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Oxytocin Massage Streamlining Breast Milk: Literature Review

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ABSTRACT

Oxytocin massage is massage or stimulation of the spine to release oxytocin, causing the breasts to release milk. With oxytocin massage, the mother will feel calm, and relaxed, reduce pain, and love her baby, so with this the hormone oxytocin and water Mother's milk come out quickly. The implementation of oxytocin massage therapy must be carried out effectively to get maximum results. The aim of the study was to identify the effectiveness of oxytocin massage therapy on increasing breast milk production in the postpartum period. This study uses a literature review using the PRISMA checklist protocol and evaluation. Search articles using two databases, namely PubMed and Scholar. There were differences in prolactin hormone levels before and after the intervention was back massage, oxytocin levels increased after a combination of back massage and acupressure intervention, and oxytocin massage intervention was effective in postpartum women on the first day until the third day who had not expelled colostrum or had impaired milk production. Oxytocin massage is effective if done twice a day with a duration of 3-5 minutes or for approximately 2-3 minutes with 2-3 massages. The implementation of oxytocin massage therapy can affect the release of colostrum in postpartum women, and oxytocin massage has a significant effect on primiparous postpartum women. There is a need for development in other studies, including combining oxytocin massage with other non-pharmacological methods in order to further support the increase in breast milk production in the postpartum period.

Keywords: mother's milk; oxytocin massage; postpartum

INTRODUCTION

Childbirth is the first experience so it can cause stress during childbirth and after delivery with a normal delivery process, especially for primiparous mothers. Stress experienced by primiparous mothers can increase levels of the hormone cortisol which results in decreased levels of the hormone oxytocin, causing delays in the onset of lactation (Prima et al., 2019). Whereas in multiparous mothers, the second pregnancy or childbirth had a better tendency than the first in terms of lactogenesis and galactopoietic and had experience in breastfeeding. But this does not rule out the possibility of multiparous mothers experiencing stress after giving birth which can cause breast milk production to be hampered (Saputri et al., 2019). World Health Organization (WHO) recommends that newborns get exclusive breastfeeding for 6 months, because breast milk is the best nutrition for babies with appropriate nutritional content for optimal growth (Seri et al., 2019). But exclusive breastfeeding has decreased every year. According to the Indonesian Ministry of Health, in 2020, from the number of babies aged less than 6 months who were recalled, from 3,196,303 targeted babies less than 6 months, there were 1,113,564 babies aged less than 6 months who received exclusive breastfeeding or around 34.8 %(Kementerian Kesehatan Republik Indonesia, 2021).

The 2018 Basic Health Research (Riskesdas) explained that the proportion of breastfeeding for infants and children aged 0 to 5 months experienced a significant decrease of 37.3% (Riskesdas, 2018). For breastfeeding mothers, the smooth flow of breast milk is very important to meet the needs of the baby. The absence of breast milk on the first day after giving birth is one of the causes of failure in exclusive breastfeeding. Failure in breastfeeding is often caused by various factors, including maternal factors, infant factors, psychological factors, health personnel factors, and socio-cultural factors. As for the maternal factors that become a problem in breastfeeding, namely the release of breast milk, the reduced stimulation of the oxytocin hormone can affect the issue of breastfeeding, while the lactation process can be influenced by physical and psychological changes (Nugraheni & Heryati, 2017). Breast milk production is influenced by the hormone prolactin, while expenditure is influenced by the hormone oxytocin (Wahyuningsih, 2019) The oxytocin

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hormone will come out through stimulation to the nipples that comes from sucking the 1baby's mouth or by massage on the spine. By doing a massage on the spine, the mother will feel calm, and relaxed, reduce pain, and love her baby, so with this the hormone oxytocin and breast milk are released quickly (Elsera et al., n.d.) Through massage or stimulation of the spine, the neurotransmitter will stimulate the medulla oblongata and directly send a message to the hypothalamus in the posterior pituitary to release oxytocin, causing the breasts to release milk. Another benefit of this massage is that it relieves stress on the mother. That way, the oxytocin hormone comes out and will help expel breast milk which is assisted by the baby's sucking on the nipple immediately after the baby is born with a normal baby condition (Wulandari et al., 2016). Based on the explanation above, the purpose of this study is to conduct a literature review to determine the relationship between oxytocin massage therapy and increased milk production in postpartum mothers.

