DOI Number: 10.5958/0974-1283.2019.00042.2

SPEOS (Stimulation of Endorphin, Oxytocin and Suggestive): Intervention to Improvement of Breastfeeding Production

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ABSTRACT

Background: The problem of preliminary breast milk expenditure that is not yet smooth is often the reason for the mother to delay or replace it with breast milk substitutes. Even though they have obtainedearly breastfeeding initiation, the expenditure and production of breast milk are not yet smooth.

Objectives: Proving the SPEOS method (Stimulation of Endorphin, Oxytocin,and Suggestive) is effective against increasing breast milk production.

Method: The study used a quasi-experimental pre and posttest design. The sample was 60 postpartum mothers in the Mojokerto area hospital who met the research criteria, taken with a simple random sampling technique. The control group gets early breastfeeding initiation according to the procedure. The intervention group was given the SPEOS method (Stimulation of Endorphin, Oxytocin and Suggestive) intervention method, which was carried out according to the procedure. Assessment of breast milk production is carried out by pumping breast milk, using Pigeon (ml) pumps. Data collection used a weighing test for breast milk production. Processing and analysis of data used paired t-test, Mann Whitney test,and LSD test.

Result: The SPEOS method affected the increase in breast milk production. There were significant differences in the production of breast milk pre-post control group, obtained t-count 8.923 (p = 0.000) and the experimental group t-count 18.886 (p = 0.000). The difference in the level of comfort between groups with the LSD test obtained p-value = 0.035.

Conclusion: The findings of the study show that the SPEOS method (Stimulation of Endorphin, Oxytocin,and Suggestive) is one of the alternative interventions for increasing milk production and accelerating the release of breast milk through increased work of prolactin and oxytocin.

Keywords: *SPEOS method, Breast milk production, Postpartum*

INTRODUCTION

Indonesia, encouraging exclusive breastfeeding for infants up to 6 months of their first life and continued until the child is two years old. For babies, breast milk has an important role to support growth, health, and survival. Whereas for mothers, breastfeeding can reduce morbidity and mortality because the breastfeeding process will stimulate uterine contractions there by reducing puerperal complications[(1)]. UNICEF asserted that babies are given formula die 25 times higher than babies who are exclusively breastfed[(2)].

Nationally, mothers who breastfed alone in the first 24 hours were 30.2%. Data shows that the coverage of exclusive breastfeeding in Indonesia is still low, only 54.3% of babies in Indonesia are exclusively breastfed, meaning that there are still 45% of babies in Indonesia who are not getting enough breast milk[(3)]. While the national target for exclusive breastfeeding is 80%, in Southeast Asia the achievement of exclusive breast milk shows numbers that are not much different. In

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comparison, exclusive breastfeeding coverage in India has reached 46%, in the Philippines 34%, in Vietnam 27%, and Myanmar 24%[4].

Research in Ghana shows that 16% of infant deaths can be prevented through breastfeeding babies from the first day of birth. This figure rose to 22% if breastfeeding began in the first hour after birth[5].

Failure in the breastfeeding process is often caused by the emergence of several factors, including maternal factors, infant factors, psychological factors, health personnel factors, socio-cultural factors. The research conducted by Diana (2001) showed that inhibiting factors of exclusive breastfeeding in the form of false beliefs about baby food, promotion of formula milk, and health problems for mothers and babies led to the failure of exclusive breastfeeding[6].

The reality in the field, the production, and ejection of breast milk which is a little on the first day after birth, becomes an obstacle in early breastfeeding. The problem of breastfeeding is affected by the reduction of stimulation of the hormone oxytocin, the physical and psychological changes in the mother during the lactation process. Theoretically, the workings of the oxytocin hormone are influenced by psychological conditions. Therefore maternal postpartum preparation is an important factor that can influence the success of breastfeeding, stress, excessive worry, unhappiness plays a role in breastfeeding success[7].

The problem of breastfeeding does not come out on the first day of birth must be anticipated since pregnancy through lactation counseling, but the dissemination of information among officers has not been optimized,so it is necessary to do alternative ways to stimulate milk production[8]. Various researches that have been carried out in Indonesia to facilitate breast milkproduction include methods of Oxytocin Massage, Marble Technique, Warm Compress, Massage Rolling (back), Breast Care, but due to limited information on health services about the procedure of implementation, these methods are only known and rarely given by health workers as care giver to patients[9].

The SPEOS method (Stimulation of Endorphin, Oxytocin,and Suggestive) is one of the preferred interventions to stimulate the release of oxytocin through oxytocin and endorphin massage, provide comfort and foster confidence in the mother that breast milk must come out and mothers can breastfeed exclusively[10].

