CHAPTER 3

PROJECT EVALUATION

3.1 Introduction

Project achievements can be evaluated by measuring effectiveness and efficiency of the project. For this study which focuses at postpartum maternal care services in Sena Hospital, the researcher would like to evaluate only the project effectiveness by measuring outcomes and comparing the outcomes with the study's objectives. The sample of the study is a group of mothers who reside in Sena District and give birth during 1- 30 April 1999, numbering 45 persons. These women will be required to do pre-test and post-test after receiving postpartum maternal care services. In addition, monitoring of postpartum checkup will be conducted after one month of their childbirth which includes health checkup, cervical cancer screening and family planning. Also, childcare will be monitored in infant growth, infant feeding with breast milk and time to start supplement food.

3.2 Purpose

The followings are objectives for evaluating the outcome of postpartum maternal care services in Sena Hospital.

- 1. To compare the knowledge of mothers before and after receiving postpartum maternal care services.
- To determine the percentage of mothers who have postpartum checkup after delivery fro 4-8 weeks.
- 3. To determine the percentage of mothers who have cervical cancer screening in the postpartum period within 4-8 weeks.
- 4. To determine the percentage of mothers who have family planning in the postpartum period within 4-6 weeks.
- 5. To determine the number of mothers who feeds their infant exclusively with breast milk for four months.
- 6. To determine the percentage of infants who are fed on supplement food at the age of less than four months.

3.3 Evaluation Questions

Below is a set of questions for this evaluation.

1. Do postpartum mothers gain more knowledge of self-care and infant care after receiving postpartum maternal care services?

- 2. Is the percentage of mothers who receive postpartum care services and have postpartum checkup after delivery equal or higher than 80?
- 3. Is the percentage of mothers who receive postpartum care services and have cervical cancer screening equal or higher than 50?
- 4. Is the percentage of mothers who receive postpartum care services and have family planning equal or higher than 77?
- 5. Is the percentage of mothers who receive postpartum care services and feed their infant exclusively with breast milk at least four months equal or higher than 30?
- 6. Is the percentage of infants of mothers who receive care postpartum services and feed their infant with supplement food before the age of four months equal or less than 50?

3.4 Evaluation Method

3.4.1 Design

This study investigates the knowledge of mothers before and after receiving postpartum maternal care services. Postpartum mothers who underwent the delivery process at Sena Hospital during 1-30 April 1999, accounted for 120 cases. However, only PP mothers who lived in Sena district were selected because the district was the area responsibility of Sena Hospital and the researcher chose only those who didn't have any complications (postpartum hemorrhage and high blood pressure). Other selection criteria of the sample were as follows; the infant wasn't handicapped or didn't

suffer from asphyxia during the delivery process and the infant must weigh at birth higher than 2,000 grams. Forty-five postpartum mothers met such criteria and were selected for this study. The rest were postpartum mother living outside Sena district (65 cases) and those having postpartum complications (10 cases). For the latter, it can be elaborated as follows; postpartum mothers having postpartum bleeding (2 cases), postpartum mothers whose infants suffered from asphyxia during the delivery process (6 cases) and postpartum mothers whose infants weighed less than 2,000 grams (2 cases), totaling ten cases.

3.4.2 Data collection method

Instrument

To assess the knowledge of postpartum mothers, the questionnaire was used two times to collect data. The first was conducted when postpartum mothers were moved from delivery room to postpartum ward and the second was before they discharged from the hospital. The first and the second were two to three days apart. The questionnaire is consisted of two sections; (1) general information of postpartum mothers and (2) their knowledge of self-care and infant care. The second part comprises of 40 true-false questions. If their answer is correct, they will get one point but if it is wrong, they will get no point. Three levels of knowledge were finalized based on the following score;

Good Score ranges from 32-40 points

Fair Score ranges from 26-31 points

Low Score ranges from 20-25 points

The questionnaire was checked for content validity by obstetricians and pediatricians, totaling five persons. It was also tested for reliability by applying Kudor Richardson formula (K-R 20) to calculate internal consistency. The reliability was equal to 0.56 (r = 0.56).

