

Systematic Review

The Effect Of Endorphin Massage On Milk Production In Postpartum Mothers

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ABSTRACT

Background: *Low milk production in the first few days after delivery becomes constraints in early breastfeeding. The purpose of this research is to find out effect of endorphin massage on milk production in postpartum mothers.*

Methods: *Systematic review using the database: Google Scholar. The search results that meet the article criteria between 2017-2021, having minimum 20 sample, using keywords "massage, endorphin, ASI" are then analyzed for articles.*

Results: *From 17 article extracted, it showed that milk production can be improved by massage techniques such as endorphin massage.*

Conclusion: *To increased breast milk, it is advisable for postpartum mothers using massage therapy such as endorphin massage.*

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INTRODUCTION

The variety is excessive Infant mortality in Indonesia may be averted via breastfeeding (ASI) early and one of a kind breastfeeding. This is evidenced via way of means of World Health Organization (WHO) within the 2012 Indonesian Health Profile that IMR in Indonesia by and large associated with dietary factors, particularly 53%. Some of the ailments arising from malnutrition, among others, pneumonia (20%), diarrhea (15%), perinatal mortality (23%) which is actually a disease that can be prevented by breastfeeding since early stage.

The significance of giving breast milk to infants is contemplated within the hints World Health Organization (WHO) due to the fact 2010 which appealed to each mom offer extraordinary breastfeeding till the toddler is six months old. According to information from UNICEF, youngsters who're solely breastfed are 14 instances much more likely to survived the primary six months of existence than youngsters who did now no longer breastfed. Starting breastfeeding on the primary day after delivery can lessen the danger new child mortality as much as 45%. Even the WHO and UNICEF

recommend breastfeeding is given until the age of 24 months. One of the triggers for the inhibition of colostrum excretion is the lack of breast care (Alza & Nurhidayat, 2020).

In the manner of breastfeeding, there are 2 tactics that have to be considered, that are the discharge and manufacturing of breast milk. The manufacturing of breast milk is prompted with the aid of using the hormone prolactin whilst manufacturing is prompted with the aid of using the hormone oxytocin. The hormone oxytocin will be released by stimulating the nipple through the baby's mouth or through massage to the mother's spine. The purpose of endorphin massage is to provide calm, relax, reduce pain and love the baby more so that the oxytocin hormone will be released through the flow of breast milk (Anuhgera et al., 2019).

The manufacturing of colostrum is motivated with the aid of using the hormone oxytocin, the hormone prolactin, and permit down reflexes. The more often the mother breastfeeds, the more often and more breast milk is produced. Oxytocin is very important for the smooth flow of breast milk. Optimal breastfeeding practice is the most effective intervention for improving the health of both mother and baby. Studies show that breastfeeding can prevent neonatal infections and mortality by 45%, diarrhea by 30% and deaths in 18% in children (Anuhgera et al., 2019).

Low milk manufacturing within the first few days after transport turns into constraints in early breastfeeding. Mothers who do not now no longer breastfeed their toddlers on days the primary is because of tension and worry of a loss of milk manufacturing in addition to the mother's lack of know-how approximately the breastfeeding process. One of the approaches to growth milk manufacturing in postpartum mothers, specifically with endorphins rubdown that's a way of contact and mild rubdown across the neck, lower back and arms. Developed first by Constance Palinsky used to manage pain. This technique can be used to reduce pain during childbirth, normalizes heart rate, and blood pressure, increases relaxed state in the body by triggering a feeling of comfort through the surface of the skin and prevent postpartum stress (Alza & Nurhidayat, 2020; Mayangsari & Hidayati, 2020).

Endorphin Massage is a light massage that gives a comfort effect to the mother. The light touch that is given to the neck, back and arms during the endorphin massage will stimulate the hypothalamus to release endorphin hormones which will help release the oxytocin hormone to accelerate colostrum excretion. So far, the use of endorphin massage is widely used for pain management, anxiety during childbirth, and to help with uterine involution.

