

Mother's Satisfaction towards the Modified Oral Stimulation Intervention in Preterm Infants

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Abstract

The purpose of this descriptive research was to assess satisfaction of pre-term delivery mothers towards the modified oral stimulation intervention in pre-term infants. The participants were the mothers of 42 premature infants admitted to a tertiary hospital in Thailand who were purposively selected according to the inclusion criteria. Data were collected by using mothers' satisfaction questionnaire about using the oral massage to stimulate suckling and swallowing program which was developed by the researchers with IOC=1.00. The data were analyzed with descriptive statistics: frequency and percentages, mean and standard deviation. It was found that mothers were overall satisfied at a high level ($\bar{x} = 4.76$, $SD = 0.81$) and were most satisfied with the services from nurses ($\bar{x} = 4.85$, $SD = 0.76$), the development of premature infants ($\bar{x} = 4.75$, $SD = 0.83$) and the use of oral massage application to stimulate suckling and swallowing ($\bar{x} = 4.68$, $SD = 0.85$) consecutively. We concluded that mothers are very satisfied with the use of the oral massage application to stimulate suckling and swallowing in all aspects of premature infants. Therefore, nursing care of mothers after giving birth to premature infants should include the application of oral massage to stimulate the suckling and swallowing of premature infants can be used to prepare mothers and infants before being discharged home.

Keywords: Mother's Satisfaction, Pre-Term Infants, The Modified Oral Stimulation Intervention.

BACKGROUNDS

The incidence of premature birth with babies' body weight less than 2,500 grams in Thailand is increasing. Most of premature born babies have problems with body systems functioning and various complications. The premature born infants must be nursed in the neonatal intensive care unit (NICU/NSCU). Some of them require mechanical ventilation, causing them to be fed through enteral tubes which inhibit learning skills in assimilation. A common problem is unable to suck breastmilk, also unable to swallow effectively. Oral massage to stimulate strength of muscles around the lips to enhance suckling and swallowing reflexes for premature infants who were born at 32 weeks of gestation or older would strengthen the suckling ability more effectively. There are some studies found that massaging to stimulate suckling of premature babies can increase their suckling ability, increased weight and reduced the length of stay in the hospital (Saehung et al., 2013; Consordee, Daramas, & Phumonsakul, 2017; Limpatham, Teerarangsikul, & Phongchaturawit, 2016; Chailangka, Daramas, & Kongsaktrakul, 2018; Calk, 2019).

In addition, there are some studies found that lips massage to stimulate absorption and breastfeeding improve infants' suckling efficiency (Chailangka et al., 2018), because breast milk has a specific taste and smell, and eventually the massage program stimulate absorption. This stimulates cranial nerves (CN) 7th, 9th, and 11th, to send the impulses to the amygdala stimulates perception of

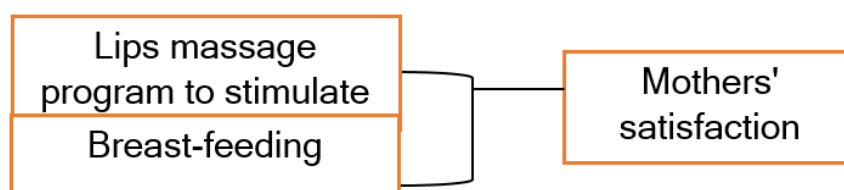
sweet tastes, and affects babies' positive behaviors which includes sucking harder and sucking longer. The smell of mother's milk in infants occurs during suckling that promotes infants to learn and recognize the smell of mother's milk which will could be observed by more frequent sucking behavior, longer sucking time, and increase the volume of milk obtained (Raimbault, Saliba, & Porter, 2007). When infants learned the taste and smell of mother's milk along with oral massage, they would increase suckling efficiency and impact increase body weight, eventually.

Nurses play an important role in the procedures of oral massages to stimulate absorption, as well as breastfeeding after massage in premature infants. They are key persons for the activities of sharing knowledge and demonstration of oral massage to stimulate suckling abilities and absorption in conjunction with breastfeedings. This procedure is considered as a nursing innovation. In Thailand, there was no research report systematically. The researchers, therefore, used the 8-position massage model for stimulating absorption developed by Wiranpat Sachantaphong and colleagues (2024) as a tool for stimulating the suckling reflexes among premature birth babies along with breast-feedings. By direct teaching and demonstrating the techniques for mothers, this activity would enhance relationships and bonds between mothers and baby as well. And how well the mother performs depends on many factors. Satisfaction with the practice of infant oral massage activity is also considered as an important factor for mothers' practice, because satisfaction is a positive feeling that affects good attitude of persons. This usually results from receiving the response that one desires that can be observed from behavior and expression responses to stimuli that impact a person to feel positive and want to practice continuously. The researcher is therefore interested in studying satisfaction of mothers regarding the use of an oral massage application to stimulate absorption in premature infants.