To determine the percentage of mothers' postpartum checkup, which included cervical cancer screening and family planning, it had to be tracked down at a clinic of postpartum appointment (outpatients' department) after one month of delivery by checking their names in postpartum registration list. In case that postpartum mothers do not come to the hospital for two months, the researcher will visit them at their place to interview them whether they receive the services of postpartum checkup and cervical cancer screening and family planning. If they do, where they get the services and if not, what is their reason and the researcher will advise and encourage them to have postpartum checkup. (see diagram 1)

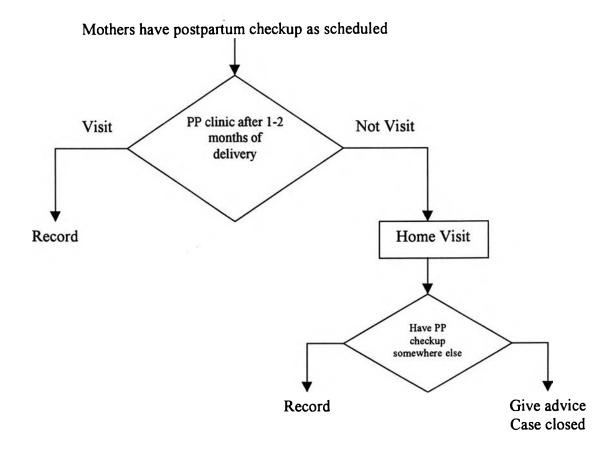


Diagram 1: Monitoring and evaluation of postpartum mother's self-care

To determine the percentage of infants who were fed on breast milk, duration of breastfeeding and time to start the supplement food, the researcher conducted home visits two times to observe the infant growth and interview postpartum mothers or the infant's baby-sitters about the infant's health after birth whether the infant was sick or not and if the infant was ill, what the illness was. They were also asked about infant feeding if the infant was still fed with breast milk or not and at what age of infant they should start feeding powder milk or supplement food as well as other problems of infant care. The researcher also asked them to evaluate their economic status and

meanwhile the researcher observed the environment in the house; such as, sanitary, food, water, hygiene in childcare and type of family (single or extended family). The first visit was conducted when the infant aged two months and the second when the infant aged four months and all infants were weighed.

3.4.3 Data analysis

- Analyzing personal information by using frequency distribution,
 means and percentage; such as, age, occupation, income, number of
 pregnancy and education. These will be used to assess the
 knowledge of postpartum mothers.
- 2. Comparing the knowledge of postpartum mothers before and after receiving postpartum maternal care services by using paired t-test which is included in SPSS (Statistical Package for the Social Science version 7.5) software package.
- 3. Chi-Square will be used to identify the correlation of demographic factors and time duration in feeding infants with breast milk and to identify the correlation of demographic factors and time to start using supplement food.

3.5 Result

The study of knowledge of postpartum mothers in self-care and infant care is consisted of two sections; general information of postpartum mothers and data about their knowledge.

3.5.1 General information

Personal characteristic

All forty-five postpartum mothers were Buddhists and were married. Their age ranged from 16-41 years old but 32 out of 45 were in the range of 20-29 years of age (71.1%), followed by 30-39 years (6 cases = 13.3%) and 40-49 years (6 cases = 4.4%). The average of age was 23.48 years. The majority of the PP mothers graduated from the elementary school (22 cases = 48.88%) and high school (20 cases = 44.44%).

Economic characteristic

It was found that most postpartum mothers were employees in industry factories (24 cases = 53.33%), followed by housewives (26 cases = 35.55%), agriculturists and merchants (2-3 cases). Most of them earned monthly income around 3,600-5,000 baht per household (17 cases = 37.77%), followed by 5,000-10,000 baht (15 cases = 33.33%) and 1,000-3,600 baht (9 cases = 20 %).

