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Effectiveness of Lactation Counselling and Breast Milk Stimulation Techniques on Relactation and Breastfeeding among Mother-Infant Dyads in a Selected Hospital, Puducherry – An Interventional study

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KEYWORDS
Breast milk stimulation technique, Lactation counselling, Breast feeding, Relactation

ABSTRACT:
Background: Breast milk has benefits of ensuring a healthy child and the survival of a child. Several studies reported that the initiation of breastfeeding within a day was significantly associated with reducing low birth weight related neonatal mortality and infection related neonatal mortality among all live births. **Objectives:** The main objectives to determine the effectiveness of lactation counselling and breast milk stimulation techniques on relactation among the mothers of the infants who stopped breastfeeding in Group I and Group II. **Methods:** The study was conducted in Rajiv Gandhi Government Women and Children Hospital (RGGW&CH), Puducherry, Union territory in the Indian continent. Puducherry among 216 Mother-Infant Dyads using simple random sampling technique who meets the inclusion criteria. **Result:** The comparison of weight of the baby between pretest and post-test in both groups. In both the groups, there was significant gain in the weight of the baby. The calculated 't' value was highly significant at $p<0.001$. **Conclusion:** The level of knowledge of the mothers about relactation was moderately adequate. The study concluded that lactation counselling along with breast milk stimulation techniques is more effective in relactation than merely giving lactation counselling.

1. INTRODUCTION

Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of the mothers. As a global public health recommendation, the infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health [1].

The advantages of breastfeeding include a few factors such as early breast milk is liquid gold, the breast milk changes as the baby grows, breast milk is easier to digest, breast milk fights diseases, life can be easier when one breastfeed, breastfeeding can save money, breastfeeding can feel great, good for the mother's health, nursing mothers miss less work, release of good hormones, health benefits and practical added bonuses, the top benefit as maternal fulfilment [2].

Breast milk has benefits of ensuring a healthy child and the survival of a child. Several studies reported that the initiation of breastfeeding within a day was significantly associated with reducing low birth weight related neonatal mortality and infection related neonatal mortality among all live births [3].

Exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given – not even water – with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines. Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health [4].

Relactation means frequent suckling of the infant on the mother's breasts, frequent skin-to-skin contact with the mother-baby dyads, extensive support of the mother's efforts to re-induce lactation, the use

of supplementers as tube-feeding devices that allow the infant to receive milk or formula at the mother's breast, cessation of all bottles and pacifiers, and, occasionally, the use of galactagogues such as domperidone and metoclopramide [5].

Educational interventions have impacts on the health of the pregnant woman as well as, on the health and wellbeing of the next human generations. Antenatal education on breastfeeding is beneficial in preparing women for effective breastfeeding by promoting their confidence level, knowledge, and skills. Invariably, nurses guide and assist women throughout their pregnancy and puerperal period. She also plays a vital role in health education programs during the perinatal care. A nurse can encourage the advancement of breastfeeding by providing teaching on breastfeeding and positive support before birth and after hospital discharge [6].

2. NEED FOR STUDY

Worldwide, 10% of the disease burden in under-five children, occurs due to the non-exclusive breastfeeding. According to the Lancet estimate, suboptimal breastfeeding is a consequence of 1.4 million child deaths and 77% of child deaths are accounted for by non-exclusive breastfeeding in the first 6 months of birth. The highest risk of inappropriate feeding during the first 6 months of life occurs in the developing countries where 96% of the infant mortality occurs due to suboptimal breastfeeding. Nutritional deficits among the infants are immediate consequences of delayed breastfeeding and non-exclusive breastfeeding that leads to morbidity and mortality among children [7].

Globally, India has the highest under-five mortality rate (0.9 million deaths in 2016), which is attributable to an array of factors such as poverty, poor water and sanitation, poor healthcare access and non-EBF. Between 2005 and 2016, national studies, from India, reported an improvement in early breastfeeding prevalence by 9.0% (from 46.0 to 55.0%). EBF varied widely in India, ranging from 36.0% in Meghalaya to 77.0% in Chhattisgarh[8].

World Health Organization (WHO) recommended exclusive Breast Milk Feeding (BMF) to the infant for the first six months of life to achieve optimal growth, development, and health. The prevalence of exclusive BMF in the developing countries has increased from 33% in 1995 to just 39% in 2010. Although using promoting programs, the exclusive BMF has had a descending trend in Iran in 2000-2006, and an increasing trend in 2007-2011 [9].

