THE EFFECTIVENESS OF BREAST CARE AND SOY MILK PRODUCTION ON THE PRODUCTION OF MOM’S BREAST MILK

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ABSTRACT

Background: The role of breastfeeding is very important and can even affect the risk of death. Breastfeeding can save up to 30,000 infant deaths in Indonesia, and exclusive breastfeeding can prevent 10 million deaths of children under five in the world every year. Low milk production is a major problem for new mothers, apart from flat or inverted nipples, sore nipples, swollen breasts, and lack of or misinformation. This will have a bad effect on the baby. After all, mothers usually look for alternatives by giving formula milk to their babies which causes the intensity of the baby's sucking to decrease because they take turns using formula milk which makes less milk come out because the baby is full and lazy to suckle.

Purpose: The purpose of this study was to determine the effectiveness of breast care and soy milk provision in the production of breast milk for postpartum mothers.

Method: This research was conducted in the Sidomulyo Health Center, Pekanbaru City starting from March to May 2021. This type of research is Quasy Experimental research. The population of this study was all postpartum mothers who had babies who were at the Sarinah Pratama Clinic and PMB Hasna Dewi. The sample of this research was 20 postpartum mothers who were divided into 2 groups and selected by purposive sampling. The data collection...
method is observation with the observation sheet instrument. Data analysis used Mann-Whitney with a significant level of 95%.

Results: The results showed that the average milk production in the breast care intervention group was better, namely 171.90 ml (SD 42.91) compared to the soy milk group, namely 84.10 ml (SD 15.99).

Conclusion: This study concludes that there is a difference in the production of breast milk in postpartum mothers who are given breast care and who are given soy milk (p = 0.000), namely breast care is more effective in increasing breast milk production.

Suggestion: It is hoped that breast care is expected as one of the routines at home for postpartum mothers who are breastfeeding to increase milk production and support the success of exclusive breastfeeding.

**INTRODUCTION**

One of the causes of unsuccessful breastfeeding is that the mother lacks confidence that her breast milk cannot meet the needs of her baby (Roesli, 2012). In addition, factors that cause failure in the breastfeeding process are often caused by mothers who complain about breastfeeding, such as breast milk production that is not smooth (Nababan et al, 2021). Around 35% of mothers stop breastfeeding exclusively because they feel that there is not enough milk and the baby is not satisfied (Nita, 2010). The role of breast milk is very important and can even affect the risk of death. Breastfeeding can save up to 30,000 infant deaths in Indonesia, and exclusive breastfeeding can prevent 10 million under-five deaths in the world each year (UNICEF, 2012).

According to the Indonesian Health Profile in 2019, the percentage of exclusive breastfeeding in Indonesia was 67.74%, but this achievement did not meet the target of exclusive breastfeeding in Indonesia which reached 80%. Data from the Pekanbaru City Health Office Profile in 2019 stated that the coverage of exclusive breastfeeding in Pekanbaru city was 41.3% and all 21 health centers in Pekanbaru City had not reached the target of exclusive breastfeeding of 80%. Sidomulyo Health Center is one of the health centers in Pekanbaru City with the lowest coverage of exclusive breastfeeding, namely a percentage of 14.9% (Dinas Kesehatan Kota Pekanbaru, 2019).

Low milk production is a major problem for new mothers, apart from flat or inverted nipples, sore nipples, swollen breasts, and lack of or misinformation. This will have a bad impact on the baby because mothers usually look for alternatives by giving formula milk to their babies which causes the intensity of the baby’s sucking while breastfeeding to decrease because they take turns using formula milk which makes less milk come out because the baby is full and lazy to suckle (Wijayanti & Setiyaningsih, 2016).

Smooth milk production will greatly affect the success of breastfeeding. Low milk production in the first few days after giving birth can be caused by a lack of stimulation of the hormones prolactin and oxytocin which play a very important role in the smooth production of breast milk (Astarani et al., 2019).

Efforts are made to facilitate and increase milk production that can be used by postpartum mothers, one of which is breast care. Breast care is an action to take care of the breasts, especially during breastfeeding to facilitate the release of breast milk (Damanik, 2020). Breast care is carried out in the form of breast massage to improve blood circulation and is useful for launching the milk ejection reflex (Katuuk, 2018).

