AD-A268 204

MENTATION PAGE

Form Approved
OMB No. 0704-0188

is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, ng and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this ng this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	1993	THESIS/~~DISSERTATION~~

4. TITLE AND SUBTITLE
The Incidence and Duration of Breatfeeding in Active Duty Military Women

5. FUNDING NUMBERS

6. AUTHOR(S)
Debre Sandercock

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
AFIT Student Attending: University of Cincinnati

8. PERFORMING ORGANIZATION REPORT NUMBER
AFIT/CI/CIA- 93-026

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
DEPARTMENT OF THE AIR FORCE
AFIT/CI
2950 P STREET
WRIGHT-PATTERSON AFB OH 45433-7765

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

DTIC
ELECTE
AUG 13 1993
S A D

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for Public Release IAW 190-1
Distribution Unlimited
MICHAEL M. BRICKER, SMSgt, USAF
Chief Administration

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

93-18705

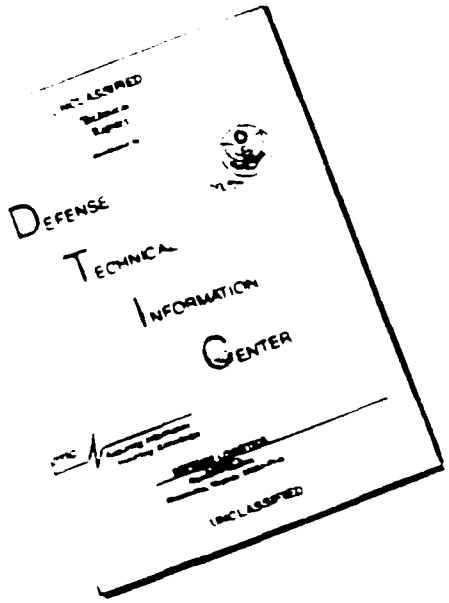
14. SUBJECT TERMS

15. NUMBER OF PAGES
32

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

93-026

THE INCIDENCE AND DURATION OF BREASTFEEDING IN ACTIVE DUTY MILITARY WOMEN

A thesis submitted to the

Division of Graduate Studies and Research to the University of Cincinnati

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN NURSING
in the College of Nursing and Health

1993

by

Debra J. Sandercock

B.S.N. Duke University, 1983

Accesion For
NTIS CRA&I ☑
DTIC TAB ☐
Unannounced ☐
Justification
By
Distribution /
Availability Codes
Dist | Avail and / or Special
A-1 | 23

DTIC QUALITY INSPECTED 3

ABSTRACT

INCIDENCE AND DURATION OF BREASTFEEDING IN ACTIVE DUTY MILITARY WOMEN

Debra J. Sandercock

The purpose of this investigation was to examine the incidence and duration of breastfeeding in active duty women in the armed forces. No data existed regarding the duration of breastfeeding for these women. A convenience sample of 20 active duty women who delivered at a midwestern military medical center was selected. Women with multiple gestation, premature deliveries (delivery prior to 37 weeks gestation), and maternal/infant complications were excluded from the study. Data was collected from existing records. The mother's inpatient record was examined to collect demographic information, type of delivery, and maternal complications. The type of feeding at discharge was collected from the newborn nursery/neonatal intensive care unit register. The infant's outpatient record was examined to collect type of feeding at 2, 8, 16, and 24 weeks, and infant complications. Frequencies were calculated to summarize the data. Correlations were used to examine the relationship between breastfeeding duration in active duty military women, age, ethnicity, number of children, educational level, marital status, and maternal income at each time of data collection. In contrast to 55% of civilian employed mothers, 45% of the active duty mothers were breastfeeding upon discharge from the hospital. By six months, none of the 20 mothers were still breastfeeding compared to 10% of civilian mothers. There were no statistically significant differences between type of feeding and age, ethnicity, marital status, number of previous children, type of delivery, socioeconomic status, education or type of job at any of the data collection time points. Replication of this investigation needs to be conducted with a larger sample over a longer period of time. From the results of this investigation, it appears that military perinatal nurses should develop programs to provide both prenatal and postpartum education and support for women who are breastfeeding while employed.

ACKNOWLEDGEMENTS

I offer special thanks to all those who influenced me in pursuit of this advanced degree, especially:

My husband Don, for his love, patience, confidence, and motivation.

My daughters Jean, Catherine, and Victoria for their love, the time and attention they unknowingly gave up, and for their comic relief in times of stress.

My thesis committee for their guidance, support, and encouragement: Laurie Gunderson PhD, Janiece Adams MSN, and Tina Weitkamp MSN.

Judith Rosen who experienced graduate school, thesis preparation, and the twins' pregnancy and birth with me for her friendship and support.