Relactation will be possible at 9 weeks postpartum, if the mother's motivation to breastfeed is strong. The best techniques to increase the milk supply include frequent, day/night, and short breastfeeding patterns. Stopping the use of bottles and supplements is a key to success, which helps in overcoming breast refusal and low milk supply [10].

Though many studies have been conducted in the area of the breastfeeding among mothers, the researcher could not find any valid study on the effectiveness of Lactation Counselling and Breast Milk Stimulation Techniques on relactation and breastfeeding among the mothers. Hence, the researcher felt the need to assess the effectiveness of Lactation Counselling and Breast Milk Stimulation Techniques on relactation and breastfeeding among the mothers in a selected hospital in Puducherry.

3. OBJECTIVES OF THE STUDY

- To assess the knowledge and attitudes of the mothers about relactation among the mothers with infant who stopped breastfeeding in Group I and Group II.
- To determine the effectiveness of lactation counselling and breast milk stimulation techniques on relactation among the mothers of the infants who stopped breastfeeding in Group I and Group II
- To find out the association between the demographic and the clinical variables with level of knowledge and attitude regarding relactation of the mothers in Group I and Group II.

Hypotheses of the Study

H_1 - The initiation of relactation is significantly better and quicker in mothers who had undergone lactation counselling and breast milk stimulation techniques (Group I) than the mothers who received lactation counselling only (Group II).

4. MATERIAL AND METHODS

Research Design

A true experimental (pretest and posttest control group) design was adopted to assess the effectiveness of lactation counselling and breast milk stimulation techniques on relactation and breastfeeding among the mothers.

Study setting

The study was conducted in Rajiv Gandhi Government Women and Children Hospital (RGGW&CH), Puducherry, Union territory in the Indian continent. Puducherry is situated in south East region of India.

Criteria of Sample selection

Inclusion criteria

Mother-infant dyads,

- Not breastfeeding now.
- Discontinued breastfeeding for 3 days to 6 months.
- Mother aged between 19 and 35 years.
- Infant aged between 1 week to 6 months.
- Any gravid.
- Who are admitted in wards.

Exclusion criteria

Mother infant dyads,

- Mother with HIV infection
- Baby with acute illness
- Mother not willing to participate
- Mothers with Psychiatric illness.

Sample size

The sample size was calculated used are as follows:

$$n_1 = \frac{(\sigma_1^2 + \sigma^2/\kappa)(z_{1-\alpha/2} + z_{1-\beta})^2}{\Delta^2}$$

$$n_2 = \frac{(\kappa * \sigma_1^2 + \sigma_2^2)(z_{1-\alpha/2} + z_{1-\beta})^2}{\Delta^2}$$

Comparison of mean and standard deviation was done. With the confidence Interval (2 – sided) 95%, Power 95% the sample size is calculated as 216. Group I allotted with 108 samples and Group II allotted with 108 samples

Sampling technique

In this study Simple random technique using lottery method was used.

Instruments

The knowledge was assessed by structured questionnaire about relactation which consisted of 10 questions related to what is relactation, relactation possibility, ideal time to relactate, ways of stimulating relactation, hand expression, age for successful relactation, principles of relactation, techniques of relactation, stimulation of breast for relactation, stomach capacity of the infant. The mother's attitude related to relactation was assessed with the likert scale consisting of 7 items on attitude towards relactation. Check list for relactation intervention and milk secretion, consisted of 7 days schedule to assess the breast milk secretion, use of breast milk stimulation techniques like drip-drop method, top up feed, fullness of breast and mother's satisfaction.

Ethical considerations

Ethical permission was obtained from the ethical committee of the institution. Institution's Human Ethics Committee clearance and permission was obtained from RGGW&CH, Puducherry. Written informed consent was obtained from the selected mothers. The mothers, selected for the study were assured of the confidentiality of the information they shared with the researcher. It was ensured that the prescribed intervention will not affect the normal work schedule of the mothers. A positive benefit was explained to all the selected mothers. They were also explained that they could withdraw from the study at any point of time. The mothers were assured that the data they shared would be kept confidential. Anonymity and confidentiality was maintained throughout the study

5. DATA COLLECTION PROCEDURES

Phase – I

The investigator collected the demographic baseline data and clinical data from the mothers and assessed the knowledge and attitudes of the mothers about relactation. For collecting the data, from one mother it took 20-30 minutes, the same procedure was continued till the required sample size was obtained.

