
 - Demonstrate burping techniques
- > "Do you have any questions about feeding problems?"

3) Schedule Home Visit #3

- Establish date, time
(= 2 weeks postpartum)
- Leave appointment card



WHAT IS NUTRITION?

Nutrition is the science that is the study of food and how it is used by the body.

What we eat becomes part of our bodies. The old saying, "You are what you eat", is true!

WHY GOOD NUTRITION?

Food helps a person to grow, play, work, think, and do many other activities that make up life itself.

Good nutrition is especially important during infancy because this is a time of very rapid growth.

After the first year of life, your child will never again grow so rapidly!

Because of this rapid growth, a good diet is very important!

HOW WILL A GOOD DIET HELP KEEP MY BABY HEALTHY?

A good diet:

- Helps your baby grow
- Helps your baby fight infections, and get better faster when he/she is sick.

For your baby, it is important that he/she gets both the right amount and right type of food.



WHAT DO I FEED MY BABY?

Milk--but never cow's milk. Cow's milk does not provide the special nutrients that baby needs.

WHY NOT SOLID FOODS?

Solid foods from your table or commercially prepared baby foods are usually started somewhere between 6 months and 1 year of age. Of course, ask your doctor or pediatrician for his/her advice.

There is no nutritional reason to start your baby early on solid foods. Babies get all the nutrients they need in the formula.

Some parents feed solid foods early hoping that their babies will sleep through the night. This is a common belief that has been proven to be untrue.

There is also the matter of cost. It will be more expensive to feed your baby once solid foods are given.

Finally, some doctors or physicians feel that starting babies early on solid foods can increase a baby's chance of getting food allergies. Thus they suggest that mothers wait.



WHAT ABOUT WATER?

Water is very important for baby. They lose water more quickly than the adult does! It is a good idea to offer the baby unsweetened water several times each day. Offer the water when the baby is awake, but not within 1 hour of feeding time.

Extra water is especially important:

- During hot weather
- When the baby is constipated
- If the baby is having diarrhea

If the water bottles are made up ahead of time, they must be sterilized. The temperature of the water depends on the baby's individual taste. Some babies like water warm, others like it cold.

WHAT ABOUT VITAMINS?

Ask your doctor or pediatrician what he/she recommends.

HOW WILL I KNOW THAT MY BABY IS GROWING WELL?

Your doctor or pediatrician will keep track of:

- Your baby's length
- Your baby's weight
- Your baby's head circumference

These are important measures of your baby's growth!



COMMON FEEDING PROBLEMS

HICCUPS

What are hiccups?

Hiccups are normal for babies and rarely cause them any discomfort. These are caused by the return of air bubbles that were swallowed.

What can I do to help?

The remedy is to allow the baby to continue to suck on water or formula.

COLIC

What is colic?

A cramping or pain in the abdominal/stomach area. The baby will cry and draw their legs up to the abdomen/stomach. This may happen in young infants--usually under 3 months of age.

Sometimes the baby is hungry or has swallowed too much air, or may be afraid, angry, or excited.

Usually, colic is thought of as caused by air or gas. The baby's sucking and swallowing reflexes are at work sometimes when the baby is not eating. He/she may use these when they are overclothed, or thirsty, or even tired.

What can I do to help?

You can try feeding or burping. And, of course, call your doctor or pediatrician.



SPITTING UP AND VOMITING

What is spitting up?

The return of small amounts of swallowed food during or shortly after eating is called spitting up.

Spitting up is common in the first 6 months for many babies. (For some babies, it can last up to 8 or 9 months.)

Some possible reasons include:

- baby has not been properly burped after eating
- baby has been laid to nap after eating with the head lower than the rest of the body
- baby is upset or tense

During the early months, a healthy infant may spit up a small amount at each feeding.

What can I do to help?

- make sure to burp baby
- place baby in the "prone" position (lying with the face downward rather than upward) or the "right lateral" position (on their right side rather than their left side). This helps the food to digest.
- try to comfort baby

This problem begins to improve at about 3 months of age, and is usually gone by 6 months of age.

What is vomiting?

Vomiting is the complete emptying of the stomach.

What can I do to help?

It is best to phone your doctor or pediatrician about this.



DIARRHEA

What is diarrhea?

Diarrhea is frequent loose watery stools.

What can I do to help?

It is best to phone your doctor or pediatrician about this.

CONSTIPATION

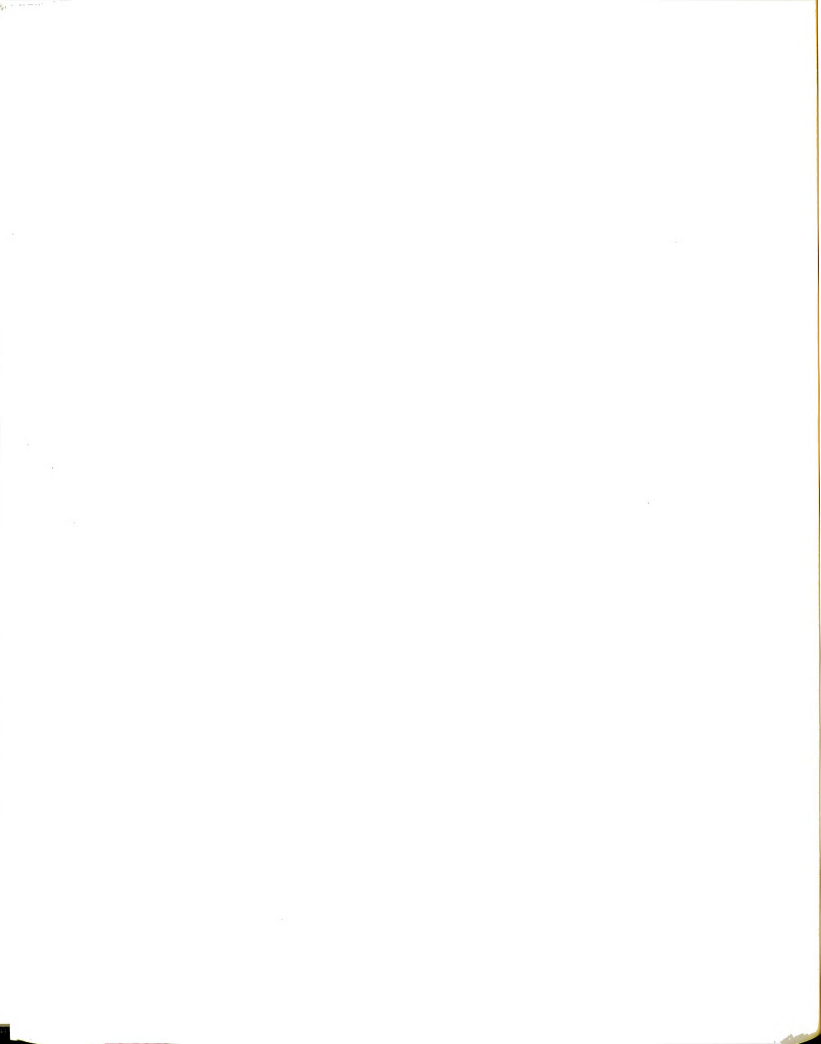
What is constipation?

Most babies have 1 or more stools per day--although some normal infants have stools only once every 36 to 48 hours. (It is the quality rather than the quantity of stools that determines constipation.)

Constipation is hard stools that are difficult for the infant to pass.

What can I do to help?

Increase fluid intake. It is best to phone your doctor or pediatrician about this.



BURPING

Why?

Infants will swallow some air while they take formula. Therefore it is necessary to allow the infant to get rid of the swallowed air at least once for each 2 ounces of milk taken during the feeding--and again at the end of the feeding.

How?