Endorphin massage is a mild stimulation of the neck, arms and back from the ribs to 5-6 extending both sides of the spine to the scapula which will accelerate the work of the parasympathetic nerves, nerves originating from the medulla oblongata and in the sacrum area of the spinal cord, stimulating posterior pituitary to release oxytocin, oxytocin stimulates ion-contracting of smooth muscle cells that surround the mammary glands causing myoepithelial contractions of the breast so as to increase milk production from the mammary glands (Anderson, Kynoch, Kildea, & Lee, 2019; Baiq Eka Putri Saudia, 2017; Widhiani, Murni, & Suseno, 2019).

Based on the Ahluwalia report, massage therapy can reduce cortisol levels. Systemic changes in blood pressure levels can occur via neurological or endocrine methods. This is certainly very supportive of the condition of post-caesarean section mothers in giving colostrum. The application of complementary therapies with simple and inexpensive techniques can help patients overcome the problem of breastfeeding so that mothers in breastfeeding will feel happy and happy. (Ahluwalia, Li, & Morrow,

2012).

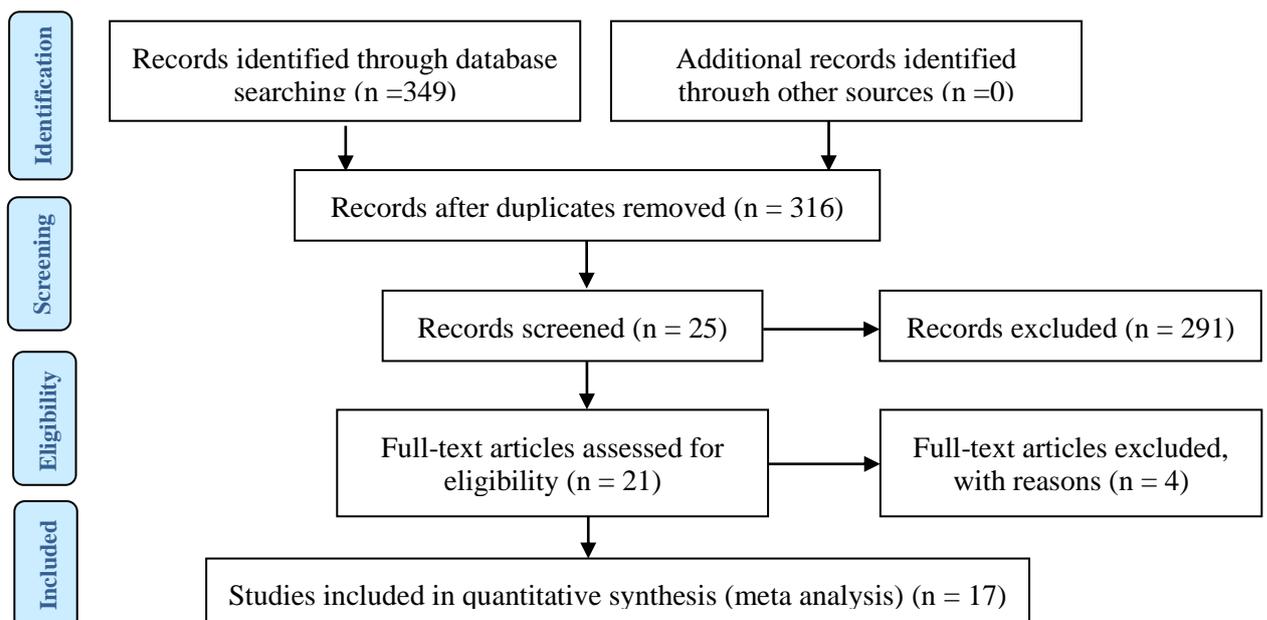
The massive abundance of studies relating to endorphin massage has increased strikingly over last few decades. So, it needs to do systematic review to see and compare the effect found in a study with the effects that have been found in previous studies in the respective area of research. The aim of this studies is to discover impact of endorphin rubdown on milk manufacturing in postpartum mothers.