TABLE OF CONTENTS

ABSTRACT.....i

ACKNOWLEDGEMENTS.....ii

LIST OF TABLES.....iv

CHAPTER 1: INTRODUCTION TO THE STUDY.....1

Introduction to the Problem.....1
Purpose of the Study.....2
Significance to Perinatal Nursing.....2
Review of the Literature.....4
Review of Previous Studies.....4
Theoretical Rationale.....8
Research Questions.....9
Operational Definitions.....9

CHAPTER 2: METHODOLOGY.....12

Design.....12
Setting.....12
Subjects.....12
Procedures.....14

CHAPTER 3: PRESENTATION OF FINDINGS.....15

Data Analysis.....15
Results.....15

CHAPTER 4: DISCUSSION OF FINDINGS.....20

Discussion of Findings.....20
Conclusions and Implications.....22
Scope and Limitations.....24

CHAPTER 5: SUMMARY.....25

Summary.....25
Recommendations.....26

REFERENCES.....28

APPENDIX.....32

LIST OF TABLES

Table 1: Reasons for Exclusion from Study.....15

Table 2: Frequency of Feeding Type at Discharge, 2 Weeks, 8 Weeks, 16 Weeks, and 24 Weeks.....16

Table 3: Percentage of Women that Continued to Breastfeed..... 17

Table 4: Demographic Frequencies for Age, Ethnicity, Method of Delivery, and Educational Level.....18

Table 5: Demographic Frequencies for Income, Occupation, and Marital Status.....19

Chapter 1

The Research Problem

Introduction to the Problem

Breastfeeding is considered the optimal nutrition for infants (American Academy of Pediatrics, 1982; National Association of Pediatric Nurse Associates and Practitioners, 1988; Lawrence, 1989a). After a low rate of 24.9% in 1970, in-hospital breastfeeding rates in the U.S. rose to 59.7% in 1984. Then the incidence declined to 52.2% in 1989 (Martinez & Nalezienski, 1979; Martinez & Krieger, 1985; Ryan, Rush, Krieger, & Lewandowski, 1991). In Healthy People 2000, the U. S. Department of Health and Human Services, Public Health Service, set goals to increase to 75% the proportion of mothers who breastfeed their babies in the early postpartum period and to 50% the proportion who continue breastfeeding until their babies are five to six months old (1992).

The women who remain on active duty in the U.S. Air Force after the birth of their babies return to work generally at six weeks postpartum. Therefore a question arises as to the duration of breastfeeding for these individuals, since it is known that the mother's employment status negatively impacts breastfeeding. For example, mothers who work while breastfeeding experience a shorter duration of breastfeeding than mothers who do not work (Ryan

& Martinez, 1989; Kurinij, Shiono, Ezrine, & Rhoads, 1989; Lawrence, 1989b).

Purpose of the Study

The purpose of this investigation was to examine the incidence and duration of breastfeeding in active duty women in the armed forces. No data existed regarding the duration of breastfeeding for these women.

More specifically, the incidence and duration patterns for women in the armed services were compared to civilian data on breastfeeding as reported in the 1989 Ross Laboratories Mothers Survey. A second aim was to examine the impact on breastfeeding of demographic variables including: socioeconomic status, educational level, ethnicity, number of children, marital status, and maternal age.

Significance

Fifty-six percent of mothers with children under the age of six were in the labor force in March 1988 (U. S. Department of Labor, Women's Bureau). Included in those mothers would be active duty military mothers. Due to widespread beliefs that breastfeeding and employment combine poorly or not at all, nurses need to offer information about the options available to employed mothers. Since breastfeeding should be actively encouraged in all maternal-child health care settings, perinatal nurses are in a strong

position to provide both prenatal and postpartum education and support regarding breastfeeding.

Breastfeeding benefits infants and mothers. Advantages that accrue to the infant include optimal nutrition for normal growth and development, safeguarding against allergies, encouraging proper development of jaw and facial structure, protection against disease, especially ear and gastrointestinal infections, ease of digestibility, and the facilitation of a warm nurturing relationship. For mothers, breastfeeding provides protection against postpartum hemorrhage, quicker recovery from childbirth, stronger bonding with the baby, decreased incidence of breast cancer, and relaxation while nursing. Breastfeeding also saves time, money and energy compared to bottlefeeding (Spisak & Gross, 1991, p. 57).

Society also benefits from having an infant breastfed through stronger family bonds and decreased health care costs. Breastfeeding is recommended not only as a method of feeding but also as a nurturing relationship. It is well known and documented that breastfeeding has many beneficial results for both the mother and baby. Breastfeeding is encouraged through at least the sixth month of life by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists (1992). However, it was not known whether breastfeeding was occurring in women returning to active military duty at six weeks following the birth of

a child. Therefore, there was a great need to have a better understanding of the breastfeeding patterns in these individuals. Since breast milk is the most appropriate and nutritionally sound food for the baby, the data obtained from this investigation may lead to appropriate intervention programs.