* Demonstrate

The baby can be held upright over the shoulder and gently patted or laid across the lap with his/her head elevated and the back patted and stroked until he/she burps or held in a sitting position with his/her chin supported and the back patted.

You decide what method that you and baby like best!

HOME VISIT #3
CHECKLIST

1) Baby Care Basics

- Review material on pages 14, 15,
18, 19, 20, 23 in "Baby Care Basics"
- > "Do you have any questions about bathing or diapering?"

2) Infant Soothing Techniques

- Review suggestions
- > "Is there anything you have found to be helpful?"

3) Schedule Home Visit #4

- Establish date, time
(= 3 weeks postpartum)
- Leave appointment card

INFANT SOOTHING TECHNIQUES

- Talking to baby
- Singing/music
- Walking
- Swaddling
- Rocking
- Car ride
- Bath/massage
- Pacifier
- Warmth

> Is there anything you have found to be helpful?

When all fails, place baby on stomach in crib and let him/her cry. If possible, have someone you trust take over for a while. You would probably appreciate a break!

HOME VISIT #4
CHECKLIST

1) Infant States/Temperament

- Review material on the Amazing Newborn

> "Do you have any questions about infant states?"

2) Modified Brazelton

- Review material on Brazelton
- Demonstrate Brazelton tasks

> "Do you have any questions about these tasks?"

3) Infant Development

- Review newborn through 12 months in
"How Your Baby Grows"

> "Do you have any questions about growth or development?"

4) Schedule Home Visit #5

- Establish date, time
(= 4 weeks postpartum)
- Leave appointment card



THE AMAZING NEWBORN

The newborn is vital and responsive! From birth, they are ready to learn about their world. All of the newborn's senses are operating--they can see, hear, smell, touch, and cry.

We're going to look at your baby's ability for interaction--but first it is important for us to learn about the different kinds of behavior in a newborn.

There are 6 patterns of behavior, broken into 2 categories:

<u>Sleep</u>	<u>Awake</u>
Quiet sleep	Quiet alert
Active sleep	Active alert
Drowsiness	Crying

SLEEP STATES

Quiet sleep: The infant is at full rest. No body movements except for occasional startles. No eye movements under their lids.

Active sleep: Eyes are closed but body is active. Some facial expression such as smiling or frowning. May suck. Rapid eye movement.

Drowsiness: Lids are droopy. Eyes appear dull. The infant may be still or moving.

AWAKE STATES

Quiet alert: The infant is fully awake and very responsive. Eyes are wide and bright. This is the time for critical interaction between a baby and his/her parents.

Active alert: This is the time when a newborn discovers their arms and legs. They may also experiment with sounds such as coos and gurgles. The active alert state can be thought of as a perfect playtime for baby.

Crying: The infant's eyes are tightly closed. There may be a lot of body movement. Gentle touching, rocking, and holding may help to quiet baby.

MODIFIED BRAZELTON

The Brazelton was designed to test an infant's:

- reactions to objects
- reactions to sounds
- use of their reflexes

When we use the Brazelton, we are able to observe the infant's ability to respond to his/her outside environment.

It is important to understand that the Brazelton usually takes between 20 and 30 minutes, and involves about 30 different tasks!

Today, I would like to show you just a few of these tasks.

It is also important to understand that certain tasks can only be done when the baby is in a certain state.

Vision

Babies can see at birth, but only a distance of about 10 to 12 inches. This is about the distance from the crook of your arm to your face. You need to be close to your baby for him/her to see your face.

TASK #1

By moving a ball 10 to 12 inches above the infant, you can see your baby's ability to focus on and follow an object!

- * It is best not to talk during this task since that might distract him/her
- * It is best for your baby to be in an alert state

Once you get his/her attention, move the ball slowly from side to side. You might try jiggling the ball above your baby to get his/her attention at first.

Hearing

Not only can your baby hear very well at birth, he/she can also turn to the direction of sounds!

TASK #2

If we shake a rattle at the side of his/her head, he/she will move toward the sound!

- * It is best not to talk during this task since that might distract him/her
- * It is best for your baby to be in an alert state

These first two tasks show us that babies are curious. They are interested in the environment that surrounds them!

Reflexes and Strengths

We will look at just a few of your baby's reactions to certain kinds of touch.

TASKS #3, 4, 5, 6

Babinski: Stroke the sole of the foot

Watch for spread of toes!

in Plantar Grasp: Push below toes; place index finger
infant's hand

Watch for curling or tightening of
fingers and toes!

Standing: Support infant under his/her arms and place
in an upright position

Watch for support given by the legs!

Rooting: Stroke cheek or corner of mouth

Watch for head to turn and search for
something to suck!

Of course, babies prefer certain kinds of touch such
as stroking, patting, and holding. Babies even enjoy a
massage such as gently rubbing their back!

Other Senses

So far we have looked at vision, hearing, and
touch.

Babies can also smell. They even have the
the ability to recognize or remember smells!
(Such as your perfume or shampoo.)

Finally, babies can also "talk". Of course, the language of a baby is different from an adult!

The newborn communicates by crying. At about 3 months of age, babies can coo. Then they begin to babble. At about a year of age, they will say their first words!

It is important to talk to babies as they grow and develop. They enjoy the sound of the human voice! Here are some suggestions:

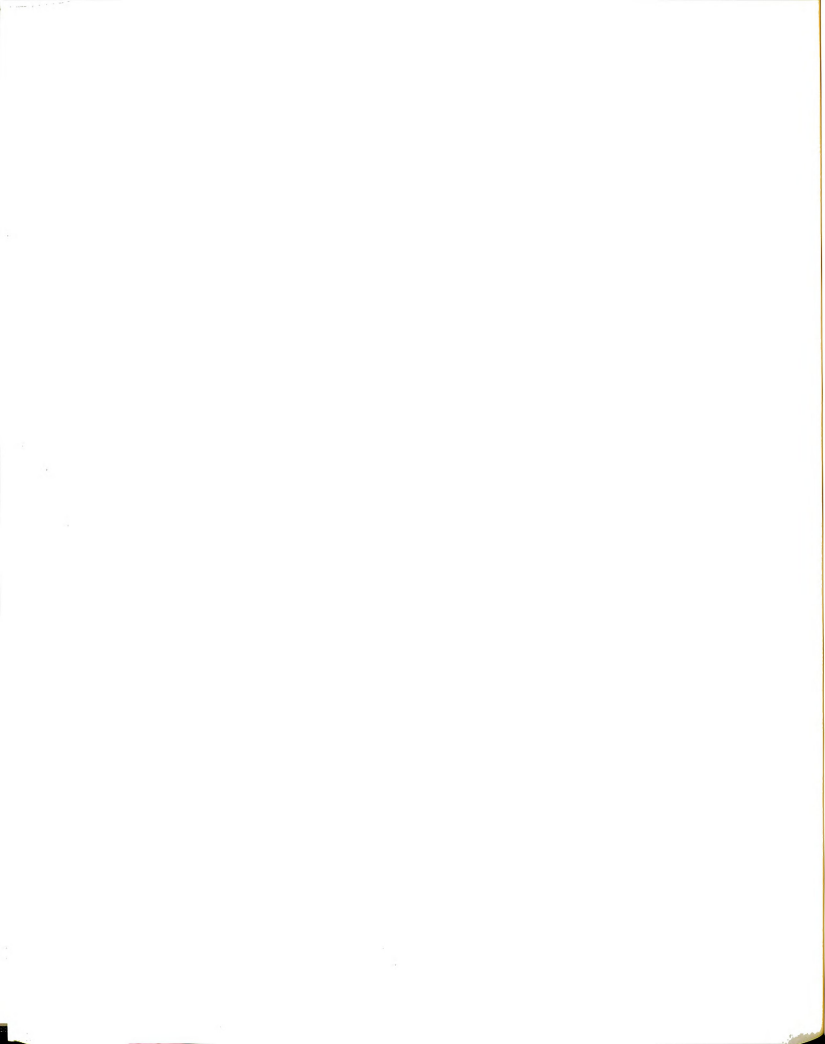
* Demonstrate

Quiet Talk: Rocking, holding and talking to baby at a special time each day.

