

CHAPTER III

METHODOLOGY

Research Design

The present study employed a cross-sectional descriptive study.

Target Population

The target population was all postpartum mothers of Maharaj Nakhon Si Thammarat Hospital, Muang District, Nakhon Si Thammarat Province.

Study Population

The study population was postpartum mothers who gave birth at Maharaj Nakhon Si Thammarat Hospital whose infants were four to six months old during July and August 2003.

Sample

The sample consisted of 400 postpartum mothers who gave birth at Maharaj Nakhon Si Thammarat Hospital, Muang District, Nakhon Si Thammarat Province, who took their four-to-six-month-old infants to receive medical services at the Primary Care Unit under the network of Maharaj Nakhon Si Thammarat Hospital. The selection criteria of the sample were as follows:

1. Their infants were four to six months old.
2. They did not have any disease which prevented them from breastfeeding.
3. Their infants did not experience oxygen deprivation after birth.
4. Their infants did not have trouble sucking such as cleft lips cleft palate.
5. They were able to communicate in the Thai language.
6. They were willing to participate in the study.

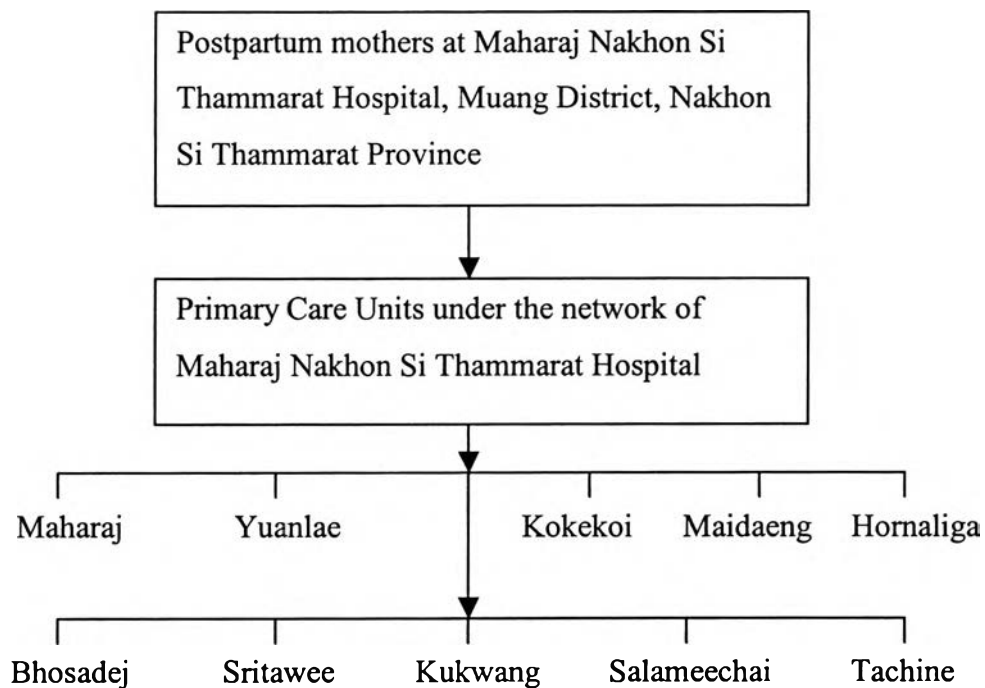
Sample Size

The sample size was calculated using the estimating the population proportion formula in 2001. The existing survey data of Maharaj Nakhon Si Thammarat Hospital revealed that 28% of the postpartum mothers who sought services at the hospital breastfed for four months, with the deviation no more than 5%. The confidence level in drawing the conclusion was set at 95%.