Another way to increase breast milk production is by giving soy milk made from soybeans. Soy milk contains 35% protein which is almost the same as beef or egg protein which when compared to green beans only contains 24% protein (Nababan et al, 2021). Soy milk was chosen to increase breast milk production because the protein content in soy milk can help increase breast milk production. After all, soy milk contains isoflavones, alkaloids, polyphenols, steroids, and other substances that have the potential to stimulate the hormones oxytocin and prolactin which are effective in increasing and facilitating production ASI (Elika Puspitasari et al., 2018).

Based on this, the authors are interested in conducting further research on the Effectiveness of Breast Care and Soy Milk Provision on Breast Milk Production for Postpartum Mothers in the Work Area of the Sidomulyo Health Center, Pekanbaru City.

**RESEARCH METHODOLOGY**

The type of research used is a quantitative research using a quasi-experimental approach with a post-test only group design, namely by comparing two groups, namely the group was given breast care treatment and the group given soy milk. After
receiving a research permit and receiving a letter of approval from the Research Ethics Study No. LB.02.03/6/39/2021 from KEPK Poltekkes, Ministry of Health, Riau, the two groups were treated. In the breast care group, massage on the right and left breasts were carried out 2 times a day for 30 minutes for 7 days and an assessment of milk production was carried out on day 8. In the soy milk group, the intervention was given in the form of soy milk from the factory brand Hoki 320 ml, but according to SOP researchers give only 200 ml. This milk was given 2 times in the morning and evening for 7 days and breast milk production was assessed on day 8. The results obtained from the measurements in the two groups will be compared and analyzed. The population in this study were all postpartum mothers who had babies at the Sarinah Pratama Clinic and Hasna Dewi PMB in the Sidomulyo Health Center Work Area, Pekanbaru City. The sample of this study amounted to 20 postpartum mothers who were taken by purposive sampling. Data analysis using Mann-Whitney

RESEARCH RESULT

Based on table 1, it can be seen that the average milk production in the group receiving breast care was 171.90 ml (SD: 42.9) and the group receiving soy milk was 84.10 ml (SD: 15.9). The results of the Mann Whitney statistical test with a 95% confidence degree showed that there was a difference in the milk production of postpartum mothers who were given breast care with those who were given soy milk with (p-value = 0.000), the Mean Rank for the breast care group was higher, namely 15.50 ml compared to the group giving soy milk was 5.50 ml, which means that the milk production was more in the group receiving breast care compared to the group giving soy milk.

Table 1
Differences in Breast Milk Production in Postpartum Mothers with Breast Care and Giving Soy Milk

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min-Max</th>
<th>Mann-Whitney-U</th>
<th>Mean Rank</th>
<th>Nilai- p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast Care</td>
<td>10</td>
<td>171.90</td>
<td>42.915</td>
<td>138-260</td>
<td>0.000</td>
<td>15.50</td>
<td>0.000</td>
</tr>
<tr>
<td>Feeding Soy Milk</td>
<td>10</td>
<td>84.10</td>
<td>15.996</td>
<td>60-110</td>
<td></td>
<td>5.50</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Breast care is done by stimulating or massaging the breasts of nursing mothers and compressing the breasts with warm water and cold water alternately for 2 minutes which can affect the pituitary to secrete the hormones progesterone and estrogen to produce the hormone oxytocin (Wulan & Gurusinga, 2015)

Breast care has been investigated to increase breast milk production in various previous studies including research conducted by (Astarani et al., 2019) on "The Effect of Breast Care on Breast Milk Production for Postpartum Mothers" with a sample of 30 postpartum mothers. Sufficient milk production while those who do not do breast care have less milk production, as evidenced by analysis using correlation tests and obtained p-value = 0.002, which means it is proven that breast care is positively related to breast milk production in postpartum mothers. The results of this study are in line with the theory which suggests that movement in breast care is beneficial in launching the milk ejection reflex. This effort is also an effective way to increase the amount of milk in the breast. In addition, it can also prevent the occurrence of breast milk dams in the breast (Astarani et al., 2019).

Likewise, giving soy milk is another way to increase milk production. The average milk production in the intervention of giving soy milk from the results of the study was 84.10 ml. Soy milk, one of which is part of nutrition and fluids, is a factor that can affect breast milk production (Nababan et al, 2021).

