DIFFERENCES IN ATTITUDES AND COPING BEHAVIOR BETWEEN NEW MOTHERS WHO BREAST FEED AND NEW MOTHERS WHO BOTTLE FEED

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Introduction

It is said that the mother makes the major adjustment to children in our culture (LeMasters, 1957). Parenthood is a critical period in the life cycle and is seen by some researchers as a time of crisis because the addition of a new member to the small family system constitutes a drastic reorganization of previously existing roles and relationships (Dyer, 1963; LeMasters, 1957). Studies show that the arrival of the first born to the family unit is "a period of transition which is somewhat stressful,"but not of crisis proportions (Hobbs, 1965; Hobbs, 1968; p. 417). Certainly, childbirth of the first born generates a range of strong, sometimes conflicting, emotions.

The way that an individual meets life's stresses, challenges, and experiences is a reflection of his ability to cope. Pregnancy, childbirth, and the postpartum period constitute a time of psychological upheaval in a woman's life (Bibring, Dwyer, Huntington, & Valenstein, 1961). For the new mother, especially, the simultaneous physiological, social and emotional changes involved, demand immediate reactive behavior based on limited prior skills, experiences, and problem solving abilities. Adaptive coping behavior can be defined as that which enables her to manage this life experience in ways that generate learning and growth, rather

than despair and helplessness (Zeitlin, 1980). The most extensive attempt at studying coping behavior was completed by Lois B. Murphy and her colleagues at the Menninger Foundation in Topeka, Kansas (Murphy & Moriarty, 1976). Their research on children's reactions to stress is a definitive piece of work that helps to illuminate the whole area of coping and adaptive behavior. Murphy used coping as a general term to include "defense mechanisms, active ways of solving problems, and methods for handling stress that do not come under the heading of defense mechanisms and problem solving methods" (p. 5). The present study used Murphy's definition in its examination of mother's coping behavior. Individuals develop their own particular coping styles as a result of the interaction between internal and external influences. These coping styles evolve and change over time. According to Murphy and others who have adapted her work (Zeitlin, 1980), coping devices can be characterized as both active and passive, flexible and rigid, productive and non-productive, each in their own right, attempts to deal with the specific feelings and frustrations of a situation. Murphy contended that coping styles must be seen in relation to the types of situations as they are experienced by the individual. Insofar as the present research was concerned, the question was raised as to whether the decision to choose breast feeding as compared to bottle feeding was

related to a new mother's ability to cope with parenthood.

It would seem reasonable to assume that, in fact, a new mother's attitudes and ability to cope are related to her choice of feeding method. In the first few months of life, much of the infant's time awake is devoted to satisfying his need of hunger. The mother and child interaction that ensues forms the basis of a more lasting relationship. Maternal-child attachment may indeed be a factor in shaping a mother's attitudes and in building adequate coping mechanisms. Modahl and Newton (1979) completed a study which explored differences in mood patterns between mothers who were both breast and bottle feeding. Their contention was that "consistent maternal mood patterns may mediate the quality of affectional bonding between mother and child" (p. 819). Using the Curran & Cattel Eight State Mood Questionnaire (8SQ), the authors compared the mood states of 34 mothers who regularly both breast fed <u>and</u> bottle fed their infants. Three experimental groups were formed by random selection of subjects: Group A--testing during breast feeding; Group B--testing during bottle feeding; and Group C (Control)--testing when not feeding. It was found that mothers measured during bottle feeding (Group B) showed significantly more anxiety, stress, depression, regression, fatigue, and guilt as measured by the 8SQ than both control group mothers and mothers measured during breast feeding. In ad-

dition, Group B also differentiated significantly from the control group by scoring higher on the extroversion scale as well. There were no differences between the three groups on the arousal mood scale. Mothers who were tested during breast feeding did not differ significantly from control group mothers on any of the eight mood states measured. Hence, a mother's mood state during breast feeding was consistent with her mood when not feeding. A shift in mood was exhibited during bottle feeding alone.

Ainsworth and Tracy (1972) provided evidence that the mother-infant interaction during feeding in the first three months had a significant effect on later attachment behavior, feeding problems, and other "oral" problems not directly related to feeding. Other authors have taken the position that the maternal-infant bond is formed, in part, by the unique breast feeding relationship between mother and child which unlike artificial feeding, provides a special multisensoral stimulation, security and closeness for the infant (Jelliffee & Jelliffee, 1976, 1977; Newton, 1972; Sugarman, 1977).

Human milk has also been cited to have superior chemical properties which result in fewer respiratory and gastrointestinal infections in infancy, lower incidence of food allergies, asthma, and allergic diseases, and possible protection against obesity, colitis, coeliac disease, dental

caries, and orthodontic problems (Gerrard, 1974; Jelliffee & Jelliffee, 1976, 1977; Martin & Beal, 1978; McLaren & Burman, 1976; Sugarman, 1977). In this light, breast feeding can be viewed as a preventive measure which may enable the infant to stay healthy, and therefore, be easier to handle.

Since Freud's articulation of orality as a central concept in the understanding of personality, infant nurturance has been under extensive investigation. Quite a number of studies before and after psychoanalytic theory have explored the influence of the feeding experience on the child's subsequent development (Bernstein, 1955; Broad, 1972, 1973; Childers & Hamil, 1932; Davis & Ruiz, 1965; Dorner & Grychtolik, 1978; Heinstein, 1963; Hoefer & Hardy, 1929; Maslow & Szilagyi-Kessler, 1946; Menkes, 1977; Newton, 1951, 1971, 1972; Orlansky, 1949; Peterson & Spano, 1941; Rodgers, 1978; Rogerson & Rogerson, 1939; Sears, Maccoby & Levin, 1957; Sewell & Mussen, 1952; Thurston & Mussen, 1951). Results are contradictory, however, when it comes to demonstrating that breast feeding is superior to bottle feeding or that the length of breast feeding is a factor in promoting better psychological, intellectual and/or behavioral development in the child later on. In most cases, maternal personality or attitudinal variables were not explored.

One of the earliest investigations into attitude and personality differences as a result of the feeding technique

was conducted by Niles Newton (1955). All 123 multiparae in the study, mostly black Protestant postpartum patients in an inner city hospital, initially breast fed their infants. Significant differences among the mothers were found upon their leaving the hospital. Those women who expressed a desire to bottle feed were more negative about their pregnancy, childbirth and baby care responsibilities.

Two studies reported similar reasons for a mother's choice either to breast feed or bottle feed her infant (Bacon & Wylie, 1976; Brown, Lieberman, Winston & Pleshette, 1960). The main motives to breast feed were based on the feelings that it was the best for the baby and more enjoyable for him. The main reasons mothers gave for choosing the bottle were that they would be embarrassed by breast feeding and that breast feeding would probably tie them down too much. Thus, breast feeders gave "affectionately nurturant" reasons for their choice, while bottle feeders gave "narcissistic" reasons (Brown, et al., p. 427). Other common reasons for breast feeding reported by Bacon and Wylie, and in many cases found by Brown and his associates as well, included satisfaction for the mother, establishment of a better relationship with the child, breast feeding was cheaper and more convenient, curiosity about trying it, breast feeding was an instinctive thing to do, and finally, because of benefits in hygiene, protection against infec-

tion, and faster involution of the uterus. Their survey found that mothers chose bottle feeding as a preferable technique because of a better social life, the convenience of bottle feeding, medical advice given not to breast feed, no inclination to breast feed, worries that their breasts were too small, their figure might be spoiled, and that there were no reassurances about how much milk was consumed by a baby at the breast. More minor reasons for bottle feeding included ability of the husband to share in the feeding, fear that an older sibling might be jealous, and that bottle feeding was a more modern and hygienic technique. The two studies also indicated that the influence of others as to choice of feeding method was negligible in both feeding groups.

In an earlier investigation by Sears, Maccoby and Levin (1957), mothers who were bottle feeders expressed a number of the same attitudes listed above. In this study, the childrearing methods of 379 American mothers were examined over a period of the baby's birth until kindergarten age. Of the mothers in their sample, 60% did not breast feed, and of those who did, the large majority breast fed for less than three months. A comparison of breast and bottle feeding mothers revealed no differences among the two groups in feelings of rejection or coldness toward the infant or mother's lack of self esteem. However, they reported significant differences with regard to mother's feelings about

sex. Mothers who bottle fed appeared to "have a strong sense of modesty, or anxiety about sex in general" (p. 77). Moreover, mothers who breast fed were significantly more tolerant in the control and training of their children with respect to modesty, masturbation, and social sex play. Masters and Johnson (1960) also noted that breast feeding mothers as a group had more positive feelings about sex and were more solicitous of an earlier return to sexual relations with their husbands. Furthermore, Newton (1972) found that more bottle feeding mothers held the belief that men have a more satisfying time in life.

The most recent examination of attitudes and differences between mothers who breast feed and mothers who bottle feed was conducted by Switzky, Vietze and Switzky (1979). The two feeding groups were formed among 83 middle class mothers of 6 week old infants, half of each group being primiparae and the other half, multiparae. Breast feeding mothers were identified as those having a higher level of education, more breast feeding friends, and husbands who expressed more support for their choice of feeding method. Decisions on mode of feeding were typically arrived at before the lying-in period for both groups. On the Parental Attitude Research Instrument (PARI), bottle feeding mothers indicated significantly more conflict within their marriages. Moreover, higher measures of marital discord, rejection of

the homemaking role, and inconsiderateness of the husband distinguished the bottle feeding group from the breast feeding group, although these three variables did not reach significance. Bottle feeding mothers were also found to be in favor of accelerating the development of their youngsters while breast feeding mothers were more inclined to let their children develop at their own pace. Finally, breast feeders were strongly in favor of nursing as opposed to bottle feeders who were either neutral or negative about it. Although both primiparae and multiparae were observed in equal numbers, the data were not analyzed separately. Not only would this have been interesting in all areas, but as the authors mentioned, it could have clouded the effects observed in others.

A few studies have focused on the relationship between infant feeding technique and mother's personality. Adams (1959) took 58 primiparae, of which 35 breast fed and 23 bottle fed. Results indicated that within the bottle feeding group there was greater dependency, rejection of the child, dissatisfaction with the sexual role, and psychosexual disturbance. As measured by the Blacky Test, there was significantly greater personality disorder with regard to orality, anal expulsiveness, positive identification, sibling rivalry, guilt feelings, positive ego ideal, and narcissism. The breast feeding group was significantly more

disturbed on only the penis-envy variable. The author cautioned the inclination to generalize such results to "any given single case" since overlapping between the two groups was prevalent (p. 146).

