

## Differences in Maternal Role Attainment for Breastfeeding and Bottlefeeding Mothers at Four Months after Delivery

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### Introduction

Much has been written about various aspects of breastfeeding. Studies that have focused on the physiologic and psychologic importance of breastfeeding to the infant, profiles of the type of mother who is most likely to succeed at breastfeeding, strategies to promote breastfeeding, and practical advice on how to breastfeed are common in the literature.

Although relatively few research reports have concentrated on the effect of breastfeeding on the mother, nurses frequently assume that breastfeeding mothers have a more positive interaction with their infants than bottlefeeding mothers. Care giving quality may be enhanced through breastfeeding. In particular, breastfeeding is associated with enhanced satisfaction for the mother. Klaus and Kennel(1982) have indicated that sustained contact is a key variable to attachment, and satisfaction with breastfeeding fostered closer mother-infant ties. This association leads to the assumption that bottlefeeding mothers are at a disadvantage when forming relationships with their infants.

In the early 1980s public sentiment equated bottlefeeding with deficient mothering behaviors. As a result, the Task Force on the Assessment of Infant Feeding Practices and Infant Health was compelled to state that, "a mother should not feel that she is doing psychological harm to her child if she is unable or unwilling to breastfeed"(Martone and Nash, 1988). Nevertheless, the link between enhanced positive interaction with an infant and breastfeeding remains a strong belief.

Little is known about how feeding methods affect care giving quality, mother's satisfaction, and the maternal role. Therefore, the purpose of this study was to determine if differences in maternal behavior exist between breastfeeding and bottlefeeding mothers.

### Literature Review

#### 1) Relationship between Feeding Methods and Maternal Role Attainment

Whether to breast or bottlefeed a newborn is a major question facing every new parent. Caregiving quality may be enhanced through breastfeeding. A

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mother's sensitivity to her infant's needs may increase from a frequent and intimate nursing experience (Bloom, 1981 ; Gulick, 1982). Through this experience, a mother gains essential information about what makes her infant feel emotionally secure. Together, they develop a mutual awareness of changes in their levels of tension, relaxation, and pleasure. With consistency and continuity in breastfeeding, infants remember and anticipate sensations and images firmly correlated with familiar and predictable things and people in their environment (Gulick, 1982). Psychologists agree that breastfeeding provides a baby with maximum oral gratification, and establishes bonds of affection between mother and child (Taggart, 1976). Several researchers have found that attachments can certainly take place if a mother does not breastfeed (Helsing and King, 1982 ; Riordan, 1983). However, with breastfeeding, the opportunities for attachment or bonding to take place are enhanced by frequent touching, holding, and eye to eye contact. So, one can hypothesize that a mother is rewarded for her touching by a resulting closeness with her infant, through which she can pleurably experience the infant's warmth and soft skin. In addition, she can look closely and observe her infant's responses to her touch.

Mercer and Stainton (1984) reported that mothers who breastfed had a more positive perception of their birth experience, and mothers who choose to breastfeed had a higher sense of self-competence. Rutledge and Pridham (1987) reported that feeding methods had a significant effect on the maternal perception of competence ( $F(2, 135) = 3.908, p = .022$ ) at 6 weeks after delivery. Breastfeeding mothers had the highest perception of competence for infant care ( $M = 5.03, SD = .68$ ), compared with bottle-feeding mothers ( $M = 4.91, SD = .78$ ), and with mothers feeding by both methods ( $M = 4.56, SD = .93$ ). Dickman (1979) reported breastfeeding promotes a mother's emotional health and decreases postpartum depression.