Formula:	n	=	Z^2PQ/d^2
When	n	=	the sample size needed
	Z	=	1.96 at 95% CI
	P	=	0.28 (exclusive breastfeeding rate)
	Q	=	$1 - P$ ($1 - 0.28 = 0.72$)
	d	=	0.05 (accepted deviation)
Thus,	n	=	$(1.96)^2 (0.28) (0.72) / (0.05)^2$
	n	=	310

Sampling Techniques

There are altogether ten Well Baby Clinics under the Primary Care Units in the network of Maharaj Nakhon Si Thammarat Hospital in Muang District, Nakhon Si Thammarat Province.



In each of the ten Primary Care Units under the network of Maharaj Nakhon Si Thammarat Hospital, the number of four-to-six-month-old infants who received vaccination and health check-up was 220 per month. Thus, the sampling method was not used in this study. The sample consisted of all postpartum mothers who met the inclusion criteria specified by the researcher who took their infants to receive services from July 1 to August 31, 2003, equaling to 400.

Instruments

There were three types of instruments used in the present study.

1. Questionnaire

The questionnaire was constructed by the researcher based on a review of related theories and existing research which covered the content and the objectives of the present research. It was divided into five parts as follows:

Part I elicited information regarding the maternal factors including age, religion, educational background, occupation, income, ante-natal care, place of ante-natal care, types of nipples, experience with breastfeeding, intention to breastfeed, plan to breastfeed, and health status. It also covered the infant factors which were birth weight, current weight, and health status.

Part II elicited information regarding breastfeeding practices during the first four months after the infants were born including types of milk used to feed the infants and problems and obstacles in breastfeeding practices.

Part III concerned the postpartum mothers' knowledge about breastfeeding practices including benefits of breastfeeding, types, and duration of breastfeeding. The responses to the questions were "yes," "no," and "don't know."

If the answer was "yes," the postpartum mothers got the score of 1; if the answer was either "no" or "don't know," the postpartum mothers got the score of 0.

Part IV regarded the postpartum mothers' attitudes toward breastfeeding practices including beliefs, feelings, and intention to breastfeed.

The questions used the 5-point Likert scale as follows:

	Positive attitudes	Negative attitudes
Strongly agree	5 points	1 point
Agree	4 points	2 points
Undecided	3 points	3 points
Disagree	2 points	4 points
Strongly disagree	1 point	5 points

Part V dealt with encouragement and support for breastfeeding practices.

The questions elicited information regarding individuals and media which supported breastfeeding practices; activities promoting breastfeeding conducted by family members, others, and medical and public health personnel during pregnancy, delivery, and postpartum period; and follow-up after discharge from the hospital.

The answers are rated in a four-rating scale as follows:

Receive always meant the postpartum mothers always received advice, encouragement, and support regarding breastfeeding practices, which was equal to 3 points.

Receive often meant the postpartum mothers often received advice, encouragement, and support regarding breastfeeding practices, which was equal to 2 points.

Receive sometimes meant the postpartum mothers sometimes received advice, encouragement, and support regarding breastfeeding practices, which was equal to 1 point.

Not receive at all meant the postpartum mothers did not receive any advice, encouragement, or support regarding breastfeeding practices, which was equal to 0 point.

2. Focus group discussion

The researcher led the discussion concerning problems and obstacles in breastfeeding practices among postpartum mothers who gave birth at Maharaj Nakhon Si Thammarat Hospital, whose babies were four to six months old, and who met the inclusion criteria in 2 groups at Maharaj and Hornaliga Primary Care Units. Each group has eight postpartum mothers. The data were analyzed by means of categorization, the data were then presented in the form of description and narration with additional discussion.

3. Observation

The researcher conducted the observation of the public health officials' efforts to support breastfeeding practices starting from the time when pregnant women signed up for ante-natal care at the hospital until after their hospital discharge. The observation technique was structured non-participant observation. The findings were presented in the form of narration.

Validity and Reliability of the Instruments

1. **Content validity** was conducted by asking the following five experts to validate the breastfeeding questionnaire:

- A pediatrician
- An ob-gynecologist
- A nursing instructor who was a specialist in pediatrics
- A nurse in the Lactation Clinic who was a specialist in breastfeeding
- A health education academic who was a specialist in behaviorism

The experts reviewed the content validity of the questionnaire as well as language appropriateness and gave comments and recommendations for revision of the instrument.