Pregnancy and delivery characteristic

It was found that most postpartum mothers had prenatal health cares at Sena Hospital (25 cases = 55.55%), followed by medical clinics (13 cases = 28.88%), health

offices or other hospitals (5 cases) and there were two mothers who didn't ask any health care providers to take care of their pregnancy (4.44%).

About the number of their pregnancy, the majority of the PP mothers were second time pregnant (22 cases = 48.8%), followed by the first time pregnant (13 cases = 28.88%) and the third time pregnant (7 cases = 15.5%) and three women were pregnant equal or more than four times. Most of them never experienced miscarriage (28 cases = 53.3%), followed by those with one miscarriage (6 cases = 13.33%) and one case with two miscarriages (2.22%).

They were also asked about the number of delivery and it was found that most underwent the delivery process for the second time (22 cases = 48.88%), followed by the first time delivery (16 cases = 35.55%), the third time delivery (5 cases = 11.11%) and the fourth time delivery or more (2 cases).

Infant characteristic

It was found that 50.2% of the infants were female and 47.8% were male. Most of the infants weighed at birth more than 3,000 grams (62.2%), followed by 2,500-2,990 grams (40%). The average weight was 3,071 grams (SD = 323.1). Two infants had the highest weight; 3,750 grams and one infant had the lowest; 2,450 grams which was lower than the weight standard (2500 grams). The lowest weighed infant's mother was 22 years old and the infant was her second pregnancy. Her pregnancy was examined eight times and her blood test and childbirth history were normal and the infant was healthy and physically normal at birth.

 Table 3.1:
 Demographic and perinatal characteristics

| Demographic | Frequency | Percentage |
|--|-----------|------------|
| Individual characteristics | | |
| Maternal religion | | |
| • Buddhist | 45 | 100 |
| Maternal marital status | | |
| • Married | 45 | 100 |
| Maternal age (years) | | |
| • <20 | 5 | 11.11 |
| • 20-29 | 32 | 71.11 |
| • 30-39 | 6 | 13.33 |
| • >39 | 2 | 4.44 |
| *Average of age = 25.56 | | |
| SD = 5.58 | | |
| Minimum = 16 years | | |
| Maximum = 41 years | | |
| Level of Education | | |
| Don't attend school – primary school | 25 | 55.44 |
| High school | 20 | 44.44 |
| Economic characteristic | | |
| Occupation | | |
| • Employee | 24 | 53.33 |
| Housewife | 16 | 35.55 |
| Merchant/vendor | 2 | 4.44 |
| Agriculturist | 3 | 6.66 |

Table 3.1: (Continue)

| Demographic | Frequency | Percentage |
|---|-----------|------------|
| Monthly income | | - |
| • <3,600 | 9 | 20 |
| • 3,600-5,000 | 17 | 37.8 |
| • 5,000-10,000 | 15 | 33.4 |
| • >10,000 | 4 | 8.9 |
| Pregnancy/delivery characteristic | | |
| • Didn't have prenatal health care with any | 2 | 4.44 |
| health service providers | | |
| With Sena Hospital | 25 | 55.55 |
| • With clinics | 13 | 28.88 |
| • With other health service providers | 5 | 11 |
| Number of pregnancy | | |
| • First time | 13 | 28.9 |
| • Second time | 22 | 48.9 |
| Third time | 7 | 15.8 |
| Fourth time and more | 3 | 6.7 |
| Number of birth delivery | | |
| • First time | 16 | 35.55 |
| Second time | 22 | 48.88 |
| Third time | 5 | 11.11 |
| • Fourth time and more | 2 | 4.44 |
| Infant characteristic | | |
| Gender of infants | | |
| • Male | 22 | 47.8 |
| • Female | 23 | 50.2 |

Table 3.1: (Continue)

| Demographic | Frequency | Percentage |
|----------------------------------|-----------|------------|
| Weight of the infant | | |
| • Less than 2,500 grams | 1 | 2.2 |
| • 2,500-2,990 grams | 18 | 40 |
| • Equal or more than 3,000 grams | 28 | 62.2 |
| *Average of weight = 3,071 grams | | |
| SD. 323.1 | | |
| Minimum = 2,450 grams | | |
| Maximum = 2,450 grams | | |

3.5.2 Assessment of knowledge of postpartum mothers before and after receiving the service postpartum mothers were classified into three types.