Review of the Literature

Patterns of breastfeeding and employment have been studied because new mothers are returning to work. However, breastfeeding has varying definitions in the literature ranging from "ever breast fed" such as in the National Surveys of Family Growth to "exclusively breast fed" and "partially breast fed" in other studies. Additionally, breastfeeding is not always explicitly defined. Therefore, it is somewhat confusing to assimilate the statistics and information regarding breastfeeding. Also, the impact of the multiple roles undertaken by breastfeeding employed mothers have not been widely studied.

Review of Previous Studies

Studies have analyzed data from successive years of the Ross Laboratories Mothers Survey (RLMS). The RLMS is a large, national mail survey sent out each quarter since 1955 to mothers when their infants reach 6 months of age. The questionnaires are sent to a probability sample from a list of names accounting for approximately 70% to 82% of all new mothers in the United States. The list is derived from

hospital sources, county records of birth registration, photography and entrepreneurial services, and newspapers. Ross Laboratories compiles the data from the completed responses and the data is available upon request for investigational purposes. The National Center for Health Statistics in four National Surveys of Family Growth (NSFG), Cycle I (1973), Cycle II (1976), Cycle III (1982), and Cycle IV (1988), have also addressed breastfeeding. Because these surveys focused on fertility, the NSFG included samples that were representative of the national population of civilian noninstitutionalized women in their reproductive years (ages 15 through 44 years). Comparison showed both RLMS and NSFG provide reliable and useful estimates of breastfeeding (Ryan, Pratt, Wysong, Lewandowski, McNally, & Krieger, 1991). The RLMS is a more useful resource because it has data collected more often, and data related to breastfeeding has been collected continuously since 1955. Limitations of RLMS include that employment data have only been collected since 1981 and error may be introduced because mothers must recall the type of milk fed over the previous six months. Additionally another variable that may have more impact on breastfeeding than employment, timing of return to work, is not addressed. The RLMS results are generalizable to the United States population because the collected infant feeding data are weighted by subclass means in the sample to account for differing responses and coverage rates.

Since 1981, analysis of the RLMS consistently reflects that maternal employment negatively impacts the duration of breastfeeding but not the incidence of breastfeeding (Ryan, Wysong, Martinez, & Simon, 1990; Martinez & Krieger, 1985; Ryan & Martinez, 1989). According to the latest published data, 55% of mothers, both employed and unemployed, breastfed in the early postpartum period. However, by 6 months of age only 10% of employed mothers were still breastfeeding compared to 24% of unemployed mothers (Ryan & Martinez, 1989).

Kearney & Cronenwett (1991) and Auerbach & Guss (1984) found that timing of return to work was more important than employment status in determining breastfeeding duration. Employment status did not affect breastfeeding when the return to work was after two months postpartum. However, mothers who planned to return to work prior to two months postpartum planned and experienced a shorter duration of breastfeeding. The findings are not generalizable as the subjects were married, professional, primarily white women who knew they could receive support from the research project staff if needed. Data could also be skewed from a Hawthorne effect (Kearney & Cronenwett, 1991). In Auerbach & Guss' study (1984) mothers who began working prior to sixteen weeks postpartum weaned earlier than did mothers who began working after sixteen weeks postpartum. These data were collected from questionnaires

mailed to respondents from an advertisement in four national lay magazines requesting mothers who worked and breastfed. Mothers who were motivated to answer the advertisement may be different from mothers who did not. Also, 94% of the respondents were married and 94% were white. In another study, professional women experienced greater duration of breastfeeding than other working women. Additionally, black women working part-time breastfed more often than black women working full-time. Part-time versus full-time employment had no significant difference for white women (Kurinij, Shiono, Ezrine, & Rhoads, 1989). Again, these findings are not generalizable outside the population studied.

In summary, the researcher found no published data concerning the breastfeeding practices of active duty military women. Studies have looked at factors related to employment and breastfeeding rather than incidence and duration. Auerbach and Guss (1984) suggest that role overload is the difficulty in combining employment and breastfeeding, not breastfeeding itself. Overall the literature consistently reflects that, white, well educated, higher income, older women with more than one child tend to breastfeed more often than lower income, minority, less educated younger women (Samuels, Margen, & Schoen, 1985; Martinez & Krieger, 1985; Ryan & Martinez, 1989; Kurinij,

Shiono, Ezrine, & Rhoads, 1989; Ryan, Wysong, Martinez, & Simon, 1990).

