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Systematic Literature Review: How to Increase Milk Production in Breastfeeding Mothers

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Abstract

The most common reason cause of exclusive breastfeeding failure is the assumption of insufficient breast milk of breastfeeding mothers. The aim of this systematic review is to know how to increase milk production in breastfeeding mothers. This study followed the PRISMA guidelines for systematic reviews, a literature search was carried out to assess articles that explain how to increase milk production in breastfeeding mothers. Consume herbal ingredients and massage, acupressure, hypno-breastfeeding as a combination method can help mothers to increase milk production. Midwives can promote combine method to improve milk production in breastfeeding mothers.

Keywords: Milk Production, Breastfeeding Mother

INTRODUCTION

Indonesia has many problems in babies and child health. Child with under-nutrition is still high level specifically stunting. Nationally, based on the Basic Health Research report in 2018, the prevalence of stunting among children under 5 years of age in Indonesia is 30.8%, while in Kalimantan Selatan (South Borneo) Province, the prevalence is 12% (Badan Litbang Kesehatan, Kementrian Kesehatan RI, 2018). Many factors cause stunting in Indonesia such as nutrition, economic, social, education, and cultures (Beal et al., 2018; Kustanto, 2021; Sartika et al., 2021). The government of Republic of Indonesia campaign "Movement to improve nutrition for the first 1000 days of a child's life or the First 1000 Days of Birth movement", and one of this program is Exclusive breastfeeding (Kementerian PPN/ Bappenas, 2018).

The new mothers in Indonesia have common problem in breastfeeding. The most common problem in breastfeeding is lack supply of breast milk in 1st or 2nd day (Rahmaika Arumsari et al., 2018) and many mothers were worried that their baby was not getting adequate breast milk. To overcome this problem, mothers in Indonesia usually consume more vegetables, herbal ingredients, and conduct breast massage. But we do not know what herbal ingredients or method that effective to increase milk production in breastfeeding mothers. So, this study aims to know the way to increase milk production in breastfeeding women or mothers.

METHOD

This study was systematic literature review based on PRISMA guideline 2020 (Page et al., 2021). The step of this study was started searching the articles on Science Direct, ProQuest, and Google Scholar. The inclusions of this study were 1) Breastfeeding mothers; 2) Pregnant

women preparing to breastfeed; 3) the article must give ingredients to consume or conduct one or combine method to increase milk production; 4) the articles must be published on international e-Journal in English Language, the Publisher must be credible (indexing by SCOPUS or SINTA). The exclusions of this study were 1) Breastfeeding mother with premature babies/newborn; 2) Breastfeeding mother with twin babies; 3) Review papers; 4) Qualitative research.

All potentially eligible studies were reviewed in our initial search which encompassed the following key concepts and related keywords increase milk production breastfeeding mother, increase* milk production, milk production, breastfeeding mother*, breastfeeding woman*. The terms combined with the Boolean operators 'AND', 'OR' and 'NOT', Setting language was in English language only. In this figure below, we can see the process of selection articles based on PRISMA guideline.