Phase – II

Lactation counselling (Group I)

The investigator selected the mothers based on the inclusion criteria. The selected mothers were explained and an informed written consent was obtained from each of the mothers. The mother and the care taker were encouraged to take part in the counselling session. Lactation counselling was given using relactation counselling booklet. It took 20-30 minutes.

Administration of Breast Milk Stimulation Technique (Group I)

Mother was made to sit comfortably in the chair leaning forward and supported in the table. Privacy was given to the mother to undress herself by exposing the breasts with the breasts hanging down. The investigator is provided back massage for 2-3 minutes followed by breast massage 1-2 minutes and nipple stimulation manually for 1-2 minutes. The investigator made the mother seated in a comfortable position in bed and put the baby on breast and stimulated for suckling for 10 minutes. Following the suckle, the drip drop method was started by connecting a nasogastric tube tip fixed near the nipple and the wide part is placed in a cup of milk (top up feed - double boiled milk provided in the hospital or breast milkfrom the milk bank). Baby is stimulated to suck. With 5-10 suckling, milk is delivered from the tube to the infant mouth and this process takes 30 minutes. So, the total time taken for were mother was 2 hours.

Lactation counselling (Group II)

Lactation counselling was given using the relactation counselling booklet. It took 20 minutes. So, for one mother it took 1 hour to complete the process. Follow up was done over the phone and created a Whatsapp group to follow the mothers daily. The mothers were enquired about the improvement of

milk secretion, urine out put of the baby and sleeping pattern of baby. The mothers were followed up in well baby clinic in RGGW&CH Puducherry every Wednesday.
For both groups, posttest I was done at 1 week and posttest II at 1 month. Anthropometric measurements, breast milk secretion, urine output and sleeping pattern of the baby were measured.

6.PLAN FOR DATA ANALYSIS

Data analysis is a technique used to reduce, organize and give meaning to the data. The collected data were coded and analyzed by using descriptive and Inferential Statistics. Demographic, clinical variables, knowledge and attitude among the mothers was analyzed by using descriptive methods.
Paired 't' – test was used to determine the effectiveness of the lactation counselling and breastfeeding technique on Check list for relactation intervention and Check list for baby after relactation in both Group I and Group II. Chi-square test was used to find out the association among the level of Knowledge related to breastfeeding Knowledge Questionnaire, Knowledge about relactation Questionnaire, mothers attitude related to relactation Questionnaire among the mothers with their selected demographic clinical and the anthropometric variables.

7.RESULTS

The Tabel 1 frequency and percentage wise distribution of the demographic variables of the mothers of the infants who stopped breastfeeding in Group I and Group II. Out of the 216 mothers of the infants, who were interviewed, in both Group I and Group II, a majority (47.2% and 50%) of them were in the age group between 23-27 years. Totally 44(40.7%) mothers in Group I, and 40(37%) in Group II completed secondary school education. A total of 97(89.8%) mothers in Group I and 90(83.3%) in Group II were home makers. Totally, 88(81.5%) mothers in Group I, 78(72.2%) mothers in Group II belonged to urban areas. A total of Group I, 106(98.1%) mothers in Group I, 101(93.5%) mothers in Group II, were Hindus. In Group I, 48(44.4%) mothers and, in Group II, 54(50%) mothers of the infants had monthly income of Rs. 5000-10000. In Group I, totally 72(66.7%) mothers and in Group II, 69(63.9%) mothers of the infants belonged to joint families. In Group I, totally 102(94.4%) mothers and in Group II, 93(86.1%) mothers of the infants were non-vegetarian eaters. The chi-square test revealed that both groups were found comparable in terms of age of the mother, education, occupation, marital status, type of family and place of residence with the 'p' value of >0.05. But, there was significant differences were found between Group I and Group II in terms, monthly family income and dietary habits with the 'p' value of <0.05.