Theoretical Rationale

Role function is one of four adaptive modes that Roy identifies in her adaptation model of nursing. The basic need of the role function mode is social integrity; it means that a person needs to know who they are in relation to others so that they can act. A role defines the expected behaviors that a person should perform to maintain a title (Roy, p. 245). Roy divides roles into primary, secondary and tertiary roles. A primary role "determines the majority of behaviors engaged in by the individual during a particular growth period in life" (Roy, p. 245). In this study's target population, the primary role is young adult female. A secondary role "influences behavior in a variety of settings and is occupied according to the tasks an individual must accomplish to achieve autonomy at a particular time in life" (Roy, p. 245), such as mother and employee in this study. A tertiary role is "a temporary role of choice that an individual occupies for the purpose of fulfilling some minor task associated with the current developmental stage" (Roy, p. 246). In this study, the tertiary role of interest is breastfeeding mother. According to Roy's model, there are two types of role conflict, interrole and intrarole. Interrole conflict occurs when the expected behaviors of one role are

incompatible with the expected behaviors of one or more other roles. Intrarole conflict occurs when the individual demonstrates behaviors in a role that are incompatible with the expectations from one or more persons in the environment concerning the role (Roy, p. 246). Interrole and/or intrarole conflict may contribute to the negative impact of employment on breastfeeding duration. Role conflict was not specifically addressed in this investigation. However, it is a hypothesis of the researcher and others (Auerbach & Guss, 1984) that role conflict could explain differences in breastfeeding patterns between employed and unemployed mothers. The possible impact of role conflict on the results of this investigation will be discussed.

Research Questions

The research questions for the investigation were:

(1) How many active duty military mothers breastfeed during the early postpartum period?

(2) How many active duty military mothers continue to breastfeed until the infant is five to six months of age?

Operational definitions of variables

Active duty military mothers. Active duty military mothers were women who choose to continue on active service in one of the armed forces after the birth of a baby. Active service is full-time employment. In terms of Roy's model, active duty military mothers have two secondary roles, full-time employee and full-time mother.

Unemployed mothers. Women who self-reported no employment outside the home. In terms of Roy's model, unemployed mothers have one secondary role, full-time mother.

Early postpartum. Postpartum is the time after the birth of a baby and can include several months. For the purposes of this study, early postpartum was up to discharge from the hospital. Early postpartum feeding status was the type of feeding recorded in the newborn inpatient chart for the time of discharge.

Breastfeeding. Breastfeeding is a nurturing relationship between mother and baby that includes feeding the baby at the breast. For the purposes of this study, breastfeeding was anything that was reported by the mother as breastfeeding and recorded as breastfeeding in the chart. It included any or all of the following: exclusive nursing, supplementing nursing with pumped breast milk, and supplementing nursing with formula. In terms of Roy's model breastfeeding is a tertiary role.

Formula feeding. Formula feeding means that the mother is not breastfeeding at all. The infant does not suckle at the breast or receive pumped breast milk.

Incidence of breastfeeding. Incidence of breastfeeding was measured as breastfeeding upon discharge from the hospital. Feeding status at discharge was obtained from the infant's inpatient chart.

Duration of breastfeeding. Duration of breastfeeding was measured in weeks. For the purposes of this study, the number of weeks of breastfeeding was coded as the type of feeding recorded in the baby's outpatient record for each data collection time point.

Chapter 2

Design and Methods

Design

A retrospective descriptive correlational design was used. Since breastfeeding is the optimal nutrition for infants and carries many benefits to both mothers and babies, it would have been unethical to require an infant to be formula fed for the sake of research. Also, the retrospective design eliminated any Hawthorne effect (Polit & Hungler, 1991, p. 161).

Setting

Data collection took place at a midwestern military medical center. In the center, there were approximately 100 deliveries per month. The women who delivered at the medical center were active duty military women and dependents of active duty and retired military personnel. There was a Level II Neonatal Intensive Care Unit at the medical center.

Subjects

Subjects were active duty women who delivered at the midwestern military medical center and planned to remain on active duty after the birth of the baby. Only routine deliveries were included in the study. Women with multiple gestation, premature deliveries (delivery prior to 37 weeks gestation) and maternal/infant complications in the early postpartum period were excluded from the study.

Complications that occurred after the early postpartum period were documented but did not exclude an infant/mother from the study.

For practical reasons, the researcher selected a convenience sample of 50 active duty women who delivered at the medical center between January 1, 1992 and June 30, 1992. Restricting the sample to this time frame helped to ensure consistency in treatment standards during the study period and decrease losses from the sample due to the military transfer of the mother. Starting with June 30, 1992, the researcher went back chronologically and enrolled in the study the first 50 active duty deliveries who met the inclusion criteria. Clinical records provided a list of active duty women who delivered at the medical center.