METHOD

This research is a literature review using keywords (AND, OR, NOT) to broaden or specify the search, so that it is easier to determine which articles to use. The keywords used during the search were “back massage” AND “postpartum”, “back massage” AND “oxytocin hormone”, “oxytocin massage” OR “back massage” AND “increased milk production” AND “postpartum mother”.

Table 1. Keywords Literature Review

Database	Keyword	Result
PubMed	Back massage AND Postpartum AND Oxytocin hormone	11
Scholar	Oxytocin massage OR Back massage AND Increased milk production AND Postpartum mother	429

The strategy used to search for articles using PICOS, which consists of Population, Intervention Comparators Outcome, and Study Design.

Table 2. PICOS format in the literature review

Criteria	Inclusion	Exclusion
Population	Postpartum mother	Not a postpartum mother
Intervention	Oxytocin massage in postpartum mothers	Not oxytocin massage for postpartum mothers
Comparators	Acupressure	Non acupressure
Outcomes	Effect of oxytocin massage on increasing milk production	There is no effect of oxytocin massage on increasing milk production
Study Design and Publication Type	Quasi-experimental studies	No Exclusion
Publication	2016-2021	<2016
Language	English and Indonesian	Not English and not Indonesian

Search strategies in this literature study using databases including PubMed and Scholar. At the initial search stage for articles, 440 articles were found (PubMed n=11, Scholar n=429) after being filtered from 2016-2021, then selecting articles based on titles and abstracts resulting in 19 articles. The total number of articles that can be reviewed with full text is ten articles. Below is a diagram image sorted from the initial search results, titles, abstracts, and selected or reviewable journals. Flowchart below.

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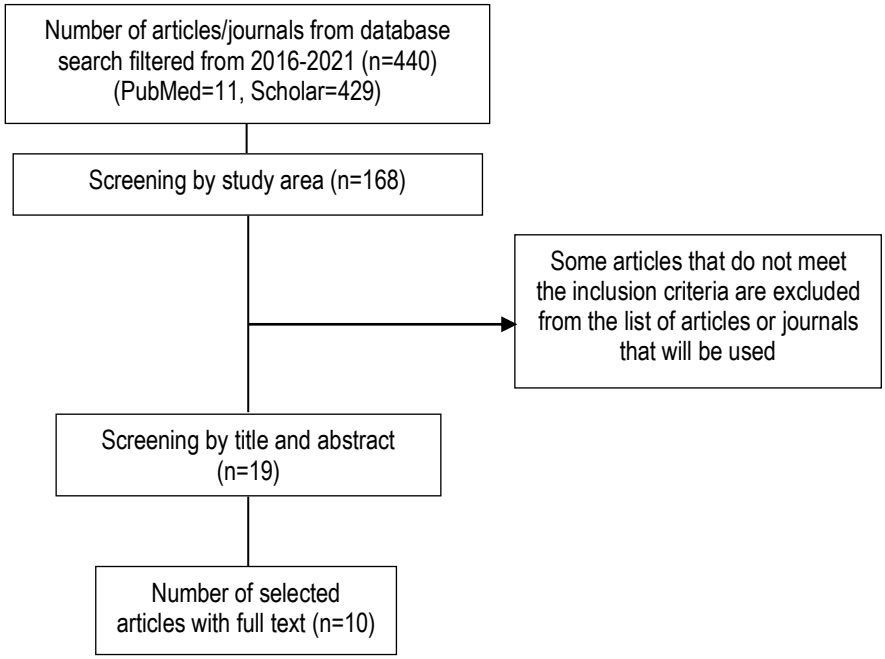

Figure 1. Diagram flow literature review

RESULT

According to the research results in the selected articles (n=10) varied. There is a quasi-experimental method carried out by (Anita, 2020; Yahya, 2020; Ilmu, 2020; Prima, 2019; Seri, 2019; Saputra., 2019; Umbarsari, 2017; Wulandari, 2016; Delima, 2016), and the pre-experimental method was carried out by Ilmiah, 2021 (Ilmiah et al., 2021). This research on oxytocin massage was conducted in Indonesia.