Table 2 represents frequency and percentage wise distribution of the clinical variables of the mothers of the infants who stopped breastfeeding in Group I and Group II. In Group I, totally, 55(50.9%) mother's and in Group II, 61(56.5%) mother's age at marriage was between 23-27 years. In Group I, totally, 63(58.3%) mothers and Group II, 70(64.8%) mothers of the infants were aged 23-27 years at delivery. In Group I, 55(50.9%) and in Group II, 65(60.2%) mothers of the infants were multi gravida. In Group I, 53(49.1%) mothers had 1 child and in Group II, 64(59.3%) mothers had 2 children. In Group I, a total of 90(83.3%) mothers and in Group II, 92(85.2%) mothers of the infants had normal delivery. All the mothers, in both groups had institutional delivery. In Group I, 57(52.8%) mothers had male baby and in Group II, totally, 60(55.6%) mothers were having female children. In Group I, a total of 102(94.4%) infants and in Group II, 103(95.4%) infants were born at term. In terms of present age of the infants, in Group I, 61(56.5%) infants were in the age 0-3 months and in Group II, 57(52.8%) infants were in the age between 4-6 months. In Group I, 70(64.8%) infants and in Group II, totally, 73(67.6%) infants had more than 5 kg weight. In terms of birth order of the baby, in Group I,

33(49.11%) infants were first babies whereas, in Group II, totally 64(59.3%) infants were 2nd baby to their parents.

The chi square test revealed that both groups were found comparable in terms of age at marriage, age at first delivery, number of gravida, type of delivery of the present baby, place of delivery, sex of the baby, gestational age of the baby at birth, age of the baby now and weight of the baby now as the 'p' value >0.05 indicates. But, significant differences were found between Group I and Group II in terms of number of children and birth order of the present child as the obtained 'p' value 0.05 indicates.

Table 3 presents the comparison of weight of the baby between pretest and posttest in both groups. In both the groups, there was significant gain in the weight of the baby. The calculated 't' value was highly significant at $p<0.001$.

The obtained chi-square value revealed that there was no significant association between the demographic variables with the level of knowledge and attitude about relactation. There was no significant association between the clinical variables with the level of knowledge and attitude about relactation.

Table: 1 Frequency and Percentage Wise Distribution of Selected Demographic Variables of mothers of infants in Group I and Group II (N = 216)

S. No	Demographic Variables	Group - I (n = 108)		Group - II (n = 108)		Level of Significance
		f	%	f	%	
1.	**Age of the mother**					
	19 -22 years	8	7.4	8	7.4	χ^2 = 1.07 P = 0.78 (NS)
	23-27 years	51	47.2	54	50	
	28-32 years	42	38.9	36	33.3	
	33-35 years	7	6.5	10	9.3	
2.	**Educational Status**					
	Non literate	14	13	7	6.5	χ^2 = 7.23 P = 0.124 (NS)
	Primary school	11	10.2	13	12	
	Secondary school	44	40.7	40	37	
	Diploma	8	7.4	19	17.6	
	Any degree	31	28.7	29	26.9	
3.	**Occupation**					
	Agriculture	0	0	0	0	χ^2 = 2.33 P = 0.311 (NS)
	Government Service	3	2.8	7	6.5	
	Private Service	8	7.4	11	10.2	
	Business	0	0	0	0	
	Daily Employee	0	0	0	0	
	Homemaker	97	89.8	90	83.3	
4.	**Residential Area**					χ^2 = 3.93 P= 2 (NS)
	Urban	88	81.5	78	72.2	
	Rural	20	18.5	28	25.9	
	Semi urban	0	0	2	1.9	
5.	**Religion**					

	Hindu	106	98.1	101	93.5	χ^2 = 5.12 P = 0.163 (NS)
	Christian	2	1.9	2	1.9	
	Muslim	0	0	4	3.7	
	Jainism	0	0	1	0.9	
6.	**Family Income (Per Month)**					
	Less than Rs.5000	20	18.5	5	4.6	χ^2 = 17.25 P = 0.002** (S)
	Rs.5000-10000	48	44.4	54	50	
	Rs.10001-15000	30	27.8	24	22.2	
	Rs.15001-20000	5	4.6	17	15.7	
	Above 20000	5	4.6	8	7.4	
7.	**Type of Family**					χ^2 = 0.184 P = 0.082 (NS)
	Nuclear	36	33.3	39	36.1	
	Joint family	72	66.7	69	63.9	
8.	**Dietary Habit**					χ^2 = 4.27 P = 0.039* (S)
	Vegetarian	6	5.6	15	13.9	
	Non vegetarian	102	94.4	93	86.1	