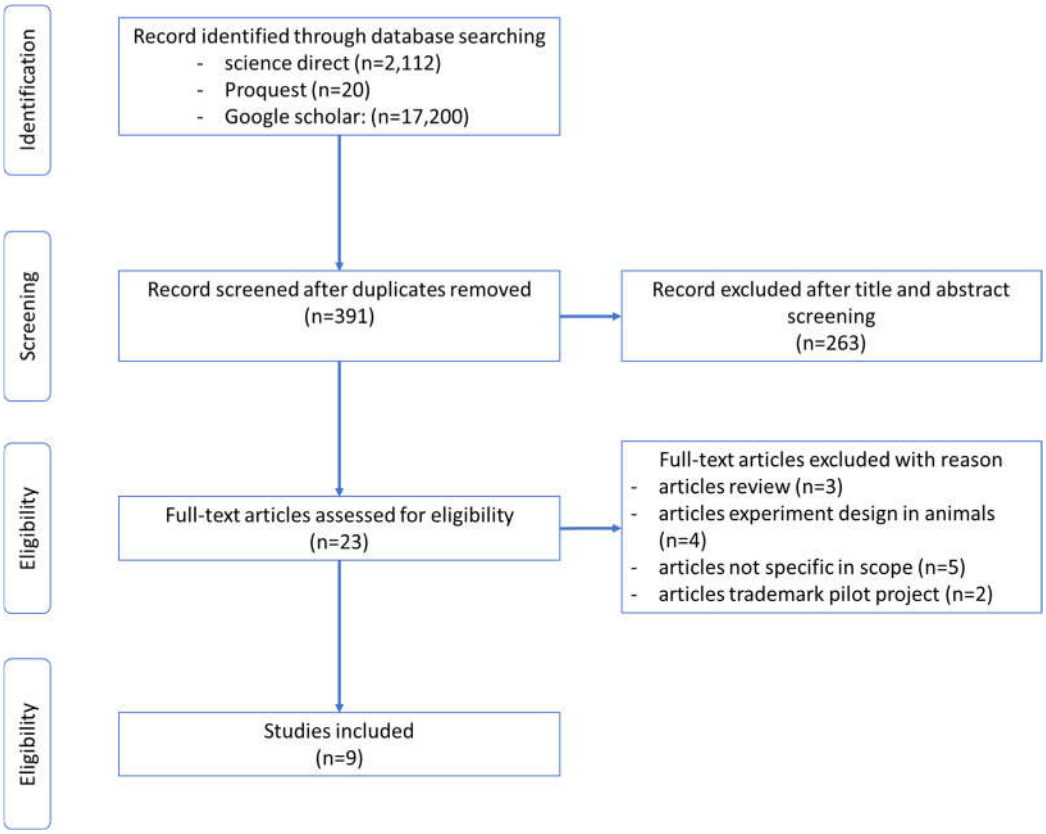

Figure1. Study Selection Process based on PRISMA Flow Diagram for Systematic Review (Page et al., 2021)

RESULT

This study has 9 articles in accordance with the inclusion criteria.

Table 1. the Result of Research

No	Title, Authors, Year	Population	Intervension	Comparation	Outcomes
1	**The effect of oxytocin massage and breast care on the increased production of breast milk of breastfeeding mothers in the working area of the public health center of Lawanga of Poso District** (Triansyah et al., 2021) Ade Triansyaha, Stangb,⁎,	30 mothers	Method: This pre-experimental research was performed through the One Group Pretest–Posttest design Intervension: oxytocin massage and breast care		Oxytocin massage and breast care affected the increase of breast milk production considered based on the frequency and duration of breastfeeding as well as the infants' weight in Lawanga Public Health Center, Poso District

No	Title, Authors, Year	Population	Intervension	Comparation	Outcomes
	Indarc, Apik Indartyd, Muh. Tahird, Muh Sabire, Rosmala Nurf, Muhammad Basir-Cyiog, Mahfudzg, Alam Ansharyg, Muhammad Rusydi 2021				
2	**Evaluation of early postpartum fenugreek supplementation on expressed breast milk volume and prolactin levels variation** (Abdou & Fathey, 2018) Rania Mohamed Abdoua, Mona Fatheyb 2018	60 mothers	Method: a case-control study performed Intervension: fenugreek supplementation	-	Fenugreek consumption affects the early stage of lactogenesis and prolactin level but did not affect the established breastmilk volume or change in prolactin level at later stages so it can be used for mother satisfaction and reassurance in the early stages of lactation
3	**Hypnobreastfeeding to Increase Motivation and Breast Milk Production: A Study** (Asih & Nyimas, 2020) Yusari Asiha, Aziza Nyimas 2020	48 pregnant women at term to breastfeeding is divided into two groups: the intervention group and the control group	Method: a quasi-experimental design with post-test with control group design Intervension: Hypnobreastfeeding treatment was given to mothers since pregnancy at the end (37-42 weeks) for four times a month followed by listening to Hypnobreastfeeding affirmations every day during the month	compared with a control group given a lactation education	The results showed the majority of respondents have the motivation to give breast milk, the perception of breast milk production, and the observation of breast milk production and average weight gain for infants in both criteria. Independent T-Test results of the analysis showed that there was no significant difference in motivation to giving breast milk between groups conducted with a group given Hypnobreastfeeding lactation education. There are substantial differences in perception and observation of breast milk production and infant weight gain between groups led with a group that was given Hypnobreastfeeding lactation education. There is no significant difference in motivation to giving breast milk, and there is a substantial difference in breast milk production in the Hypnobreastfeeding group compared with the lactation education group
4	Effectiveness of Breast Crawl by Midwives to Increase Breast Milk Production among Postpartum Mothers (Asih & Nyimas, 2020) Sultina Sarita, Syahrianti, Nurnasari. P 2020	30 midwifery students who give breast crawl for 30 breastfeeding mothers	Method: True experimental study with posttest only control group design Intervension: breast crawl	-	There was a significant difference between the breast milk production of postpartum mothers who were given breast crawl intervention and those who were not given breast crawl intervention by midwives