In a study by Chamberlain (1976), 60 multiparous mothers were chosen on the basis of (a) unrestricted breast feeding [("the practice of freely allowing and encouraging breast sucking of the infant for several months" (p. 31)]; and (b) total artificial feeding. Mothers within the breast feeding category were less defensive about their feeding choice and more oriented toward home life. On the Cattell 16PF Scale, they also scored higher on the trait of radicalism, distinguishing them as freer thinkers, better informed, having a willingness to experiment and a desire to persuade others toward one's own point of view. The artificial feeding mothers confirmed that they had problems breast feeding their first child due to inadequate lactation, which the author interpreted as a psychosomatic reaction. Moreover, as a group, they scored higher on the trait of surgency, indicating increased gaiety, enthusiasm, effervescence, impulsiveness, and an increase in conversion reaction symptoms (hysteria) and sexual anomalies. On the Darbes-Michael Child Behavior Q Sort, there was a greater congruence between nursing mothers' attitudes toward their children's actual and ideal behavior, and a tendency toward freer acceptance of

childlike behavior. Artificial feeding mothers, on the other hand, appeared to idealize their children as other-oriented rather than self-oriented, which Chamberlain declared "may be in direct conflict with typical child behavior" (p. 33). Chamberlain also indicated the need for further research on the topic.

Golub (1978) observed 41 middle class mothers, 20 who were breast feeding and 21 who were bottle feeding their infants. No significant differences were found between the two groups on the Adjective Check List (ACL), but significant differences were found when both groups of mothers were combined and compared with the normative data derived from the ACL scales. Responses to a questionnaire found economic factors, reading, baby's and mother's health, personal gratification, and the experiences of others to differentiate between the breast and bottle feeding groups.

Field (1977) reported that there were no differences between mothers who either breast or bottle fed in the amounts of maternal stimulation given to their normal four month old infants during feeding. The two groups were characterized as "sensitive" to the timing of stimulation so as not to disturb the feeding interaction. In both feeding groups, stimulation was reserved to the longer rest periods or interruptions of sucking when the nipple was out of the infant's mouth.

A comprehensive study reported recently in the literature (Grubb, 1980) described how new mothers (multigravidas) perceive time in relation to themselves and others during the first postpartal month. The author used a mother's perception of time most effectively to illustrate the personal and familial stress and disorganization of life so soon after childbirth. Her report described the mothers' efforts to prevent further stress and to reorganize their own lives and the lives of their families which were in a state of disequilibrium due to the birth of their new babies. In comparing breast feeding and bottle feeding mothers, Grubb reported that those women who were nursing felt significantly more pressured for time for themselves and for their babies than bottle feeding mothers. Breast feeding mothers used more time to organize, gather information and evaluate attributes about themselves and their babies than did bottle feeding mothers. All new mothers experienced disorientation of time in relation to their babies' schedule, when their babies needed care and how long it took. Breast feeding mothers apparently felt more disoriented by the organization of events in time than did bottle feeding mothers and made more signficant statements about time's effect on their behavior. All new mothers made the same number of statements reflecting not enough time.

Whether or not a woman should breast feed her newborn is apparently an age old issue. This practice, ever charged with highly controversial elements, was challenged even before the advent of modern technology and the introduction of artificial feeding. According to writings of the English Puritans, both physical and psychological advantages were to be derived from a mother breast feeding her infant, rather than employing a wet nurse for this purpose. The Puritans argued that a mother's milk was more natural for a child than a stranger's milk; that the qualities necessary to shape the infant's future character and behavior were passed on in his mother's milk; and that an infant learned of his mother's love and in turn then loved her through the act of nursing (Schnucker, 1974). With the turn of the century, alternatives to nursing became the issue, substantiated by scientific methodology and far removed from Puritan ethic. "During the 1920's, symbols of female emancipation--bobbed hair, short skirts, the contraceptive diaphragm, cigarettes, feeding bottles--were all regarded as symbols of freedom from the home" (Jelliffee, 1976, p. 236). Moreover, the female breast became regarded as mainly erotic rather than nurturing. The infant food industry, with the "modern" technique of bottle feeding at its core, became dominant in the lives of American women who could afford

this new fashion. With widespread advertising and promotional campaigns, compounded by public ignorance about nutrition, it eventually drew in the lower class as well. It is only within the past decade that women are returning to breast feeding (Pryor, 1973), and a renewed interest in its influence vis-a-vis bottle feeding has been generated.

The current research elected to investigate one aspect of the breast vs. bottle feeding issue. The null hypothesis was chosen to examine whether differences in attitudes and coping behavior existed between new mothers who breast feed and new mothers who bottle feed (assuming that under the null hypothesis there are no differences). Primiparae were studied because (a) choice of feeding technique would not be biased by former success or failure with a particular method used with an older child; (b) in making the transition to parenthood, ability to cope and former attitudes would not be influenced by any prior childrearing experience (i.e. former attitudes or adaptive measures would not be part of the mother's intellectual and behavioral repertoire); and (c) addition of the first born would alter the family system most radically so that old patterns of roles and relationships would be subject to change. The specific variables selected for observation included coping behavior, attitude toward self (as an individual), attitude toward motherhood (feelings about self as a mother and about the baby), attitude toward childrear-

ing, and attitude toward marriage. Each variable was evaluated as follows:

Coping behavior was described using an adaptive coping inventory. Coping style (ability to meet own individual needs and to adapt to demands of the environment) was characterized as productive (competent, satisfying, and socially responsible behavior), active (behavior that sets things in motion and perpetuates this motion), and flexible (adaptable behavior chosen from a wide range of strategies).

Attitude toward self was defined and described according to a standardized measure of self evaluation.

Attitude towrd motherhood was evaluated using a neonatal perception inventory which provides a mother's assessment of the average baby and of her own baby, thus, "tapping the mother's unconscious fantasies regarding her newborn" (Broussard, cited in Erickson, 1976, p. 73) and revealing her own feelings about herself as a mother.

Attitude toward childrearing was derived from 12 scales which form one major factor of a family life attitude inventory--(a) Discouraging Verbalization (rejection of child's feelings, anxieties, conflicts, disagreements with parental policies), (b) Seclusion of the Mother (a measure of social adjustment; how confined and tied to the home a mother feels as a result of her childrearing responsibilities), (c) Breaking the Will (attitude toward obedience),

(d) Martyrdom (a mother's feelings of self sacrifice as a result of her childrearing responsibilities), (e) Strictness (attitude toward discipline), (f) Exclusion of Outside Influences (parental control and authoritarian attitudes), (g) Deification (idealization of parental role), (h) Parental Control (control over all aspects of family life; negation of the notion of cooperation and partnership), (i) Approval of Activity (acceptance of child's social behavior), (j) Suppression of Sexuality (attitude toward child's sex education), (k) Intrusiveness (interference in child's personal life), (l) Parental Un-Involvement (rejection of the notion of comradeship and sharing).

Attitude toward marriage was evaluated according to six scales related to marital adjustment, which constitute a second major factor of the family life attitude inventory --(a) Marital Conflict (marital tension resulting from quarreling and dissension between the mother and her spouse), (b) Irritability (marital tension resulting from the mother "blowing up" because of her anger and annoyance with the child, (c) Rejection of the Homemaking Role (marital tension resulting from the mother's dissatisfaction with her duties of caring for the home and for the child), (d) Inconsiderateness of the Husband (the mother's projection of negative feelings about her spouse), (e) Ascendancy of the Mother (the extent to which the mother plans to domin-

ate the family), (f) Dependency of the Mother (the extent to which the mother relies on others for consistent support and security).

In addition to the five variables just described, demographic and pre and postnatal characteristics were rated.

This study was unique in its attempts to determine differences between the attitudes and coping styles of first time mothers in the early months of parenthood on the basis of their choice of feeding technique. The combination of numbers of variables, types of measures used, and in particular, interest in the variable of coping itself, set this study apart from others in the literature.

Method

Subjects

The total number of mothers in the sample was 78. Two groups were formed with 39 mothers in each. Group 1 was made up of mothers who were breast feeding (breast feeding with no more than one supplement a day). Group 2 consisted of mothers who were bottle feeding (total artificial feeding). Participants were chosen of volunteers from private pediatric groups and private referrals in the New York metropolitan area meeting the following criteria: middle class, Caucasian primiparae, ages 20 - 40, with 6 - 10 week old infants delivered healthy and at term. Mothers

were chosen with babies in the 6 - 10 week old age range based on Feldman's postulation that the impact of parenthood hits only after the first four to six weeks (Feldman, cited in Hobbs, 1965). According to Feldman, couples are initially elated with their new experiences of parenthood, and participate in a "baby honeymoon" during the baby's first weeks of life (p. 371).

Measures

General Questionnaire. Demographic data and pre and postnatal characteristics of the population were measured from items on a general questionnaire (see Appendix A).

The Coping Inventory: A Measure of Adaptive Behavior (Zeitlin, 1980). The Coping Inventory was used in this study to measure the variable of coping behavior. The Coping Inventory is a criterion referenced culture fair assessment instrument used with children and adults. It was developed from research by Lois B. Murphy and associates at the Menninger Foundation (Murphy & Moriarty, 1976), and tested with typical and handicapped chldren of varying ages and cultural backgrounds. There are 48 items related to adaptive coping, rated on a scale of 1 - 5 (1 = no or very little minimal competency to 5 = competent and effective behavior). Adaptive coping is defined as behavior which is appropriately responsive to the demands of the environment, while facilitating solutions that enhance

efforts to care for oneself and generating learning that can be applied to new situations (Zeitlin, 1980, p. 1). The results may be summarized in an Adaptive Behavior Index, a profile describing coping style, and listing behaviors that facilitate or interfere with adaptive coping. The Coping Inventory has two categories--Coping with Self, and Coping with Environment. Within each category there are three dimensions: Productive, Active and Flexible. There are 12 scores generated. Since half of these are total scores, only six were subject to statistical analysis in the present study: (1) Self-Productive; (2)Self-Active; (3) Self-Flexible; (4) Environment-Productive; (5) Environment-Active; and (6) Environment-Flexible.

Validity and reliability were established as a result of a number of samples using field testing (Zeitlin, 1980). Murphy's 1976 longitudinal study yielded a factor analysis of behaviors most related to adaptive coping. This formed the basis of the Inventory test items. Three field test samples and personal consultations with Murphy resulted in the final 48 item inventory where "the wording of items was made more rigorous and the language describing the rating scale was made consistent" (Zeitlin, 1980, p. 4). Four trained observers determined inter-observer reliability on 81 of 103 children (total: 4 handicapped and 59 non-handicapped). Reliability coefficients were significant

($p < .001$) for all 12 scores of the Inventory.