Back Talk: Imitating and responding to your baby's vocalizations.

Parallel Talk: Saying what the baby is doing while he/she is doing it.

Saying what you are doing while you are doing it.



HOME VISIT #5
CHECKLIST

1) Well Baby Check-Ups

- Review health material

> "Do you have any questions about your baby's check-ups?"

2) Immunizations

- Review schedule on page 15 in "A First Year Guide to Feeding Your Baby"
- Demonstrate chart in back cover of "Baby's Health Record and Formula Feeding Guide"

> "You can take this with you each time to the doctor's office and ask him/her to complete it."

3) Schedule Home Visit #6

- Establish date, time
(= 8 weeks postpartum)
- Leave appointment card



HEALTH

WHY WELL BABY CHECK-UPS?

Your baby should have regular health visits. These visits are important for keeping a check on his/her general health and growth.

WHEN?

During your baby's first year, he/she should visit the doctor at least 5 times. These visits are sometimes called "well baby check-ups".

Of course, it is important to telephone the doctor anytime you are worried about your baby's health.

WHAT WILL HAPPEN?

- a complete physical examination
- immunizations
- a chance for you to ask any questions you might have about your baby (physical problems, care, diet, behavior, etc.)

WHEN ELSE SHOULD MY BABY SEE THE DOCTOR?

- when your baby is ill (vomiting, temperature, etc.)
- when your baby just seems to be acting different-- even if you can't really explain what it is



HOME VISIT #6
CHECKLIST

1) Safety

- Review safety material (in bold print) in "Birth to Birthday Safety"
- Demonstrate emergency choking aid
- Review suggestions for babyproofing home
- Demonstrate home environment check

> "Do you have any questions about safety?"

2) Schedule Home Visit #7

- Establish date, time
(= 12 weeks postpartum)
- Leave appointment card

SUGGESTIONS FOR "BABYPROOFING" HOME

- Insert safety plugs into unused electrical sockets
- Install gates or childproof latches (at basement door or any stairways)
- Move small glass or ceramic knickknacks
- Remove poisons from kitchen, bath
- Beware of unstable furniture that could tip
- Pet food and pet dishes should be out of reach
- Dangerous items (such as scissors, sewing kits, silverware, matches) should not be left out
- Remove or cover control knobs on stove when not in use; keep pot handles turned inward; beware of appliance cords (could pull hot coffee on self)
- Do not leave small objects out (may place in mouth and choke)
- Tape padding on sharp edges of furniture
- Do not leave plastic clothing bags out (may suffocate)
- Keep all doors and drawers closed

HOME ENVIRONMENT CHECK

Whatever room that you and the mother are meeting in (most likely the living room, dining room, or kitchen)--simply point out a few changes that she might make in that room as the baby becomes more mobile.

> "You might "

Also, share with her the suggestion of getting on her hands and knees to survey the room.

> "This is what your baby sees."

HOME VISIT #7
CHECKLIST

1) Closure

- Reminder of final visit
 - Review home visit topic areas
- > "Do you have any questions about any of these things?"

2) Support Systems

- Review support material

3) Community Resources

- Review community resource material
- Review highlighted material in "A Guide to Children's Services in Genesee County"

4) Thank You

- > "Again, thank you for being a part of this study. Your participation is really appreciated!"

CLOSURE

Reminder

This will be my last visit to your home. I want to thank you again for letting me come into your home and visit with you and your baby.

Review

Over the past several weeks, we've talked about a lot of different things.

- Formula preparation
- Feeding schedules & amounts
- Nutrition
- Common feeding problems
- Your baby's physical and social development
- Your baby's ability to respond to you and things in his/her environment
- Caring for your baby (bathing and diapering)
- Well-baby visits & immunizations
- Safety for baby in the home
- Support systems for new parents

All of these things that we've talked about are very important for caring for your baby!

Clarification

Do you have any questions about any of these things?

IDENTIFYING AND BUILDING SUPPORT SYSTEMS

Having others in our lives that we can turn to for help, or information, or friendship--is very important. This is especially true for new parents!

There are two sources of help that may be available to us:

Informal Support Systems

This includes friends, spouses, family members, neighbors, or co-workers.

Formal Support Systems

This includes professional people such as ministers, nurses, doctors, or social workers.

Identifying and building these helping relationships (both formal and informal) can be a source of great personal strength!

COMMUNITY RESOURCES

I would like to leave you this pamphlet, "A Guide to Children's Services in Genesee County". It is divided into different service sections.

I will point out just a few of these service sections:

- Child Care Services
- Health Services
- Emergency Assistance

If you think that you might be interested in any of these services, please telephone them!

Of course, I would like to remind you of Hurley's health services available to infants and children:

- Pediatric Clinic

Monday - Friday 9 a.m. to 3 p.m.
[Appointment only--unless emergency or sick visit.]

- After Hours Clinic

Monday - Friday 5:30 p.m. to 10:30 p.m.
Weekends; Holidays 12 noon to 11 p.m.

Thank You

Again, thank you for being a part of this study. Your participation is really appreciated!

APPENDIX E

FORMULA PREPARATION PERFORMANCE CRITERION CHECKLIST

	<u>Passed</u>	<u>Failed</u>
1. Washed bottles, nipples and pitcher	+	-
2. Boiled bottles and nipples for five minutes	+	-
3. Boiled water for five minutes	+	-
4. Let water cool to touch	+	-
5. Wiped can	+	-
6. Shook can, poured formula into pitcher	+	-
7. Added one part water to one part formula	+	-
8. Poured formula into bottles	+	-
9. Covered pitcher, placed in refrigerator	+	-
10. Made sure that formula was not too hot	+	-
11. Threw out formula left in bottle	+	-

Total Items Passed: _____

FEEDING QUESTIONNAIRE

Please read each of the following statements and select what you consider to be the best answer.

1. During the first year of life, baby may be fed
☐ breast milk or formula
☐ breast milk, formula, or cow's milk
☐ breast milk, formula, cow's milk, or powdered milk
2. Solid foods are usually started
☐ at around 3 months of age
☐ somewhere between 6 and 12 months of age
☐ when the front teeth appear
3. Starting solid foods early may
☐ help baby sleep through the night
☐ give baby extra nutrients
☐ cause food allergies
4. Water is important for baby because
☐ it can help fill up a hungry baby
☐ they lose water more quickly than the adult does
☐ it contains some nutrients and minerals
5. Most infants need approximately ☐ ounces of formula each day.
☐ 11 to 12
☐ 17 to 18
☐ 23 to 24

6. Baby will need about ____ feedings each day.
- ____ 2 to 3
 - ____ 5 to 8
 - ____ 10 to 12
7. ____ babies will probably need more feedings throughout the day.
- ____ smaller
 - ____ larger
 - ____ ill
8. Mothers can tell that their babies are hungry by
- ____ whether or not baby cries
 - ____ keeping track of ounces of milk drank
 - ____ feeding baby at regular meal times
9. To help with hiccups, I might
- ____ allow baby to suck on water or formula
 - ____ rock baby at a rapid pace
 - ____ burp baby
10. To help with colic, I might
- ____ give baby a warm bath
 - ____ try feeding or burping
 - ____ massage baby's tummy

11. A healthy infant may spit up

- ☐ a small amount at each feeding
- ☐ a small amount occasionally
- ☐ only when overfed

12. To help with spitting up, I might

- ☐ give baby less milk or food
- ☐ give baby more milk or food
- ☐ burp baby more times