No	Title, Authors, Year	Population	Intervension	Comparation	Outcomes
5	Effect of Consuming Temulawak (Curcuma xanthorriza roxb.) Extract on Breast Milk Production in Postpartum Mothers (Supriyana, 2017) Chyntia Desbriyani, Soeharyo Hadisaputro, Titi Suherni, Ari Suwondo, Supriyana 2017	38 respondents included using consecutive sampling, with 19 assigned in the intervention and control group	Method: a quasi-experimental study with non-equivalent control group design Intervension: consuming Temulawak (Curcuma xanthorrhiza roxb.)	-	Temulawak (curcuma xanthorrhiza Roxb) extract had a significant effect in increasing breast milk production and prolactin levels in postpartum mothers
6	Relationship Of Additional Nutritional Consumption Of Green Beans (Vigna Radiata) With Breast Milk Production (Handayani & Yulaikah, 2021) Rohmi Handayani, Siti Yulaikah 2020	40 respondents consisting of 20 respondents in the treatment group (consumption of green beans) and 20 respondents in the control group (not consuming green beans)	Method: pre-experimental design with post test only design with control group design Intervension: Consuming Green Beans (Vigna radiata)	-	The frequency and consumption of additional Vigna radiata (green beans) nutrition can increase breast milk production
7	The Effect of Breast Acupressure and Oxytosins Massage to Improve the Breast Milk Production in Postpartum Mother (W Parwati, 2017) Desak Made W Parwati, Lucia Endang Hartati, Titin Suheri 2017	26 respondents (postpartum mother on day 1)	Method: quasi-experiment with post-test design only design and with a control group: breast acupressure and oxytocin massage	-	there is a significant effect between the group performed breast acupressure and oxytocin massage with the ones did not conduct breast acupressure the oxytocin massage to increase milk production
8	The Differences Effect Of Corn Hair Tea And Rajuke Tea On The Production Of Breast Milk In The Working Area Of Puskesmas Kota Selatan , Puskesma Kota Utara And Puskesmas Sipatana In Gorontalo City (Abdul et al., 2021) Nurnaningsih Ali Abdul, Nancy Olii 2021	60 postpartum motehrs	Method: pre-experimental with a control group pretest-posttest design Intervension: Consuming Corn Hair Tea	Comsuming Rajuke Tea	The results showed that Rajuke tea was more able to increase breastmilk production comparing to Corn Hair tea
9	The Combination of Acupressure and Affirmation Relaxation as an Alternative Method to Increase Breast Milk Production and Breastfeeding Self-efficacy (Rahmaika Arumsari et al., 2018) Dita Rahmaika Arumsari, I Wayan Agung Indrawan, Endang Sri Wahyuni 2018	24 primiparous mothers in the first day of postpartum period which were divided into 2 groups; that of treatment group (group given treatment of combination of acupressure and affirmation relaxation)	Method: true experimental with pre-test and post-test design Intervension: treatment group given treatment of combination of acupressure and affirmation relaxation	compared with a control group was not given treatment of combination of acupressure and affirmation relaxation	the combination of acupressure and affirmation relaxation method is able to increase breast milk production and breastfeeding self-efficacy of primiparous mothers on the postpartum period

No	Title, Authors, Year	Population	Intervension	Comparation	Outcomes
		and control group.			