Protection of subjects. The current investigation was of no benefit to the individual subjects, but added to nursing knowledge about the incidence and duration of breastfeeding in active duty military women. Since this study was a retrospective chart review there were no additional risks to the patients. Because of the use of pre-existing records, this study did not require informed consent. However, confidentiality was maintained. Names, register numbers and social security numbers were used by the researcher to coordinate maternal inpatient and infant outpatient records. No names, register numbers, or social security numbers appeared in any data released by the

researcher. Only the researcher had access to this information. After coordinating the two records, a subject number was assigned to each individual's data. Any reporting of the findings was in aggregate.

Procedures

Data was collected only from existing records. Clinical records provided a list of active duty women who delivered at the medical center between January 1, 1992 and June 30, 1992. The mother's inpatient record was examined to collect the following information: age, ethnicity, number of children, educational level, occupation/Air Force Specialty Code, military rank, marital status, type of delivery, and maternal complications. Then the infant's inpatient record was examined to find the type of infant feeding at discharge. Finally, the infant's outpatient record was examined to retrieve the following data: infant complications and type of feeding at 2 weeks, 8 weeks, 16 weeks, and 24 weeks.

Data about extraneous variables, such as age and ethnicity, that have been documented to influence breastfeeding was collected to estimate any confounding effects.

Chapter 3

Presentation of Findings

Data Analysis

Data from the investigation were analyzed using the SPSS PC+ Student Ware software program. Research questions were answered via frequency calculations and the use of a two-tailed correlation coefficient with the alpha set a priori at 0.05.

Results

There were 63 deliveries to active duty women at the medical center between January 1, 1992 and June 30, 1992. There were 20 mother-infant pairs that met inclusion criteria for the study. See Table 1 for reasons for exclusion.

Table 1

Reasons for Exclusion from Study

1. Military discharge because of pregnancy (n=20)
2. Breastfeeding at hospital discharge, but transferred out of the area (n=7)
3. Preterm delivery (n=6)
4. Breastfeeding at hospital discharge, but unable to locate infant's outpatient record (n=3)
5. Unable to locate mother's inpatient record (n=2)
6. Intrauterine fetal demise (n=1)
7. Mother with severe psychiatric disorder (n=1)
8. Multiple gestation (n=1)
9. Infant adopted after delivery (n=1)
10. Infant's outpatient chart incomplete (n=1)

Of the 20 mother-infant pairs in the study, 45% (9) were breastfeeding at time of discharge from the hospital. At the two week well baby check up, 40% (8) of the infants were being breastfed. At 8 and 16 weeks, 5% (1) of the infants were still breastfeeding. At the six month well baby check up none of the mothers were still breastfeeding (see Table 2).

Table 2

Frequency of Feeding Type at Discharge, 2 Weeks, 8 Weeks, 16 Weeks and 24 Weeks

	Type of Feeding	
Time	Breast	Formula
Discharge from hospital	45%(9)	55%(11)
2 weeks	40%(8)	60%(12)
8 weeks	5%(1)	95%(19)
16 weeks	5%(1)	95%(19)
24 weeks	0%(0)	100%(20)

Table 3 shows the percentages of mothers who were breastfeeding at hospital discharge who continued to breastfeed. The one mother who was still breastfeeding at 8 and 16 weeks began supplementing breastfeeding with formula feedings after the 2 week well baby check up.

Table 3

Percentage of Women that Continued to Breastfeed

Breastfeeding Group (n=9) Continuing Breastfeeding

Time	Percentage
2 weeks	88%(8)
8 weeks	11%(1)
16 weeks	11%(1)
24 weeks	0%(0)

There were no significant correlations between type of feeding and age, ethnicity, marital status, number of previous children, type of delivery, socioeconomic status, education, or type of job at any of the data collection time points. See Appendix A for correlation coefficients and significance levels. See Table 4 for frequency distributions for age, ethnicity, and method of delivery in the study sample.

Table 4

Demographic Frequencies for Age, Ethnicity, Method of Delivery, and Educational Level

Characteristic	Group		
	Breastfeeding	Formula	All
Mean age (range)	25(19-31)	28(20-36)	27.5(19-36)
Ethnicity			
Caucasian	100%(9)	82%(9)	90%(18)
African American	0%(0)	18%(2)	10%(2)
Number of children*			
0	33%(3)	73%(8)	70%(14)
1	67%(6)	0%(0)	15%(3)
2	0%(0)	27%(3)	15%(3)
Method of delivery			
vaginal	89%(8)	55%(6)	70%(14)
caesarean section	11%(1)	45%(5)	30%(6)
Educational level			
college degree	44%(4)	18%(2)	70%(14)
no college degree	56%(5)	82%(9)	30%(6)

* does not include child from this delivery

Sample frequencies for income, occupation, and marital status are shown in Table 5.