MATERIALS AND METHOD

This studies technique is systematic review, used 8 stages, specifically figuring out questions, figuring out inclusion and exclusion criteria, literature search, article selection, carry out vital appraisal, carry out information extraction, information synthesis and map the consequences findings. Sources of studies information derived from the literature via the net withinside the shape of studies consequences acquired approximately massage, endorphin, ASI. Article inclusion standards used: 1) An article that describes the endorphin rub down on milk manufacturing in postpartum mothers. 2) Published articles have whole sections. 3) Published in 2017-2021. The exclusion standards for articles included: Incomplete article composition.

The seek became achieved the usage of the Google Scholar database the usage of keywords: "massage, endorphin, ASI". The articles that seem are then taken care of in order that no articles with the identical identify are found. Then the articles have been taken care of primarily based totally at the inclusion and exclusion standards that were determined. Articles that encompass abstracts handiest may be eliminated. So that we get the articles to be analyzed.

The articles which have been received are then extracted. Extraction of articles is primarily based totally on the writer of the item, the year the item became published, the quantity of samples used, the measuring device used, the effects of the studies conducted, and the item database. After getting the item that became reviewed, the author made a vital appraisal and degree the stop is charting the data. Filtering and choice of articles the usage of PRISMA Flowchart.



Gambar 1. Prisma Flow Diagram

RESULTS

Search outcomes the use of the key phrases "massage, endorphin, ASI" use the digital Google Scholar database. Search outcomes the use of those 3 key phrases ended in 349 articles. Then filtering the articles with inclusion and exclusion standards become received 25 articles. Selection of the following article through getting rid of article duplication with the end result of 21 articles. Subsequently, article removal become achieved primarily based totally on a whole association of 17 articles.

Based on systematic review on some search of endorphin massage on milk production in postpartum mothers as follows: (Anuhgera et al., 2019) combine breast care, endorphin massage and combination of breast care and endorphin massage to post section-cesarea mothers. Showed an analysis of the effect of endorphin massage on breast milk production in postpartum mothers (Alza & Nurhidayat, 2020; Baiq Eka Putri Saudia, 2017; Pertamina, Rahmawati, Malang, Ijen, & Malang, 2020; Pratimi, Ernawati, & Saudia, 2020; Tutik Hidayati, 2019; Wahyuningsih & Rohmawati, 2018). Combine back rolling and endorphin massage (Dewi, Indrayani, & Khanifah, 2017; Mayangsari & Hidayati, 2020). Compare oxytocin and endorphin massage and sugestif (SPEOS) (Nugraheni & Heryati, 2017; Rukmawati, Astutik, & Retnoningrum, 2020; Sari, Rahayu, & Rohmayanti, 2017; Syukur, Wahyutri, & Putri, 2020; Widhiani et al., 2019; Wulandari & Mayangsari, 2019). From 17 article extracted, it showed influential to boom the easy manufacturing of breast milk.

Table 1. Article Extraction

Researcher	Year	N	Result
Diah Evawanna Anuhgera, Eka Fitria Panjaitan, Desika Wali Pardede, Nikmah Jalilah Ritonga, Damayanti	2019	48	There had been forty-eight individuals decided on the use of purposive sampling, with 18 assigned in breast care, endorphin rub down and mixture of breast care and endorphin rub down. The time of spending colostrum expenditure is classed each day whilst the quantity of colostrum expenditure is classed after intervening. Analysis of the statistics used is one-manner Anova. The outcomes confirmed that the mixture of breast care and endorphin rub down turned into the best movement withinside the time of spending colostrum and the quantity of colostrum with a cost of $p = 0,000$. The mixture of breast care and endorphin rub down can be carried out as an opportunity remedy post-cesarean mother.
Nurfaizah Alza, Nurhidayat	2018	34	The results showed that the number of subjects based on the