13. It may take ____ to ____ to complete a feeding.

- ☐ 5 to 10 minutes
- ☐ 10 to 20 minutes
- ☐ 20 to 60 minutes

14. If baby is vomiting, I should

- ☐ stop giving milk for that day
- ☐ give more water to replace lost fluids
- ☐ telephone the doctor

15. If baby is constipated, I might try

- ☐ feeding solid foods
- ☐ putting sugar in the milk
- ☐ increasing fluids

16. It is best to burp baby

- ☐ at the end of the feeding
- ☐ for each 2 ounces of milk taken
- ☐ only if baby seems slow to eat

17. To burp baby it is best to

- ☐ pat the back gently
- ☐ pat the back firmly
- ☐ stroke the stomach

18. If baby does not finish a bottle, you should

- ☐ cover tightly and place in refrigerator
- ☐ throw away any formula baby does not finish
- ☐ encourage baby to finish bottle

19. Bottles and equipment should be boiled for ____ minutes.

- ☐ five
- ☐ ten
- ☐ fifteen

20. Prepared formula should be refrigerated and used within

- ☐ 3 hours
- ☐ 12 hours
- ☐ 48 hours

21. When preparing formula, you should use

- ☐ 1 part mix to 1 part water
- ☐ 1 part mix to 2 parts water
- ☐ 1 part mix to 3 parts water

22. The purpose of sterilization is to

- ☐ stop the growth of bacteria in the milk
- ☐ prevent colic
- ☐ prevent constipation

23. To make sure that the formula is not too hot you should

- ☐ dip one finger in the bottle
- ☐ taste the formula
- ☐ shake some milk on your wrist

24. You should prop a bottle for feeding

- ☐ at night time only
- ☐ whenever you are busy
- ☐ never if possible

25. Baby may have a three-meals-per-day adult schedule at approximately

- ☐ 3 months of age
- ☐ 6 months of age
- ☐ 12 months of age

INFANT CARE QUESTIONNAIRE

Please read each of the following statements and select what you consider to be the best answer.

1. If possible, it is best to give baby a bath
____ daily
____ every other day
____ once each week
2. A tub bath is usually recommended
____ as soon as navel and circumcision are healed
____ when baby can sit on his/her own
____ at about one year of age
3. For the first few days or weeks of life, _____ is usually recommended.
____ a sponge bath
____ a tub bath
____ no bath
4. It is necessary to change a baby's diaper _____ times each day.
____ 2 to 4
____ 4 to 6
____ 6 to 8

5. To protect baby from diaper rash you might use
____ vaseline
____ corn starch
____ cream
6. When cleansing baby, _____ the skin folds and creases.
____ do not disturb
____ pay special attention to
____ lubricate
7. The genital area should
____ be cleaned daily
____ not be touched
____ be cleaned occasionally
8. It is important to keep baby's skin
____ moisturized
____ fresh and dry
____ protected from air
9. When using disposable diapers, you should
____ also use plastic pants
____ avoid oversized diapers
____ tape very tightly
10. The most frequent cause of baby skin problems is
____ soiled or soggy diapers
____ the use of too many lotions or creams
____ exposure to hot or cold air

SAFETY QUESTIONNAIRE

Please read each of the following statements and select what you consider to be the best answer.

1. If baby is choking on a foreign object, you should first

- ☐ Lay baby face down and give 4 back blows rapidly between the shoulder blades with the heel of your hand
- ☐ Open your mouth wide and cover the baby's mouth and nose giving puffs of air about every 3 seconds
- ☐ Hold baby upside down by the feet and shake until object comes loose

2. If baby has swallowed a poisonous substance, you should first

- ☐ Induce vomiting with syrup of ipecac
- ☐ Call the Poison Control Center
- ☐ Take baby's temperature and telephone the doctor

3. To prevent baby from getting into medicine or cleaning products, probably the best thing to do is

- ☐ Keep these products out of baby's reach
- ☐ Watch baby every minute
- ☐ Place childproof locks on cabinets

4. When bathing baby, the number one safety precaution is

- ☐ A water level of no more than 6 inches
- ☐ Remaining in the room at all times
- ☐ Water that is warm to the touch

5. Parents need to "babyproof" a home when their baby is
- ☐ 2-3 months of age or when baby can grasp objects
 - ☐ 6-9 months of age or when baby begins crawling
 - ☐ 12 months of age or when baby may begin walking

6. A good practice to protect baby from electrical shock is to

- ☐ Place tape over all socket openings
- ☐ Insert safety plugs into unused sockets
- ☐ Put heavy furniture in front of sockets

7. When is it okay to leave baby alone in the house?

- ☐ If baby is sleeping, and you will be gone only a short time
- ☐ If baby is placed in the crib with the sides up, and you will be gone only a short time
- ☐ It is never okay to leave baby alone

8. When the stove is not in use, it is best to

- ☐ Unplug it
- ☐ Remove control knobs
- ☐ Keep baby out of room

9. If furniture has sharp edges, you might

- ☐ Teach baby to avoid
- ☐ Tape edges
- ☐ Watch baby closely

10. When driving in a car with baby, keep the windows near baby

- ☐ Closed
- ☐ Opened a few inches
- ☐ Whatever way baby prefers

11. For a young infant, the car safety seat should

- ☐ Face toward the front
- ☐ Face backwards
- ☐ Be placed in the front seat

12. Federal regulations specify that crib slats can't be more than _____ inches apart.

- ☐ 2 and three-eighths
- ☐ 3 and three-eighths
- ☐ 4 and three-eighths

13. It is best to keep the crib equipped with

- ☐ A low-hanging mobile
- ☐ Soft pillows
- ☐ A favorite toy

14. A good location for the crib is in

- ☐ Your bedroom near you
- ☐ A corner away from windows
- ☐ A busy room for easy watching

15. Plastic bags should be

- ☐ Kept far away from baby
- ☐ Thrown away immediately
- ☐ Placed in a high cabinet

16. When baby is using the high chair or on the changing table

- ☐ Place rugs on the floor beneath
- ☐ Hold baby down with one hand
- ☐ Use safety straps

17. To protect baby from basement or any stairway you could

- ☐ Always keep these doors closed
- ☐ Install gates or childproof latches
- ☐ Carpet the stairs

18. Glass or ceramic knickknacks

- ☐ Can remain in room if baby is watched closely
- ☐ Should probably be put away for now
- ☐ May help to entertain baby

19. Pet food and pet dishes

- ☐ Pose no real threat to baby
- ☐ May be messy if baby tips over
- ☐ Should be out of baby's reach

20. Because baby may try to chew on electrical cords or pull down on them, you might

- ☐ Use cord shorteners
- ☐ Make sure cords are not frayed
- ☐ Wrap tape around cords

HEALTH QUESTIONNAIRE

Please read each of the following statements and select what you consider to be the best answer.