Table 5
Demographic Frequencies for Income, Occupation, and Marital Status

	Group		
Characteristic	Breastfeeding	Formula	All
Maternal income*			
15-24	33%(3)	54%(7)	50%(10)
25-34	22%(2)	18%(2)	20%(4)
35-44	33%(3)	0%(0)	15%(3)
45-54	11%(1)	9%(1)	10%(2)
55-64	0%(0)	9%(1)	5%(1)
Type of occupation			
professional	44%(4)	18%(2)	30%(6)
clerical	22%(2)	27%(3)	25%(5)
technical	33%(3)	55%(6)	45%(9)
Marital status			
single	11%(1)	18%(2)	15%(3)
married	89%(8)	73%(8)	80%(16)
divorced	0%(0)	9%(1)	5%(1)

* income is listed as thousands of dollars per year

Chapter 4

Discussion of Findings

Discussion of Findings

For the study sample, 45% of the active duty mothers were breastfeeding at discharge from the hospital. This is in contrast to civilian data compiled by Ross Laboratories showing 55% of employed mothers breastfeeding. At six months none of the active duty mothers were still breastfeeding compared to an incidence of 10% breastfeeding at six months in the civilian sector. So, for this sample, when contrasted to working civilian mothers, fewer active duty military mothers began breastfeeding and fewer active duty military mothers continued to breastfeed.

For the sample there were no statistically significant differences between the breastfeeding and non-breastfeeding mothers. There were some differences that might have had clinical relevance if the sample had been larger. The literature has shown that white, well educated, higher income, older women with more than one child tend to breastfeed more than lower income, minority, less educated younger women (Samuels, Margen, & Schoen, 1985; Martinez & Krieger, 1985; Ryan & Martinez, 1989; Kurinij, Shiono, Ezrine, & Phoacs, 1990; Ryan, Wysong, Martinez, & Simon, 1990). Although not statistically significant in this sample, some of

those associations were shown. All but two mothers in the sample were white. The two non-white mothers were in the formula feeding group. The majority of the breastfeeding group (67%) had one previous child, while for the majority of the formula feeding group (73%) this child was their first. As would be expected from reviewing the literature, most mothers in the formula feeding group (82%) had a lower educational level. In contrast to the reported literature, for this study the older mothers (mean age 28) were in the formula feeding group and the younger mothers in the breastfeeding group (mean age 25). Also, the highest income mother was in the formula feeding group.

Some of the breastfeeding patterns shown in this study may have been negatively influenced by health care providers. The active duty mother who breastfed the longest in this sample (through 16 weeks) was encouraged to begin supplementing with formula twice a day at the 2 week check-up because the baby had not returned to birth weight even though the baby had gained weight since hospital discharge. This mother continued to breast feed with formula supplementation after 2 weeks through 16 weeks. She was the only mother still nursing after the eight week check-up. Another baby that was not back up to birth weight at the two week check-up had a weight check at four weeks. The

mother was nursing twice a day and otherwise giving formula, perhaps because of the pressure for the baby to gain weight. By eight weeks she was completely formula feeding. In contrast, another mother was encouraged to continue breastfeeding when she telephoned the clinic at three weeks because her baby was "spitting up after nursing". By the eight week check-up she was completely formula feeding. Perhaps demonstrating perceived role conflict, one mother began feeding formula at four weeks "in preparation for returning to work". At the eight week check-up she was completely formula feeding.

Conclusions and Implications

In Sister Callista Roy's adaptation model of nursing, a role defines the expected behaviors that a person should perform to maintain a title. Interrole conflict occurs when the expected behaviors of one role are incompatible with the expected behaviors of one or more other roles. Intrarole conflict occurs when the individual demonstrates behaviors in a role that are incompatible with the expectations from one or more persons in the environment concerning the role (Roy, p. 246). The roles of primary interest in this investigation were breastfeeding mother and active duty military member.

Role conflict is a possible explanation of the differences in breastfeeding patterns in both employed civilian mothers and active duty military mothers, as contrasted to unemployed civilian breastfeeding mothers. Military service is a 24 hour, seven day a week commitment. Military mothers are subject to being required to work at any time and for any length of time. Although not a frequent occurrence, military mothers can also be required to leave their families for prolonged time periods, such as during Operation Desert Storm. Also, military mothers may feel less free to request time to pump their breasts at work than civilian working mothers (who also have difficulty requesting time to pump)(Spisak & Gross, 1991, p. 43). This may be because of attitudes such as "if the military wanted you to have a family they would have issued you one".