However, Martone and Nash (1988) reported that

when the mean overall attachment scores of mothers who bottlefed were compared with the mean scores of mothers who breastfed, no significant statistical differences were found. Lee (1993) studied 232 mothers during the postpartum period regarding feeding methods and maternal role attainment. No significant relationships were found between feeding methods, maternal role performance ( $F(2, 229) = .322, p = .725$ ), and maternal identity ( $F(2, 229) = .257, p = .771$ ). With prenatal preparation and social support being the covariates, feeding methods did not have a significant effect on maternal role performance ( $F(2, 229) = .571, p = .566$ ). Results also indicated that feeding methods did not significantly affect maternal identity, with prenatal preparation and social support being the covariates ( $F(2, 229) = .339, p = .774$ ). The results of these studies suggest that a relationship between initial attachment behavior and infant feeding method does not exist and breastfeeding alone does not guarantee that a mother will form a stronger bond with her infant. Bottlefeeding mothers believed strongly that bottlefeeding was a convenient, trouble-free method which allowed them to see exactly how much milk their newborn ingested, and which allowed the infant's father to be involved in feeding (Kearney, 1988).

## 2) Relationship between Feeding Methods and Maternal Role Strain

Goode (cited in Burr, Holl, Nye, & Reiss, 1979) defined role strain as the "felt difficulty in fulfilling role obligations". It is the stress generated within a person when that person cannot comply with a role, or set of roles. Sarbin and Allen (cited in Burr et al., 1979) defined role strain as internal stress experienced when a person perceives that he or she is unable to fulfill multiple role commitments.

To examine the degree of maternal role strain, Lee (1984) studied the difficulty of married couples with a infant at 3-12 months using the modified Hobbs and Steffensmeier measurement. Of the participants questioned, 81.4% answered "much

difficulty”, 7.9% answered “very much difficulty”, 10.7% answered “a little difficulty”. No one answered “no difficulty”. Chung(1985) examined the difficulty of married couples with an infant at 6 months with the result that 8% answered “very much difficulty”, 71% answered “much difficulty”, 21% answered “a little difficulty”, and no one answered “no difficulty”. Literature on the transition to parenthood suggests that parents who are highly committed to the parenting role found the difficulty to be slight or moderate, and revealed that no mothers experienced no difficulty. Lee(1993) studied the relationship between feeding methods and maternal role strain with mothers during the postpartum period. Results indicated that feeding methods did not have a significant effect on maternal role strain( $F(2,229)=.841, p=.432$ ). Also, the hypothesis of an association between maternal role strain and feeding methods with prenatal preparation and social support being the covariates, was not supported( $F(2,229)=1.159, p=.316$ ).

### 3) The Influence of Variables on Maternal Role Attainment and Role Strain

In many reports, the influence and importance of social support have identified. Cutrona(1984) investigated 71 primiparous women regarding social support and stress. Results showed that social support assessed during pregnancy, and stress at 2 weeks after birth, had a significant relationship ( $r=-.21, p<.05$ ). Social support during pregnancy and stress at 8 weeks after birth were also significantly related( $r=-.23, p<.05$ ). Cutrona and Troutman(1986) reported maternal depression did not have a significant correlation with social support, but mothers who received a high degree of social support had low stress at 3 months after delivery. Lee(1994) studied 213 women regarding maternal role attainment and social support. Results showed that social support assessed at 4 months after birth uniquely contributed to a prediction of maternal role attainment( $T_{23}=1.754, T=3.495$ ).

The findings of these studies indicate that the more support a mother received from her hus-

band, 1) the more apt she was to become involved with her infant when they were together, 2) the less she felt that she needed to be in the presence of her infant at all times, and 3) the adequacy of mothering was influenced by the context of family relationships, and specifically by a mother's perception of support from her husband.

However, having a large support network did not assure that social support was forthcoming in a positive manner(Mercer, 1986). The more persons providing social support, such as advice, the greater the chance that the advice may be incongruent, leading to conflict(Crawford, 1985).