2. **Reliability** The questionnaire which had been revised to ensure content validity was tested with 30 subjects who had characteristics similar to those of the study sample. The Kuder-Richardson 20 was used to determine the reliability of the questionnaire investigating postpartum mothers' knowledge of breastfeeding practices, while Cronbach's alpha coefficient was used to determine the reliability of the questionnaire measuring the postpartum mothers' attitudes toward breastfeeding practices and support for breastfeeding practices, using the SPSS/PC program.

The Kuder-Richardson (K-R 20) reliability coefficient was as follows:

$$r_{tt} = \frac{k}{k-1} \left(1 - \frac{\sum pq}{\sigma_t^2} \right)$$

When	r_{tt}	=	reliability coefficient of the instrument
	k	=	the number of items in the instrument
	p	=	the proportion of those who answered correctly
	q	=	the proportion of those who answered incorrectly
	pq	=	the variance of the score of each item
	σ_t^2	=	the variance of the total score

The reliability of the questionnaire measuring knowledge of breastfeeding practices = 0.78.

The Cronbach's alpha coefficient was as follows:

$$\alpha = \frac{n}{n-1} \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$$

α	=	reliability coefficient
n	=	number of items in the instrument
σ_i^2	=	total of variance of each item
σ_t^2	=	variance of the total score of the instrument

The reliability of the questionnaire measuring attitudes toward breastfeeding practices = 0.66.

The reliability of the encouragement and support for breastfeeding practices = 0.91.

Data Collection

In the present study, data were collected mainly by using the questionnaire by interview, with one research assistant, as well as group discussion and observation of public health officials' support of breastfeeding practices during pregnancy and follow-up after hospital discharge from Maharaj Nakhon Si Thammarat Hospital and its Primary Care Units. The observation was carried out for one day at each venue. Data were collected in the following procedures:

1. The instruments including the questionnaire, the series of questions for focus group discussion, and the observation form were prepared.
2. The research assistant was trained on how to use the questionnaire and interview techniques before data collection was conducted.
3. A formal letter from The College of Public Health, Chulalongkorn University, asking for permission to collect data and for cooperation from staff members was sent to the Primary Care Units under the network of Maharaj Nakhon Si Thammarat Hospital, Muang District, Nakhon Si Thammarat Province.
4. The subjects who met the inclusion criteria were interviewed.
5. Most of the data were elicited by means of the questionnaires. Only part of the data came from medical records such as type of delivery, birth weight, current weight (at four months), health status during pregnancy, health problem during the first four months, infant health problem.
6. The focus group discussion was conducted with the subjects divided into two groups: exclusive breastfeeding for four months and non-exclusive

breastfeeding for four months based on the series of questions previously designed.

7. The researcher conducted two focus group discussions, each of which consisted of eight postpartum mothers. The venues where the discussions took place were Maharaj and Hornaliga Primary Care Units.
8. The public health officials' work to support breastfeeding practices was observed beginning when the pregnant women signed up for ante-natal care and ending with the follow-up conducted after the subjects were discharged from Maharaj Nakhon Si Thammarat Hospital or its Primary Care Units. The researcher conducted the observation spending one day at one venue covering the breastfeeding policy of Maharaj Nakhon Si Thammarat Hospital as follows:
 - 8.1 The compliance with the breastfeeding promotion policy such as giving explanation, advice, and information about breastfeeding or posting announcements about breastfeeding.
 - 8.2 The examination of the nipples of pregnant women and provision of solutions in case of abnormalities as well as advice and follow-ups.
 - 8.3 The dissemination of health education among individuals and in groups with an emphasis on breastfeeding during pregnancy, delivery, and postpartum period.
 - 8.4 The supervision to ensure that the infants received breast milk and were held by their mothers within half an hour after birth.