Objective:

To study mothers' satisfaction with using oral massage program to stimulate absorption and breastfeeding for premature infants.

Research Framework:



METHODS

This research is a descriptive research. Study of the satisfaction of mothers of premature and underweight infants. Data were collected after the experiment (post - test design) by studying mothers' satisfaction with the use of the oral massage application to stimulate suckling and swallowing in conjunction with breastfeeding among premature infants. The sample group comprised 42 premature infants admitted to the Sick Newborn Unit (Children's Ward 3) at Saraburi Hospital. Sample size was calculated using the G*Power program (Faul, Erdfelder, Buchner, & Lang, 2009).

Population and sample

population: The premature infants with a gestational age of 32-36 weeks who were admitted to the Neonatal Sick Unit (Pediatric Ward 3) at Saraburi Hospital.

sample group: 42 premature infants who were admitted to the Sick Newborn Unit

(Children's Ward 3) at Saraburi Hospital. The sample was purposively selected according to the inclusion criteria.

Inclusion criteria they are as follows:

- 1) 32-36 weeks gestation after conception, Ballard Score calculated by doctor.
- 2) The baby was fed through a feeding tube and received approval from the doctor to have oral massage.
- 3) Has the tracheal tube been removed? Haven't been on a ventilator for more than 48 hours.
- 4) The baby is stable condition, including having a body temperature of 36.5-37.5 degrees Celsius. Respiratory rate 40-60 times / minute, heart rate 120-160 times / minute, no signs of stopping breathing for more than 20 seconds (apnea) , and blood oxygen saturation not lower than 95% , including no spasticity or Frequent twitching
- 5) The baby had no birth defects or serious complications such as cystic fibrosis. Respiratory diseases that depend on oxygen, heart disease, cerebral hemorrhage Intestinal gangrene have a birth defect there is an infection in the bloodstream, etc.
- 6) The mother does not have sleeping pills or pain relievers.
- 7) The mother does not have contraindications to breastfeeding.
- 8) Father or mother is willing to participate in the research project. By signing the consent form provided.

Exclusion criteria they are as follows:

- The baby has a birth defect or serious complication such as cystic fibrosis. Respiratory diseases that depend on oxygen, heart disease, cerebral hemorrhage Intestinal gangrene have a birth defect There is an infection in the bloodstream, etc.

Research tools:

2 types of tools used in research:

1. Tools used to conduct trial:

- 1.1 Application of oral massage to stimulate swallowing reflexes, that was adapted from The Premature Infant Oral Motor Intervention (PIOMI) program , which is an oral massage program for premature infants developed by Lessen (2008) and a program to stimulate sucking in premature infants. Chollada Bhumiphon's (1996) definition along with the experiences of the researchers who have studied concepts in anatomy and physiology about muscles and reflex related to the absorption of premature infants makes adjustments to the methods of massage and duration used. The developed application of 8 steps of absorption-stimulating massage includes: Step 1: Massage the upper lip from the center of the nose to the corners of the mouth. Step 2: Massage the lower lip from the center of the chin to the corners of the mouth. Step 3: Massage from the corners of the mouth and 2 Side to ear lobe. Step 4: Massage both cheeks. Step 5: Massage the lower gums back and forth. Step 6: Massage the upper gums back and forth. Step 7: Palate. Step 8: Massage the tongue from the base to the tip of the tongue. By massaging to stimulate swallowing, all 8 steps take a total of 4 minutes. Perform these steps 15 minutes before meals, then let the mother provide breastfeed to her baby for 15-30 minutes or until the infant stop suckling or fell asleep. The researchers demonstrated oral massaging and stimulating the mouths of premature infants and let the mothers demonstrated in return until they became proficient. The researchers demonstrated oral massage on 5 premature infants, who had similar

conditions, to the mothers and then invited 2 experts in premature infant mouth massage to evaluate the correctness of the massage method. Steps of massages and the time spent in each step according to the criteria indicated in the data collection form adapted from Lessen's Premature Infant Oral Motor Intervention Reliability Rating Tool. It was used to calculate the researcher's confidence in massaging to stimulate absorption in premature infants.

- 1.2 Disposable powder-free rubber gloves, use while massaging to stimulate the mouth of premature infants.
- 1.3 Use the same stopwatch throughout the study.
- 1.4 Baby scales, the quality of the baby scales is validated from the neonatal sick unit, by the quality control of hospital's medical equipments standard.