Table 3. Theoretical Mapping

No	Author	Title	Result
1	(Anita et al., 2020)	Potency of back massage and acupressure on increasing of prolactin hormone levels in primipara postpartum; consideration for midwifey care	Differences in prolactin hormone levels before and after the intervention were back massage (p=0.003) and acupressure (p=0.001). DOI: https://doi.org/10.1016/j.enfcli.2019.07.165
2	(Yahya et al., 2020)	Potential combination of back massage therapy and acupressure as complementary therapy in postpartum women for the increase in the hormone oxytocin	Analysis of oxytocin levels based on a combination of back massage and acupressure intervention was (p=0.001). DOI: https://doi.org/10.1016/j.enfcli.2019.07.163
3	(Ilmiah et al., 2021)	Oxytocin Massage on Breast Milk Production in Post Partum Mothers	Based on the results of the T-test showed that the value of p = 0.000 < a (0.05) which indicates that there is an effect of oxytocin massage on the smoothness of breast milk. DOI: https://doi.org/10.33087/jiubj.v21i1.1325
4	(Ilmu et al., 2020)	The Effect of Oxytocin Massage on Smooth Breast Milk Production in Breastfeeding Mothers in Tambakromo Village, Tambakromo District, Pati Regency	Based on the Independent Sample Test, Sig.(2-tailed) of 0.002 <0.05, there is a difference in the results of smooth breastfeeding between breastfeeding mothers who do oxytocin massage and those who do not do oxytocin massage. DOI: https://doi.org/10.36308/jik.v11i2.236
5	(Prima et al., 2019)	The Effect of Oxytocin Massage on Breast Milk Production in Primiparous Postpartum Mothers	The results of statistical tests using the Wilcoxon Match Pairs Test obtained a p-value = 0.000 or p < = 0.05, which means that there is a significant effect of oxytocin massage on primiparous postpartum mothers in the working area of Public Health Centers in Mataram City. DOI: https://doi.org/10.32807/jkp.v13i1.193

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Cont.....

No	Author	Title	Result
6	(Seri et al., 2019)	Oxytocin Massage Increases Breast Milk Production in Mothers Primipara Postpartum in Singkawang City	The results of the Chi-Square statistical test between oxytocin massage and milk production obtained sig p = 0.025 (< 0.05). These results indicate a relationship between oxytocin massage and milk production in primiparous postpartum mothers. DOI: https://doi.org/10.30602/jvk.v5i1.227
7	(Saputri et al., 2019)	Effect of Oxytocin Massage on Breast Milk Production In postpartum Mothers	The results of statistical tests using chi-square (x2) obtained p-value = 0.037 (p-value 0.05) which means that there is a significant effect between oxytocin massage on breast milk production in postpartum mothers at BPM Lia Maria Sukarame Bandar Lampung in 2017. DOI: https://doi.org/10.26630/jkep.v13i2.931
8	(Umbarsari, 2017)	The Effectiveness of Oxytocin Massage on Breast Milk Production at RSIA Annisa in 2017	The results of the Independent T-Test test, p-value = 0.006, which means p <0.05, means that there is an effect of oxytocin massage on the average breastfeeding time. DOI: https://doi.org/10.33006/ji-kes.v1i1.47
9	(Wulandari et al., 2016)	The Effect of Oxytocin Massage on Colostrum Expenditure in Post Partum Mothers at the Regional General Hospital of the Riau Archipelago Province	The results of the Independent T-Test test, p-value = 0.006, which means p≤0.05, states that there is an effect of oxytocin massage on the average time of colostrum expulsion. DOI: https://doi.org/10.26630/jk.v5i2.53
10	(Delima et al., 2016)	The Effect of Oxytocin Massage on Increasing Breast Milk Production for Breastfeeding Mothers at Puskesmas Plus Mandiangin	The statistical test results obtained a p-value of 0.000, so it can be concluded that oxytocin massage affect breast milk production in nursing mothers at the Puskesmas Plus Mandiangin Bukittinggi. 2016. DOI: https://doi.org/10.22216/jit.2015.v9i4.1238