Scores	Handicapped	Non-handicapped
Self-Productive	.866	.802
Environment-Productive	.943	.872
Self-Active	.886	.805
Environment-Active	.892	.843
Self-Flexible	.892	.837
Environment-Flexible	.781	.781
Productive-Total	.920	.875
Active-Total	.909	.884
Flexible-Total	.864	.849
Self-Total	.896	.858
Environment-Total	.928	.891
Coping-Total	.920	.895

A high degree of reliability and a low standard error of measurement was also found based on split-half reliability computations (SE_m = .083 for the handicapped group; and SE_m = .099 for the non-handicapped group). The Inventory was found to adequately discriminate between the adaptive behaviors of the handicapped and non-handicapped groups. Significant and consistent differences between the scores of the two groups were shown. The Coping Inventory was described as a single factor instrument measuring "general coping behavior".

Zeitlin has developed two forms of the Coping Inventory, one designed for observer rating of children, and the other, a self-rating inventory designed for adults. The adult self-report inventory is a direct adaptation of the one standardized for children and was found to be adequate for use in the present study. Zeitlin considers the formal characteristics most related to adaptive coping as dynamically the same

throughout life. The self-rating form of the Coping Inventory has been used with individual parents, parent groups, personnel training groups, growth and stress management groups, for instruction of high school and college students, and for research and therapy.

The Adjective Check List (Gough & Heilbrun, 1980). The Adjective Check List (ACL) is an alphabetic list of 300 adjectives, and was used in the present study to elicit a mother's self evaluation. Individuals are asked to respond by marking those adjectives that are self-descriptive. Data analysis yield 37 scales which can be compared either by standard scores converted from raw scores or by notation of high and low scores on each scale. The 37 scales include four related to the manner in which the individual has dealt with the check list itself, 15 need scales, nine scales dealing with different components of interpersonal behavior, five scales derived from transactional analysis theory, and four scales used to assess creativity (or "origence") and intelligence.

Reliability was determined from samples of 591 males and 588 females. Test-retest correlations were determined on 199 males and 45 females. Reliability coefficients for females were reported as follows:

Modus Operandi Scales	Alpha	Test-Retest
1. Number of adjectives checked	---	---
2. Number of favorable adjectives	.94	.85
3. Number of unfavorable adjectives	.91	.76
4. Community	.66	.52
Need Scales		
5. Achievement	.82	.73
6. Dominance	.78	.78
7. Endurance	.77	.61
8. Order	.78	.65
9. Intraception	.77	.59
10. Nurturance	.83	.78
11. Affiliation	.87	.66
12. Heterosexuality	.71	.71
13. Exhibition	.75	.86
14. Autonomy	.68	.77
15. Aggression	.74	.85
16. Change	.62	.71
17. Succorance	.64	.64
18. Abasement	.69	.68
19. Deference	.71	.75
Topical Scales		
20. Counseling Readiness	.53	.59
21. Self-Control	.71	.76
22. Self-Confidence	.77	.78
23. Personal Adjustment	.66	.55
24. Ideal Self Scale	.76	.78
25. Creative Personality Scale	.63	.70
26. Military Leadership Scale	.69	.56
27. Masculine Attributes Scale	.75	.51
28. Feminine Attributes Scale	.76	.45
Transactional Analysis Scales		
29. Critical Parent	.77	.75
30. Nurturing Parent	.77	.73
31. Adult	.77	.71
32. Free Child	.76	.82
33. Adapted Child	.79	.64
Origence-Intelligence		
34. A-1 (High O, low I)	.69	.45
35. A-2 (High O, high I)	.76	.45
36. A-3 (Low O, low I)	.72	.67
37. A-4 (Low O, high I)	.80	.66

Factor analysis yielded six factors: Factor 1--Potency (with 20 significant loadings, accounting for 43% of the variance); Factor 2--Assertiveness (with 16 significant loadings, accounting for 15% of the variance); Factor 3--Socia-

bility (with 19 significant loadings, accounting for 29% of the variance); Factor 4--Individuality (with four significant loadings, accounting for 5% of the variance; Factor 5--Dissatisfaction (with five significant loadings, accounting for 5% of the variance); and Factor 6--Constriction (with three significant loadings, accounting for 3% of the variance). All scales, except for Number of Adjectives Checked, resulted in significant loadings of ± .30 on one or more factors. Factors 1 - 6 were used in the present study to determine mother's attitude towards self.

Gough and Heilbrun also offer a simple formula for identifying random or spurious answer sheets:

$$2\ \text{Com} + \text{Mls} - \text{Unfav.}$$

Scores below 20 suggest that the protocol is undependable; scores between 20 and 50 suggest the possibility of randomness; and scores of 50 or above counterindicate an invalid protocol.

Much has been done to support the validity of the ACL. The authors attempted to insure content validity in their efforts to base the test items on classic research and well established theory and methodology (for example, using the work of Allport and Odbert, Cattell, Mueller, Murray, Berne, and Welsh, among others). Content validity has been further established in item analysis (Gough &

Heilbrun, 1980; Parker & Veldman, 1969; Scarr, 1966) and in item interpretation (Fiske & Barack, 1976). In the latter, Fiske and Barack asked subjects to respond to each ACL adjective with a synonym. These diverse synonyms were combined to form modal scales which resulted in reliabilities comparable to those for the original scales and to the intercorrelations among the scales. Thus illustrated, were the internal consistencies of the scales and the extrinsic convergent validity of the scales with each other.

Two studies using the multimethod-multitrait matrix of Campbell and Fiske (cited in Bouchard, 1968; cited in Poe, 1969) established the convergent and discriminant validity of the ACL along with the Edwards Personal Preference Schedule (EPPS). Bouchard also used a Self-Rating Schedule (SRS) and the California Psychological Inventory (CPI) while Poe added a normative modification of the EPPS (N-EPPS). Bouchard examined the three variables of Dominance, Endurance & Order which all met the criterion of convergent validity, and all but Endurance met the criteria of discriminant validity. Poe used all 15 need scales of the instruments and concluded that the criteria of convergent and discriminant validity were met. Both authors suggested nonetheless, possible refinement of the ACL because of the apparent item overlap.

Construct validity has been supported by the authors

in a number of different studies with adults, and in comparison of the ACL with other measures (Gough, 1960; Gough & Heilbrun, 1980; Heilbrun, 1958, 1959, 1962). Correlations of the ACL scales with observer trait ratings or trait rankings provided important validity information as did correlations of self report protocols with matching observer protocols, and finally, correlations of the ACL scales with other measures of personality (CPI, MMPI, EPPS, Terman Concept Mastery Test).

Further evidence for construct validity has been reported by Scarr (1966) who demonstrated the validity of the ACL scales for a population of young children, and Parker (1969) who provided validity information for the ACL Femininity Scale. Other applications of the ACL are provided by the authors in the revised 1980 manual. They reported examples of research using the ACL in studying cultural archetypes, in psychobiographical analyses, in environmental psychology, in investigating stereotypes, in assessing the concept of the ideal self, and finally, in cross-cultural settings. Predictive validity was established in one cross-cultural study reported where academic performance at the high school level was found to be predictable from brief combinations of ACL scales (Gough & Riva, cited in Gough & Heilbrun, 1980).

Face validity was established by Golub (1978) who compared both breast and bottle feeding groups of mothers with ACL normative data, and found differences that one would expect from the particular population under investigation.

In the past, the ACL has generated contradictory evaluations. However, in 1980 a major revision was published (the first since its initial publication in 1965) which introduced 15 new scales, presented normative data for almost 10,000 subjects, summarized significant research and indicated the enormous popularity and widespread use of the instrument - 26th in a list of the 100 most frequently used and cited tests in psychology (Buros, 1978). Moreover, even most critics point out "its utility for research, its economical assessment of general adjustment" (Vance, cited in Buros, 1972, p. 78) and its "moderate noncontroversial terms appropriate for reasonably intelligent, well educated subjects" (Rorer, cited in Buros, 1972, p. 77).

Neonatal Perception Inventory (NPI). The present study used the NPI II to measure attitude toward motherhood. The NPI is an assessment tool designed by Broussard and Hartner (1970, 1971, cited in Erickson, 1976; cited in Powell, 1981) to elicit a mother's perception of her infant. It results in data measuring the mother's perception of the average baby and her perception of her own baby. According to the authors, maternal qualities can also be extrapolated from this

data. The NPI evaluates six behavioral dimensions: crying, feeding, spitting up, sleeping, bowel movements, and settling down. Each behavioral item in a Your Baby Perception Inventory and an Average Baby Perception Inventory is scored on a five point scale ranging from "a great deal", "a good bit", "a moderate amount", "very little", or "none". Values of 1 to 5 are given to each of the six items in each inventory: 1 for "none" to 5 for "a great deal". The numerical scores of each item are added and the total score of the Your Baby Inventory is subtracted from the total score of the Average Baby Inventory. A positive score indicates a favorable perception of the infant, whereas a negative score indicates a less favorable perception by the mother. Broussard proposes that a new mother who does not rate her infant as better than the average, may be unconsciously asking for help herself. The rating may, in fact, indicate that she too might be vulnerable, feeling overwhelmed and unable to cope with the stresses of parenthood. Broussard found that mothers whose ratings were zero or negative seemed to have "a very low self esteem, lack confidence in themselves as individuals and as mothers, and have difficulty in understanding the infant's cues and responding to the infant's needs" (Broussard, cited in Erickson, 1976, p. 75). It was reported that the NPI II has shown construct, criterion, and predictive validity (Erickson, 1976).

The NPI was developed on a normative sample of 318 primiparae with one month old infants. Results from the six NPI scales were significantly correlated with four scales of Schaefer's Postnatal Research Inventory. When the children reached between 4½ years old and 4 years, 10 months, 120 of the original study population were evaluated according to the GAP classification code, and divided into categories according to an apparent need for therapeutic intervention. These results were compared with a Probability of Risk rating of the children based on their NPI results at one month of age. A statistically significant association was observed between the prediction and outcome. Maternal scores on the four scales of Schaefer's Postnatal Research Inventory were also significantly correlated with the need for intervention at age 4½ years. Of the original and follow-up sample, 104 children were evaluated again when they ranged in age from 10 years, 3 months to 11 years, 9 months. Demographic data were comparable with the data for the original population. Broussard and Hartner found almost identical proportions of children rated at high risk at ages 10 - 11 as they did in the original and follow-up age groups. The authors concluded that "the critical variable associated with the child's emotional development in this study is judged to be the mother's early perception of him. This relationship appears to be independent of the

educational level of either parent, father's occupation, changes in income, maternal age, type of delivery, family size, or occurrence of tonsillectomy" (Broussard, cited in Powell, 1981, p. 93).