Researcher	Year	N	Result
			ASI production posttreatment group after the endorphin message method showed that the number of subjects with ASI production was as smooth as many. There is an effect of endorphin message with breast milk production in post-partum mothers obtained Z value of -0.05.
Baiq Eka Putri Saudia, Ni Nengah Arini Murni	2017	40	The results of the study found: There was a significant effect of endorphin massage on increased milk production ($p = 0.000$) and decreased EPDS score ($p = 0.000$).
Masning, Firda Fibrila, Martini Fairus	2017	34	The results showed that the release of breast milk by endorphin massage was faster compared to what was not done, which was 94.12%, with an average expenditure of 2 days faster. The results of the Mann Whitney test showed a p value of 0,000 where the p value $< \alpha (0.05)$
Dewi Mayangsaria, Sri Nur Hidayati	2020	20	Breast Milk Production Research Results in postpartum moms earlier than and after being given a rolling again rubdown withinside the intervention institution has the suggest 57.49, after 147.84. earlier than giving Endorphin rubdown has an average 50,135, after 107,071. There is a distinction among rolling again rubdown and breast milk manufacturing Endorphin rubdown on milk manufacturing withinside the intervention institution on the Tiara Gubug Primary Clinic Grobogan district p cost 0,000 and there are variations in rolling again rubdown and Endorphin rubdown of breast milk manufacturing in postpartum moms on the Tiara Gubug Primary Clinic, Grobogan Regency p cost 0,000.

Researcher	Year	N	Result
Sumirah Budi Pertami, Budiono, Ira Rahmawati	2020	175	The effects indicated variations among the 4 organization concerning the breast milk manufacturing and an growth in toddler weight with $p = 0,00 < \alpha = 0,05$ and $p = 0.046 < \alpha = 0.05$ respectively
Baiq Mei Asri Pratimi, Ernawati, Baiq Eka Putri Saudia	2020	30	The results showed that the production of breast milk before endorphin massage in the control group with a mean of 2667 and in the treatment group with a mean 2,400, the increase in breast milk production after massage in the control group was 3,267 with $p = 0.259$ and the treatment group with a mean of 4,933 with $p = 0.001$ ($p < 0.05$).
Tutik Hidayati, Iis Hanifah	2019	40	The effects had been received after oxytocin rubdown ASI out quicker than now no longer carried out oxytocin rubdown. This observe used a pre-experimental layout with one organization pre-check post-check layout method. The populace is all moms who breastfeed toddler elderly 0-6 months. The sampling method used is general sampling. Data evaluation the use of Wilcoxon received the effects of $p = 0,000$, in order that $p < \alpha = 0.05$, then there may be the affect of the Application of Massage Endorphin and Oxytocin Method to Increased Breast Milk Production in Breastfeeding Mothers of Babies 0-6 Months in Gading Village.
Dyah Ayu Wulandari, Dewi Mayangsari, Sawitry	2019	30	The outcomes confirmed that the imply price of smoothness of breastfeeding withinside the intervention institution of oxytocin rubdown become 661.20 and withinside the intervention institution of endorphin rubdown 598.60, with a p price of $0.454 >$

Researcher	Year	N	Result
			0.05, which supposed that there has been no distinction withinside the smoothness of milk manufacturing withinside the intervention groups, so it may be concluded that the oxytocin rubdown and rubdown interventions endorphins are similarly influential to boom the easy manufacturing of breast milk.
Adinda Putri Sari Dewi, Eni Indrayani, Rina Khanifah	2017	44	The outcomes imply that there's a distinction in milk manufacturing among the intervention and the manage organizations with an OR of 0,2 (95% CI: 0,060 to 0,770). Parity and frequency of breastfeeding have enormous correlation with breast milk manufacturing. Mother's age, parity, work, obesity, and frequency of breastfeeding don't have any enormous correlation with breast milk manufacturing.
Diah Eka Nugraheni, Kosma Heryati	2017	30	The effects confirmed the technique SPEOS impact on milk manufacturing, common of 131.87 (p=0.00) and expanded little one weight, common of 483.30 g (p 0.00). Age and the meals fed on with the aid of using the mom at some point of the study (maternal nutrition) did now no longer have an effect on milk manufacturing, while IMD impact on milk manufacturing with 0.389 rectangular r (p 0.04). SPEOS techniques impact on milk manufacturing and an boom in child weight on postpartum mom in Bengkulu City in BPM.
Dewi Permita Sari, Heni Esti Rahayu, Rohmayanti	2017	38	Analysis end result for breast milk manufacturing earlier than and after remedy were given p value: 0,000. It way that there has been a distinction among earlier than and after remedy at the same time as