DISCUSSION

Table 1 shows that many methods to increase milk production. We group it into two parts are:

1) Consume herbal ingredients

In this study has fenugreek supplementation, consuming Temulawak (Curcuma xanthorrhiza roxb.), Consuming Green Beans (Vigna radiata), Consuming Corn Hair Tea, Comsuming Rajuke Tea. In Indonesia**,** accordance to those articles shows us that many herbal ingredients can increase milk production.

Fenugreek contents phytochemicals including alkaloids, isoflavones, polyphenols, tannins, and saponins affect milk production; they were found to stimulate milk ejection, improve milk protein levels, and enhance lactation by increasing prolactin levels (Abdou & Fathey, 2018; Mohanty et al., 2014).

Temulawak (curcuma xanthorrhiza Roxb) is very rich in antioxidants and contains secondary metabolite component of curcuminoid and flavonoid group and has a relatively high antioxidant activity compared to alpha tocopherol, which is popular antioxidant compound. The extract of the extract of temulawak (curcuma xanthorrhiza Roxb) also contains high vitamin A and excellent source of polyphenols to help increasing milk production and prolactin (Dosoky & Setzer, 2018; Supriyana, 2017)

Green Beans (Vigna radiata) green beans (Phaseolus Radiatus) as a galactogogue is based on its nutritional content, including carbohydrates, which are the largest component of green beans, which is 62-63%. The fat content in green beans is 0.7-1 g / kg fresh green beans which consists of 73% unsaturated fat and 27% saturated fat, so it is safe for consumption. Based on the amount, protein is the second main constituent after carbohydrates. Mung beans contain 20-25% protein. The protein in raw green beans has about 77% digestibility. The low digestibility is due to the presence of anti-nutritional substances, such as antitrypsin and tannins (polyphenols) in green beans. The fulfillment of adequate nutrition during the lactation process can affect the production of the hormone prolactin after eating. Provision of additional nutrients containing galactogogueis very helpful to increase milk production (Handayani & Yulaikah, 2021).

Rajuke tea was more able to increase breastmilk production comparing to Corn Hair tea (Abdul et al., 2021). Rajuke tea is a tea made from a combination of moringa leaves and corn hair. Moringa leaves contain phytosterol compounds which function to increase and accelerate milk production. Moringa leaves also contain complete protein (containing 9 essential amino acids), calcium, iron, potassium, magnesium, zinc and vitamin A, vitamin C, vitamin E and vitamin B which have a major role in the immune system (Abdul et al., 2021).

2) Massage

Massage can we use to increase milk production such as breast massage, oxytocin massage. Oxytocin massage will stimulate the spinal cord; then, the neurotransmitter medulla oblongata will send a message to the hypothalamus. Thus, the posterior pituitary will secrete the hormone oxytocin, which causes the breasts to produce milk. The production of breast milk and the process of breastfeeding requires stimulation of the breast muscles to the breast glands for the con- tractions needed in the lactation process. Stimulation of the breast muscle can be done by giving breast care technique (Hesti et al., 2017; Triansyah et al., 2021; Widia & Meihartati, 2018)

3) Combine method

Combine method consists of acupressure and affirmation technic, acupressure and oxytocin massage. These studies show us that both of these studies can help breastfeeding mother increase milk production. Acupressure may also reduce stress or depression through the central effect such as releasing noradrenaline and serotonin and improving the release of beta-endorphin and adrenocorticotropic. There has been limited research on affirmation relaxation on breastfeeding self-efficacy of postpartum mothers. Affirmations is a strong and positive statement giving crucial influence to strengthen self-confidence. Affirmations can help us change our perceptions and beliefs. If we believe an affirmation to be true, our perceptions selectively reinforce it because we change our self-talk. Our mind is constantly engaged in dialogue with ourselves Affirmation relaxation might create a relaxed state of physical and emotional condition. Mother with relaxed condition (not feeling pain, anxious, and stress) will be able to improve her breastfeeding self-efficacy (Brockway et al., 2017; Rahmaika Arumsari et al., 2018)

CONCLUSION

Many methods can increase milk production to help breastfeeding mothers. Midwives can promote to breastfeeding mother to consume herbal ingredients and combine with breast massage, hypno-breastfeeding, acupressure, and affirmation technic.

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