



The effect of SPEOS method and music therapy on breastmilk production in primipara postpartum mothers

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ABSTRAK

Latar Belakang: Produksi ASI pada hari kedua dan ketiga pascasalin belum adekuat sehingga sering mengakibatkan muncul permasalahan dalam menyusui. Faktor hormonal merupakan salah satu faktor yang mempengaruhi produksi ASI. Oleh karena itu, dibutuhkan terapi non farmakologi yang dapat membantu meningkatkan produksi ASI pada ibu menyusui primipara.

Tujuan: Tujuan dari penelitian ini adalah untuk mengetahui efek dari kombinasi terapi dengan metode SPEOS (stimulation of endorphins, oxytocin, and suggestive massage) dan terapi musik klasik terhadap produksi ASI pada ibu nifas primipara.

Metode: Penelitian ini merupakan sebuah quasi-experiment dengan desain pretest and post-test with control group. Ada sebanyak 34 responden ibu nifas hari pertama sampai hari keempat yang dipilih secara acak dan kemudian dibagi menjadi dua kelompok intervensi dan kelompok kontrol. Analisis bivariat dilakukan menggunakan uji Wilcoxon and Mann Whitney untuk melihat efek dari metode SPEOS dan terapi musik klasik terhadap ASI.

Hasil: Rata-rata produksi ASI meningkat dari 4.35 ml menjadi 46.66 ml ($p=0.0001$) pada kelompok intervensi dibandingkan dengan kelompok kontrol yang meningkat dari 5.48 ml menjadi 19.07 ml ($p=0.0001$).

Kesimpulan: Ada pengaruh kombinasi metode SPEOS dan terapi musik klasik terhadap peningkatan produksi ASI pada ibu nifas primipara.

KATA KUNCI: ibu nifas; produksi asi ; speos ; terapi musik

ABSTRACT

Background: Breastmilk production on the 2nd to 3rd day after delivery is still low and it can lead to breastfeeding adequacy problem. Hormonal constitute one of many factors that causing this condition. Therefore, there is a need for non-pharmacological interventions to increase breastmilk production in primipara postpartum mothers.

Objectives: The purpose of the study was to determine the effect of the SPEOS method (stimulation of endorphins, oxytocin, and suggestive massage) and classical music therapy on breastmilk production in primipara postpartum mothers.

Methods: This study was a quasi-experiment with pretest and post-test with control group design. A total of 34 postpartum mothers from the first day to the fourth day were selected in this study randomly and were divided into an experimental group (EG) and control group (CG). Wilcoxon and Mann Whitney test was used for statistical analysis.

Results: The average breastmilk production after the administration of the SPEOS method and music therapy interventions was increased significantly from 4.35 ml to 46.66 ml ($p=0.0001$) compared to control group 5.48 ml to 19.07 ml ($p=0.0001$).

Conclusions: *The combination of the SPEOS method and music therapy is effective in increasing breastmilk production in primipara postpartum mothers.*

KEYWORD: *postpartum mother; milk production; speos; music therapy*

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INTRODUCTION

Breast milk is the only natural food that is best for babies because it contains the energy and complete substances needed for the first six months of a baby's life (1). The Indonesian Ministry of Health is targeting an increase in the target of exclusive breastfeeding by up to 80%. However, exclusive breastfeeding in Indonesia is only 74.5% (2). One of the factors that becomes a problem in breastfeeding is insufficient milk production, especially in the first days of the baby's birth. From previous study, it stated that milk volumes on days 1 and 2 were low, the mean for day 2 being 175 mL/d (3). For the first breastfeed, within 60 minutes of birth, infants take 0 to 5 mL of colostrum. For the first 2 days after birth, before secretory activation, the intake of colostrum is 37 to 169 mL/d (4). This is because there is still a small amount of progesterone, estrogen, Human Placental Lactogen (HPL) and Prolactin Inhibiting Factor (PIF) in the mother's body so that milk production is still hampered, especially on 2-3 days after childbirth (1). The first twenty-four hours postnatal is the essential period for successful breastfeeding. Throughout this period, prolactin and oxytocin hormone that is vital for the production of breast milk are released. Moreover, production and adequacy of breastmilk at 6 weeks after birth have been shown to have a significant association with milk production in this period (5).