## Hypotheses

The hypotheses tested in this study were :

1. Mothers who select the breastfeeding method have a higher perception of maternal role attainment than bottlefeeding mothers.
  - 1) Mothers who select the breastfeeding method show a higher perception of maternal role performance than bottlefeeding mothers.
  - 2) Breastfeeding mothers show a higher perception of maternal identity than bottlefeeding mothers.
  - 3) Breastfeeding mothers show a higher perception of maternal interaction with their babies than bottlefeeding mothers.
2. Mothers who select the breastfeeding method have less maternal role strain than bottlefeeding mothers.
  3. For mothers with equivalent social support, breastfeeding mothers show a higher perception maternal role attainment than bottlefeeding mothers.
    - 1) Breastfeeding mothers show a higher perception of maternal role performance when social support is controlled.
    - 2) Breastfeeding mothers show a higher perception of maternal identity than bottlefeeding mothers when social support is controlled.
    - 3) Breastfeeding mothers will show a higher perception of maternal interaction with their babies when social support is controlled.

4. For mothers with equivalent social support, breastfeeding mothers will have less maternal role strain than bottlefeeding mothers.

## Methods

### Subjects

All subject women met the criteria of having a live born infant who was of 38 weeks or more gestation without a birth anomaly or severe disease. The time of measurement was at 4 months following birth. Mercer(1986) said that 4 months following birth is a turning point of adaptation in mothering with almost two-thirds of the women studied reporting that they were comfortable with the maternal role and felt it had become internalized as part of their identity at the 4 month point. Subjects were primarily identified through 5 Community Health Centers in Taejeon. Questionnaires were mailed to mothers who gave their consent by telephone. Data were collected from 177 mothers.

### Instruments

**Maternal role attainment** was defined as an interactional and developmental process occurring over a period of time, during which the mother becomes attached to her infant, acquires competence in the caretaking tasks involved in the role, and expresses pleasure and gratification in the role. Maternal role attainment was operationalized by three measures;1) maternal role performance(Parenting Sense of Competence Scale)(Gibaud–Wallston, 1977); 2) maternal identity(Semantic Differential Scale–Myself as Mother)(Osgood, cited in Walker, Crain, and Thompson, 1986); and 3) maternal interaction.

**Perceived maternal role performance** was assessed using a 12 item index, slightly modified from the Parenting Sense of Competence Scale(Gibaud–Wallstone, 1977). The items were scored from 1 to 4 with the highest number representing the greatest perception of maternal ability. The alpha reliability coefficient was .83.

**Perceived maternal identity** was assessed by a Semantic Differential Scale, *Myself as Mother*(SD–Self). The SD–Self consists of 12 bipolar adjective pairs embedded within a 24 item, 5 point Semantic Differential Scale. The Cronbach alpha reliability coefficient of the sample reported here was .85.

**Perceived maternal interaction** was assessed using a 13 item index, reflecting the degree of mother–infant interaction during care giving activity. Items were scored from 1 to 4 with the highest number representing the greatest interaction with the baby. The alpha reliability coefficient was .79.

**Maternal role strain** was defined as the “felt difficulty in fulfilling role obligations”. Maternal role strain was measured using a 20 item index, slightly modified from Hobbs’s Scale(cited in Chung, 1985). The items were scored from 1 to 4 with the highest number representing the greatest sense of comfort. The alpha reliability coefficient was .84.

**Perception of social support** was operationalized with support from the husband, and other people. The mother’s perception of support received from her husband was measured using a 21 item index reflecting the degree of help and satisfaction she received from her husband regarding care giving activities and house activities. Items were scored from 1 to 4 with the highest number representing the greatest perception of help from the husband. The alpha reliability coefficient was .89. The mother’s perception of social support received from other people was measured using a 13 item index. This scale was composed of physical, emotional, and informational support from relatives and friends. Each set was scored from 1 to 4 such that the highest scores indicate the highest level of support. The alpha reliability coefficient was .75.

### Data Analysis

Response categories were coded and entered into a computer, where they were analyzed using the Statistical Package for Social Sciences (SPSSx). Relationships of demographic variables to independent variables were tested using chi-square and

analysis of variance. Independent variables were analyzed for association with breastfeeding methods using the t-test and covariate analysis.