DISCUSSION

Research by Anita, (2020) The average maternal prolactin level in the back massage group was lower than in the acupressure group, with the average prolactin hormone before back massage being 80.06 nm/dL and acupressure 84.47 nm/dL while the prolactin hormone after back massage intervention was 98, 33 nm/dL and acupressure of 96.13 nm/dL, which means an increase in the amount of the hormone prolactin after back massage and acupressure intervention. Research Yahya, (2020) use a sample of primiparous postpartum mothers with vaginal delivery criteria and a baby's weight of 2500 grams consisting of 45 respondents. Having exclusion criteria, including postpartum mothers who resigned as subjects, babies died, childbirth complications, mothers with acute illnesses and babies with abnormalities. The interventions carried out were back massage, acupressure, and a combination of back massage and acupressure. All interventions were carried out once a day for three days every day for 30 minutes every morning from 09.00-09.15. The massage was carried out along the spine to the 5th and 6th ribs, then acupressure was applied to the LU 1-rib 2, CV 17, and S11 points. The average analysis of oxytocin levels based on the intervention of a combination of back massage and acupressure with p-value = 0.001. The results showed differences in the average levels of the oxytocin hormone for postpartum mothers, acupressure, and massage with a combination of back massage and acupressure. The results showed that complementary treatments increase the production of the hormone oxytocin, as evidenced by the levels of the hormone oxytocin before and after treatment, especially combination back massage and acupressure. Respondents of postpartum mothers according to research Ilmiah dkk., (2021) before the oxytocin massage intervention, there were 3 people with moderately smooth breast milk and 27 people with non-fluent breast milk. Then the postpartum mother was given oxytocin massage therapy for approximately 2-3 minutes with 2-3 massages. After the intervention, 33 postpartum mothers (100%) experienced smooth milk production. So the researchers concluded that this oxytocin massage therapy is a non-pharmacological therapy that can increase or launch breast milk production in postpartum mothers on the second day. Research conducted by Ilmu dkk., (2020) on 30 postpartum mothers consisting of two groups, namely 15 breastfeeding mothers who did oxytocin massage and 15 who did not do oxytocin massage. The control group (no lactation lure) obtained a result of 6.75 so it can be concluded that lactation massage is more effective in increasing milk production.

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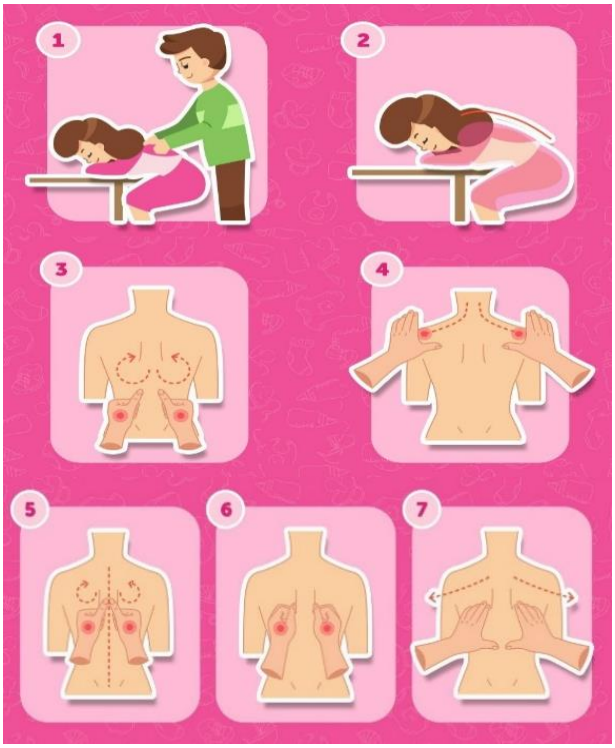

Figure 2. Oxytocin Massage (Source: Vaikoh, 2017)

Prima, (2019) sing a sample of normal postpartum mothers on the first day as many as 30 respondents. The frequency of respondents based on age, namely <20 years were nine respondents and 21-35 years were 21 respondents. Exclusion criteria in this study were postpartum mothers whose babies died, postpartum mothers who had breast abnormalities such as mastitis, postpartum mothers who suffered from infectious diseases such as HIV/AIDS and Hepatitis, babies born with congenital abnormalities, and mothers who experienced postpartum blues. The intervention carried out was oxytocin massage on primiparous postpartum mothers, namely through stimulation or massage of the spine (vertebrae) to the fifth or sixth costal bones which caused the breasts to secrete milk and was carried out twice a day with a duration of 3-5 minutes. There was a significant change that after the oxytocin massage showing an increase in milk output 4.25 times greater than before the oxytocin massage intervention with p-value = 0.000 or p < = 0.05.