Researcher	Year	N	Result
			the end result of dimension of intervention organization and manipulate organization were given p value: 0,004 that means there has been a giant distinction among intervention organization and manipulate organization.
Elisa, Latifah Lely Septiariani, Kurniati Puji Lestari	2020	27	Breastfeeding production before mothers performed SPEOS method on average was 3.70 ml with standard deviation of 5,113. Breast milk production after mother performed SPEOS method on average was 129,63 ml with standard deviation 11,001. There was an influence of SPEOS method to breast milk production on postpartum mother at Maternity Hospital of Mardi Rahayu Semarang (p-value = 0,000).
Nursari Abdul Syukur, Endah Wahyutri, Erma Fitri	2020	20	Combination massage is the best method to produce the highest amount of ASI because the largest Sig p value is (1,000) where the level is significant <0.05. So H0 this study was rejected means that there is a significant difference between the production of breast milk from the combination massage compared with the two-massage done separately
Luh Yunita Widhiania, Ni Nengah Arini Murnb, Mutiara Rachmawati Susenoc	2019	34	After the statistical test was carried out using the Independent T-Test significance value (p) of 0.043 <0.05. There are differences between the SPEOS Methods and Marmet Technique on Breast Milk Production for post-partum mothers in the work area Karang Pule Health Center.
Sefrina Rukmawati, Puji Astutik, Ambar Dwi Retnoningrum	2020	30	T-test results received p value = 0,000 $\leq \alpha = (0.05)$, in order that Ha is accepted. There is a power of Method (Stimulation endorphan, oxytocin and suggestive) to boom milk

Researcher	Year	N	Result
			manufacturing and involution of the uterus in post-partum.
Endang Wahyuningsih, Wiwin Rohmawati	2018	40	Research result endorphin massage and breast care massage to smooth the production of breast milk in the mother childbirth as much as 28 (70%).

DISCUSSION

The formation of breast milk begins in pregnancy. During pregnancy changes occur breasts, especially the size of the breasts, which are caused by their presence proliferation of lactiferous duct cells and glandular cells for the formation of breast milk as well smooth circulation of blood in the breast, but the excretion of milk is inhibited by the hormone estrogen. Hence, it influences prolactin and secretion breast milk is more dominant at postpartum, namely on the second or third day because estrogen and progesterone levels have fallen dramatically.

Maternal psychological factors can also inhibit the let-down reflex or breastfeeding reflex, including stress, such as: confusion, instability, fear and anxiety. The mental state of the mother who is anxious and thoughts of stress, confusion, chaos can inhibit the process of the hormone oxytocin, let down reflex or reflex to release breast milk. Breast milk production continues, but output is hampered, causing a dam of breast milk (Alza & Nurhidayat, 2020; Pratimi et al., 2020; Syukur et al., 2020; Tutik Hidayati, 2019).

Colostrum production can increase and decrease depending on the stimulation of the breast glands, especially in the first week of breastfeeding. Factors that influence the smoothness of breastfeeding are frequency of breastfeeding, breast care, gestational age, stress and acute illness. Frequency of sucking is the factor most related to the smooth expulsion of colostrum. The frequency of breastfeeding is at least 8 times in 24 hours, the more often the baby is fed, the more colostrum production and secretion will be.