****Significant at p<0.01 , NS - Non Significant**

Table 2: Frequency and Percentage Wise Distribution of Selected Clinical Variables of the mothers of the infants in Group I and Group II. (N = 216)

Sl. No.	Clinical Variables	Group - I (n = 108)		Group - II (n = 108)		Level of Significance
		f	%	f	%	
1.	**Age at Marriage**					
	19 -22 years	45	41.7	42	38.9	χ^2 = 1.106 P = 0.575 (NS)
	23-27 years	55	50.9	61	56.5	
	28-32 years	8	7.4	5	4.6	
	33-35 years	0	0	0	0	
2.	**Age at Delivery**					
	19 -22 years	29	26.9	23	21.3	χ^2 = 2.06 P = 0.56 (NS)
	23-27 years	63	58.3	70	64.8	
	28-32 years	15	13.9	15	13.9	
	33-35 years	1	0.9	0	0	
3.	**Number of Gravida**					
	Primi gravida	53	49.1	43	39.8	χ^2 = 1.87 P = 0.171 (NS)
	Multi gravida	55	50.9	65	60.2	
4.	**Number of Children**					
	One	53	49.1	43	39.8	χ^2 = 7.82 P = 0.020* (S)
	Two	48	44.4	64	59.3	
	Three	7	6.5	1	0.9	
5.	**Type of Delivery of the Present Baby**					
	Normal delivery	90	83.3	92	85.2	χ^2 = 0.64

	Caesarean delivery	17	15.7	14	13	P = 0.724 (NS)
	Instrumental delivery	1	0.9	2	1.9	
6.	**Place of Delivery**					
	Home delivery	0	0	0		Constant
	Institutional delivery	108	100	108	100	
7.	Sex of the Baby					χ^2 = 1.501 P = 0.220 (NS)
	Male	57	52.8	48	44.4	
	Female	51	47.2	60	55.6	
8.	**Gestational Age of the Baby at Birth**					χ^2 = 0.205 P = 0.903 (NS)
	Preterm	3	2.8	3	2.8	
	Term	102	94.4	103	95.44	
	Post term	3	2.8	2	1.9	
9.	**Present Age of the Baby**					$\chi2$ = 1.85 P = 0.173 (NS)
	0-3 months	61	56.5	51	47.2	
	4-6 months	47	43.5	57	52.8	
10.	**Weight of the Baby Now**					$\chi2$ = 0.18 P = 0.666 (NS)
	Less than 5 kgs	38	35.2	35	32.4	
	More than 5 kgs	70	64.8	73	67.6	
11.	**Birth Order of the Present Child**					$\chi2$ = 9.09 P = 0.011** (S)
	1	53	49.1	43	39.8	
	2	47	43.5	64	59.3	
	3	8	7.4	1	0.9	

****Significant at p<0.01 , NS - Non Significant**

Table 3: Effectiveness of Breast Milk Stimulation Techniques in Group I and Group II

Group	Test	Mean	SD	Mean Difference	T value	p-value
Group I	Pre-test	5.64	1.65	1.00	6.14	0.000** (S)
	Post- test	6.64	1.65			
Group II	Pre-test	5.5	1.81	0.42	5.85	0.000** (S)
	Post- test	5.93	1.82			