The results of research conducted on 30 respondents showed that the expulsion of breast milk before the oxytocin massage intervention was carried out by as many as 30 respondents in the less category. While in research Seri, (2019) with respondents 30 primiparous postpartum mothers aged 16–31 years were divided into 2 groups, namely the intervention group and the control group. The intervention group was taught and demonstrated how to do oxytocin massage, then evaluated milk production. Shows the effect of oxytocin massage on milk production between respondents who were given treatment and respondents who were not given treatment. The results of the Chi-Square statistical test between oxytocin massage and breast milk production obtained sig p = 0.025 (< 0.05). These results indicate that there is a relationship between oxytocin massage and milk production in primiparous postpartum mothers. Oxytocin massage has the opportunity to produce 8 times faster and smoother breast milk compared to mothers who did not receive oxytocin massage. Same with research Saputri, (2019) shows a statistical test result p-value = 0,037 (p-value≤0,05) which means that there is a significant effect of oxytocin massage on breast milk production in postpartum mothers. The oxytocin massage was given to respondents with the criteria for postpartum mothers 3 hours postpartum, totaling 32 people, consisting of 16 respondents as intervention respondents and 16 people as control variables. Research data were collected by doing oxytocin massage after 3 hours postpartum and for 5 days every morning and evening, and then observations were made on the 6th day. Sufficient breast milk, while out of 16 respondents who did not do oxytocin massage, 9 people experienced sufficient milk production.

Umbarsari (2017), the population in this study were postpartum mothers who were given oxytocin massage for 3 hours, while the control population in this study were all postpartum mothers who were not treated with oxytocin massage. Then massage for 20 minutes using baby oil on the neck and shoulders to relax the body and then proceed from the back of the waist down the spine until the scapula forms the letter "V", then measure the time of milk expulsion using a clock. In this study, the average time of colostrum expulsion in postpartum mothers in the oxytocin massage

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treatment group was 5.15 hours, while the average time for colostrum expenditure in postpartum mothers in the control group was 8.30 hours so oxytocin massage had an effect on colostrum expenditure in postpartum mothers. These results are also in accordance with the research Wulandari, (2016) which got a value of p≤ 0.05 and it can be concluded that oxytocin massage performed on the spine has a major effect on increasing milk production in mothers 2 hours postpartum. This intervention was carried out on 30 respondents. The results showed that in the treatment group the average time of colostrum expulsion was 5.21 hours. In this study, oxytocin massage was carried out based on the Standard Operating Procedure (SOP) given to the postpartum mother for 2 hours. While the results obtained in the group that did not receive oxytocin massage (control) the average time of colostrum expulsion was 8.16 hours. These results showed that there was a difference in the time of colostrum expulsion between postpartum mothers who were given oxytocin massage (treatment) and mothers who did not receive oxytocin massage (control).

In other research conducted by Delima, (2016) 21 respondents who received oxytocin massage showed that after being given oxytocin massage the average milk production of respondents was 9.00 with a standard deviation of 1.183, minimum-maximum milk production with a value of 6-10. This study shows that it is in accordance with the theory, that doing massage along the spine (vertebrae) to the bone to the fifth-sixth rib will stimulate the hormones prolactin and oxytocin so that breast milk can automatically run more smoothly. In addition to facilitating breast milk, oxytocin massage provides comfort to the mother, reduces swelling (engorgement), reduces milk blockage, stimulates the release of the hormone oxytocin, and maintains milk production. Based on the literature review of several studies above, shows that there is an effect of oxytocin massage on the smoothness of breast milk and colostrum in postpartum mothers, both primi and multiparous.

CONCLUSION

The literature review of oxytocin massage therapy on increasing breast milk production in postpartum mothers contains important things in carrying out the intervention. This literature review concludes that oxytocin massage therapy is effectively given to postpartum mothers on the first day to the third day who have not expelled colostrum or have impaired milk production. The point of oxytocin massage is to facilitate and increase milk production in postpartum mothers, namely massage of the spine (vertebrae) to the fifth or sixth costae bone. Oxytocin massage therapy is effective if it is done twice a day with a duration of 3-5 minutes or for approximately 2-3 minutes with 2-3 massages showing an increase in milk production 4.25 times greater than before the oxytocin massage intervention. Another study also showed that oxytocin massage therapy was more effective if an additional intervention was given, namely acupressure therapy.