Before receiving postpartum maternal care service, 53% of postpartum mothers had had knowledge in "good" level (the lowest score was 24 points and the highest was 36). The average score was 31.2 (SD = 3.3). After receiving the services, the number of PP mothers who had knowledge in "good" level rose to 93.3% (the lowest was 30 points and the highest was 39) and the average score was 35.2 (SD = 2.6).

If comparing the average scores of their pre-test and post-test, it was found that after attending the program, postpartum mothers gained more knowledge which is found statistical significant improved (P-value<0.00) as shown in the table 3.2.

Table 3.2: Levels of knowledge of postpartum mothers before and after receiving the service.

| Score levels | Before | | Ai | fter |
|--------------------|-----------|------------|-----------|------------|
| (Total: 40 points) | Frequency | Percentage | Frequency | Percentage |
| Good (32-40) | 24 | 53.33 | 42 | 93.33 |
| Fair (26-31) | 19 | 42.22 | 3 | 6.66 |
| Low (20-25) | 2 | 4.44 | 0 | 0 |
| | | | | |

Table 3.3: Comparison of average score taken before and after receiving the service.

| | Mean | Min | Max | Sem | Different Mean | P-value |
|--------|-------|-----|-----|------|-------------------|---------|
| Before | 31.24 | 24 | 38 | 0.50 | 4 | <0.001 |
| After | 35.24 | 30 | 39 | 0.48 | | |

Concerning the knowledge of the postpartum mothers, it was found that before receiving the service, most of them had known how to perform maternal and infant care correctly; such as, mother and infant must sleep in the same bed (82%), mother should eat all five nutrients (96%), drinking a lot of water would be good for excretive system (96%), tea and coffee should be avoided (80%), sanitary pads should be changed frequently (100%), pure water should be used to clean their vagina (96%), perineum cleansing should be practiced from the vaginal pass to anus (82%), they should pass urine within 6-8 hours (89%), urine suppression can cause inflammable bladder (82%),

every member in the family should participate in maternal and infant care (100%). Regarding to supplement food, they learned that supplement food should be fed with the infant aged four months (82%), supplement food must be softened and mashed (93%) and supplement food should be fed in the beginning one meal in a day (93%). Table 3.3 outlines the aforementioned in more detail.

However, several mothers had misbelife knowledge in many aspects; such as, eating sour fruits could cause the wound open (58%), eating the egg would make the wound swollen (47%), they should eat only boiled rice with salt (47%), postpartum mothers should place a heat pad on the abdomen (56%), using sanitary pads might hinder the release of lochia (36%), if postpartum mothers are healthy, postpartum checkup is not needed (24%), contraception begins one year after delivery (33%), no menstruation, contraception is not needed (51%), exercising with the raise of legs would cause the wound open (58%), after breastfeeding, infants must drink a lot of water (47%), one of benefits of supplement food is making infant gain weight (69%) and the statement of which 80% of them had mistaken knowledge was the use of lochia discharge drug which they believed could facilitate the release of lochia.