In line with (Elki Puspitasari et al., 2018) under the title "The Influence of Soy Milk Feeding on Increasing Breast Milk Production in Postpartum Mothers in RB Bina Sehat Bantul" with a sample of 40 people and the results showed that before soy milk intervention was given, most of the respondents with smooth breast milk production were 45 % (18 people), slightly fluent breastfeeding category 35% (14 people) and very smooth breastfeeding 20% (8 people). Then, after being given soy milk, there was an increase in breast milk production by 77.5% (35 people) and very smooth breastfeeding 20% (8 people). Thus, after being given soy milk, there was an increase in breast milk production by 77.5% (35 people) in the very smooth breastfeeding category and 12.5% (5 people) in the smooth breastfeeding category. It is proven by the results of the Wilcoxon test and obtained p-value = 0.000 (p < 0.05), which means that there is an effect of giving soy milk to increase breast milk production.

One of the factors that can affect the production of breast milk, among others, is the nutritional status of the mother. For mothers to be successful in exclusive breastfeeding, mothers who are breastfeeding their babies must receive additional food to avoid a reduction in the production of breast milk.
and production of breast milk. Soybeans are one of the many good sources of protein for our bodies. One of the ingredients is phytoestrogens which, if consumed regularly by mothers who are breastfeeding, will help mothers increase the production of abundant and abundant breast milk and get good quality breast milk (Febriani, 2020). One way to increase breast milk production is by consuming soy milk made from soybeans. Soy milk was chosen to increase breast milk production because soybeans contain 35% protein which can help increase breast milk production. After all, soy milk contains isoflavones, alkaloids, polyphenols, steroids, and other substances that stimulate the hormones oxytocin and prolactin which are effective in increasing and facilitating breast milk production. (sustainable). Soy milk is a processed drink made from soybean starch which has many nutritional and beneficial properties. Isoflavones or phytoestrogen hormones are naturally produced by the body and can help the mammary glands of nursing mothers to produce more milk (Girsang et al., 2021)

Based on the results of (Febriani, 2020) it can be concluded that there is an effect of giving soy milk to increase breast milk production. The effect of Soybean (Glycine max) can be seen from the increase in breast milk production and shows a positive effect where all respondents experience an increase in breast milk production. The nutritional content and benefits, its potential to stimulate the hormones oxytocin and prolactin are effective in increasing and launching breast milk production, and the reflex of prolactin is hormonally useful for producing breast milk. In line with the research conducted by(Girsang et al., 2021), it can be concluded that the results of this study show a p-value <0.05, which means that there is an effect of giving soy milk to increase breast milk production in Mangga Dua Village, Dusun III, Tanjung Beringin District, Serdang Bedagai Regency in 2020. Research Results (Lestari, 2021) found that soy milk was statistically significant at 0.00 (p<0.05) effectively increasing the milk production of postpartum mothers with the difference in scores between before and after with a mean value of 5,300. In line with the research conducted by (Winarni et al., 2020), a p-value of 0.00 was obtained, which means that the administration of soybean and melon juice was effective in increasing breast milk production and infant weight in nursing mothers at the Tigraksa Health Center.

Based on the results of data collection at the Sarinah Pratama Clinic and Hasna Dewi PMB located in the working area of the Sidomulyo Health Center in Pekanbaru City, it was found that there were differences in breast care and soy milk giving to postpartum mother's milk production (p-value = 0.000) with a Mean Rank for the breast care group higher that is 15.50 ml compared to the group giving soy milk which is 5.50 ml, which means that milk production is more in the group receiving breast care compared to the group receiving soy milk. The results of the research that researchers did on breast care turned out to be more effective in increasing and facilitating breast milk production. This is following the theory which states that the purpose of breast care is to maintain breast hygiene, flex and strengthen the nipples, breasts that are maintained will produce sufficient milk for the baby's needs, and with good breast care the nipples will not blister when sucked by the baby (Wijayanti & Setiyaningsih, 2016).

The breast care intervention consists of a series of massages and ends with compressions which are carried out in direct contact with the areas of the two breasts as a source of milk production so that the massage and compression series in breast care will prevent blockage of breast milk and promote blood circulation, then stimulate the hormones oxytocin and prolactin, for milk production and smooth breast milk. So that the advantage of breast care is direct stimulation of the nerve point of milk production. Meanwhile, when compared with the provision of soy milk, which if consumed, is not necessarily fully absorbed by the body for the production and smoothness of breast milk.