1. During baby's first year, he/she will probably visit the doctor about _____ time/s for check-ups.

_____ one

_____ three

_____ five

2. Regular health visits are important

_____ when baby may be ill

_____ for keeping a check on growth

_____ if baby has a handicap

3. You can telephone the doctor

_____ anytime you are worried about baby's health

_____ only when baby is very ill

_____ if he/she has given permission

4. Immunizations usually begin at _____ of age.

_____ 2 months

_____ 6 months

_____ 1 year

5. During a regular check-up, you can ask questions about

- ☐ physical problems
- ☐ physical problems and diet
- ☐ physical problems, diet, and care instructions

6. In the first year of life, baby should receive immunizations for

- ☐ polio
- ☐ polio, DTP (Diphtheria, Tetanus, Pertussis)
- ☐ polio, DTP (Diphtheria, Tetanus, Pertussis), and a TB test (Tuberculin)

7. In the second year of life, baby should receive immunizations for

- ☐ polio, DTP (Diphtheria, Tetanus, Pertussis)
- ☐ polio, DTP (Diphtheria, Tetanus, Pertussis), measles, German measles
- ☐ polio, DTP (Diphtheria, Tetanus, Pertussis), measles, German measles, mumps, HbPv (Haemophilus b Polysaccharide Vaccine)

8. Records of baby's immunizations should be kept by

- ☐ a doctor
- ☐ a doctor and the hospital
- ☐ a doctor and you

9. Good nutrition is especially important during infancy because

- ☐ baby can't use vitamin supplements
- ☐ this is a time of very rapid growth
- ☐ you can control his/her diet

10. A good diet will help your baby

_____ grow

_____ grow and fight infections

_____ grow, fight infections, and get better faster when
sick

CLINIC RECORDS CHECKLIST

Subject: _____
 Staff: _____
 Date: _____

Routine Visit

Immunization 6-Month Schedule:

Age	Immunization	Date Received
2 months	DTP	/ /
	Polio	/ /
4 months	DTP	/ /
	Polio	/ /
6 months	DTP	/ /
	Polio	/ /

General Care Comments:

Hygiene

_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/

Attitude

_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/

Overall Wellbeing

_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/

Number of Visits:

0 1 2 3 4

Sick/Emergency Visit

Reason:

_____	/	/
_____	/	/
_____	/	/
_____	/	/
_____	/	/

General Care Comments:

Hygiene

_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/

Attitude

_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/

Overall Wellbeing

_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/
_____	+	-
_____	/	/

Number of Visits:

0 1 2 3 4

PARENTAL ATTITUDE RESEARCH INSTRUMENT

The following questionnaire includes a series of statements. Please read each statement and decide how STRONGLY you AGREE or DISAGREE with the statement on a scale from 1 to 4. Circle the appropriate number. Please read each statement; it is important not to skip any statement. Do not spend too much time with any one statement. Trust your first thought.

	STRONGLY AGREE		STRONGLY DISAGREE	
1. Strict discipline develops a strong person who knows right from wrong.	1	2	3	4
2. When a child thinks his parent is wrong he should say so.	1	2	3	4
3. A mother should make it her business to know everything her children are thinking.	1	2	3	4
4. Children have a right to rebel and be stubborn sometimes.	1	2	3	4
5. Most children are trained to use the potty by 15 months of age.	1	2	3	4
6. Parents shouldn't feel they have to give up important things for their children.	1	2	3	4
7. Children should be encouraged to undertake tough jobs if they want to.	1	2	3	4
8. The trouble with giving attention to children's problems is they usually just make up a lot of stories to keep you interested.	1	2	3	4
9. A parent should keep control of their temper even when children are demanding.	1	2	3	4
10. Having to be with the children all the time gives a woman the feeling she is tied down.	1	2	3	4
11. Strict training makes children unhappy.	1	2	3	4

	STRONGLY AGREE		STRONGLY DISAGREE	
12. If a child acts mean he needs understanding rather than punishment.	1	2	3	4
13. A wise parent will teach a child early just who is boss.	1	2	3	4
14. There is nothing worse than letting a child hear criticisms of his parents.	1	2	3	4
15. A child's thoughts and ideas are his own business.	1	2	3	4
16. A child should take all the time he wants to before he learns to walk.	1	2	3	4
17. A parent must expect to give up their own happiness for their child's happiness.	1	2	3	4
18. A child should learn that he has to be disappointed sometimes.	1	2	3	4
19. A child should never keep a secret from his parents.	1	2	3	4
20. A parent should be concerned with any problem of a child no matter how small.	1	2	3	4
21. Most parents never get to the point where they can't stand their children.	1	2	3	4
22. Most young mothers are upset more by the feeling of being shut up in the home than by anything else.	1	2	3	4
23. Toilet training should be put off until the child shows that he is ready.	1	2	3	4
24. Almost any problem can be settled by quietly talking it over.	1	2	3	4
25. Children who are held to strict rules grow up to be the best adults.	1	2	3	4

	STRONGLY AGREE		STRONGLY DISAGREE	
26. Taking care of a home doesn't have to coop a woman up.	1	2	3	4
27. If a parent is wrong he should admit it to his child.	1	2	3	4
28. A good parent should protect their child from life's little problems.	1	2	3	4
29. Few women get enough thanks for all they have done for their children.	1	2	3	4
30. Most parents can spend all day with their children and remain calm and pleasant.	1	2	3	4

PARENTAL ATTITUDE RESEARCH INSTRUMENT

The following questionnaire includes a series of statements. Please read each statement and decide how STRONGLY you AGREE or DISAGREE with the statement on a scale from 1 to 4. Circle the appropriate number. Please read each statement; it is important not to skip any statement. Do not spend too much time with any one statement. Trust your first thought.

	STRONGLY AGREE		STRONGLY DISAGREE	
1. A child will be glad later on that he had strict training.	1	2	3	4
2. Some children are just so bad they must be taught to fear grown-ups for their own good.	1	2	3	4
3. Children have every right to question their parents' opinions.	1	2	3	4
4. Children are entitled to keep their own secrets.	1	2	3	4
5. The sooner a child learns to walk the better he's trained.	1	2	3	4
6. There is no reason why a parent can't be happy and make their child happy too.	1	2	3	4
7. A good parent lets their child learn the hard way about life.	1	2	3	4
8. Children bother you with all their little problems if you aren't careful from the first.	1	2	3	4
9. Raising children is an easy job.	1	2	3	4
10. A young parent feels "held down" because there are lots of things they want to do while still young.	1	2	3	4
11. If children are given too many rules they will grow up to be unhappy adults.	1	2	3	4
12. A child should never be taught to fear grown-ups.	1	2	3	4

	STRONGLY AGREE		STRONGLY DISAGREE	
13. A parent should never be made to look wrong in a child's eyes.	1	2	3	4
14. A parent should always be concerned about upset feelings in a child.	1	2	3	4
15. A child should be taken off the bottle or breast as soon as possible.	1	2	3	4
16. Children should realize how much parents have to give up for them.	1	2	3	4
17. Children have to face difficult situations on their own.	1	2	3	4
18. A parent should always be concerned about upset feelings in a child.	1	2	3	4
19. Parents very often feel that they can't stand their children a minute longer.	1	2	3	4
20. Most young parents are pretty content with home life.	1	2	3	4
21. Strict training will make a child resent his parents later on.	1	2	3	4
22. More parents should teach their children to always be loyal to them no matter what.	1	2	3	4
23. You can't make a child behave by cracking down on him.	1	2	3	4
24. Very few children are trained to use the potty by 15 months of age.	1	2	3	4
25. It is a parent's duty to make sure they know their child's deepest thoughts.	1	2	3	4
26. Children don't "owe" their mothers anything.	1	2	3	4
27. A child needs to be emotionally close to its parents for a long time.	1	2	3	4

	STRONGLY AGREE		STRONGLY DISAGREE	
28. A mother should do her best to avoid any disappointment for her child.	1	2	3	4
29. Not many parents can be pleasant and calm with their children all day.	1	2	3	4
30. One of the worst things about taking care of a home is that a woman feels that she can't get out.	1	2	3	4

COMPETENCY

This questionnaire was designed to help us understand the feelings and experiences of the first-time parent. Please answer the following questions.

1. What do you check for when your baby awakes crying?

< Clarification: What kinds of things do you look for?
What do you think might be the problem?

Is there anything else you might check for?

2. If a baby seems difficult to comfort, what are some suggestions you might offer a new mother returning from the hospital?

< Clarification: If a baby is fussy or crying, what -?

Are there any other suggestions you might offer?

3. If you were uncertain about how to handle a problem with your baby's care, which person or persons might you contact?

< Clarification: For example, if you experienced difficulty in feeding the baby, or there was a problem with diaper rash.