Table 3.3: Comparison of postpartum mothers' knowledge before and after receiving the service.

| Item | % Before | % After | P-value |
|---|----------|----------|---------|
| | (n = 45) | (n = 45) | (=0.05) |
| 1. After childbirth, a mother and an infant must | 56 | 67 | 0.227 |
| be separated. | | | |
| 2. PP mothers must rest for 6-8 hours. | 78 | 96 | 0.021 |
| 3. The mother and the infant must sleep on the | 82 | 100 | 0.031 |
| same bed. | | | |
| 4. The mother should eat all five nutrients. | 96 | 98 | 1 |
| 5. Eating sour flavored fruit can cause the | 42 | 64 | 0.021 |
| wound open. | | | |
| 6. Drinking a lot of water is good for excretive | 93 | 93 | 1 |
| system. | | | |
| 7. Eating an egg can cause the swollen of the | 53 | 80 | 0.021 |
| wound. | | | |
| 8. Tea and coffee should be avoided. | 80 | 82 | 1 |
| 9. PP mothers should eat only boiled rice with | 53 | 76 | 0.021 |
| salt. | | | |
| 10. Heat pad should be placed on the abdomen. | 44 | 71 | 0.002 |
| 11. Lochia discharge drug helps facilitate the | 20 | 60 | 0.00 |
| smooth flow of lochia. | | | |
| 12. Sanitary pads should be changed frequently. | 100 | 98 | 1 |
| 13. Use pure water to clean the vagina. | 98 | 100 | 1 |
| 14. Using sanitary pads causes the poor discharge | 64 | 84 | 0.031 |
| of lochia. | | | |
| 15. Perineum cleansing should be practiced from | 82 | 91 | 0.289 |
| the front to the back. | | | |
| 16. Urine suppression is the cause of urination | 82 | 98 | 0.031 |
| inflammation. | | | |
| 17. Within 6-8 hours, mothers must pass urine. | 89 | 96 | 0.375 |

Table 3.3: (Continue)

| Item | % Before | % After | P-value |
|--|----------|----------|-----------|
| | (n = 45) | (n = 45) | (= 0.05) |
| 18. Everyone in the family should participate in | 100 | 98 | 1 |
| maternal and infant care. | | | |
| 19. PP mothers have an assessment examination | 100 | 100 | 1 |
| as scheduled in 4-6 weeks. | | | |
| 20. Health checkup is not needed if PP mothers | 76 | 91 | 0.039 |
| are healthy. | | | |
| 21. Cervical cancer screening is included in | 96 | 93 | 1 |
| health checkup. | | | |
| 22. Contraception begins one year after | 67 | 78 | 0.344 |
| childbirth. | | | |
| 23. If PP mothers have PP checkup, they also | 96 | 98 | 1 |
| receive contraception service. | | | |
| 24. Contraception should start 4-6 weeks after | 87 | 93 | 0.453 |
| delivery. | | | |
| 25. No menstrual phase, no need for | 49 | 71 | 0.064 |
| contraception. | | | |
| 26. To keep perineum wounds clean, sanitary | 98 | 100 | 1 |
| pads should be changed frequently. | | | |
| 27. Exercises by raising legs may cause the | 42 | 69 | 0.064 |
| wound open. | | | |
| 28. The amount of breast milk is plenty to feed | 98 | 96 | 1 |
| the infant. | | | |
| 29. If an infant sucks more, the breasts make | 87 | 100 | 0.031 |
| more milk. | | | |
| 30. After breastfeeding, an infant must be fed a | 53 | 71 | 0.035 |
| lot of water. | | | |
| 31. Breast milk is the best nourishment. | 100 | 98 | 0.302 |
| 32. Breast milk contains immunization. | 100 | 100 | 1 |

Table 3.3: (Continue)

| Item | % Before | % After | P-value |
|---|----------|----------|---------|
| | (n = 45) | (n = 45) | (=0.05) |
| 33. A mother feels closer to her infant if the | 100 | 100 | 1 |
| infant sucks her breast. | | | |
| 34. Nutritious food is contributed to more breast | 93 | 98 | 1 |
| milk. | | | |
| 35. Herbal alcohol drinks are contributed to more | 87 | 93 | 0.125 |
| breast milk. | | | |
| 36. Supplement food should be fed with the infant | 82 | 96 | 0.063 |
| at the age of four months. | | | |
| 37. One of benefits of supplement food is making | 31 | 40 | 0.302 |
| the infant gain weights. | | | |
| 38. Supplement food must be softened and | 93 | 100 | 0.250 |
| mashed. | | | |
| 39. Supplement food should be fed once a day in | 93 | 100 | 0.250 |
| the beginning. | | | |
| 40. Mashed banana should be fed only in case of | 84 | 93 | 0.125 |
| the infant aged four months. | | | |