Based on this study, active duty military mothers are further from reaching the Public Health Service's goals of 75% mothers breastfeeding in the early postpartum and 50% breastfeeding at six months than their employed civilian counterparts. Both civilian and military programs need to encourage initiation and continuance of breastfeeding.

Scope and Limitations

Generalizability of the results of this investigation will be to groups of active duty military mothers with similar demographic characteristics. Limitations of this study center around the use of a convenience sample. The sample does not accurately represent the population of all military mothers, which limits the generalizability of the results and threatens external validity. With the retrospective design, some subjects who would have been eligible for inclusion were lost due to inability to find records. There were eleven additional mothers breastfeeding at hospital discharge that had to be eliminated from the study because the babies' records were not available or the records were not complete. Seven of the mothers had been transferred to another duty assignment. Three infants whose mothers were still stationed in the local area did not have pediatric clinic charts. They may have been seen in private pediatric practices or their parents may have been hand carrying their records. One chart was blank after the two week check-up. Those eleven subjects, if they had met all criteria, may have changed the results. Another limitation was the small sample size. Each subject had a greater impact on the results due to the small sample size.

Chapter 5

Summary

Summary

The purpose of this investigation was to examine the incidence and duration of breastfeeding in active duty women in the armed forces. No data existed regarding the duration of breastfeeding for these women. Analysis of the Ross Laboratories Mother's Survey consistently reflects that maternal employment negatively impacts the duration of breastfeeding but not the incidence of breastfeeding (Ryan, Wysong, Martinez, & Simon, 1990; Martinez & Krieger, 1985; Ryan & Martinez, 1989). According to the latest published data, 55% of mothers, both employed and unemployed, breastfed in the early postpartum period. However, by 6 months of age only 10% of employed mothers were still breastfeeding compared to 24% of unemployed mothers (Ryan & Martinez, 1989). Also, Kearney & Cronenwett (1991) and Auerbach & Guss (1984) found that mothers who returned to work prior to 8 weeks and 16 weeks, respectively, experienced shorter durations of breastfeeding than did mothers who did not work or who returned to work after 16 weeks. Active duty military mothers return to work at 6 weeks postpartum.

A retrospective descriptive correlational design was used. Data collection took place at a midwestern

military medical center. A convenience sample of 20 active duty women and their babies who delivered at term comprised the sample. Women with multiple gestation and maternal/infant complications in the early postpartum period were excluded from the study.

Of the twenty mother-infant pairs in the study, 45% (9) were breastfeeding at time of discharge from the hospital. By the six month well baby check-up, none were still breastfeeding. These results compare unfavorably with the civilian data collected by Ross Laboratories of 55% breastfeeding in the early postpartum and 10% breastfeeding at six months. Both civilian data and the data from this study compare unfavorably with the Public Health Service's goals of 75% breastfeeding in the early postpartum and 50% breastfeeding at six months.

Recommendations

Recommendations for further study include replicating the study with a prospective, observational, non-intervention design. The prospective design would eliminate the limitations of this study imposed by loss of subjects due to inability to find charts and military transfer of the subjects. Another recommendation would be to increase the sample size.

Other information that may have impact on the breastfeeding patterns of military women should also be gathered. Information would include breastfeeding policies and practices in the nursery, obstetrician/midwife/family practitioner preferences, and preferences and biases of pediatric nurse practitioners/pediatricians providing infant follow-up care. Knowledge and attitudes of supervisors/peers in the military workplace may also impact breastfeeding patterns. Availability of adequate places to pump/store breast milk and breaks for pumping should also be assessed. Appropriate intervention programs should then be developed to actively encourage breastfeeding through at least the first six months of life. Encouraging breastfeeding will help maximize the health of developing infants, since breast milk is the most appropriate and nutritionally sound food for babies.

References

American Academy of Pediatrics. (1982). The promotion of breast-feeding. Pediatrics, 69(5), 654-661.

American Academy of Pediatrics & American College of Obstetricians and Gynecologists. (1992). Guidelines for Perinatal Care (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics.

Auerbach, K. G., & Guss, E. (1984). Maternal employment and breastfeeding. American Journal of Diseases of Children, 138, 958-960.

Kearney, M. H., & Cronenwett, L. (1991). Breastfeeding and employment. Journal of Obstetric, Gynecological, and Neonatal Nursing, 20(6), 471-480.

Kurinij, N., Shiono, P., Ezrine, S., & Rhoads, G. (1989). Does maternal employment affect breast-feeding? American Journal of Public Health, 79(9), 1247-1250.

Lawrence, R. A. (1989a). Breastfeeding in modern medicine. In Breastfeeding: a guide for the medical profession (3rd ed.) (pp. 1-27). St. Louis, MC: C. V. Mosby.