**Results**

1) Characteristics of Subjects

All mothers(N=177) were married. Their ages ranged from 19 to 36 years, with a mean age of 26.7 years. Their education ranged from 6 to 18 years, with a mean of 13.2 years. There were 87 male infants(49.2%) and 90 female infants(50.8%). Primiparas numbered 117(66.5%) and multiparas numbered 59(33.5%). Chi-square and t-test were used to test for differences in demographic variables between the two feeding methods groups. The educational status of bottlefeeding mothers was higher than breastfeeding mothers( $t=-3.32, p=.001$ ). A significant group difference was found for the number of working mothers,  $\chi^2=12.78, p=.0004$ . There were no significant differences between the two groups in family number, age, months married, and birth order<Table 1>.

<Table 1> Comparison of Feeding Methods on Demographic Variables

Variable	Breast (N=81)		Bottle (N=96)		t	p
	X	SD	X	SD		
Family						
Number	4.11	1.48	3.98	1.30	.58	.565
Age	27.41	2.59	28.17	3.27	-1.69	.092
Months						
Married	31.74	23.15	31.51	21.72	.07	.947
Years						
Education	12.43	2.21	13.53	2.17	-3.32	.001*

2) Tests of hypotheses

Hypotheses 1 and 2. Hypothesis 1, which stated that breastfeeding mothers would show a higher perception of maternal role attainment, was rejected. Similarities and differences in maternal role attainment between the two groups were

investigated using the t-test. Using maternal role performance as the dependent variable, a significant difference was not found between the two groups( $t=-.71, p=.478$ ). Maternal role performance scores for breastfeeding mothers were mean=36.16, SD=5.60; and for bottlefeeding mothers were mean=36.72, SD=4.90<Table 2>. The hypotheses concerning the relationship of feeding methods with maternal identity( $t=.09, p=.927$ ) and with maternal interaction( $t=-.31, p=.745$ ) were also rejected. Hypothesis 2, which stated that breastfeeding mothers would have a lower perception of maternal role strain, was not supported. The t-test indicated that feeding method did not have a significant effect on maternal role strain( $t=.07, p=.945$ ) <Table 2>.

<Table 2> Comparison of Maternal Role Attainment and Maternal Role Strain By Feeding Methods

Variable	Breast (N=81)		Bottle (N=96)		t	p
	X	SD	X	SD		
Maternal Role						
Performance	36.16	5.60	36.72	4.90	-.71	.478
Maternal						
Identity	44.87	6.67	44.78	7.10	.09	.927
Maternal						
Interaction	44.49	5.09	44.75	5.74	-.31	.745
Maternal Role						
Strain	47.01	10.89	46.90	9.05	.07	.945

Hypotheses 3 and 4. An analysis of covariance (ANCOVA) was used to test hypothesis 3; that breastfeeding mothers with more social support would have a higher perception of maternal role attainment<Table 3>. With husband's support and other people's support being the covariates, feeding methods did not have a significant effect on maternal role performance( $F(2,173)=.041, p=.841$ ). Results also indicated that feeding methods did not significantly affect maternal identity( $F(2,173)=.611, p=.436$ ) and maternal interaction( $F(2,173)=.027, p=.869$ ), with husband's support and other

<Table 3> Effect of Feeding Methods on Maternal Role Attainment and Maternal Role Strain, with Husband's Support and Other people's Support as Covariates

Variable	Source of Variance				
	SS	df	MS	F	p
<u>Maternal Role</u>					
<u>Performance</u>					
Covariates	725.983	2	362.991	15.372	.000*
Husband's support	30.731	1	30.731	1.301	.256
Other's support	565.577	1	565.577	23.951	.000*
Feeding method group	.957	1	.957	.041	.841
Residual	4085.140	173	23.614		
Total	4812.079	176	27.341		
<u>Maternal Identity</u>					
Covariates	1544.289	2	772.144	19.692	.000*
Husband's support	636.548	1	636.546	16.234	.000*
Other's support	480.206	1	480.206	12.247	.001*
Feeding method group	23.939	1	23.939	.611	.436
Residual	6783.343	173	39.210		
Total	8351.571	176	47.452		
<u>Maternal Interaction</u>					
Covariates	547.541	2	273.771	10.149	.000*
Husband's support	106.158	1	106.158	3.935	.049*
Other's support	299.639	1	299.639	11.108	.001*
Feeding method group	.737	1	.737	.027	.869
Residual	4666.852	173	26.976		
Total	5215.130	176	29.631		
<u>Maternal Role Strain</u>					
Covariates	2261.645	2	1130.832	13.037	.000*
Husband's support	253.735	1	253.745	2.925	.089
Other's support	1490.232	1	1490.232	17.180	.000*
Feeding method group	19.654	1	19.645	.227	.635
Residual	15006.340	173	86.742		
Total	17287.638	176	98.225		