Is there anyone else you might contact?

4. As your baby becomes more mobile (able to crawl, walk), what are some changes you might make in your home in order to provide him/her with a safer environment?

< Clarification: How might you childproof your home?

Are there any other changes you might make?

5. Under what conditions or circumstances would you contact your baby's doctor?

< Clarification: What kinds of changes in your baby's behavior would prompt you to contact the doctor?

Is there anything else?

6. Many parents experience difficulty when introducing solid foods into their baby's diet (he/she may resist eating). How might you handle such a problem?

< Clarification: What are some things you might do to make the meal time run more smoothly?

Is there anything else you might try?

7. Managing the behavior of the young child (1-3 years) can become quite a chore. What are some methods of discipline you might experiment with?

< Clarification: What are some different ways you might manage that trying behavior?

Is there anything else you might try?

8. Raising a child can be a very demanding job. What suggestions might you share with a new parent about how to reduce the pressures or stresses in parenting?

< Clarification: When you were feeling tense or tired, what sort of things did you do that seemed to help?

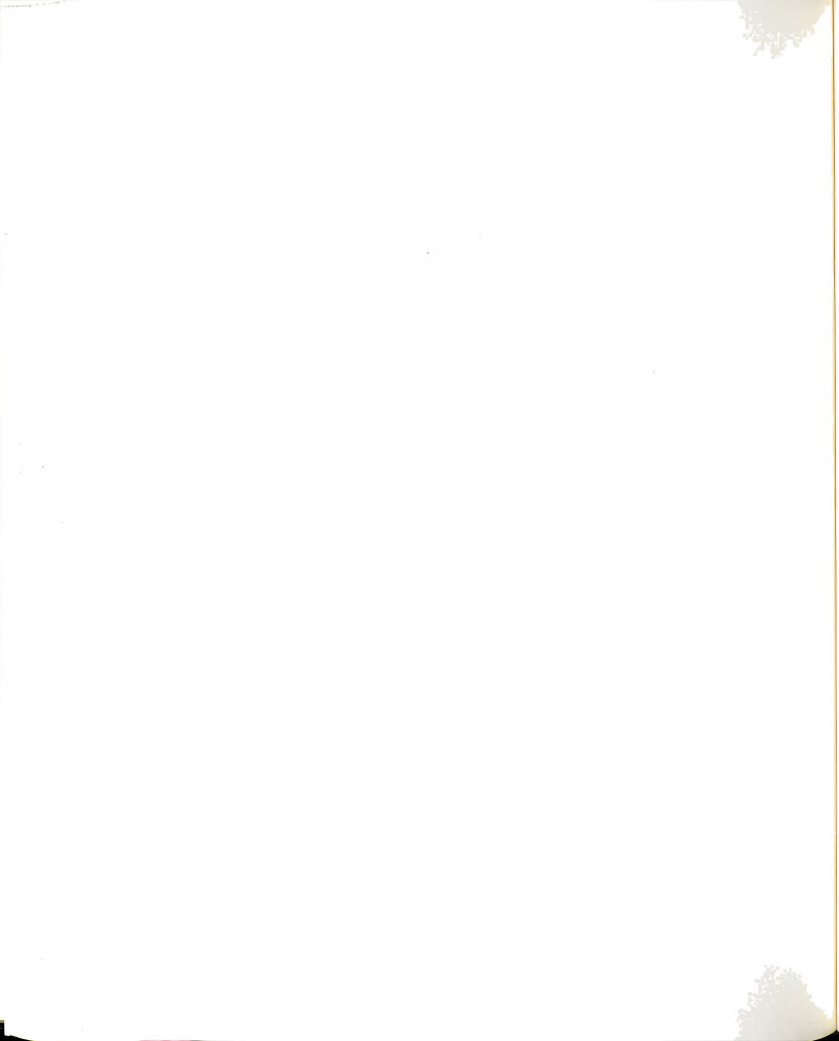
Anything else?

THANK YOU!

MOTHER-INFANT INTERACTION:
VERBAL STIMULATION

- | | | |
|-------|--------------------|---|
| _____ | 1. Parallel | Mother varballizes infant's behavior or performance as infant is engaged in activity. Must refer to a specific physical action. |
| _____ | 2. Mood Expression | Mother defines infant's mood states. May include an estimation of infant's likes/dislikes. |
| _____ | 3. Explanatory | Mother offers a causal interpretation of infant's behavior or mood state. |
| _____ | 4. Back Talk | Mother attempts to imitate infant's vocalizations. (Immediately follows infant's vocalizations.) |
| _____ | 5. Musical | Mother sings or hums. |
| _____ | 6. Amusement | Mother engages in laughter. |
| _____ | 7. Instruction | Mother tells the infant the name of some object in a teaching style. |
| _____ | 8. Informative | Mother describes/details some aspect of her actions. |
| _____ | 9. Personhood | Mother calls child by name. |
| _____ | 10. Endearment | Mother uses "pet" names for infant.) |
| _____ | 11. Affection | Mother expresses fondness of infant. |
| _____ | 12. Admiration | Mother praises baby's qualities or behaviors. |

- | | | |
|-------|-----------------|---|
| _____ | 13. Investigate | Mother asks question of infant. |
| _____ | 14. Responsive | Mother provides answer to question. |
| _____ | 15. Repetition | Mother repeats sentence/message
(must follow immediately). |
| _____ | 16. Need | Mother makes request of infant. |
| _____ | 17. Global | Mother makes reference to things
other than caretaking activities
that are occurring. Apart from
immediate time/setting. |



HOME OBSERVATION FOR MEASUREMENT
OF THE ENVIRONMENT
(Birth to Three Years)

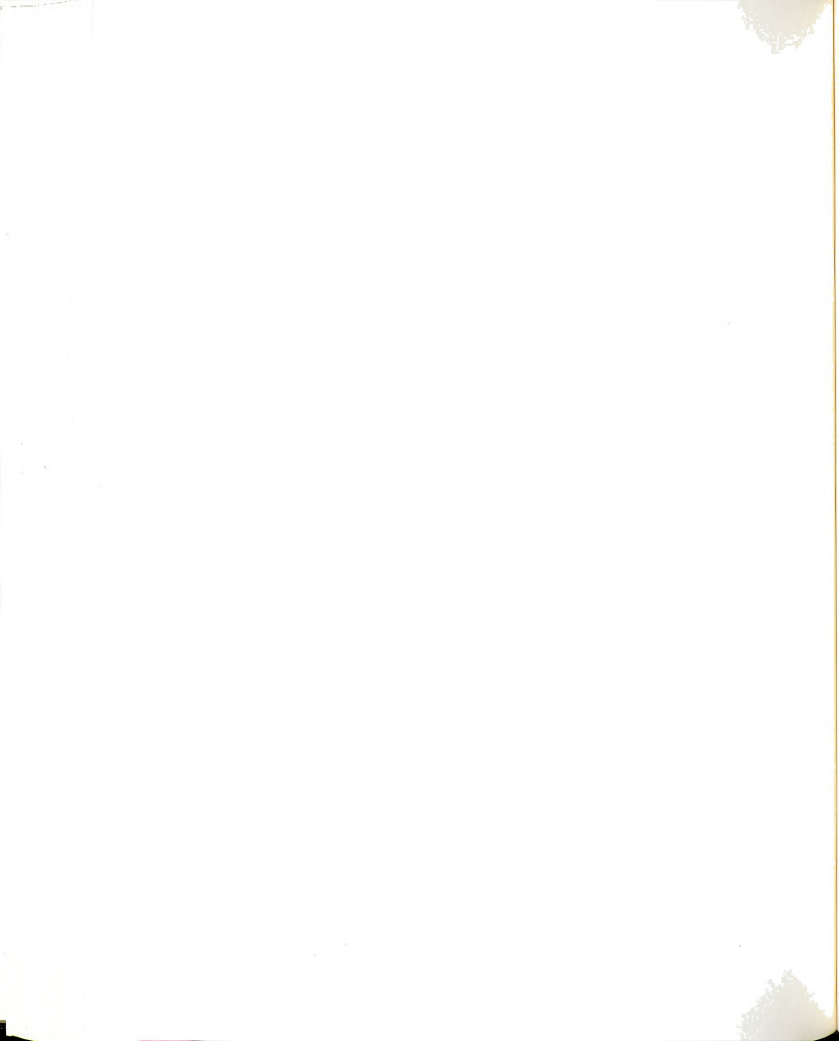
Section I: Emotional and Verbal Responsivity of Mother