Lawrence, R. A. (1989b). Maternal Employment. In Breastfeeding: a guide for the medical profession (3rd ed.) (pp. 307-318). St. Louis, MO: C. V. Mosby.

Martinez, G. A., & Krieger, F. W. (1985). 1984 milk-feeding patterns in the United States. Pediatrics, 76(6), 1004-1008.

Martinez, G. A., & Nalezienski, J. P. (1979). The recent trend in breast-feeding. Pediatrics, 64(5), 686-692.

National Association of Pediatric Nurse Associates and Practitioners. (1988). NAPNAP policy statement on breastfeeding. Journal of Pediatric Health Care, 2(6), 314.

Polit, D. F., & Hungler, B. P. (1991). Nonexperimental research. in Nursing research: principles and methods (4th ed.) (pp. 160-188). J. B. Lippincott.

Roy, C. (1976). Introduction to nursing: an adaptation model. Englewood Cliffs, NJ: Prentice-Hall.

Ryan, A. S. & Martinez, G. A. (1989). Breast-feeding and the working mother: a profile. Pediatrics, 83(4), 524-531.

Ryan, A. S., Pratt, W. F., Wysong, J. L., Lewandowski, G., McNally, J. W., & Krieger, F. W. (1991). A comparison of breast-feeding data from the National Surveys of Family Growth and the Ross Laboratories Mothers Surveys. American Journal of Public Health, 81(8), 1049-1052.

Ryan, A. S., Rush, D., Krieger, F. W., & Lewandowski, G. E. (1991). Recent declines in breast-feeding in the United States, 1984 through 1989. Pediatrics, 88(4), 719-727.

Ryan, A. S., Wysong, J. L., Martinez, G. A., & Simon, S. D. (1990). Duration of breast-feeding patterns established in the hospital: Influencing factors. Clinical Pediatrics, 29(2), 99-107.

Samuels, S. E., Margen, S., & Schoen, E. J. (1985). Incidence and duration of breast-feeding in a health maintenance organization population. American Journal of Clinical Nutrition, 42, 504-510.

Spisak, S., & Gross, S. (1991). Second followup report: The Surgeon General's workshop on breastfeeding & human lactation. National Center for Education in Maternal & Child Health, Washington, D. C.

U. S. Department of Health and Human Services, Public Health Service. (1992). Healthy People 2000: National Health Promotion and Disease Prevention Objectives (DHHS Publication No. (PHS) 91-50213). Boston, MA: Jones and Bartlett.

U. S. Department of Labor, Women's Bureau. (1990). Facts on working women. U. S. Government Printing Office, No. 90-2.

Appendix A

Correlation Coefficients and Significance Levels (two-tailed with alpha = 0.05)

Variable	Time			
	Discharge	2 Weeks	8 Weeks	16 Weeks
Age	r=.0531 p=.824	r=-.1372 p=.564	r=-.2318 p=.327	r=-.2318 p=.327
Ethnicity	r=.3015 p=.196	r=.2722 p=.246	r=.0765 p=.749	r=.0765 p=.749
Marital Status	r=.0231 p=.923	r=.0468 p=.845	r=-.0526 p=.826	r=-.0526 p=.826
Number of Children	r=.1426 p=.549	r=.0828 p=.729	r=.1395 p=.557	r=.1395 p=.557
Education	r=.2851 p=.223	r=.3565 p=.123	r=.3504 p=.130	r=.3504 p=.130
Job	r=.2769 p=.237	r=.3829 p=.096	r=.3093 p=.184	r=.3093 p=.184
Income	r=-.1641 p=.489	r=-.2500 p=.288	r=-.3746 p=.104	r=-.3746 p=.104
Delivery Type	r=.3728 p=.105	r=.3118 p=.181	r=.1502 p=.527	r=.1502 p=.527

University of Cincinnati
Medical Center

College of Nursing and Health

William Cooper Procter Hall

Cincinnati, Ohio 45221-0038

May 27, 1993

Debbie Sandercock
Graduate Student
University of Cincinnati
College of Nursing and Health-PNP Program
3110 Vine Street
Procter Hall
Cincinnati, OH 45221-0038

Dear Debbie,

You did an outstanding job on your independent study course entitled "Pharmacology in Children". I was impressed with the amount of effort you put forth. The written and oral information you shared with me during your study of pharmacology in children was exemplary. You covered the topics in a comprehensive manner.

I feel confident that you have a well rounded knowledge base regarding pharmacologic agents that are commonly used in children. Thank you for sharing the information in the "Management of Minor Illness" course with fellow graduate students. You certainly earned the grade A in this independent study course.

Sincerely,

Jennifer M. Bradley

Jennifer M. Bradley, RN,C., CRNP, MSN
Instructor of Clinical Nursing
Coordinator of PNP Program