Mothers who feel that her breast milk is insufficient in early postpartum period will lose

confidence, stop breastfeeding early and choose to give supplementary infant formula to their babies (6,7). However, if support and help are offered that facilitating mothers in breastfeeding, it's possible that breastfeeding is going to be successful (8).

Breast milk production on the first day of delivery is influenced by reduced stimulation of the hormone oxytocin, physical and mental changes in the mother during the breastfeeding process. In theory, the work of the oxytocin hormone is influenced by psychological conditions (9). The problem of low milk supply often occurs in primiparous mothers because they experience more fatigue, psychological disorders, and lack of knowledge after childbirth (10). Therefore, the psychological condition and mother's belief are the most important things in the process of increasing milk production. One of the ways that can improve the psychological condition for the better is by giving positive suggestions. Positive suggestions are made to prepare the milk to flow smoothly and meet the baby's needs from the first day of birth. Mother can do it alone or with the help of others (11).

Various studies have been conducted in Indonesia to increase breast milk production including the Oxytocin Massage Method, Warm Compress, Roll Back Massage, music therapy, and Breast Care. Previous studies showed these methods were effective in increasing breast milk production and prolactin levels. (2,12–15) But, these methods were only focused on the

physical or psychological therapy as the reasons to increase breast milk production. Whereas, midwifery practices now applied a holistic approach to identified the needs of women as a whole, because health is a harmonization of the physical, mental, and soul (16).

The SPEOS (Endorphin, Oxytocin, and suggestive stimulation) technique is one of the popular interventions to stimulate oxytocin release through oxytocin and endorphin massage, providing comfort and fostering confidence in the mother that breast milk should come out and that she will be able to feed exclusively (17). Endorphin massage can stimulate the release of endorphin hormones and might stimulate can stimulate the release of prolactin and oxytocin hormones to increase milk volume and production. When it is combined with oxytocin massage and positive suggestions so that the mother has confidence in her ability to breastfeed so that oxytocin levels will increase. This has an impact on increasing milk production in the early life of the baby (18). Music therapy has also been proven as a relaxation therapy because music can affect the system in the brain that suppresses the function of the hypothalamus, pituitary, and adrenal glands to inhibit the production of stress hormones (epinephrine, norepinephrine, dopa, corticosteroid) so that the production of the hormones oxytocin and prolactin is maximized (19). These methods can be used as an alternative to increase breast milk production of postpartum women in Indonesia because they meet the holistic aspects. Although studies have shown that the SPEOS method and music therapy increase breast milk production, there is no study examining the effect of the combination of the two them on breast milk production. This study aims to determine the effectiveness of SPEOS method and music therapy on breastmilk production in primipara postpartum mothers.

MATERIALS AND METHODS

This study was a quasi-experiment with pretest and post-test with control group design (20). This study was conducted at the Public Health Center Toroh I and Toroh II. A total of 34 postpartum mothers from the first day to the fourth day were selected in this study by purposive sampling and were divided into experimental group (EG) and control group (CG). Inclusion criteria including; primipara mothers in their 1st day postpartum, spontaneous delivery, good baby suction reflex, mother and baby in good condition, willing to participate in research voluntarily, mothers who have babies with normal birth weight.