2. Mother's satisfaction tool:

- 2.1 Premature infants' general information recording form. A recording form that the researcher developed from literature review which includes: diagnosis, gender, gestational age at birth, age after birth, birth weight, day of initiating oral massage, the day of receiving permission from the doctor to start suckling, the day of first breastfeeding, the first day the baby is able to be breastfed for 8 times per day, baby's weight on the day of breastfeeding allowance, and the baby's weight on the first day allowance for breastfed 8 meals/day.
- 2.2 Questionnaire: Mothers' satisfaction with using the oral massage to stimulate suckling and swallowing program, which was developed by the researchers to assess mothers' satisfaction.

Standardization of questionnaire:

Inspection of content validity, the researcher constructed a questionnaire on mothers' satisfaction toward the use of the oral massage program to stimulate suckling and swallowing of premature infants which composed of 13 questions. Then submitted the questionnaire to 3 experts comprised 1 pediatric nurse who was specialized in neonatal care, and 2 maternity nurses checked for content compliance with the Index of item objective congruence (IOC), obtained the value $IOC = 1.00$.

Data collection:

After receiving approval from the Human Research Ethics Standards and Practices Committee of Saraburi Hospital, the researcher has conducted training nurses in the sick neonatal unit at Saraburi Hospital by demonstration oral massage according to the manual of the oral massage to stimulate to stimulate suckling and swallowing program developed by the researchers. To provide nurses with guidelines and teach mothers to follow correctly and according to the same standards. And at the end of the experiment, the baby was delivered back to home and to be in care of the family. The researcher collected data on mothers' satisfaction regarding the use of oral massage application to stimulate suckling and swallowing in premature infants.

Data analysis

- 1) Analyze general data of premature infants who received a massage program to stimulate suckling and swallowing. Using descriptive statistics, frequency, percentage, mean and standard deviation.
- 2) Analysis of mothers' satisfaction towards using oral massage application to stimulate suckling and swallowing in premature infants with the mean and standard deviation.

Protection of the human rights:

This research project has been approved by the Research Ethics Committee of Saraburi Hospital. According to certificate number EC008/2022 in collecting data from samples. The researcher explained the research objectives, research process to the participants before signing consent to participate in the study project. Participants can terminate their participation in the study at any time which will not have any effect with the medical treatment that the infant will receive. Every infant will be evaluated for readiness to be breastfed every time. Considering the strength of the body by the criteria, the infant must have normal vital signs, there were no serious problems or complications, the infant must be alert, not tired and fall asleep easily.

Research results:

- 1) General information of 42 premature newborns who received the oral massage program to stimulate suckling and swallowing, 25 were male (59.5 %) and 17 were female (40.5 %), with an average gestational age at birth of 34.38 weeks. The average age of infants when they first started suckling was 5.45 days. The average age of infants when they first started suckling 8 times a day was 3.64 days. The average weight of infants when they first started suckling was 2088.12 grams, and the average weight of infants when they first started suckling. 8 meals per day for the first time, averaging 2136.19 grams
- 2) Mothers' satisfaction with the use of the oral massage application to stimulate the suckling and swallowing of premature infants. It was found that mothers were overall satisfied at a high level ($\bar{x} = 4.76$, $SD = 0.81$) and were most satisfied with the services from nurses ($\bar{x} = 4.85$, $SD = 0.76$) Next is the development of premature infants ($\bar{x} = 4.75$, $SD = 0.83$) and the use of oral massage application to stimulate suckling and swallowing ($\bar{x} = 4.68$, $SD = 0.85$)

Table 1: General information of the premature infants who received the oral stimulating massage program (n=42)

Measurement of variables	Mean (\bar{x})	Standard deviation (SD)
gestational age at birth	34.38 weeks	2.48
The baby begins to suckle	5.45 days	1.45
Baby's age when he started suckling 8 meals/day	3.64 days	0.96
Baby's weight when he first suckles	2088.12 grams	18.56
Baby's weight when he first started feeding 8 times/day.	2136.19 grams	15.38

Table 2: Results of data analysis on mothers' satisfaction with the use of oral massage to stimulate suckling and swallowing in premature infants (n=42)

Aspects of satisfaction	Mean (\bar{x})	Standard deviation (SD)
Nursing services	4.85	0.76
In terms of using oral massage application to stimulate suckling and swallowing.	4.68	0.85
Aspects of development of premature infants	4.75	0.83
Overall satisfaction	4.76	0.81

SUMMARY OF RESULTS AND RECOMMENDATIONS

The results of this research showed that mothers are very satisfied with the use of the oral massage application to stimulate suckling and swallowing in all aspects of premature infants. Therefore, nursing care of mothers after giving birth to premature infants should include the application of oral massage to stimulate the suckling and swallowing of premature infants can be used to prepare mothers and infants before being discharged home.

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