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REFERENCES

Anita, N., Ahmad, M., Usman, A. N., Sinrang, A. W., Alasiry, E., & Bahar, B. (2020). Potency of back message and acupressure on increasing of prolactin hormone levels in primipara postpartum; consideration for midwifery care. *Enfermeria Clinica*, *30*, 577–580. https://doi.org/10.1016/j.enfcli.2019.07.165

Delima, M., Arni, G., & Rosya, E. (2016). Pengaruh Pijat Oksitosin Terhadap Peningkatan Produksi Asi Ibu Menyusui Di Puskesmas Plus Mandiangin. *Jurnal Ipteks Terapan*, *9*(4), 283–293. https://doi.org/10.22216/jit.2015.v9i4.1238

Elsera, C., Agustiningrum, R., & Winarti, A. (n.d.). *Pengetahuan ibu hamil tentang pijat oksitosin*. 1453–1464.

Fitria, R., & Retmiyanti, N. (2021). Pijat Oksitosin terhadap Produksi Asi pada Ibu Post Partum. *JIUBJ: Jurnal Ilmiah Universitas Batanghari Jambi, 21*(1), 275–276. https://doi.org/10.33087/jiubj.v21i1.1325

Kementerian Kesehatan Republik Indonesia. (2021). Laporan Kinerja Kementrian Kesehatan Tahun 2020. *Kementerian Kesehatan Republik Indonesia Tahun 2021*, 1–224.

Kholisotin, Munir, Z., & Astutik, L. Y. (2019). Pengaruh Pijat Oksitosin Terhadap Pengeluaran Asi Pada Ibu Postpartum Primipara. *Jurnal Kesehatan Prima*, *13*(1), 1–9.

Nugraheni, D. E., & Heryati, K. (2017). Metode Speos (Stimulasi Pijat Endorphin, Oksitosin dan Sugestif) Dapat Meningkatkan Produksi ASI dan Peningkatan Berat Badan Bayi. *Jurnal Kesehatan*, *8*(1), 1. https://doi.org/10.26630/jk.v8i1.384

Riskesdas, K. (2018). Hasil Utama Riset Kesehata Dasar (RISKESDAS). *Journal of Physics A: Mathematical and Theoretical*, *44*(8), 1–200. https://doi.org/10.1088/1751-8113/44/8/085201

Rofika, A, & Sulistyaningsih, S. H. (2020). PENGARUH PIJAT OKSITOSIN TERHADAP KELANCARAN PRODUKSI ASI PADA IBU MENYUSUI DI DESA TAMBAKROMO KEC. TAMBAKROMO KAB. PATI. *BHAMADA: Jurnal Ilmu dan Teknologi Kesehatan*,

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e-ISSN: 2798-5067
p-ISSN: 2798-5059

11(2), 1–8.

Saputri, I. N., Ginting, D. Y., & Zendato, I. C. (2019). Pengaruh Pijat Oksitosin Terhadap Produksi Asi Pada Ibu Postpartum. *Jurnal Kebidanan Kestra (Jkk)*, *2*(1), 68–73. https://doi.org/10.35451/jkk.v2i1.249

Seri, U., Sudarto, S., & Nur Akhmad, A. (2019). Pijat Oksitosin Meningkatkan Produksi ASI pada Ibu Pospartum Primipara Di Kota Singkawang. *Jurnal Vokasi Kesehatan*, *5*(1), 58. https://doi.org/10.30602/jvk.v5i1.227

Umbarsari, D. (2017). Efektifitas Pijat Oksitosin Terhadap Pengeluaran Asi Di Rsia Annisa Tahun 2017. *JI-KES (Jurnal Ilmu Kesehatan)*, *1*(1), 11–17. https://doi.org/10.33006/ji-kes.v1i1.47

Wahyuningsih, S. (2019). *Buku Ajar Keperawatan Maternitas*. KHD Production. http://repository.unej.ac.id/handle/123456789/90829

Wulandari, F., Aminin, F., & Dewi, U. (2016). Pengaruh Pijat Oksitosin Terhadap Pengeluaran Kolostrum Pada Ibu Post Partum Di Rumah Sakit Umum Daerah Provinsi Kepulauan Riau. *Jurnal Kesehatan*, *5*(2), 173–178.

Yahya, F. D., Ahmad, M., Usman, A. N., Sinrang, A. W., Alasiry, E., & Bahar, B. (2020). Potential combination of back massage therapy and acupressure as complementary therapy in postpartum women for the increase in the hormone oxytocin. *Enfermeria Clinica*, *30*, 570–572. https://doi.org/10.1016/j.enfcli.2019.07.163