The sample size calculation was determined based on Lameshow Formula (21). A total of 34 postpartum mothers from the first day to the fourth day were selected in this study by random sampling. Participants were divided into experimental group and control group. The intervention group was given the SPEOS method intervention, a combination of endorphin massage, oxytocin massage and positive suggestive / affirmations and accompanied by classical music performed once a day for 15 minutes and carried out until day 4. Oxytocin massage is a massage technique along the spine to the 5th and 6th rib bones which is an attempt to stimulate the hormone prolactin and oxytocin. Meanwhile, endorphin massage is a technique that provides a sense of calm and It includes a touch and a light massage through-out the body to stimulate the release of endorphine hormones. The control group was received the standard postpartum care, i.e physical examination and counseling. The instrument used to measure breastmilk production was the feeding duration observation sheet. The amount of breast milk was measured in the first and fourth days. Indicator of the length of feed converted into the

estimated volume of breastmilk (22). Duration of breastfeeding in 24 hours divided by 24 hours in minutes times 600 ml (total volume of milk in 24 hours in the first year) calculated on the first and fourth days (23). Wilcoxon and Mann Whitney tests were used for statistical analysis because of the data not normally distributed. Data normality was tested using the Shapiro Wilk test ($p < 0.005$) (24). This research was approved by the ethics committee of Sultan Agung Islamic University with the number 017/1/2020/Komisi Bioetik.

RESULTS AND DISCUSSION

Based on Table 1, most of the respondents in the experimental group were 21-34 years old with a total of 11 people (64.7%). In the control group, most of the respondents were 21-34 years old with a total of 9 people (53%). Healthy reproductive age is at the age of 20-35 years, which is the best period for pregnancy, childbirth and breastfeeding. During the period of healthy reproduction, breast milk production will be sufficient because the function of the reproductive organs still work optimally. Mothers who are less than 20 years old are still physically and psychologically immature, so there is a possibility of disturbances in breast milk production. Mothers who are more than 35 years old are considered at risk because both their reproductive organs including hormone production have decreased function so that the risk of complications occurs (25).

Table 1. Characteristics of respondents

Characteristics	Total	
	f	%
Age		
≤ 20 years	14	41.2
21 – 34 years	20	58.8
Education		
Middle School	16	47.1
High School	13	38.2
University	5	14.7
Occupation		
Housewife	32	94.1
Private	2	5.9

In the experimental group, it was found that the highest level of education was the junior high school with 9 people (52.9%). Whereas in the control group the highest level of education was junior high school education as many as 7 people (41.2%). The level of mother's education will also affect the success of breastfeeding because the higher the mother's education, the better the mother's behavior in exclusive breastfeeding. The level of education is also one of the factors that influence a person's perception of being more receptive to new ideas and technology. Highly educated people will provide a more rational response to the information that comes and reason to think about the extent to which they might get benefits from the idea. For some mothers, breastfeeding is a natural and natural act. Therefore, they think that breastfeeding does not need to be studied, but most mothers do not realize the importance of breast milk as the main food for babies.(26)

In the intervention group, it was found that all respondents worked as housewives (100%). Likewise in the control group that most respondents work as housewives with a total of 15 people (88.2%). The relationship between mother's occupation and milk production is because working mothers do not have much free time compared to working mothers. In addition, working mothers tend not to pay attention to their babies because they are busy at work (26).

Table 2. Breastmilk production before and after intervention in both groups

Breastmilk Production	Pre-test (Mean±SD)	Post-test (Mean±SD)	p value
Experimental Group	4.35±2.20	46.66±10.02	0.0001 ^a
Control Group	5.48±2.51	19.07±7.93	0.0001 ^a

^aWilcoxon Test

The average breastmilk production after the administration of the SPEOS method and music therapy interventions was increased

Table 3 Differences in Breastmilk Production Between Both Groups

Group	Mean Rank (Mean±SD)	p-value
Experimental Group	25.82	0.0001 ^b
Control Group	9.18	

^bMann Whitney Test

significantly 42.31 ml, from 4.35 ml to 46.66 ml ($p=0.0001$) while in the control group the average breastmilk production increased 13.59 ml, from 5.48 ml to 19.07 ml ($p=0.0001$). There was a significant difference in breastmilk production in the experimental group and the control group ($p=0.0001$). Differences in Breastmilk Production from each group are shown in table 2.