*****S - Significant at p < 0.001**

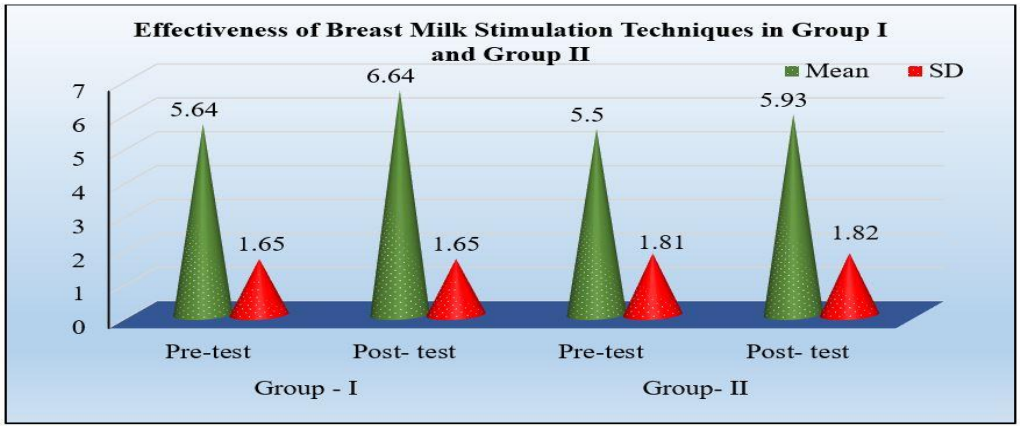

Figure 1: Comparison of the mean and standard deviation in Group I and Group II

8. DISCUUSION

The study findings are supported by Adrawa et al. (2018) found majority of the mothers, having babies agedbetween 2-12 months, were aged between 18 – 35 indicating this group, as the most fertile reproductive age group. McFadden et al. (2019) study found that breastfeeding counselling as an effective public health intervention to increase exclusive breastfeeding rates and breast milk secretion.

9. CONCLUSION

The present study assessed the effectiveness of breast milk stimulation techniques on relactation and breastfeeding among the mothers in a selected hospital, Puducherry. The level of knowledge of the mothers about relactation was moderately adequate. The study concluded that lactation counselling along with breast milk stimulation techniques is more effective in relactation than merely giving lactation counselling.

RECOMMENDATION

Based on the findings of the present study, the following recommendations have been made,

- The information booklet on breastfeeding and relactation can be used as a teaching and practicing.
- The drip drop method among the mothers who stopped breastfeeding can be implemented.

REFERENCES

1. Breastfeeding. World Health Organization (WHO). 2019 [cited 2020 May 12]. Available from: https://www.who.int/health-topics/breastfeeding
2. Adda Bjarnadottir, MS, RDN, Valinda. Benefits of Breastfeeding for Both Mom and Baby [Internet]. Healthline. Healthline Media; 2020 [cited 2020 May 12]. Available from: https://www.healthline.com/health/breastfeeding/11-benefits-of-breastfeeding
3. Woldeamanuel, B.T. Trends and factors associated to early initiation of breastfeeding, exclusive breastfeeding and duration of breastfeeding in Ethiopia: evidence from the Ethiopia Demographic and Health Survey 2016. Int Breastfeed J 15, 3 (2020). https://doi.org/10.1186/s13006-019-0248-3
4. Breastfeeding.World Health Organization (WHO). 2013 [cited 2020 May 12]. Available from:https://iris.who.int/bitstream/handle/10665/79198/9789241505307
5. Franz AN. "Relactation in Emergencies" by Ashley N. Franz [Internet]. CORE Scholar. [cited 2020 May 12]. Available from: https://corescholar.libraries.wright.edu/mph/166/
6. Piro, S.S., Ahmed, H.M. Impacts of antenatal nursing interventions on mothers' breastfeeding self-efficacy: an experimental study. BMC Pregnancy Childbirth 20, 19 (2020). https://doi.org/10.1186/s12884-019-2701-0
7. Woldeamanuel BT. Trends and factors associated to early initiation of breastfeeding, exclusive breastfeeding and duration of breastfeeding in Ethiopia: evidence from the Ethiopia

Demographic and Health Survey 2016. *Int Breastfeed J*. 2020;15(1):3. Published 2020 Jan 9. https://doi.org/10.1186/s13006-019-0248-3

8. Ogbo FA, Dhami MV, Awosemo AO, et al. Regional prevalence and determinants of exclusive breastfeeding in India [published correction appears in Int Breastfeed J. 2019 Jun 4;14:22]. Int Breastfeed J. 2019;14:20. Published 2019 May 16. https://doi.org/10.1186/s13006-019-0214-0
9. Rodríguez-Gallego I, Leon-Larios F, Corrales-Gutierrez I, González-Sanz JD. Impact and Effectiveness of Group Strategies for Supporting Breastfeeding after Birth: A Systematic Review. Int J Environ Res Public Health. 2021 Mar 4;18(5):2550. https://doi.org/10.3390%2Fijerph18052550
10. Muresan, Marta. "Successful relactation--a case history." Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine vol. 6,4 (2011): 233-9. https://doi.org/10.1089/bfm.2010.0062