Parental Attitude Research Instrument (PARI). The PARI is a Likert-type test developed by Schaefer and Bell (1958). It is an inventory of attitudes on family life and children, and was used in the present study to measure the variables of attitude toward childrearing and attitude toward marriage. The scales and their reliabilities were estimated with Kuder Richardson Formula 20 (KR20), yielding 23 subscales of five items each:

Equalitarianism	KR 20 = .40
Suppression of Aggression	KR 20 = .67
Breaking the Will	KR 20 = .60
Strictness	KR 20 = .69
Intrusiveness	KR 20 = .76
Suppression of Sex	KR 20 = .63
Acceleration of Development	KR 20 = .65
Comradeship and Sharing	KR 20 = .60
Deification	KR 20 = .55
Martyrdom	KR 20 = .67
Encouraging Verbalization	KR 20 = .34
Seclusion of the Mother	KR 20 = .70
Dependency of the Mother	KR 20 = .54
Fear of Harming the Baby	KR 20 = .72
Marital Conflict	KR 20 = .69
Irritability	KR 20 = .63
Excluding Outside Influences	KR 20 = .63
Rejection of the Homemaking Role	KR 20 = .68
Avoidance of Communication	KR 20 = .57
Ascendancy of the Mother	KR 20 = .71
Inconsiderateness of the Husband	KR 20 = .69
Approval of Activity	KR 20 = .45
Fostering Dependency	KR 20 = .77

Test-retest reliabilities were reported as good, and the authors cited their literature review as evidence supporting the concurrent validity of this general approach to the study of parental attitudes. Each item in the PARI is scored as follows: strongly agree = 4; mildly agree = 3; mildly disagree = 2; and strongly disagree =1. For each PARI scale, scores could range from 20 (strongly agree) to 5 (strongly disagree).

Follow-up studies on the PARI by Zuckerman and coworkers (Zuckerman, 1959; Zuckerman & Norton, 1958; Zuckerman & Norton, 1961; Zuckerman, Ribback, Monashkin & Norton, 1958) and by Becker and Krug (1965) reported on the factor analysis of the PARI items and on the influence of three response set biases: the acquiescence set, opposition set and extreme set. Zuckerman offered an alternative form of PARI (the original called Q1; the alternative called Q2) to accomplish the control and measurement of response set influence. He reversed the meaning of all items on 20 of Schaefer's 23 scales, omitting the three Q1 scales of Comradeship & Sharing, Encouraging Verbalization and Equalitarianism. For Q2 scales, disagreement with the item was related to the scale name and resulted in high scores: strongly disagree = 4; mildly disagree = 3; mildly agree = 2; and agree = 1. Zuckerman explained that the 20 Q2 scales were to be scored according to this R (reversed) system

while the three Q1 scales were to be scored according to Schaefer's U (unreversed) system. Thus, agreement with a given Q1 item implied disagreement with the corresponding Q2 item, thereby resulting in the same score. Zuckerman's reversed scales were reported to have a relatively high correlation with Schaefer's original scales.

Schluderman and Schluderman (1970, 1974, 1977, 1979) reviewed Q1 and Q2 and developed an alternative version of the PARI (called Q4) with minimized methodological problems and adequate control for response set biases. They selected appropriate scales from both Schaefer's and Zuckerman's instruments - 20 scales from the reversed (R) form of Q2 and the three scales from the unreversed (U) form of Q1 (all with low response biases) - and added three Q1 scales with high response biases to be used as response bias check scales. By comparing scores on corresponding items between high and low response set scales, an estimate of a subject's response bias could be determined. Finally, they simplified the scoring which originally involved two systems - U vs. R. This was done by reversing the scale names of the three Q1 scales using the U scoring system, thereby creating 23 basic scales all scored according to the R system:

Old Q1 Name	New Q4 Name
Encouraging Verbalization	Discouraging Verbalization
Equalitarianism	Parental Control
Comradeship & Sharing	Parental Un-Involvement

As a result, the scale name and high scores on all of the 23 basic scales would be related to disagreement with item content. To calculate response set biases, the three response bias check scales continued to be scored according to the U system.

Test-retest reliability on the Mother's PARI Q4 was conducted on a sample of 425 female college students. Reliability coefficients ranged from .52 to .81. Acquiescence, opposition, and extreme set estimates were correlated with the 26 scales (23 basic scales + three response bias check scales) and indicated a great reduction in vulnerability to response set influence. The authors reported the test-retest reliabilities of the response sets as acquiescence set .61, opposition set .50, and extreme set .77, and suggested therefore, that "the response sets are individual (personality) characteristics which are relatively stable over time" (1979, p. 2). According to Schluderman and Schluderman, a researcher need not employ the response set check system simply by eliminating the last 15 items from Q4. However, it was their view that a subject's response set provided a check on the validity of the PARI.

Factor analysis on the PARI Q4 resulted in two common factors. F1, labelled an Authoritarianism factor, with 12 significant positive loadings (larger than ± .40), accounted for 21% of the variance. F2, labelled a Family Disharmony

factor, with six significant positive loadings, accounted for 12% of the variance. It was reported that this consolidation of scale scores into factor scores even further increased their reliabilitity, and subsequently, their correlations with response sets. The present study used the Q4 revision of the PARI, and measured Factor 1 in determining a mother's attitude toward childrearing and Factor 2 in measuring a mother's attitude toward marriage.

Construct validity on Mother's PARI Q4 has been supported in a recent study on attitudinal outcomes of mothers attending various parent group education programs (Schultz, Nystul & Law, 1980).

Procedure

Mothers of 6 - 10 week old infants were pre-screened by pediatricians or other referral sources. Caucasian, middle class primiparae, ages 20 - 40, were chosen based on a normal, full-term delivery of a healthy baby. Two groups were formed with 39 mothers in each, one group of breast feeders (breast feeding with no more than one supplement a day) and the second group of bottle feeders (total artificial feeding). Each mother was visited personally by the experimenter, and asked to respond to items on a questionnaire and on four different assessment instruments. Instructions were given at the top of each test. Mothers were only informed that they would be answering some questions about attitudes toward family life

and motherhood. At the conclusion of the test battery, the experimenter explained the nature of the study's comparison between breast and bottle feeding mothers with regard to differences in attitudes and coping behavior, and then described the experimental hypothesis. This procedure was designed to eliminate any potential bias created by early discussion of breast vs. bottle feeding, and in particular, to avoid any questions directed to the experimenter about the feeding technique used in the past with her own baby.

Statistical Design

Hotelling's T^2 was used to test the overall null hypothesis which assumed that the two maternal feeding groups (breast and bottle) had identical population mean vectors. The five dependent variables measured were coping behavior, attitude toward self, attitude toward motherhood, attitude toward childrearing, and attitude toward marriage. The .05 level of significance was used.

Results

Hotelling's T^2 was used to test the population mean vectors of the two feeding groups. The group means and standard deviations are shown in Table 1. The two-sample T^2 statistic has the value of 5.774; the associated F is 1.094 with degrees of freedom 5 and 72. This result is not sig-

Table 1

Means and Standard Deviations of Scores Demonstrating Attitudes and Coping Behavior of Breast and Bottle Feeding Mothers

Group[a]	Coping Behavior	Attitude Toward			
		Self	Motherhood	Child Rearing	Marriage
		Means			
Breast Feeding	4.161	51.021	.718	10.016	14.096
Bottle Feeding	4.098	51.086	.692	9.776	13.480
Total	4.129	51.054	.705	9.896	13.788
		Standard Deviations			
Breast Feeding	.358	2.910	.456	.832	1.237
Bottle Feeding	.347	2.534	.468	1.061	1.870
Total	.352	2.711	.459	.955	1.605

[a] n = 39 for each group.

nificant at the .05 level, leading to an acceptance of the null hypothesis. Thus, there are no differences between the two feeding groups on any of the five dependent variables.

The results for the variable of coping behavior are reported in Table 2. Individual scores appear in Appendix C, Table A. Differences were not significant between the two maternal feeding groups in coping style. Both breast and bottle feeding mothers appeared to demonstrate adaptive coping behavior as compared to the norms on the Coping Inventory.

The results for the variable of attitude toward self are reported in Table 3. Individual scores appear in Appendix C, Table B. There were no significant differences in mean scores between the breast and bottle feeding groups with regard to their attitude toward self. Both groups of mothers appeared to rate themselves as average on all factors of the Adjective Check List, indicating no particular strengths or weaknesses in areas of resourcefulness, assertiveness, sociability, individuality, self criticism or self discipline.

The results for the variable of attitude toward motherhood are reported in Table 4, with data reflecting individual scores appearing in Appendix C, Table C. There were no significant differences in mean scores between the breast and bottle feeding mothers in their expressed attitude of confidence in motherhood as manifested in their perception of their babies.

Table 2

Means and Standard Deviations of Scores on the Coping Inventory Demonstrating Coping Behavior of Breast and Bottle Feeding Mothers

	Self			Environment		
Group[a]	Productive	Active	Flexible	Productive	Active	Flexible
			Means			
Breast Feeding	4.126	3.926	3.928	4.438	4.195	4.351
Bottle Feeding	4.026	3.936	3.892	4.438	4.046	4.249
Total	4.076	3.931	3.910	4.438	4.121	4.300
			Standard Deviations			
Breast Feeding	.427	.529	.546	.359	.501	.429
Bottle Feeding	.451	.441	.555	.318	.565	.467
Total	.439	.484	.547	.337	.536	.449

Note. Minimum score = 1.0

Neutral score = 3.0

Maximum score = 5.0

[a] n = 39 for each group.

Table 3

Means and Standard Deviations of Scores on the ACL Demonstrating Attitude Toward Self of Breast and Bottle Feeding Mothers

	Attitude Toward Self					
Group[a]	Pot.[b]	Ass.[c]	Soc.[d]	Ind.[e]	Dis.[f]	Con.[g]
			Means			
Breast Feeding	50.874	51.313	54.236	49.842	47.809	52.051
Bottle Feeding	49.446	51.567	53.941	50.255	49.379	51.928
Total	50.160	51.440	54.089	50.049	48.594	51.990
			Standard Deviations			
Breast Feeding	5.382	2.567	7.270	4.072	4.591	5.125
Bottle Feeding	4.516	2.617	8.403	4.259	4.806	4.188
Total	4.988	2.578	7.807	4.144	4.736	4.650

Note. Factor scores based on the sum of the standard scores with mean of 50 and sigma units of 10.

[a] *n* = 39 for each group

[b] Pot. = Potency

[c] Ass. = Assertiveness

[d] Soc. = Sociability

[e] Ind. = Individuality

[f] Dis. = Dissatisfaction

[g] Con. = Constriction

Table 4

Means and Standard Deviations of Scores on the NPI Demonstrating Attitude Toward Motherhood of Breast and Bottle Feeding Mothers

	Attitude Toward Motherhood	
Group[a]	Means	Standard Deviations
Breast Feeding	.718	.456
Bottle Feeding	.692	.468
Total	.705	.459

Note. A score of 1 represents positive scores of +1 and above.

A score of 0 represents negative scores of 0 and below.

[a] n = 39 for each group.