Endorphins are known as substances that have many benefits. Endorphin massage can stimulate the release of endorphin hormones and can stimulate the appearance of prolactin and oxytocin reflexes to increase the volume and production of breast milk[11]. When combined with oxytocin massage and supported suggestively so that the mother has confidence in her ability in the process of breastfeeding, the resistance to the release of oxytocin will increase. This has an impact on increasing milk production in the early life of the baby.

MATERIALS AND METHOD

The research design was quasi-experiment with pre and post-test design, measurements were taken before and after intervening in the SPEOS method which was a combination of endorphin massage, oxytocin massage, and suggestion, starting 1-6 hours postpartum every day up to week 4. Deep population of this research is all postpartum mothers in the Mojokerto area hospital. Samples were primiparous postpartum mothers giving birth to 60 people (divided into 30 experimental groups and 30 control groups). Research criteria: samples aged 20-35 years, postpartum first day (1-6 hours postpartum), primiparous and multiparous, it did not experience postpartum complications, gestational age above 37 weeks, infants were not given formula milk, BB ≥2500gram, mother, did not smoke, form of nipples on both mother's breasts stood out, condition of mother and baby healthy. Taken with a simple random sampling technique.

The SPEOS method is given every day starting on day 1 (1-6 hours post partum) for four weeks. The duration of the massage starts 10 minutes at week 1, then increases to 15 minutes week II. Then evaluating if the milk production is small then the time that the massage is increased to 20 minutes and maintained until week IV, breast milk production assessment is carried out by pumping breast milk, using a Pigeon pump (ml), breast milk is pumped before and after massage every week up to 4 weeks, pumped 2 hours before the breastfeeding baby. Data collection uses a weighing test for breast milk production. Processing and analyzing data using a paired t-test for breast milk secretion, Mann Whitney test to measure the mean difference of breast milk secretion, while to see the difference in comfort level between groups of respondents with the LSD test.

FINDINGS

Table 1: Distribution of Age, Parity, Education, BMI and Baby Weight

No.	Variable	Control		Experiment		p-value
		Frequency	Percentage	Frequency	Percentage	
1.	**Age**					
	< 20 years	5	17%	2	6%	0.241
	20-30 years	16	53%	18	60%	
	> 30 years	9	30%	10	34%	
	Total	30	100%	30	100%	
2.	**Parity**					
	Primigravida	11	37%	8	27%	0.356
	Multigravida	16	53%	19	63%	
	Grande multi	3	10%	3	10%	
	Total	30	100%	30	100%	
3.	**Education**					
	Elementary school	5	17%	4	13%	0.489
	Middle school	10	34%	12	40%	
	High school	9	30%	10	34%	
	College	6	19%	4	13%	
	Total	30	100%	30	100%	
4.	**BMI**					
	Thin skinny level	8	27%	8	27%	0.653
	Thin weight	0	0%	0	0%	
	Normal	16	53%	20	66%	
	Light weight level	6	20%	2	7%	
	Fat weight level	0	0%	0	0%	
	Total	30	100%	30	100%	
5.	**Baby weight**					
	2500-3000	11	37%	8	27%	0.356
	3001-3500	16	53%	19	63%	
	3501-4000	3	10%	3	10%	
	Total	30	100%	30	100%	

All variables showed p-value >0.05, which indicated that there was no significant difference of the characteristics of the respondents between the experiment and control group. It could be said that both group were homogeneous.

Table 2: Breast milk secretion in the experiment and control group

Variable	Mean	SD	t-count	p-value
Control Group				
Pre-test	17.49	5.063	8.923	0.000
Post-test	73.00	29.047		
Experiment Group				
Pre-test	17.49	5.063	18.886	0.000
Post-test	221.29	55.738		

The table shows that there are differences in the results of pre-post in the control and experimental groups, as evidenced by the results of the t-count of the control group = 8.923 and the experimental group = 18.886. This show that SPEOS, increase milk production.

Table 3: Mean difference of breast milk secretion in the experiment and control group

Variable	Control	Experiment	p-value
Difference of breast milk secretion			
Mean	55.51	203.80	0.0001
SD	29.98	51.689	

The difference in mean values, shows that the SPEOS intervention in the experimental group increased breast milk production, with p-value = 0.0001

Table 4: Differences in the level of comfort between groups

Variable	Mean	SD	p-value
Control group	0.56	9.86	0.035
Experiment group	13	11.55	

The difference in mean values, shows that the SPEOS intervention in the experimental group increased level of comfort, with p-value = 0.035.