After having educated, it was found that postpartum mothers gained more knowledge in all aspects but the followings improved significantly;

- PP mothers must rest for 6-8 hours. (from 78% to 96% p value = 0.021)
- The mother and the infant must sleep on the same bed. (from 52% to 100% p value = 0.035)
- Eating sour flavored fruit can cause the wound open. (from 42% to 64% p
 value = 0.021)

- Eating an egg can make the wound swollen. (from 53% to 80% p value = 0.021)
- Heat pad should be placed on the abdomen. (from 53% to 76% p value = 0.021)
- Lochia discharge drug helps facilitate the flow of lochia. (from 44% to 71% p value = 0.021)
- Using sanitary pads causes the poor discharge of lochia. (from 20% to 60% p value = 0.00)
- Urine suppression is the cause of urination inflammation. (from 64% to 84% p value = 0.031)
- Health checkup is not needed if PP mothers are healthy. (from 82% to 98%
 p value = 0.031)
- If an infant sucks more, the breasts make more milk. (from 87% to 100% p value = 0.031)
- After breastfeeding, an infant must be fed a lot of water. (from 53% to 71% p value = 0.035)

Even though the percentage of PP mothers accurate knowledge increased after the receiving the services if comparing with the pre-service, it was found that many of them still had mistaken knowledge in some statements; such as, taking the lochia discharge drug as they believed it would facilitate the release of lochia and the benefit of supplement food.

• Drug release lochia discharge

Forty percent of mothers still had mistaken knowledge of drug release lochia discharge. They thought it would facilitate the release of lochia. Actually in medical science, iron tablets are usually provided for postpartum mothers as they have lost blood during the delivery (approximately 300 cc). They don't need to use any lochia discharge facilitator drug because lochia normally discharges through the vagina. According to interviews with postpartum mothers, they replied that the elderly suggested them to use the drug because it had been used for many generations with the belief that it helped facilitate the release of lochia.

Supplement food

The study revealed that most postpartum mothers (96%) had the knowledge of the time to start supplement food. They knew that the supplement food should be fed one meal per day and the food must be softened and mashed but 60% of the mothers didn't know the benefit of supplement food; they thought it would result in infant weight gaining.

Due to their misunderstanding that early supplement feeding could lead to weight gaining, they didn't hesitate to use the supplement food with the infant as they valued of overweight infants as pretty and healthy. Although they were educated for a few days after the childbirth, their old belief still remained unchanged. In addition, some PP mothers didn't feed their infant. Instead, a nursemaid or relatives looked after the infant, usually based on their previous experiences in infant care.

3.5.3 Postpartum checkup

Four to six weeks after delivery, every mother should be checked for any sign of abnormality and treatment will be given. Their abdomen is checked and so are their reproductive organs. It is recommended to check if the uterus returns to the prepregnancy normal condition and also cervix, ovary and vagina, stitches, the size increase of breasts and breast milk flowing. The procedure of the postpartum checkup is as follows:

- 1. Check pulse, weight and general physical conditions.
- Check episiotomy wounded, characteristics of wounds, bruises, reddish swollen, the periphery of the wounds (well/not well) and the hygiene of episiotomy wounded.
- 3. Perineum assessment, checking vagina, the size of uterus, cervix, the movement of organs in the pelvis and the lowering of the organs in the pelvis and also cervical cancer screening.
- 4. Advise on self-care after delivery, rest, nutrition, exercises to decrease the weight, sexual intercourse after childbirth to lesson the anxiety resulted from labor pain.
- 5. Advise on contraception. Types and methods of contraception are explained.