Table 5 highlights the variable of attitude toward childrearing. Individual scores appear in Appendix C, Table D. Differences in mean scores between the breast and bottle feeding groups were not significant on the Authoritarianism factor of the PARI.

Table 6 indicates the results for the variable of attitude toward marriage, with individual scores listed in Appendix C, Table E. Differences in mean scores between the breast and bottle feeding groups were not significant on the Family Disharmony factor of the PARI

Discussion

The hypothesis of this study was that there were no significant differences between breast feeding mothers and bottle feeding mothers in coping behavior, attitude toward self, attitude toward motherhood, attitude toward childrearing, and attitude toward marriage. Indeed, the two groups were not significantly different with regard to any of the five dependent variables.

The nature of the population and its sample selection are factors which could have contributed to the failure to demonstrate differences in the two feeding groups. Mothers were primarily enlisted from various pediatric groups in the New York metropolitan area. As opposed to a specifically tar-

Table 5

Means and Standard Deviations of Scores on the Authoritarianism Factor of the PARI Demonstrating Attitude Toward Childrearing of Breast and Bottle Feeding Mothers

	Attitude Toward Childrearing	
Group[a]	Means	Standard Deviations
Breast Feeding	10.016	.832
Bottle Feeding	9.776	1.061
Total	9.896	.955

Note: Minimum score = 5.0

Neutral score = 12.5

Maximum score = 20.0

[a] n = 39 for each group.

Table 6

Means and Standard Deviations of Scores on the Family Disharmony Factor of the PARI Demonstrating Attitude Toward Marriage of Breast and Bottle Feeding Mothers

	Attitude Toward Marriage	
Group[a]	Means	Standard Deviations
Breast Feeding	14.096	1.237
Bottle Feeding	13.480	1.870
Total	13.788	1.605

Note. Minimum score = 5.0

Neutral score = 12.5

Maximum score = 20.0

[a] *n* = 39 for each group.

geted and captive population (i.e. all third grade students in a local elementary school), these mothers were responsive to a request for volunteers, thereby equally pre-disposed to a personal intervention such as this study during a highly sensitive, tiring, emotional and unique period in their lives. It is suggested that these mothers may constitute a group of women who are more self-confident, organized and candid than those who were unwilling to participate. Given the intent of this study, to discriminate between breast and bottle feeding mothers on their attitudes and coping behavior, the common characteristics of all mothers in the study as evidenced by their voluntary cooperation could have greatly influenced the results toward acceptance of the null hypothesis.

Contributing to this phenomenon, or operating simultaneously, is the possibility of a pediatrician selection factor. In most cases, the procedure of this research involved a cooperating pediatrician as intermediary between the experimenter and each mother. An introductory letter asking for volunteers to be in the study was at the pediatrician's disposal to offer to those mothers in his practice, pre-screened to fit the sample description, with a baby under 10 weeks old. It is entirely possible that a selection process was at work whereby the pediatrician, either consciously or unconsciously, did not approach women whose adjustment to motherhood

was problematic, whose circumstances and concerns were such that a request to participate in a study would be an imposition at this time and an insensitive gesture on the physician's part. The resulting population of mothers from which the volunteers for each group would then be sampled could be biased and would likewise, influence the final results in the direction reported. For future consideration, it would be advisable for the researcher to secure unrestricted access to a hospital population of all newly delivered primigravidas. This procedure would be intended to eliminate the use of volunteers and the need for an intermediary in the selection process.

Another possible reason for the lack of significant differences between the two maternal feeding groups could be proposed based on the history of the mothers who were bottle feeding. Appendix D lists in percentages the demographic and pre and postnatal characteristics of the breast and bottle feeding mothers. It shows that 38% of the bottle feeding mothers made the decision to bottle feed at home with the baby. This means that 15 of the 39 bottle feeding mothers initially breast fed their infants and transferred to total artificial feeding once at home with the baby. Moreover, 23% of the bottle feeding mothers made their decision to bottle feed during lying in at the hospital. This reflects in part, the ambivalence of a number of mothers who didn't

breast feed their babies, but who seriously considered it up until the point at which the baby was born and bottle feeding actually initiated. It is suggested that the attitudes of these two types of bottle feeding mothers may be closer to those of the nursing mothers than to those of the original bottle feeding mothers, whose decision to bottle feed was firmly made before childbirth and whose actions thereafter were consistent. It would be interesting for a follow-up study to compare consistent breast feeding mothers with breast to bottle feeding mothers and consistent bottle feeding mothers to determine the direction of similarities and/or differences between the three groups. It would also be worthwhile to consider replicating this study but with consistent bottle feeding mothers, in order to eliminate any possible confounding influence of breast to bottle feeding subjects.

Failure to derive significant differences between the two maternal feeding groups could also be attributed to the type and sensitivity of measures used to observe the dependent variables. Response set influences and social desirability effects are common methodological problems associated with the use of rating scales in self-report studies. Although the present study used instruments that recognized and tried to control for these biases, it is important to speculate on their present uncertain influence, nonetheless. Another criticism of attitude research (Cohler, Weiss & Grunebaum,

1970; Schaffer, 1977) is its failure to differentiate between attitudes and actual behavior; between what is said and done, and what a mother thinks and feels. The issue is raised as to a mother's effectiveness in providing undistorted information and her willingness to offer personal and preferred information to an outsider. Hence, an option would be for future research to include an evaluation of the mother-infant interaction based on direct observation. These ratings, typically highlighting sensory-cueing, physical contact, perception of baby's state, facial expressions, vocalizations, etc., could then be compared to the mother's questionnaire responses in order to focus on actual behavior.

Another explanation for the lack of differences between a mother who breast feeds and a mother who bottle feeds with regard to her expressed self image, confidence in motherhood, attitudes about childrearing and marriage, and her general ability to cope with the transition to parenthood lies in hormonal research. Normal pregnancy, delivery and lactation are associated with major psychological, physiological, anatomical, biochemical and endocrinological changes. The question arises as to whether or not there are chemical correlates with regard to maternal behavior which would cause both breast and bottle feeding mothers to manifest similarities, not differences, at least as measured in this report. Lactogenesis (milk synthesis and secretion) has generally

been associated with the hormone prolactin, controlled from the anterior pituitary gland. Although prolactin is released and serum levels are high in response to postpartum suckling or even to the touch of a finger to the mother's nipple (Hwang, Guyda & Friesen, 1971), the corollary that prolactin levels are reduced by either no initiation of suckling or by chemical or placebo treatment to suppress lactation has been equivocal (Harrison, 1979; Weinstein, Ben-David & Polishuk, 1976). This then, suggests the presence of prolactin in both nursing and non-nursing mothers. Preliminary studies by Klaus and Kennell (1976) confirm this observation: "In two mothers there were significant increases in the prolactin level after physical contact with their infants, which involved no nursing or touching of the breast. Thus, licking, sucking, or perhaps even tactile contact alters maternal prolactin levels" (pp. 78-79). This is important because prolactin is described as a "love hormone; it appears to activate the close attachment between mother and young" (Klaus & Kennell, 1976, p. 79). Zarrow, Gandelman and Denenberg (1971) found prolactin to be an essential hormone for maternal behavior in the rabbit, rat and mouse. In a group of non-lactating rats, for instance, they discovered adequate prolactin for the presentation of maternal behavior (i.e. retrieval of rat pups), but not enough for lactation (pp. 347-348). Thus, the presence of prolactin in both groups suggests the inci-

dence of similar attachment and maternal behaviors in both nursing and non-nursing mothers. It is speculated, therefore, that hormonal prolactin activity may have led to a lack of significant differences in this study. Further research into the activity of prolactin in non-nursing mothers would be of interest.

The relationship between a mother and her newborn infant is dynamic and propelling. Reciprocal behavior patterns develop very early. Detailed studies of the behavior of newborns have shown that the neonate sees, hears and moves in precise and sustained rhythms to his mother's voice in the first minutes and hours of life (Condon & Sander, 1974), and that the infant influences the environment to adjust to him in his own particular way that is immediately apparent and predictable to his mother (Brazelton, 1963; Goldberg, 1977). Moreover, the infant's appearance of helplessness, his cry, odor and repertoire of sensory and motor abilities evokes responses from the mother and provides channels of communication essential in the process of attachment (Klaus & Kennell, 1976). Such findings are important because they suggest a commonality of experiences shared by every new mother. Pregnancy, anticipation of motherhood, expectation of parental activities, and finally, the birth of the baby are comprehensive parameters resulting in a sudden new way of life. It is therefore suggested that breast and bottle feeding mothers may

appear similar, as is indicated in this research, possibly because a more powerful force--the dynamic interrelationship beween mother and infant--is at work shaping common postnatal maternal attitudes and coping styles.

Another position that supports the results of this study can be found in articles discussing the point of view that there are no differences between breast and bottle feeding with regard to its effect on motherliness (Anthony & Benedek, 1970; Benedek, 1959) or on mother-infant attachment (McWilliams, 1975).

Finally, the similar demographic and pre and postnatal characteristics of the two feeding groups, as seen in Appendix D, are potential predictors of results such as those observed in this study. Despite different choices of feeding techniques, the mothers comprising the two groups come close to being homogeneous in many ways, and therefore, may express like attitudes and equally efficient coping behavior. Of the first time mothers in this study, 87% were older mothers, ages 25 - 40. Jones, Green and Krauss (1980) reported increased maternal responsiveness by the older mothers in their sample in comparison to the younger mothers. Although reports of additional research on maternal age and mothering were sparse, it is interesting to speculate that there is a relationship between the two, and that this may be a factor at work in the present study based on the high percentage of older mothers

in the sample and the lack of differences between the two maternal feeding groups. Schaeffer (1977) proposed that in part, deficiencies in mothering were due to ignorance (p. 90). The experimental mothers in this study, however, were not uneducated--60% received a college degree or higher and 99% were employed before childbirth. All of the fathers were ages 25 or older (55% were ages 30 and above), 65% received a college degree or higher, and all were employed. The parental population participating in this study appeared to be active and educated members of society. Moreover, 76% of the pregnancies were planned, and a notable 95% of the parents attended prepared childbirth classes. Hommell (1976) reported that taking a prepared childbirth course improved the attitudes of the participating mothers and fathers. She further asserted that a woman's self concept went up dramatically after a positive delivery experience, the course itself acting as a major variable. A number of authors contended that the more preparation a woman has before childbirth, the more likely she is to have a positive view both before and after labor and delivery, and increased mother-infant attachment even when plans to deliver the baby naturally could not be realized (Auerbach, 1976; Hommell, 1976; Klaus & Kennell, 1976; Peterson & Mehl, 1978). An important element of prepared childbirth participation is the active involvement of the fathers in prenatal preparation, labor and delivery. In the

present study, 80% of all of the fathers were present in the delivery room at the time of the baby's birth (the smaller percentage is indicative of the exclusion of fathers from the delivery room during Caesarian birth). MacFarlane (1977), Barbour (1976) and Klaus and Kennell (1976) reported the striking positive effect of the husband's presence upon the wife's birth experience, and the father's subsequent attachment to the baby and involvement in parenting. Indeed, 98% of the mothers in the study recorded here, reported father's involvement with the baby, and 82% reported father's active parenting role. Maternal attachment and bonding has been the work of Klaus and Kennell and others for many years. Their 1976 book describes the extensive research done in this area. A recurrent theme is the need for physical contact between mother and infant immediately after birth. In the present study, 69% of the mothers held their babies on the delivery table. Following childbirth, 91% of the mothers benefited from extra help at home one to two weeks post delivery, and a notable 98% reported the availability of an ongoing support network (husband, friends, parents, pediatrician) to discuss issues of parenting, feelings and frustrations concerning motherhood, etc. Finally, 94% of the mothers expressed the pleasure of having easy babies to feed, and 78% expressed a great deal of satisfaction with their choice of feeding technique. The purpose of reporting this descriptive data was to show the

uniformity of certain characteristics in the maternal population across both feeding groups, and to postulate the likelihood that breast feeding and bottle feeding were minor differences between the two groups--differences easily overridden by these educational and behavioral variables. Furthermore, the descriptive data and overall lack of significance between groups selected from a middle class population, clearly did not support Newton's earlier work (1955) on maternal attitudes with an inner city sample of breast and bottle feeding mothers.