Oxytocin is a neurohypophysis hormone that links the causes and effects of positive social interactions. Oxytocin will induce the release of milk by myoepithelial contraction through the G protein receptors, activate phosphophilase and induce milk ejection so that the lactation inhibitor feedback decreases so that prolactin can be formed and milk production will increase for the next breastfeeding process (Anuhgera et al., 2019; Dewi et al., 2017; McClellan et al., 2012; Nugraheni & Heryati, 2017; Sari et al., 2017; Syukur et al., 2020; Wulandari & Mayangsari, 2019).

Postponement of Early Initiation of Breastfeeding (IMD) performed at cesarean section delivery has an influence on the process of lactogenesis. A study by Ahluwalia (2012) found that milk production in women with cesarean section was lower at 5 days post-partum compared to normal births. Breastfeeding in the first hour after birth is an important predictor for the continuation of the breastfeeding process. Delays in initiation of breastfeeding will affect breastfeeding ability, infant acceptance, milk production and short breastfeeding duration (Ahluwalia et al., 2012).

Total colostrum expenditure is only via way of means of evaluating the mixture of breast care and endorphin rubdown. That is, the consequences received via way of means of the common quantity of colostrum expenditure among the mixture of breast care and endorphin massages on endorphin rubdown may be 9.forty seven ml. From the

consequences received, the extra the price received, the greater colostrum expenditure within the institution of endorphin rubdown and mixture of breast care with endorphin massages (Anuhgera et al., 2019; Wahyuningsih & Rohmawati, 2018).

Back massage causes it which spinal cord stimulation serves as a neural link between brain and peripheral nervous system. All communication up and down the cord spinalis located in the pathways (tracts) the ascending sensor which transmits the signal from afferent input to the brain. The substance of the grisea which is located in the middle of the spinal cord contains links between neurons which lies between the afferent input and efferent output and neuron cell bodies efferent. Afferent and efferent fibers are carrying signals to and from the spinal cord, it fuses into nerves spinalis.

These nerves are attached to the cord paired spinal cord along the cord. Inhibitoric neurons and cholimergetic neurons excitatory makes synaptic contact with oxytocin neurons are secretory neurons in the nucleus paraventricular and supraoptic. Then the hypothalamus produces the hormone oxytocin and flowed towards posterior pituitary. Oxytocin leading to breast then the release of hormones oxytocin (Mayangsari & Hidayati, 2020; Nugraheni & Heryati, 2017; Pratimi et al., 2020).

Giving massage to the back is more effective than warm compresses to the breasts to increase milk production. This is because, moment massage of the back nerves will stimulate the release of endorphins in the body which indirectly will stimulate the oxytocin reflex. When given massage back, dorsal nerves will send signals to the brain to release oxytocin, which will cause contraction of myoepithelial cells which will encourage discharge of breast milk because the nerves in the breast are innervated by the dorsal nerves (dorsal nerves) which spreads along the spine. The massage effect can also increase serotonin and dopamine levels, which can lead to decreased discomfort, fatigue, stress and depression.

This condition is the same felt by the subject after doing back massage which is feeling relaxed and comfortable. Massage has both benefits physiological and psychological. The benefits of massage include creating a relaxation response, improve metabolic processes, improve lymphatic tissue function, accelerates healing and relaxation of muscles, reduces muscle tension and levels stress (Alza & Nurhidayat, 2020; Dewi et al., 2017; Elisa, Septiarini, & Lestari, 2018; Pertami et al., 2020; Pratimi et al., 2020; Rukmawati et al., 2020).

CONCLUSION

From this research it can concluded that milk production can be improved by massage techniques such as endorphin massage. The application of the endorphin massage method from 6 hours to 1 week to postpartum mothers is an appropriate type of intervention to be carried out in the hospital and at home for post-partum mothers in order to provide good colostrum to their babies. Therefore, future studies may also be enriched by experience or perception of the spouse in delivering the massages, especially endorphin massage.

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