According to the follow-up study, it was found that all postpartum mothers had postpartum checkup 1-2 months after delivery at the postpartum clinic in Sena Hospital. The total number of postpartum mothers who had the checkup was 35. The other 10 cases who didn't visit the clinic for checkup were found out later through the researcher's home visit that they went to the health center instead. So, the second

objective; 80% of postpartum mothers have postpartum checkup, was successfully achieved.

3.5.4 Family planning

This study found that all postpartum mothers had family planning. So, the third objective was achieved as the number of those having family planning rose from 30% in 1999 (Family planning statistics, Sena Hospital 1999) and 77% was planned as the target of family planning. These mothers were the same group that had postpartum checkup. They were also advised on family planning and the importance of family planning was emphasized with the objective to refrain from childbearing.

There are two types of family planning; temporary and permanent. The temporary type refers to contraceptive tablets, contraceptive injection, male and female condoms. The permanent type refers to male and female sterilization. Most of the postpartum mothers had contraceptive injection (51.1%) because it was convenient, most of them had used it before and they were afraid they forgot to take the medicine. Taking the contraceptive tablet once a day was followed with 35.6% and 13.3% revealed they were sterilized.

3.5.5 Cervical cancer screening

It was found that 77.7% of postpartum mothers had cervical cancer screening. Consequently, the fourth objective was achieved. Originally the number of cervical cancer screening was 30% and it was targeted to reach 50% in postpartum mothers.

postpartum checkup, family planning and cervical cancer screening were all provided for postpartum mothers who went to have postpartum checkup at Sena Hospital.

Postpartum mothers who didn't have cervical cancer screening accounted for 23.3 percent because they had postpartum examination at the health center and cervical cancer screening was not available. Health personnel at the health centers suggested them to go to the hospital to check for cervical cancer but they didn't. During the researcher's home visit, they rationalized that it was inconvenient and wasting time for them to visit the hospital. In addition, they found it difficult to travel to the hospital.

3.5.6 Breast feeding

It was found that 55.6 percent of postpartum mothers fed their infant with breast milk for four months and 44.4 percent feeding breast milk for less than four months. One mother replied breastfeeding her infant only one month, which was the fewest among the samples. Six cases reported during interviews that their infants didn't suck their breasts and their break milk was insufficient, so they had to use powder milk.

This study is conducted to determine the correlation of maternal demographic characteristics; such as, age, education, income, number of pregnancy, number of delivery and occupation, with the amount of time in breastfeeding. Chi-square test was applied and it revealed that there was no statistically significant correlation between maternal demographic characteristics and the amount of time in breastfeeding (see table 3.4).

Table 3.4: Percentage of breastfeeding for four months or more and less than four months.

| Demographic | PP mothe | rs nursing | PP mothe | rs nursing | P-value |
|---------------------------------|-----------|---------------------------|-----------------|------------|---------|
| Characteristics | less than | an 4 months equal or more | | nore than | |
| | (n=22) | | 4 months (n=23) | | |
| | No. | % | No. | % | |
| Individual characteristic | | | | | |
| Maternal age | | | | | |
| • Less than 25 | 8 | 38.1 | 13 | 61.9 | 0.423 |
| • Equal and more than | 12 | 50.0 | 12 | 50.0 | |
| 25 | | | | | |
| Education | | | | | |
| • Primary | 10 | 41.7 | 14 | 58.3 | 0.688 |
| • Secondary | 10 | 47.6 | 11 | 52.4 | |
| Economic characteristic | | | | | |
| Monthly household | | | | | |
| income | | | | | |
| • Less than 3,000 baht | 2 | 22.2 | 7 | 77.8 | 0.134 |
| • More than 3,000 baht | 18 | 50.0 | 18 | 50.0 | |
| Occupation | | | | | |
| • Being employed | 13 | 44.8 | 16 | 55.2 | 0.944 |
| Not working | 7 | 43.8 | 9 | 56.3 | |
| Infant characteristic | | | | | |
| Gender | | | | | |
| • Male | 10 | 45.5 | 12 | 54.5 | 0.894 |
| • Female | 10 | 43.5 | 13 | 56.5 | |