The mothers seen in the study reported here expressed their positive impressions of the testing session. Interestingly, they thanked the experimenter for coming. Their gratitude was based on the welcome break to the isolation of being homebound with the baby and the lack of opportunities for adult exchange. It appeared that for most all of the mothers it was also an opportunity for recollection and reflection about the childbirth and postpartum experience. When the experimenter fully explained the nature of the study's comparison between breast and bottle feeding mothers with regard to differences in attitudes and coping behavior, and also described the experimental hypothesis, it is interesting to note the unsolicited agreement with the hypothesis of the study by both bottle <u>and</u> breast feeding mothers. The recurrent sentiment by mothers in both groups was that they would

not think or feel differently about their babies had they chosen the alternative feeding technique. However, many bottle feeding mothers (some who started breast feeding initially and others who never breast fed) expressed the discomfort and even guilt they experienced as a result of enormous presssure to breast feed from "experts" (teachers in prepared childbirth classes, nursing staff in the hospital, pediatricians) who were insensitive to their desire to bottle feed or their failure to successfully breast feed. During the highly emotional period of pregnancy and the early puerperium, new mothers are extremely vulnerable. Based on the body of convincing literature reporting the immunological benefit to the infant of colostrum, it is suggested that the practice of informing and encouraging breast feeding is a valuable service to new parents. On the other hand, there can be adverse effects manifested by feelings of guilt in the mother choosing to bottle feed from the start, or more especially if she is ambivalent about and has been pressured into breast feeding in the first place and then stops (Harrison, 1979, p. 287). The findings of this study apparently call into question the prevailing notions about the multi-faceted benefits of breast feeding, specifically insofar as the mother is concerned, and it is the challenge of future research to confirm or contradict these results.

APPENDICES

APPENDIX A

General Questionnaire

General Questionnaire

Instructions: Please circle the number in the right hand column which corresponds to your selected answers to each question. Select ONE answer only for each question. For fill-in questions, please print.

Mother

1. Age: _____

2. Education
   - Some high school, but didn't finish----------(1)
   - High school graduate----------(2)
   - Some college, but didn't finish----------(3)
   - Bachelor's Degree (Specify) _____ (4)
   - Graduate or Professional Degree (Specify) _____ _____ (5)

3. Profession
   - Clerical/office----------(1)
   - Education----------(2)
   - Public or Social Service----------(3)
   - Health----------(4)
   - Management/Business----------(5)
   - Law----------(6)
   - Other (Specify) _____ (7)

4. Siblings
   - Specify sex and ages _____

Father

5. Age: _____

6. Education
   - Some high school, but didn't finish----------(1)
   - High school graduate----------(2)
   - Some college, but didn't finish----------(3)
   - Bachelor's Degree (Specify) _____ (4)
   - Graduate or Professional Degree (Specify) _____ _____ (5)

7. Profession
   - Clerical/Office----------(1)
   - Education----------(2)
   - Public or Social Service----------(3)
   - Health----------(4)
   - Management/Business----------(5)
   - Law----------(6)
   - Other (Specify)----------(7)

8. Siblings
   Specify sex and ages_____

Marriage

9. Number of years married_____

10. Before our baby was born our marriage was
    - Happy; satisfying; most problems that arose were solved----------(1)
    - Not happy or satisfying; problems frequently unsolved; but no separation; divorce not considered----------(2)
    - Unhappy; unsatisfying; separation or divorce seriously considered----------(3)

11. Since our baby was born our marriage is
    - More happy and satisfying than before----------(1)
    - About the same as before the baby's birth-------(2)
    - Less happy and satisfying than before----------(3)

Childbirth and Postnatal Period

12. Pregnancy
    - Planned----------(1)
    - Unplanned----------(2)
    - Don't know----------(3)

13. Did mother attend a prepared childbirth class?
    - Yes----------(1)
    - No----------(2)
    - Other preparation (specify)_____(3)

14. Did father attend a prepared childbirth class?
    - Yes----------(1)
    - No----------(2)
    - Other preparation (Specify)_____(3)

15. Type of delivery
    - Natural, with no medication----------(1)
    - Natural, with some medication----------(2)
    - Epidural----------(3)
    - Spinal----------(4)
    - Ceasarian----------(5)
    - Other (Specify)----------(6)

16. Was father present in the delivery room at the time of birth?
    - Yes----------(1)
    - No----------(2)
    - Don't remember----------(3)

17. Did mother feed baby <u>immediately</u> after birth?
    - Yes----------(1)
    - No----------(2)
    - Don't remember----------(3)

18. Did mother hold baby <u>immediately</u> after birth?
    - Yes----------(1)
    - No----------(2)
    - Don't remember----------(3)

19. Next time with the baby
    - 1-6 hours later----------(1)
    - 7-12 hours later----------(2)
    - More than 12 hours later----------(3)
    - Don't remember----------(4)

20. Extra support at home in the first week or two
    - Professional nurse or sitter----------(1)
    - Family (Specify)_____(2)
    - Husband----------(3)
    - Other (Specify)----------(4)

21. Father-baby interaction
    - Feeds----------(1)
    - Diapers----------(2)
    - Bathes----------(3)
    - More than one of the above----------(4)
    - None of the above----------(5)
    - Other (Specify)_____(6)

22. Support network
    - Friends with newborns----------(1)
    - Family----------(2)
    - Pediatrician----------(3)
    - Husband----------(4)
    - More than one of the above----------(5)
    - None of the above----------(6)
    - Other (Specify)_____(7)

23. "Postpartum blues" or "weepiness"
    - Yes----------(1)
    - No----------(2)
    - Don't know----------(3)

Feeding

24. Feeding method
    - Breast feeding----------(1)
    - Bottle feeding----------(2)

25. Did mother receive prior information on feeding methods?
    - Yes----------(1)
    - No----------(2)
    - Don't know----------(3)

26. Reasons for choosing feeding method
    - Own decision----------(1)
    - Influenced by husband----------(2)
    - Influenced by friend----------(3)
    - Influenced by family member (Specify)_____(4)
    - Influenced by obstetrician----------(5)
    - Influenced by pediatrician----------(6)
    - Influenced by nurse in maternity----------(7)
    - More than one of the above (Specify)_____(8)
    - None of the above (Specify)_____(9)

27. When was decision on feeding method determined?
    - Before baby was born----------(1)
    - During lying in at hospital----------(2)
    - At home with the baby----------(3)
    - Other (Specify)_____(4)

28. Satisfaction with choice of feeding method
    - A great deal----------(1)
    - A moderate amount----------(2)
    - A little----------(3)
    - Not at all----------(4)

29. Husband's influence in choice of feeding method
    - A great deal----------(1)
    - A moderate amount----------(2)
    - A little----------(3)
    - None at all----------(4)

30. Does husband help in the feeding experience (i.e. give the baby a bottle or bring the baby to you to breast feed in the morning hours?
    - Yes----------(1)
    - No----------(2)
    - Other (Specify)_____(3)

Pattern of Feeding

31. Number of breaths between sucking
    - One----------(1)
    - Two----------(2)
    - Three----------(3)
    - Four or more----------(4)
    - Don't know----------(5)

32. Tension on nipple
    - Hard----------(1)
    - Medium----------(2)
    - Soft----------(3)
    - Don't know----------(4)

33. Average duration of a single feeding
    Under 5 minutes----------(1)
    5-10 minutes----------(2)
    10-15 minutes----------(3)
    15-20 minutes-=----------(4)
    20-40 minutes----------(5)
    40-60 minutes----------(6)
    Over one hour----------(7)

34. Ease of feeding the baby
    Easy baby; never distracted or sleepy----------(1)
    Moderately easy baby; rarely distractible
    or sleepy----------(2)
    Fairly difficult baby; fairly easily dis-
    tractible or sometimes falls asleep----------(3)
    Very difficult baby: easily distractible
    or often falls asleep----------(4)

35. Baby gets too much air
    Often----------(1)
    Sometimes----------(2)
    Never----------(3)

36. Baby gulps down too much milk
    Often----------(1)
    Sometimes----------(2)
    Never----------(3)

37. Burping
    Very easy----------(1)
    Moderately easy----------(2)
    Somewhat difficult----------(3)
    Very difficult----------(4)

38. Baby has a negative reaction to the milk
    Often----------(1)
    Sometimes----------(2)
    Never----------(3)

Pediatrician

39. Did mother and/or father go for a pre-natal visit?
    - Yes----------(1)
    - No----------(2)

40. Value of pre-natal visit
    - Very helpful----------(1)
    - Moderately helpful----------(2)
    - A little helpful----------(3)
    - Not helpful at all----------(4)

41. When was the baby's first office visit?
    - 1 week old----------(1)
    - 2 weeks old----------(2)
    - 3 weeks old----------(3)
    - 4 weeks old----------(4)
    - 5 weeks old or older (Specify)_____(5)

42. Number of pediatric visits in the first two months
    - One----------(1)
    - Two----------(2)
    - Three----------(3)
    - Four----------(4)
    - Five or more (Specify)_____(5)

43. How often do you call your pediatrician?
    - More than once a day----------(1)
    - Once a day----------(2)
    - More than once a week----------(3)
    - Once a week----------(4)
    - Haven't called----------(5)
    - Other (Specify)_____(6)

44. Pediatrician's support in method of feeding
    - Very helpful and supportive----------(1)
    - Moderately helpful and supportive----------(2)
    - A little helpful and supportive----------(3)
    - Not helpful or supportive----------(4)

45. How much help do you feel you have received from your pediatrician in understanding and managing your baby?

A great deal----------(1)
A moderate amount----------(2)
A little----------(3)
None at all----------(4)

Any additional comments

_____

_____

_____

_____

_____

_____

_____

_____

_____

Child's Sex

Male_____
Female_____

APPENDIX B

Consent Forms

Consent Form

Congratulations on the birth of your baby! As a new mother myself, I know the wonderful, but sometimes complex feelings accompanying this joyful event.

