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Effectiveness of Breast Massage on Amount of Milk Production in Mothers who are not Actively Breast Feeding Preterm Babies

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Abstract

Context: Breastfeeding to premature baby is often challenging for the postnatal mothers. In case of preterm labour milk synthesis is poor due to insufficient sucking reflex and poor mother baby bonding, if baby is admitted in neonatal unit. Breast massage is a technique to improve milk production in lactating mothers.

Aims: To assess the effectiveness of breast massage on amount of milk production in mothers who are not actively breast feeding preterm babies.

Settings and Design: Setting was postnatal ward Queen Mary Hospital, Lucknow. Research design was quasi-experimental (time series one group pre test post test).

Methods and Material: Data were collected with the help of demographic profile and assessment of breast milk tool from 26 samples using purposive sampling technique who met the inclusion criteria. The pretest data collected before intervention and post test data collected after each intervention consecutively for 3 days.

Statistical Analysis used: Mean, mean difference, standard deviation, t-test and chi-square.

Results: The result revealed that on day 1, the post intervention milk production was found to be more (12.34±3.83) than pre intervention (3.03±1.98), t =16.68. On day 2, the post intervention milk production was found to be more (60.61±20.52), than pre intervention (17.07±6.73), t= 15.62 . On day 3, the pre intervention milk production was 25.15±7.13, which increased to 81.92±21.10 after intervention, t=20.16 at 0.05 level of significance.

Conclusions: The findings of the study conclude that breast massage was found to be effective in increasing the amount of milk production among mothers who are not actively breast feeding preterm babies.

Keywords: Breast massage; Amount of milk production; Preterm babies; Postnatal mothers.

Key Message: The positive findings of this study support a growing body of evidence that non pharmacological intervention such as breast massage is effective for increasing amount of milk production.

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Introduction

A baby born before 37 completed weeks of gestation calculating from the first day of last menstrual period is arbitrarily defined as preterm baby.[1] Approximately 15 million new borns are born premature or in other words born before completing the 37 weeks of gestation. Every year, approximately 1 million children die each year due to the complications of preterm birth. According to figures, 27 million babies are born in India per year, with 3.5 million being born prematurely.[2] Preterm birth affected one out of every ten babies in the

United State in 2019.[3] The breast feeding problems that a mother with a premature baby faces are some what different from those that a mother with a full term baby faces. Breast feeding does not come easily to all women, and it can be particularly difficult if you have given birth prematurely. Here are some of the special difficulties and barriers that mothers of premature babies face when breast feeding: In the first few days, there was in adequate milk supply, Many mothers experience unexpected separation from their babies in the hospital after childbirth due to improper latching, such as NICU stays for infants with health problems, insufficient awareness.[4] Mothers of preterm neonates may suffer physiological and emotional challenges; these factors may affect breast feeding following delivery.[5] Preterm labour affect initiation of lactation in following ways: Lactation may be affected by stress, anxiety and fatigue.[6] Poor milk synthesis due to insufficient preparation of mammary epithelium by the hormone of pregnancy.[7] Hormones can signal the breasts to produce milk after the baby is delivered. If the baby is unable to breast feed at this point, the mother must express or pump milk from her breasts to stimulate milk production.[8] Owing to physiological immaturity or physical problems, preterm babies and babies with congenital abnormalities may be unable to suck properly. These babies' nutritional needs are normally fulfilled by expressed breast milk or formula milk. For such infants, expressed breast milk is considered the safest alternative to artificial feeds.[9]

Lactation massages are administered after a woman has given birth and is experiencing breast engorgement and reduced milk production. The massage technique is similar to that of a regular breast massage, but it has many advantages for a lactating mother. One of the key reasons for breast massage is to improve milk production.[10]

A cohort study was conducted to assess the effects of delayed lactogenesis II on early milk volume in mothers expressing milk for their preterm neonates. The findings of the study revealed that delayed lactogenesis II was linked to a lower volume of milk in the early post partum era. During pregnancy and the post partum period, mothers who are at risk for delayed lactogenesis II need additional therapies and help.[11] The mothers of preterm neonates who are not on breast feed are facing problem of less milk production. Breast massage may help to increase the amount of milk production. Objectives of the study were:

- To assess the amount of milk production in mothers who are not actively breast feeding preterm babies, before providing intervention.
- To assess the amount of milk production in mothers who are not actively breast feeding preterm babies, after providing intervention.
- To compare the amount of milk production in mothers who are not actively breast feeding preterm babies, before and after the intervention.
- To correlate the study findings with selected demographic variables.