people's support being the covariates. Hypothesis 4, which stated that breastfeeding mothers would have less maternal role strain when husband's support and other people's support were controlled, was not supported ( $F(2,173) = .227, p = .635$ ).

### Discussion

The data collected from mothers in this study did not support the commonly held notion that breastfeeding mothers will have higher quality care giving than bottlefeeding mothers. Breastfeeding mothers reported that they had a mean maternal

role performance of 36.67, while the mean for bottlefeeding mothers was 35.91. There was no statistically significant difference on the maternal role performance score between the two groups. An analysis of covariance did not show a significant difference between the groups on maternal role performance, with husband's support and other people's support being the covariates. When the mean scores of maternal identity and maternal interaction for breastfeeding mothers were compared with the mean scores of bottlefeeding mothers, no significant statistical difference was found. With husband's support and other people's support being

the covariates, there was also no difference on maternal role strain. Contrary to what was hypothesized, feeding methods did not have a significant effect on the perceived maternal role attainment score, a finding inconsistent with Rutledge and Pridham(1987), but consistent with Martone and Nash(1988) and Lee(1993). The results presented here, that feeding methods did not affect perceived maternal role strain scores, is inconsistent with Dickman(1979), but consistent with Lee(1993). Martone and Nash(1988) recommended that further research is necessary with replicate analysis at regular intervals such as one month, three months, and six months, once feeding practices are better established. However the results of this study suggest that a relationship between maternal role attainment and infant feeding methods does not exist at 4 months after birth. Although the physiologic value of breastfeeding for a baby is well recognized, many mothers felt difficulty in breastfeeding, and the interaction between infant feeding choice and the mother's real social situation may necessitate flexibility in feeding.

Nurses have no right to induce guilt over a mother's choice of feeding method. Nurses should be more ready to accept the reluctance of those who do not wish to breastfeed and help mothers deal with their own needs, goals, and feelings. Great attention is being paid at present to the earliest relationship between mother and child and how this can be improved. Nurses should see their role as that of a professional passing on available information to mothers, allowing them to decide what they wish to do, and then supporting them in their decisions.

### Conclusions and Recommendations

Health professionals frequently have suggested that feeding methods affect care giving quality and the maternal role. No evidence for such an association was found in this study. Clearly, more research into feeding methods and parenting is needed.

This may lead us to ask, how should mothers be encouraged to breast feed? A knowledge of maternal role attainment and role strain may lead to more appropriate intervention and encouragement in breastfeeding. The limitations of this study include a non-random selection of subjects, the selection of variables, and an inability to generalize results. Future studies are needed with other variables.

### REFERENCES

- Bloom, M.(1981). The romance and power of breast-feeding. Birth and the Family Journal, 8, 259-269.
- Burr, W.R., Holl, R., Nye, F.I., & Reiss, I.C. (1979). Contemporary Theories about the Family, Vols.1 & 2. N.Y. Freepress.
- Chung, M.J.(1985). Issues in the transition to parenthood. The Yonsei Research Journal, 355-370.
- Crawford, G.(1985). A theoretical model of support network conflict experienced by new mothers. Nursing Research, 34(2), 100-102.
- Cutrona, C.E.(1984). Social support and stress in the transition to parenthood. Journal of Abnormal Psychology, 93(4), 378-390.
- Cutrona, C.E., & Troutman, B.R.(1986). Social support, infant temperament, and parenting self-efficacy. A mediational model of postpartum depression. Child Development, 57, 1507-1518.
- Dickman, S.R.(1979). Breast-Feeding and Infant Nutrition. Family and Community Health, 1(4), 19-25.
- Gibaud-Wallston, J.(1977). Self-esteem and situational stress : factors related to sense of competence in new parents, University Microfilms International, Ann Arbor, Michigan, 48106.
- Gulick, E.E.(1982). Informational correlates of successful breast-feeding. MCN, 7, 370-375.