Many studies have been conducted on pregnancy, childbirth and the postpartum period. In my proposed study, new mothers of 6-8 week old infants will be asked to answer some questions on attitudes toward motherhood and family life. I would like to meet individually with each mother for approximately one hour. All information will be treated with the strictest confidence; numbers, not names will appear on all records. If at any time during the interview, a mother wishes to discontinue with the survey and withdraw from the study, she is free to do so. Any data collected will be deleted.

If you are interested in participating, please sign the attached, postage paid reply card and mail.

Thank you very much.

Maida S. Silver

I am interested in participating in the research study conducted by Maida Silver. It has been explained to me that all information will be treated with the strictest confidence, that I may withdraw at any time if I wish, and any data collected will be deleted.

Signed_____

Telephone Number_____

Consent Form

TEXAS WOMAN'S UNIVERSITY
HUMAN SUBJECTS REVIEW COMMITTEE

(Form B)

Title of Project: Differences in Attitudes and Coping Behavior Between New Mothers who Breast Feed and New Mothers who Bottle Feed

Consent to Act as A Subject for Research and Investigation:

I have received an oral description of this study, including a fair explanation of the procedures and their purpose, any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all questions about the study. I understand that my name will not be used in any release of the data and that I am free to withdraw at any time. I further understand that no medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

_____ _____
Signature Date

_____ _____
Witness Date

Certification by Person Explaining the Study:

This is to certify that I have fully informed and explained to the above named person a description of the listed elements of informed consent.

_____ _____
Signature Date

_____
Position

_____ _____
Witness Date

One copy of this form, signed and witnessed, must be given to each subject. A second copy must be retained by the investigator for filing with the Chairman of the Human Subjects Review Committee. A third copy may be made for the investigator's files.

APPENDIX C

Tables of Individual Scores of Breast and Bottle Feeding Mothers for the Five Dependent Variables

TABLE A

Individual Scores on the Coping Inventory Demonstrating Coping Behavior of Breast and Bottle Feeding Mothers

	COPING INVENTORY											
	Breast Feeders						Bottle Feeders					
	Coping/Self			Coping/Environment			Coping/Self			Coping/Environment		
	Passive	Active	Flexible	Passive	Active	Flexible	Passive	Active	Flexible	Passive	Active	Flexible
1	3.5	4.0	3.3	4.3	4.5	4.0	3.7	4.2	4.3	4.4	4.5	4.7
2	4.3	4.2	4.5	4.9	4.8	5.0	4.2	4.3	3.8	4.4	4.2	4.0
3	4.8	4.5	4.7	5.0	4.7	4.8	3.9	3.8	3.3	3.8	4.0	3.8
4	3.8	3.3	4.3	4.3	4.0	4.2	3.8	3.5	4.2	4.6	4.0	4.2
5	3.9	4.0	4.5	4.8	4.5	4.7	4.3	4.3	4.5	4.8	4.3	4.7
6	4.3	3.5	3.8	4.6	4.3	4.3	3.9	3.3	3.5	4.6	3.8	4.0
7	4.2	3.7	4.3	4.3	3.8	4.8	4.3	4.2	4.3	4.7	3.8	4.8
8	4.4	4.5	4.2	4.4	4.2	4.5	3.9	4.0	4.3	3.9	3.7	3.8
9	4.4	4.3	3.8	4.6	3.5	4.0	4.2	4.0	4.7	4.2	3.5	4.5
10	3.9	4.0	3.8	4.3	4.0	4.0	4.3	3.5	3.8	4.4	4.3	3.8
11	3.9	3.5	3.5	4.2	4.2	4.0	3.6	3.7	3.8	3.8	3.7	4.0
12	4.7	4.0	3.7	4.2	4.0	4.3	4.4	4.3	3.5	4.7	4.8	5.0
13	4.3	4.2	4.5	4.4	4.3	4.7	3.4	3.8	4.0	4.7	4.5	4.2
14	4.3	4.0	4.7	3.8	3.5	3.5	4.6	3.5	3.8	4.7	4.3	5.0
15	3.8	5.0	3.7	4.5	3.3	4.7	3.5	4.2	3.8	4.2	3.8	4.0
16	3.8	3.7	4.2	4.7	4.7	3.7	3.1	3.0	2.5	3.8	3.8	3.5
17	4.5	4.5	4.3	4.7	4.5	5.0	3.9	4.2	4.0	4.3	3.8	4.2
18	4.8	4.7	4.5	4.8	4.8	4.7	4.6	4.2	4.0	5.0	5.0	3.8
19	4.4	4.3	4.3	4.3	4.5	4.7	3.6	3.5	3.7	4.3	2.0	3.7
20	4.2	4.2	3.7	4.8	3.7	4.5	3.8	3.8	3.5	4.6	4.0	4.5
21	4.1	3.3	4.2	4.4	4.2	4.0	3.8	3.8	3.3	4.4	3.3	4.2
22	4.0	4.0	4.0	4.7	4.7	4.8	3.7	3.3	3.3	4.4	4.0	3.3

TABLE A

(continued)

#	Breast Feeders						Bottle Feeders					
	Coping/Self			Coping/Environment			Coping/Self			Coping/Environment		
	Passive	Active	Flexible	Passive	Active	Flexible	Passive	Active	Flexible	Passive	Active	Flexible
23	3.8	3.3	3.3	3.5	3.7	3.7	4.6	4.2	3.7	4.6	3.8	4.5
24	4.3	4.2	4.5	4.8	5.0	4.8	4.4	4.0	3.7	4.3	3.8	4.0
25	4.0	3.3	4.3	4.5	4.3	5.0	4.1	3.5	4.2	4.5	3.8	4.3
26	3.5	2.7	2.7	3.7	3.0	3.7	3.3	3.8	3.5	4.2	4.2	3.7
27	4.4	3.8	4.3	4.6	4.5	4.5	4.3	4.8	4.7	4.6	3.5	4.8
28	3.7	3.2	3.3	3.9	3.2	4.5	4.8	4.0	5.0	4.8	4.8	4.7
29	4.8	4.7	3.7	4.6	4.5	4.3	4.4	3.8	2.8	4.5	4.5	4.3
30	4.3	3.8	3.5	4.4	4.2	4.3	3.8	4.5	4.3	4.4	3.5	4.8
31	4.1	4.5	4.5	4.8	4.7	4.5	5.0	5.0	4.3	4.7	5.0	5.0
32	3.5	3.8	2.5	3.9	3.5	4.0	3.2	3.5	3.2	4.2	3.8	4.0
33	4.8	4.7	4.5	4.9	4.7	4.7	4.3	4.0	4.2	4.8	4.3	4.7
34	3.9	3.7	3.8	4.2	4.0	4.0	4.0	3.3	3.5	3.8	3.5	3.5
35	4.2	3.2	3.2	4.7	4.0	3.5	4.1	3.7	3.5	4.4	4.2	4.0
36	4.7	4.0	3.8	4.8	4.8	4.5	3.4	4.2	5.0	4.5	4.2	4.3
37	3.0	3.2	3.3	4.5	4.3	4.0	4.1	3.8	3.5	4.3	4.0	3.8
38	3.4	4.3	4.2	4.4	4.7	4.8	4.1	4.8	4.3	4.9	4.8	4.8
39	4.2	3.3	3.3	3.9	3.8	4.0	4.6	4.2	4.5	4.9	5.0	4.8

TABLE B

Individual Scores on the ACL Demonstrating Attitude Toward Self of Breast and Bottle Feeding Mothers

	ADJECTIVE CHECK LIST											
	Breast Feeders						Bottle Feeders					
#	P	A	S	I	D	C	P	A	S	I	D	C
1	41.50	56.50	45.66	53.66	47.60	51.20	42.50	51.50	48.83	44.00	54.80	51.40
2	49.00	48.33	61.50	49.83	47.80	56.60	51.16	51.83	60.16	47.50	45.20	54.40
3	56.00	52.83	57.33	54.33	43.80	51.40	50.83	51.50	49.33	52.33	48.40	47.60
4	51.50	48.00	57.33	49.66	48.40	47.00	43.83	51.50	53.66	51.16	50.80	50.40
5	41.50	53.33	60.83	56.83	47.80	57.60	46.16	52.83	54.00	52.50	41.20	48.00
6	54.50	49.83	41.83	42.00	37.20	44.80	53.83	49.50	67.00	49.16	55.40	54.40
7	38.50	50.83	53.00	50.50	55.40	44.60	52.00	51.50	43.33	47.00	45.80	52.60
8	63.16	54.33	50.00	52.33	52.20	64.40	42.83	52.83	43.66	45.00	53.20	47.80
9	64.50	51.50	48.00	56.16	45.00	55.20	49.16	50.83	42.33	50.33	56.00	52.80
10	50.33	51.66	52.00	48.66	51.40	54.60	51.66	44.33	59.33	50.83	46.40	53.20
11	49.66	56.83	57.83	55.16	44.00	61.20	57.50	51.00	56.66	51.83	47.20	54.00
12	45.33	51.66	54.33	47.66	44.60	51.40	50.66	48.66	54.50	49.50	56.60	53.40
13	45.66	52.16	39.00	48.33	41.80	48.00	49.83	50.66	57.50	43.33	49.60	51.20
14	55.50	46.16	53.33	56.00	47.60	56.00	54.16	52.50	66.83	56.00	45.20	57.60
15	52.83	50.00	53.00	53.00	48.20	49.00	46.33	52.83	47.66	46.50	57.00	53.40
16	52.16	49.66	52.83	47.00	51.80	53.40	47.33	42.83	40.66	43.66	49.20	41.40
17	54.33	54.00	57.66	53.16	46.60	53.20	56.83	48.50	47.66	45.00	48.40	47.20
18	54.16	50.50	59.33	51.16	48.00	58.80	57.33	55.16	57.33	52.66	46.60	57.00
19	50.33	54.33	59.16	51.33	50.20	58.20	42.66	51.16	51.50	47.33	55.40	47.20
20	53.00	54.33	57.16	52.33	58.20	52.40	48.00	49.00	46.83	51.33	51.80	43.80
21	52.66	52.83	53.83	46.66	46.20	52.40	44.33	53.83	40.00	57.66	48.60	57.40

TABLE B

(continued)