DISCUSSION

The results showed that the average milk production of respondents in experiment group was increased by 42.31 ml and in control group the average milk production was increased by 13.59 ml. The difference in the average milk production in the intervention group and the control group was 38.72 ml. The SPEOS method is a combination of endorphin massage, oxytocin massage, and positive affirmations. The purpose of the "SPEOS" method is to help postpartum mothers accelerate breastfeeding by stimulating the hormone oxytocin so that the success of exclusive breastfeeding can be achieved. The concept of the "SPEOS" method is that a mother who breastfeeds is not only assisted from the physical aspect, but the psychological adaptation process is also a concern, especially the oxytocin hormone is very "sensitive" to the mother's psychological condition. (11) SPEOS Method proved to be useful for reducing the fatigue, anxiety, and pain after labor than expected to stimulate relaxing effect to facilitates the breastmilk production.(10)

Oxytocin makes the myoepithelial cells around the alveoli contract. This makes the milk, which has gathered inside the alveoli, flow along

and fill the ducts. Oxytocin also has vital mental outcomes, it induces a state of calm, and reduces stress. It may upgrade sentiments of fondness between mother and child, and advance bonding. Wonderful shapes of touch stimulate the secretion of oxytocin and prolactin.(27). Previous studies have also shown that colostrum that comes out less than one day after delivery of a caesarean section was 7.0 times greater in mothers who were given oxytocin massage.(28) Then the endorphin hormone is released from the stimulation of the oxytocin hormone so that when oxytocin is released, it will automatically release endorphins. (11) Endorphine works like a sedative that can normalize heart rate and blood pressure, then relaxes the mother's body by triggering a feeling of comfort on the surface of the skin.(29) These two things cannot be separated from the psychological condition and the mother's belief which are the most important things in the process of increasing milk production. One way that can improve the psychological state and always think positively is by giving positive suggestions.

Music therapy in this study has a positive effect on increasing breastmilk production. This result is in line with a study by Jayamala et al in a randomized controlled trial with mothers of premature newborns. The study found that music therapy was effective in increasing breast milk by 7.12ml (1.57) in experimental group and 6.68ml (1.37) in control group over four days of the study period.(30) A study by Kittithanesuan, et al also showed that music triggered a 2.36-fold increased lactation of mothers immediately after giving birth compared to the control group. (31) It has been stated that listening to music can stimulate alpha waves withinside the brain that cause relaxation through enhancing. Previous studies stated that Music stabilizes heart rate, decreases anxiety, stress, and depression, as well as heart rate, is balanced, depression is decreased, anxiety, and stress

scores, and then increases the production of breast milk. (32,33)

The result was supported by the previous study using the SPEOS method to increase breast milk among postpartum mothers. A study by Fitriani et al found that, in 20 postpartum mothers, the SPEOS method had a significant effect on increasing breastmilk production. (10) This confirms that doing a combination of endorphin, oxytocin massage, and giving positive suggestions by doing a massage along the spine (vertebrae) to the fifth-sixth rib bone, relaxing, will stimulate the brain to release endorphin hormones, prolactin, and oxytocin hormones so that milk production increases. Thus, the obstacles in breastfeeding due to insufficient breastmilk in the first week postpartum can be resolved properly. If during the first week of childbirth milk production is running smoothly, the next milk production will be adequate and the mother can continue the breastfeeding process properly.(34) As with the majority of studies, the design of the current study is subject to limitations. Authors have not been able to control for confounding factors i.e maternal nutritional patterns. The number of samples in the future studies should be increased to more broadly and confounding factors should be controlled.

CONCLUSIONS AND RECOMMENDATION

The results of the study suggest that the combination of the SPEOS method and music therapy had a significant effect on increasing breast milk production in primipara postpartum mothers. SPEOS Methods and music therapy are low in cost, would be easy to implement, have positive effects on increasing breastmilk production, and helping postpartum to relax. Women's Health centers should consider incorporating the SPEOS method and music therapy into postpartum interventions.

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