1. Mother spontaneously vocalizes to child at least twice during visit (excluding scolding).
2. Mother responds to child's vocalizations with verbal response.
3. Mother tells child the name of some object during visit or says name or person or object in a teaching style.
4. Mother's speech is distinct, clear and audible.
5. Mother initiates verbal interchanges with observer--asks questions, makes spontaneous comments.
6. Mother expresses ideas freely and easily and uses statements of appropriate length for conversations.
7. Mother permits child occasionally to engage in messy types of play.
8. Mother spontaneously praises the child's qualities or behavior twice during visit.
9. When speaking of or to child, mother's voice conveys positive feeling.
10. Mother caresses or kisses child at least once during visit.
11. Mother shows some positive emotional responses to praise of child offered by visitor.

Subscale Total (No. of Yes Answers): ____

Section II: Avoidance of Restriction and Punishment

12. Mother does not shout at child during visit.
13. Mother does not express overt annoyance with or hostility toward child.
14. Mother neither slaps nor spansks child during visit.



Section II: Avoidance of Restriction and Punishment cont.

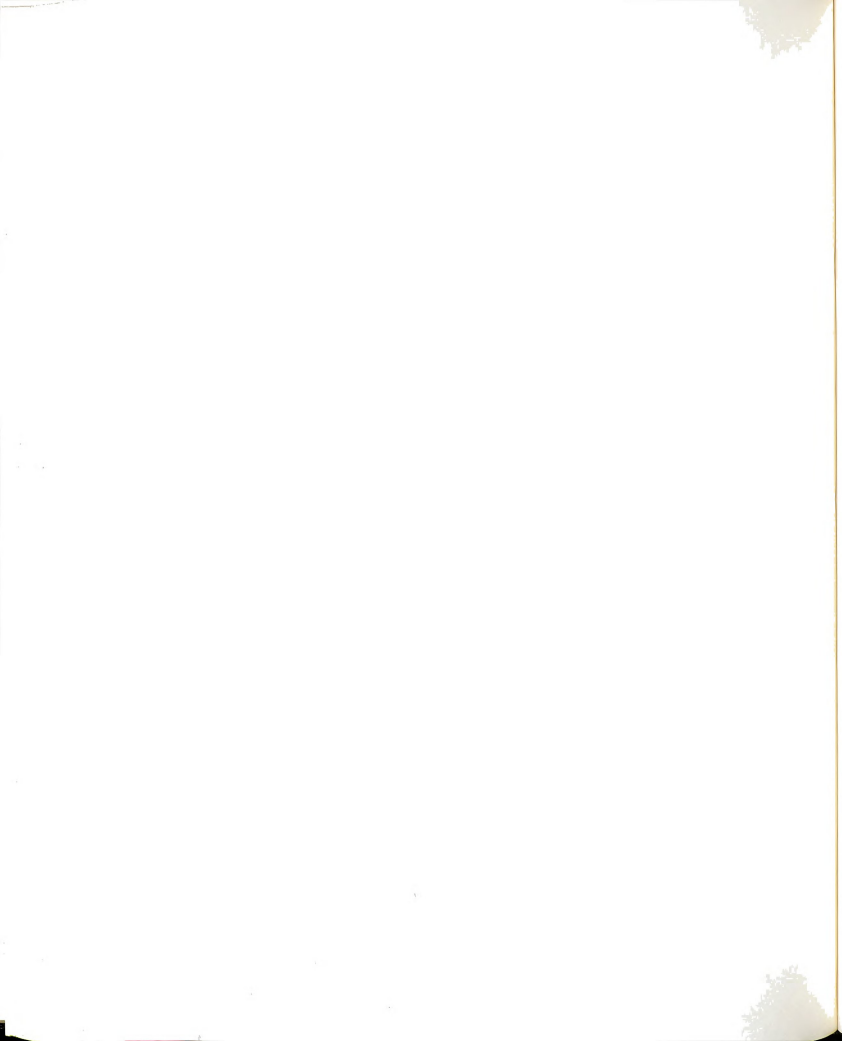
15. Mother reports that no more than one instance of physical punishment occurred during the past week.
16. Mother does not scold or derogate child during visit.
17. Mother does not interfere with child's actions or restrict child's movements more than 3 times during visit.
18. At least ten books are present and visible.
19. Family has a pet.

Subscale Total (No. of Yes Answers): ____

Section III: Organization of Environment

20. When mother is away, care is provided by one of three regular substitutes.
21. Someone takes child into grocery store at least once a week.
22. Child gets out of house at least four times a week.
23. Child is taken regularly to doctor's office or clinic.
24. Child has a special place in which to keep his toys and treasures.
25. Child's play environment appears safe and free of hazards.

Subscale Total (No. of Yes Answers): ____



Infant Measures

Growth

Two chart forms were employed. These were as follows:

Girls: Birth to 36 Months
Physical Growth
NCHS Percentiles *

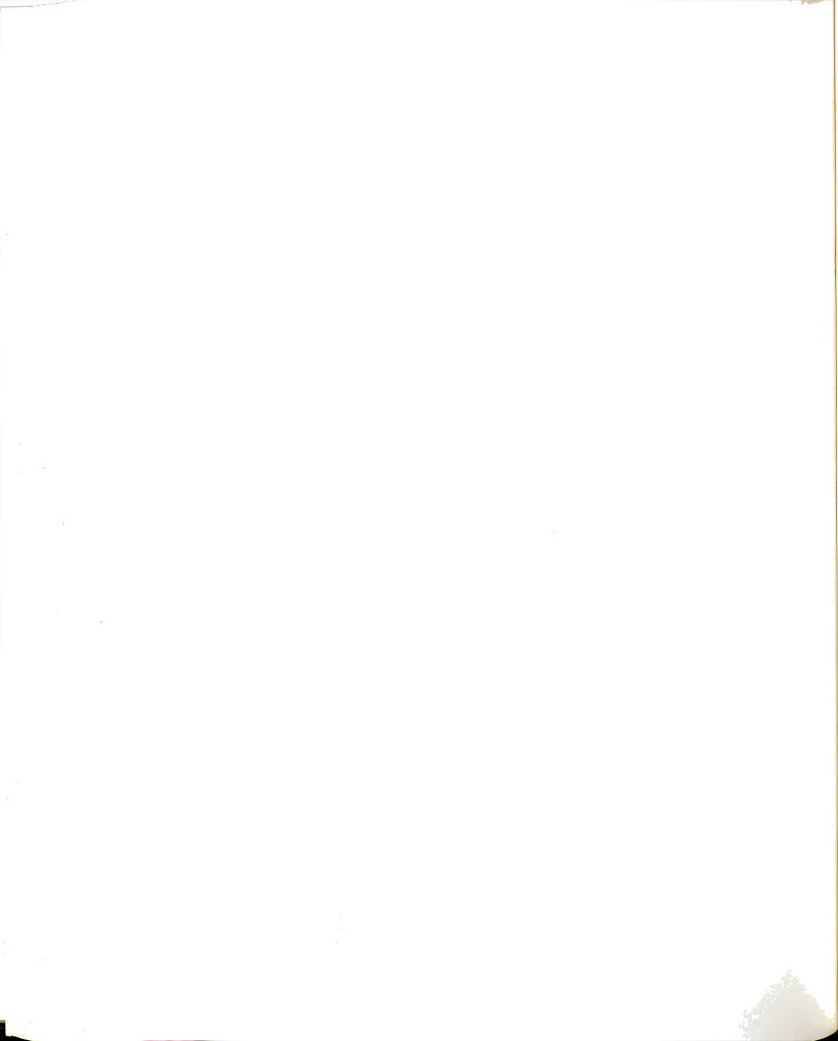
Boys: Birth to 36 Months
Physical Growth
NCHS Percentiles *

* National Center for Health Statistics percentiles.