- 8.5 The assistance to ensure that the infants correctly sucked their mothers' breast and received breastfeeding as much as they needed though not more than three hours.
 - 8.6 The prevention of postpartum mothers from giving a fake nipple or a formula bottle to the infants.
 - 8.7 The appointment for a follow-up after delivery at the Lactation Clinic in the cases that the postpartum mothers may fail breastfeeding.
 - 8.8 The round-the-clock advice provided to postpartum mothers who had trouble breastfeeding their infants at the Lactation Clinic or the postpartum ward.
 - 8.9 The home visits conducted by the Primary Care Unit to provide advice on correct breastfeeding methods.
9. The data obtained from the interviews, focus group discussion, and observation were checked for accuracy, completion, and clarity for subsequent data analysis.

Data analysis

The researcher analyzed the data obtained from the interviews, the focus group discussion, and the observation which had already been checked for accuracy, completion, and clarity using the SPSS for Windows in the following procedure:

1. Conducting data coding and data entry.
2. Checking and cleaning data.
3. Analyzing data using descriptive statistics and inferential statistics.

- 3.1 The data regarding the mother factor included age, religion, education, occupation, income, ante-natal care, place of ante-natal care, type of delivery, characteristic of nipple, experience with breastfeeding practices, intention to breastfeed, plan to breastfeed, and health status of the mother analyzed in terms of frequency distribution, percentage, and mean and presented in tables.
- 3.2 The data regarding the infant factor were birth weight, current weight, (The criteria to classify the infants based on their weights used in this study were employed based on the distribution of the data. In fact, infants' birth weight can be grouped based on the growth chart developed by the Department of Health or by percentile, which allow for subsequent national comparison), health status, and type of formula/milk received during hospital stay using frequency distribution and percentage presented in tables.
- 3.3 The data regarding the duration and rate of breastfeeding during the first four months were divided into exclusive breastfeeding and non-exclusive breastfeeding using frequency distribution and percentage.
- 3.4 The postpartum mothers' knowledge of breastfeeding practices was obtained from the 20-item questionnaire. The correct answer was equal to 1 point, and the incorrect answer was 0 point. The scores obtained were calculated in terms of percentage and then

compared with the criteria proposed by the Ministry of Education as follows:

Scores of 80% or higher	=	good level
Scores of 60-79%	=	moderate level
Scores of 0-59%	=	poor level

3.5 The postpartum mothers' attitudes toward breastfeeding practices were measured with a five-point Likert scale. There were 15 items, either positive or negative:

	Positive attitudes	Negative attitudes
Strongly agree	5 points	1 point
Agree	4 points	2 points
Uncertain	3 points	3 points
Disagree	2 points	4 points
Strongly disagree	1 point	5 points

The scores were then calculated for the mean scores which were then categorized as follows:

Mean scores < 2.5	=	low level of attitude
Mean scores = 2.5-3.5	=	moderate level of attitude
Mean scores > 3.5	=	high level of attitude

The data were then presented in terms of mean and standard deviation in tables.

3.6 The data regarding encouragement and support for breastfeeding practices during pregnancy, delivery, and postpartum period received from the hospital or its Primary Care Units were analyzed

based on the 38-item support for breastfeeding practices questionnaire as follows:

Receive always = 3 points

Receive often = 2 points

Receive sometimes = 1 point

Not receive at all = 0 point

The data were then presented in terms of mean and standard deviation in tables.

- 3.7 The relationship between predisposing factors, enabling factors, and reinforcing factors and breastfeeding practices during the first four months was determined using the Chi-square test.
- 3.8 The qualitative data were obtained from the focus group discussions and observation carried out during the discussion. In fact, data collection data analysis were conducted simultaneously employing field records, subjects' verbal responses and documents. Content analysis involved determination of main issues, categorization, and examination of the relationships among the categories. Triangulation was used to ensure the validity and reliability of the data obtained, and qualitative data were subsequently used to supplement quantitative data.