	Breast Feeders						Bottle Feeders					
#	P	A	S	I	D	C	P	A	S	I	D	C
22	49.83	51.83	43.33	45.00	45.60	50.00	50.66	49.66	48.50	45.16	49.20	50.60
23	49.50	48.83	52.66	46.66	44.00	48.20	45.83	51.00	52.00	49.50	46.60	52.80
24	49.33	53.83	65.83	46.16	48.20	53.00	51.83	52.50	65.00	48.16	51.00	56.00
25	53.00	50.00	64.00	52.83	46.20	56.40	57.83	51.16	60.66	49.83	51.60	58.40
26	46.16	46.83	46.66	42.33	54.00	36.20	50.33	53.83	31.66	45.66	49.60	48.00
27	53.00	50.50	65.66	45.50	43.20	48.80	50.33	50.83	63.00	60.16	44.40	56.80
28	44.50	48.33	52.50	53.83	55.60	49.60	51.50	50.00	58.66	51.33	41.60	50.00
29	49.66	49.50	41.50	45.16	48.00	51.20	46.66	51.00	58.66	51.83	51.80	53.80
30	52.50	51.16	66.33	46.66	44.20	50.40	48.00	49.33	61.83	49.16	39.80	55.00
31	53.00	53.33	53.16	47.16	52.80	51.20	50.83	53.50	59.33	48.50	44.60	51.40
32	48.33	48.00	62.00	51.00	45.40	49.60	45.83	51.00	50.66	52.50	60.40	46.20
33	61.50	52.50	65.16	55.33	48.00	58.80	49.50	55.50	62.33	51.16	52.00	54.90
34	52.33	50.66	49.16	51.83	52.40	50.40	40.50	55.17	46.33	53.67	53.80	55.40
35	45.00	49.83	43.50	43.66	38.16	44.40	51.00	51.17	66.50	62.40	42.60	55.60
36	50.16	49.66	61.50	51.33	44.00	54.20	45.67	48.17	57.50	52.83	45.60	44.40
37	54.50	53.33	47.33	43.50	51.20	51.00	43.50	59.40	54.33	47.50	54.00	49.60
38	48.33	55.00	53.00	52.50	54.60	53.20	54.83	53.80	53.33	52.50	47.80	52.80
39	47.33	48.50	57.00	47.66	45.20	52.00	54.83	54.83	64.67	53.50	46.60	37.80

P = Potency

A = Assertiveness

S = Sociability

I = Individuality

D = Dissatisfaction

C = Constriction

TABLE C

Individual Scores on the NPI Demonstrating Attitude Toward Motherhood of Breast and Bottle Feeding Mothers

NEONATAL PERCEPTION INVENTORY							
	Breast Feeders				Bottle Feeders		
#	Positive Perception (+)		Negative Perception (-)		Positive Perception (+)		Negative Perception (-)	
1	+	(+3)					-	(-2)
2	+	(+1)					-	(-1)
3	+	(+3)			+	(+8)		
4	+	(+3)			+	(+10)		
5	+	(+6)			+	(+1)		
6	+	(+4)					-	(0)
7			-	(-5)	+	(+3)		
8	+	(+3)			+	(+1)		
9	+	(+2)			+	(+3)		
10			-	(-2)	+	(+4)		
11			-	(-1)			-	(-3)
12			-	(-1)	+	(+6)		
13	+	(+6)					-	(-4)
14	+	(+3)			+	(+7)		
15	+	(+2)			+	(+2)		
16	+	(+10)					-	(0)
17	+	(+2)			+	(+2)		
18	+	(+8)					-	(0)
19	+	(+5)			+	(+2)		
20	+	(+4)					-	(-1)
21	+	(+5)			+	(-4)		

TABLE C

(continued)

	Breast Feeders				Bottle Feeders			
#	Positive Perception (+)		Negative Perception (-)		Positive Perception (+)		Negative Perception (-)	
22	+	(+3)			+	(+1)		
23	+	(+6)					-	(-1)
24			-	(-1)			-	(0)
25	+	(+1)			+	(+6)		
26	+	(+4)			+	(+2)		
27	+	(+6)			+	(+3)		
28			-	(0)	+	(+8)		
29	+	(+8)			+	(+3)		
30	+	(+5)			+	(+6)		
31	+	(+1)			+	(+4)		
32			-	(-4)	+	(+4)		
33			-	(-1)	+	(+6)		
34			-	(-2)	+	(+1)		
35	+	(+3)			+	(+2)		
36	+	(+2)					-	(-3)
37	+	(+4)			+	(+7)		
38			-	(-2)			-	(-1)
39			-	(-2)	+	(+2)		

TABLE D

Individual Scores on the Authoritarianism Factor of the PARI Demonstrating Attitude Toward Childrearing of Breast and Bottle Feeding Mothers

PARENTAL ATTITUDE RESEARCH INSTRUMENT

	Breast Feeders	Bottle Feeders
#	Authoritarianism	Authoritarianism
1	11.08	10.41
2	10.41	11.66
3	8.91	10.83
4	10.83	9.66
5	8.41	10.16
6	10.25	8.58
7	9.50	11.00
8	9.00	8.08
9	10.75	9.83
10	9.41	8.58
11	9.25	8.75
12	10.41	10.25
13	10.00	9.00
14	9.58	10.58
15	11.00	9.91
16	11.00	10.67
17	8.33	8.25
18	9.92	10.91
19	8.83	10.41
20	11.00	11.58

TABLE D

(continued)

	Breast Feeders	Bottle Feeders
#	Authoritarianism	Authoritarianism
21	11.50	9.41
22	9.16	9.33
23	10.66	9.83
24	10.83	10.66
25	9.83	10.41
26	10.08	11.16
27	10.08	6.83
28	11.75	9.00
29	9.66	10.16
30	10.00	9.41
31	10.50	11.00
32	9.50	10.33
33	9.83	8.58
34	10.91	9.75
35	9.91	8.00
36	9.08	9.41
37	10.41	9.75
38	9.83	9.83
39	9.25	9.33

TABLE E

Individual Scores on the Family Disharmony Factor of the PARI Demonstrating Attitude Toward Marriage of Breast and Bottle Feeding Mothers

PARENTAL ATTITUDE RESEARCH INSTRUMENT

	Breast Feeders	Bottle Feeders
#	Family Disharmony	Family Disharmony
1	14.66	14.66
2	14.16	13.66
3	15.66	16.00
4	11.50	9.83
5	15.66	15.16
6	12.50	13.50
7	14.00	12.16
8	14.16	12.16
9	15.16	12.66
10	15.00	12.33
11	14.16	13.00
12	13.33	13.83
13	12.83	14.16
14	14.00	13.83
15	14.67	14.00
16	13.00	12.00
17	14.33	14.50
18	13.83	16.83
19	13.67	11.33
20	16.00	13.00

TABLE E

(continued)

	Breast Feeders	Bottle Feeders
#	Family Disharmony	Family Disharmony
21	15.00	12.83
22	14.00	13.66
23	12.50	15.83
24	12.00	12.50
25	14.00	12.00
26	15.50	16.50
27	13.33	9.00
28	15.16	12.33
29	10.66	13.66
30	12.83	11.33
31	13.83	10.83
32	15.16	15.50
33	16.00	13.33
34	15.16	15.16
35	14.00	13.83
36	13.50	17.33
37	14.33	13.83
38	15.00	16.00
39	15.50	11.66

APPENDIX D

Demographic and Pre and Postnatal Characteristics of the Breast and Bottle Feeding Mothers of 6-10 Week Old Infants

Demographic and Pre and Postnatal Characteristics

of the Breast and Bottle Feeding Mothers

of 6-10 Week Old Infants

		Breast Feeders[a]		Bottle Feeders[b]		Total	
		#	%	#	%	#	%
Mother's age	20-24	3	8	7	18	10	13
	25-40	36	92	32	82	68	87
Mother's Educ.							
Below B.A.		10	26	21	54	31	40
B.A. +		29	74	18	46	47	60
Mother's working before childbirth		38	97	39	100	77	99
Father's age	25-29	19	49	16	41	35	45
	30+	20	51	23	59	43	55
Father's Educ.							
Below B.A.		10	26	17	44	27	35
B.A. +		29	74	22	56	51	65
# years married							
0-5		34	87	30	77	64	82
6+		5	13	9	23	14	18
Marriage before baby							
Happy		37	95	35	90	72	92
Happy/Unhappy		0	0	3	8	3	4
Unhappy		2	5	1	2	3	4
Marriage after baby							
More happy		19	49	22	56	41	53
Same		19	49	15	39	34	44
Less happy		1	2	2	5	3	3
Pregnancy							
Planned		32	82	27	69	59	76
Unplanned		7	18	12	31	19	24
Families in prepared childbirth classes		38	97	36	92	74	95

Demographic and Pre and Postnatal Characteristics . . .

(continued)

	Breast Feeders[a]		Bottle Feeders[b]		Total	
	#	%	#	%	#	%
Delivery:						
Natural-no medication	9	23	11	28	20	26
Natural-medication	16	41	15	39	31	40
Epidural	3	8	6	15	9	12
Spinal	2	5	0	0	2	2
Caesarian	8	20	6	15	14	18
Other	1	3	1	3	2	2
Father's presence in delivery room	32	82	30	77	62	80
Mother's feeding baby on delivery table	7	18	3	8	10	13
Mothers who held baby on delivery table	25	64	29	74	54	69
Next time with baby						
1-6 hours	25	64	21	54	46	59
7-12 hours	10	26	12	31	22	28
13+	4	10	5	13	9	12
Don't remember	0	0	1	2	1	1
Extra help at home - 1-2 weeks after	36	92	35	90	71	90
Active father-baby interaction	32	82	32	82	64	82
Support network	38	97	38	97	76	97
Postpartum blues	20	51	28	72	48	62
Prior feeding information received	35	90	32	82	67	86
Choice of feeding						
Own decision	31	79	33	85	64	82
Influenced	8	21	6	15	14	18

Demographic and Pre and Postnatal Characteristics . . .

(continued)

	Breast Feeders[a]		Bottle Feeders[b]		Total	
	#	%	#	%	#	%
Feeding determined						
Before baby	38	97	15	38	53	68
In hospital	1	3	9	23	10	13
At home	0	0	15	38	15	19
Satisfied with choice of feeding						
Great deal	31	79	30	77	61	78
Moderate	8	21	7	18	15	19
Little	0	0	2	5	2	3
No	0	0	0	0	0	0
Husband's influence in choice of feeding	30	77	22	56	52	67
Average feeding time						
0-20 minutes	20	51	11	28	31	40
20+ minutes	19	49	28	72	47	60
Easy baby to feed	36	92	37	95	73	94
Easy baby to burp	26	67	32	82	58	74
Prenatal visit to pediatrician	23	49	20	51	43	55

[a] $n = 39$

[b] $n = 39$

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