## 모유수유 유무와 산후 4개월된 어머니의 모성역할 획득 정도 차이

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Helsing, E, & King, F.S.(1982). Breastfeeding in practice : A manual for health workers. New York, Toronto : Oxford Univ. Press, 198-205.

Kearney, M.H.(1988). Identifying psychosocial obstacles to breastfeeding success. JOGNN, March /April, 98-105.

Klaus, M.H. & Kennell, T.H.(1982). Parent-Infant Bonding. (2nd Ed.). The C.V. Mosby Co.

Lee, H.K.(1993). Difference of maternal role attainment in breastfeeding and bottlefeeding mothers. The Chungnam Medical Journal, 20 (2), 667-678.

Lee, H.K.(1994). A structural model for maternal role attainment at four months following birth. in press.

Lee, H.R.(1984). An analysis of difficulty and satisfaction according to transition to parenthood. Masters Dissertation, Yonsei University.

Martone, D.J. & Nash, B.R.(1988). Initial differences in postpartum attachment behavior in breastfeeding and bottle-feeding mothers. JOGNN, May/June, 212-213

Mercer, R.T.(1986). First-Time Motherhood. Experiencies from Teens to Forties, New York, Springer Publishing Co.

Mercer, R.T. & Stainton, M.C.(1984). Perceptions of the birth experience : A cross-cultural comparison. Health Care Women Internat, 5 (1-3), 29-35.

Riordan, J.(1983). The sensuousness of breastfeeding . Riordan J(ed), A practical guide to breastfeeding, C. V.Mosby Co, 336-342.

Rutledge, D.L. & Pridham, K.F.(1987). Postpartum mothers' perception of competence for infant care. JOGNN, May/June, 185-194.

Taggart, M.E.(1976). A practical guide to successful breastfeeding. Canadian Nurse 72(3), 25-30.

Walker, L.O., Crain, H., & Thompson, E.(1986). Maternal role attainment and identity in the postpartum period. stability and change. Nursing Research, 35(2), 68-71.

모유수유 유무와 아기의 신체적, 정서적 발달과의 관계, 모유수유 성공에 영향을 주는 요소, 모유수유를 성공시키기 위한 전략 등 모유수유를 증진시키기 위한 연구는 많이 이루어 졌다. 이에 비하여 모유수유가 어머니의 모성행위, 어머니의 만족에 미치는 영향 등 모유수유 유무가 어머니의 정서에 미치는 영향에 관한 조사는 거의 이루어 지지 않은 실정이다. 그러나 많은 모성간호사들은 모유수유 어머니가 인공수유 어머니보다 아기 양육에 더 자신감을 갖고 있고, 어머니로서의 역할에 더 만족한다고 믿고 있다. 또한 피치못할 사정으로 인공수유를 하는 어머니들 스스로도 모유수유를 하지 못함 때문에 아기에 대한 죄의식을 갖고 있을 수 있다. 그래서 생후 4개월된 아기를 갖고 있는 어머니를 대상으로 모유수유 유무와 어머니의 모성역할 긴장과 모성역할 획득 정도에 차이를 연구하였다.

연구결과 모유수유 유무에 따라 모성역할 획득 정도에 차이가 없었으며, 모성역할 긴장에도 차이가 없었다. 또한 남편의 지지와 친척 및 친구의 지지를 공변량으로 처리하여 모유수유 유무에 따라 모성역할 획득 정도에 차이를 알아 본 결과 모유수유 유무에 따라 모성역할 획득 정도에 차이가 없었고, 모성역할 긴장 역시 차이가 없었다.

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