3.5.7 Supplement food

This study revealed that 51.1% of the infants were fed with supplement food at the age of four months and 48.9% before the age of four months. It was found that an infant was fed on supplement food at the age of two months, the fastest to start the supplement food. The mother of the infant said that she asked her relatives to look after the baby and they fed the baby with rice and banana and the infant slept well, didn't cry and didn't have any sign of abnormalities.

This study is conducted to determine the correlation of maternal demographic characteristics; such as, age, education level, income, number of pregnancy, number of delivery and occupation, with the time to start the supplement food. There was no statistically significant correlation between maternal demographic characteristics and the time to start the supplement food (see table 3.5).

Table 3.5: Comparison of the frequency of the use of supplement food before the infant aged four months and at the age of four months.

| Demographic | PP moth | ers nursing | PP mothe | rs nursing | P-value |
|---------------------------|-----------|-------------|-----------------|------------|---------|
| Characteristics | less than | 4 months | equal or | more than | |
| | (n=22) | | 4 months (n=23) | | |
| | No. | % | No. | % | |
| Individual characteristic | | | | | |
| Maternal age | | | | | |
| • Less than 25 | 9 | 42.9 | 12 | 57.1 | 0.102 |
| • Equal and more than | 13 | 54.2 | 11 | 52.2 | |
| 25 | | | | | |
| Education | | | | | |
| • Primary | 9 | 37.5 | 15 | 62.5 | 0.688 |
| • Secondary | 13 | 61.9 | 8 | 38.1 | |
| Economic characteristic | | | | | |
| Monthly household | | | | | |
| income | | | | | |
| • Less than 3,000 baht | 4 | 44.4 | 5 | 55.6 | 0.772 |
| • More than 3,000 baht | 18 | 50.0 | 18 | 50.0 | |
| Occupation | | | | | |
| • Being employed | 16 | 55.2 | 13 | 44.5 | 0.256 |
| • Housewife | 6 | 37.5 | 10 | 62.5 | |
| Pregnancy/ delivery | | | | | |
| characteristic | | | | | |
| Number of pregnancy | | | | | |

Table 3.5: (Continue)

| Demographic | PP moth | ers nursing | PP mothe | rs nursing | P-value |
|------------------------|--------------------|-------------|--------------------|-----------------|---------|
| Characteristics | less than 4 months | | equal or more than | | |
| | (n | (n=22) | | 4 months (n=23) | |
| | No. | % | No. | % | |
| First pregnancy | 4 | 30.8 | 9 | 69.2 | 0.153 |
| Second pregnancy and | 18 | 56.3 | 14 | 43.8 | |
| more | | | | | |
| Number of delivery | | | | | |
| First time | 5 | 31.3 | 11 | 68.8 | 0.079 |
| Second time and more | 17 | 58.6 | 12 | 41.4 | |
| Breastfeeding | | | | | |
| characteristic | | | | | |
| The amount of time in | | | | | |
| breastfeeding | | | | | |
| • Less than 4 months | 12 | 60.0 | 8 | 40.0 | 0.182 |
| • Equal to 4months and | 10 | 40.0 | 15 | 60.0 | |
| more | | | | | |

The body weight of 45 infants follow by researcher had home visit 2 times. AT 2 months the infants had body weight normal equal standard of division of health and mean equal 5.1 kilogram. (min = 4 kilograms, max= 6.6 kilograms) AT 4 months the infants had body weight normal equal standard of division of health and mean equal 6.4 kilogram. (min= 4.8 kilograms max = 7.7 kilograms)

The standard of division of health have infant body weight 2 months equal 4-6 kilograms and 4 months have 5-7 kilograms.