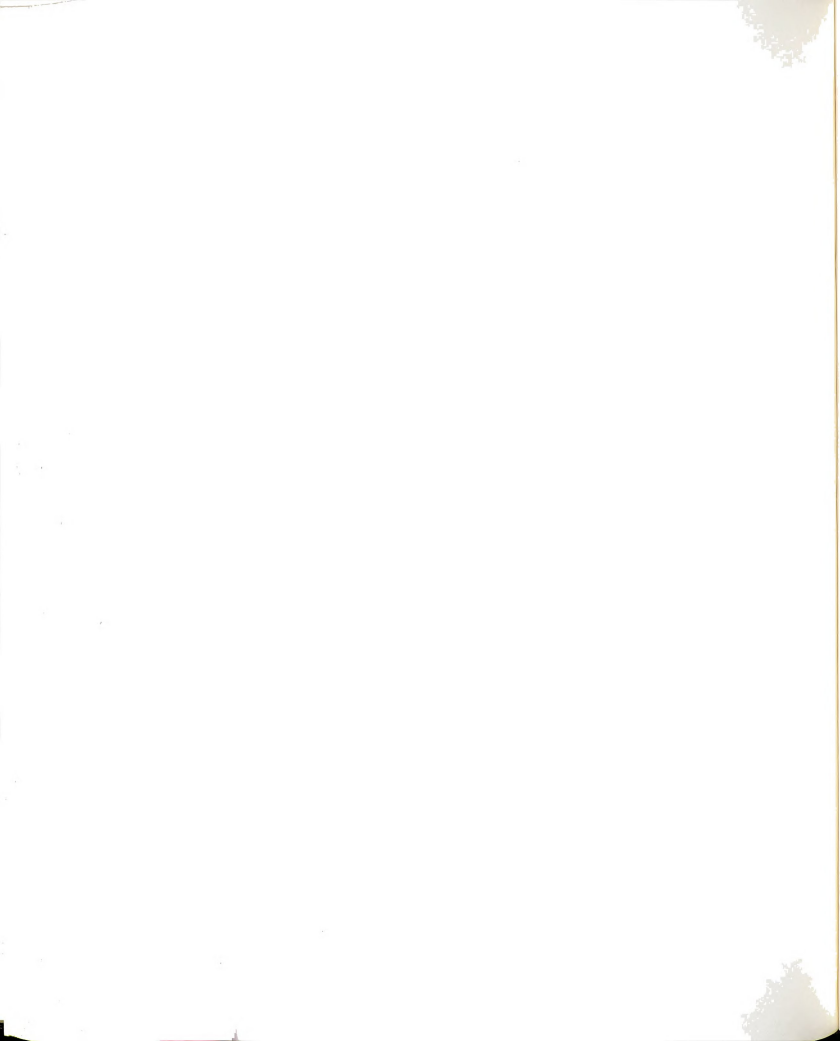
Development

Denver Developmental Screening Test forms were employed.
The form was as follows:

Revised DDST-R



APPENDIX F



CODING GUIDE

ADVICE/INFORMATION:

- I. Follow manual (student nurse copy) while listening to tape to check for any omissions in the four areas listed below:

a. Instructions

b. Questions

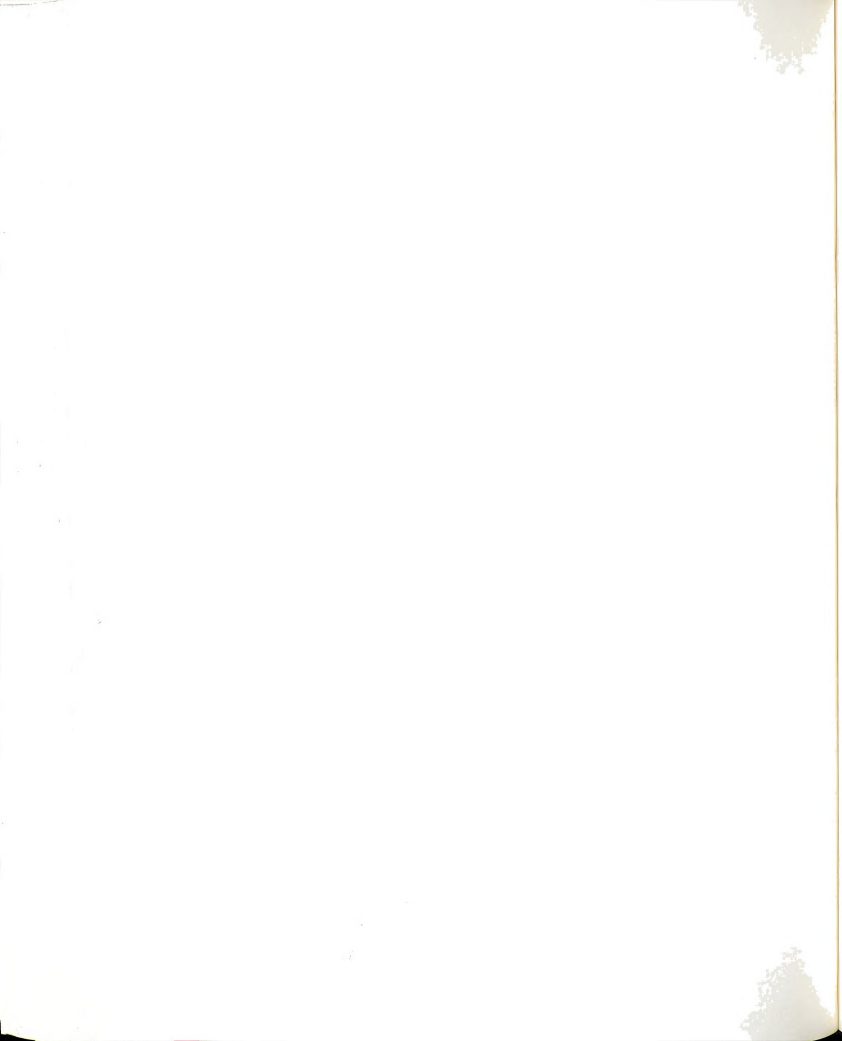
c. Demonstrations

d. Handouts

Total number of omissions: ___ ___

- II. If student nurse provided any additional information please record below:

Total number of additions: ___ ___



EMOTIONAL AIDE:

I. Empathy/Sensitivity

a. Student nurse verbalized mother's
concerns or feelings

b. Student nurse reassured mother

c. Student nurse shared a personal
story or incident

Total number: ___

II. Facilitation of Information Gathering

a. Student nurse encouraged additional
questions

b. Student nurse confirmed mother's
understanding of material

c. Student nurse displayed positive
response to mother's questions

Total number: ___

III. Positive Regard

a. Student nurse praised infant

b. Student nurse praised mother

Total number: ___

SOCIALIZATION:

Length of Visit

Total number of minutes: ___

- - - - - - - - - - -

ADVICE/INFORMATION: ___ (=additions)

EMOTIONAL AIDE: ___

SOCIALIZATION: ___

TOTAL: ___





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