Subjects and Methods

In this study quantitative approach was adopted with quasi experimental (time series one group pre test post test) research design was adopted. Data were collected with the help of demographic profile and assessment of breast milk tool from 26 samples (actual sample size was 32 but only 26 samples were selected in the study because of COVID-19) using purposive sampling technique who met the inclusion criteria. Inclusion criteria were postnatal mothers who deliver the baby between 32-36 weeks of gestation, postnatal mothers of preterm neonates who are not actively breast feed, postnatal mother who deliver the preterm neonate through caesarean section or normal vaginal delivery, primipara and multiparous mothers. Ethical clearance was obtained from Institutional ethical committee King George's Medical University Lucknow U.P. (ECR/262/Inst/UP/2013/RR-19) and the period of data collection was from March 2021 to April 2021. Study related information was explained to participants and informed consent was obtained from the participants. The demographic data were collected using a performa prepared by investigator. Amount of expressed breast milk was measured using a 20ml syringe. Breast massage was provided by investigator for 15 minutes before half an hours of each expression. Breast massage refers to the proper technique of massage of breast in order to improve amount of milk production. Breast massage include rubbing stroking and shaking each breast. The pre test data collected before intervention and post test data collected after each intervention consecutively for 3 days. Reliability of tool was calculated by Cronbach's Alpha method i.e.0.9.

Results

The result revealed that most of the mothers 9 (34.61%) were in afe group of 30-35 years, 14

(53.84%) were primipara mothers. Majority of the mothers were non-vegetarian 15 (57.69) and no one were taking drugs to improve or supress the lactation.

Table 1: Comparison of breast massage on amount of milk production before and after providing intervention.

n=26

Intervention		Mean	SD	Mean difference	t- valuw	p- value
Day 1	Pre-inter vention	3.03	1.98	9.31	16.68	p<0.00001
	Expression-1	3.26	1.50			
	Expression-2	3.88	1.08			
	Expression-3	5.19	1.59			
	Post intervention	12.34	3.83			
Day 2	Pre-intervention	17.07	6.73	43.54	15.62	p<0.00001
	Expression-1	18.26	6.52			
	Expression-2	20.19	7.08			
	Expression-3	22.15	7.11			
	Post intervention	60.61	20.52			
Day 3	Pre- intervention	25.15	7.13	56.77	20.16	p<0.00001
	Expression-1	26.19	6.98			
	Expression-2	26.88	7.04			
	Expression-3	28.76	7.08			
	Post intervention	81.92	21.10			

*p<0.05 (t-test), confidence interval: 95%

Data depicted in table no. 1 revealed that on day 1, the post intervention milk production was found to be more (12.34±3.83) than pre intervention (3.03±1.98), which is highly significant with p value <0.00001. On day 2, the post intervention milk production was found to be more (60.61±20.52) than pre intervention (17.07±6.73), which is highly significant with p value <0.00001. On day 3, the post intervention milk production was found to be more (81.92±21.10) than pre intervention (25.15±7.13), which is highly significant with p value <0.00001. The calculated t-test value (t=16.68, 15.62, 20.16) was significantly more than tabulated value at 0.05 level of significance.

Table 2: Comparison of breast massage on amount of milk production between day 1 and day 3 post intervention.

n=26

Post Inter vention	Mean	SD	Mean difference	t-value	p- value
Day 1	12.34	3.83	69.58	19.40	<0.00001
Day 3	81.92	21.10			

*p<0.05 (t-test), confidence interval: 95%

Data depicted in Table 2 revealed that day 3 post intervention milk production was found to be more (81.92±21.10) than day 1 post intervention milk production (12.34±3.83), which is highly significant with value <0.00001 at p<0.05 level of significance.

The above findings interpret that there was significant difference was found between day 1 and day 3 post intervention amount of milk production.

Further study analysis revealed that there was no demographic association was found with age, type of delivery, parity, weeks of gestation, use of any drugs to enhance or suppress lactation (p=0.73, p=0.12, p=0.24, p=0.34, p=1). Only significant association was found with dietary pattern (p=0.04).

Discussion

The findings of the present study revealed that day 3 post intervention milk production was found to be more (81.92±21.10) than day 1 post intervention milk production (12.34±3.83), which is highly significant. The result of the study interpret that breast massage is effective intervention in increasing amount of milk. A quasi experimental study was done to assess the impact of unilateral breast massage on amount of milk among postnatal mothers. Study was done on 42 postnatal mothers. Breast massage was taught by the lactational counsellor. And all the mothers were asked to massage only one breast for 10 minutes. Then amount of milk is measured. The result showed that the amount of milk produced from the side of breast massage was more than unmassaged side (p<0.001). This study showed that breast massage helps in increase volume of milk production.[12] This

study supported the findings of present study.

Conclusion

From the findings of the study, it has been observed that breast massage is helpful in increase amount of breast milk in those mothers who are not actively breast feeding preterm babies. The positive findings of this study support a growing body of evidence that non pharmacological intervention such as breast massage is effective for increasing amount of milk production. Fresh hand training can be given to nurses regarding breast massage intervention.

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