Table 5: Indicators of breast milk production in the control and experimental group

Indicators	Control group				Experimental group			
	Yes		No		Yes		No	
	%	n	%	n	%	n	%	n
Tense breast	45	14	55	16	65	20	35	10
Mother relaxes	55	16	45	14	65	20	35	10
Let down good reflexes	55	16	45	14	100	30	0	0
The frequency of breastfeeding is> 8 times	100	30	0	0	70	21	30	9
Use 2 breast	40	12	60	18	70	21	30	9
Correct attachment position	25	8	75	22	70	21	30	9
Putting is not blisters	65	20	35	10	100	30	0	0
Looks full red breasts	20	6	80	24	70	21	30	9
Breastfeeding without schedule	45	14	55	16	75	22	25	8
Babies suck strongly with a slow beat	55	16	45	14	65	20	35	10

Increased production of breast milk, indicated by tense breasts, Mother relaxes, Let down good reflexes, Use 2 breasts, Correct attachment position, Putting is not blisters, Looks full red breasts, Breastfeeding without schedule, Babies suck strongly with a slow beat. While the frequency of breastfeeding is> 8 times, experienced by all control groups. This shows that the quantity of breast milk production is insufficient, so the baby must breastfeed more often than the experimental group.

DISCUSSION

The theory of neurotransmitters that produce endorphins is by affecting the area of the brain, stimulating the secretion of β-endorphin and enkephalin in the brain and spinal cord. Neurotransmitter release affects the immune system and antinociceptive system[12].

Endorphins are naturally produced by the body's pituitary gland which is useful for reducing pain, affecting memory and mood which then gives a relaxed feeling[10].

While oxytocin massage is a massage along the spine (vertebrae) to the fifth-sixthcostae bone and is an attempt to stimulate the hormone prolactin and oxytocin after childbirth. This massage serves to increase the feeling of comfort and relaxation that can stimulate the release of endorphins, with smooth blood flow to the brain, the hypothalamus quickly receives a signal, forwarded to the posterior pituitary that secretes oxytocin, so that the milk automatically comes out[13].

Relaxing muscles, vasodilation of blood vessels, stimulates long fibers and opium receptors such as β-endorphin, which contains large peptides that can be released slowly. Furthermore, the opium on the dorsal

spinal cord blocks the pain signal, closes the substantial galatinosa so that the pain signals are pressed[14].

By the theory that prolactin produced during the breastfeeding process has been studied has a relaxation effect which causes breastfeeding mothers to feel calm and even have a euphoric effect, so that the higher the prolactin level, the better the production of breast milk[7].

The massage will eliminate tension and can cause relaxation of body muscles. This will give a sense of safe and comfort which means psychologically giving a positive impact on the feeling of calm, comfort, relaxation and decreased stress; this stimulates an increase in body morphine, namely endorphins[6]. A comfortable, calm and relaxed atmosphere will bring positive emotions that can increase the secretion of neurotransmitter endorphin through POMC which serves as a pain reliever and excessive control of Corticotropin-releasing hormone (CRH) secretion[15]. This positive response through the HPA pathway will stimulate the hypothalamus to reduce CRF secretion followed by a decrease in corticotropin, adrenocorticotropic hormone (ACTH), and the adrenal medulla will respond by decreasing catecholamine secretion, then peripheral resistance and cardiac output will decrease,so that blood pressure decreases. The state of relaxation that is felt by the mother will improve maternal comfort so that it increases the letdown reflex and increases the amount of the hormone prolactin and oxytocin[15].

Endorphin and oxytocin massage are actions that function to stimulate the production of the prolactin hormone from the brain. This hormone which affects a lot of breast milk. The main massage points to facilitate breast milk, according to Daris, are in the breast itself. The three main points for a massage on the breast are one point above the nipple, right on the nipple, and the point under the nipple. If this is done routinely and correctly, this effort can facilitate breast milk production. In addition to the dots in the breast, the point below the knee (point ST 36) will also help facilitate breastfeeding[16].

Mother's belief in being able to breastfeed her baby is a factor that supports the success of breastfeeding. What the body experiences depend on its subconscious mind. The unconscious soul plays 82% of the function of the self, while the conscious soul plays 18. When the recording is negative, it can be neutralized to be reprogramming with positive suggestions. Suggestions made by relaxing the mind will cause feelings of relaxation and happiness so that breast milk will come out smoothly[17].

The most important period of breastfeeding babies is the first 30 minutes of birth for up to 3 days because at that time colostrum was first produced. This means that it shows signs that breastfeeding in the first hour decreases mortality, and breast milk is exclusively six months old, will reduce infant mortality[6].

CONCLUSION

In postpartum mothers, the SPEOS method can be used as an intervention option for increasing breast milk production. In addition to increasing production, SPEOS has advantages that can be done from an early, has a good impact on the acceleration time of release breast milk and provides confidence and comfort for postpartum mothers.

Ethical Clearance: Yes

Conflict of Interest: No

Source of Funding: Authors

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