Routine breast care can prevent problems in postpartum mothers who are breastfeeding. The benefit of breast care is that it stimulates the breasts to influence the pituitary to secrete the hormones prolactin and oxytocin. Breast care is carried out using breast massage to maintain and stimulate the oxytocin reflex (Muslimah et al., 2020). Breast care or often called Breast Care aims to maintain breast hygiene, and increase or facilitate the production of breast milk. Breast care is useful for stimulating the breasts so that it affects the pituitary to secrete the hormones prolactin and oxytocin in addition to maintaining breast hygiene, especially nipple hygiene so that it avoids infection, flexes, and strengthens the nipples so that the baby is easy. Problems with breastfeeding often occur during breastfeeding and can suckle well, reducing the risk of injury when the baby is breastfeeding (Ningsih & Lestari, 2019). Breast care during pregnancy is an important part that must be considered in preparation for breastfeeding later. Breasts need to be prepared since pregnancy so that when the baby is born it can function properly when needed (Alhadar, Farida, Irawati, 2017).
In line with (Muslimah et al., 2020), the results obtained with a value of Sign (2-tailed): 0.000 where <0.05 then H0 is rejected and H1 is accepted. There is a difference between the treatment of giving a combination of breast care and oxytocin massage on breast milk production in postpartum mothers in the work area of the Mrican City Health Center in Kediri in 2020. So there is an influence between before and after giving a combination of breast care and oxytocin massage to postpartum mothers in the work area of the Mrican City Health Center Kediri. Based on (Ningsih & Lestari, 2019) after carrying out a statistical test between breast care and breast milk production, it was obtained that P-value = of 0.048, meaning that there was a significant relationship between breast care and milk production. The results of the analysis also obtained an OR value = 12.6 which means that mothers who do breast care have 12.6 times the opportunity to produce breast milk in the sufficient category compared to postpartum mothers who do not do breast care. The implementation of breast care will facilitate and increase the production of breast milk for postpartum mothers. The more mothers do breast care properly, the milk will be smooth. Implementation of breast care should be started as early as possible after the baby is born and done twice a day. Breast care is carried out including breast massage, breast emptying, breast compression, and nipple care (Ningsih & Lestari, 2019).

Breast care during pregnancy has several benefits, including keeping the breasts clean, especially the cleanliness of the nipples, flexing and strengthening the nipples so that it is easier for the baby to breastfeed, stimulating the milk glands so that milk production is plentiful and smooth and can detect breast abnormalities early and making efforts to overcome it prepares the mother mentally (psychically) for breastfeeding. Therefore, breast care needs to be done before and after giving birth (Taqiyah et al., 2019).

Based on the results of (Taqiyah et al., 2019) In postpartum mothers with breast milk dams, it was found that before breast care was carried out from 16 postpartum mothers there were 81.3% or 13 postpartum mothers were categorized as having breast milk dams. After breast care, there was a decrease in breast milk dam from 81.3% to 18.8%. There is an effect of Breast Massage on breast milk dam with a value of. Value 0.007. This study is in line with research conducted by (Handayani & Rustiana, 2020) that there is an effect of breast care on breastfeeding in primiparous postpartum mothers at the Sumbergempol Health Center, Tulungagung Regency where p-value = 0.000 where p < (0.05). The same study was conducted by (Hayati et al., 2020) that there was an effect of breast milk production on mothers before and after giving lavender aromatherapy and breast care with a Z value of -3.742 with a p-value (asympt. sig 2 tailed) of 0.000 (p-value <0.05). The results of the study on the effect of breast care on breast milk production at the Kassi-Kasi Public Health Center in Makassar City showed that breast care significantly affected the smooth production of postpartum mother's milk. The average milk production of mothers who do breast care is higher when compared to mothers who do not do breast care (Mukarramah, 2021).

When the baby is breastfeeding, it will secrete the hypothalamus and continue stimulation to the adenohypophysis (anterior pituitary) thereby releasing prolactin through the blood where the breast acts as a receptor. Prolactin will also stimulate the alveoli cells that function for milk production. In addition, to stimulating the anterior pituitary, the stimulation originating from the baby's sucking is also continued to the neurohypophysis (posterior pituitary) which results in the release of oxytocin. Furthermore, oxytocin is transported by the blood to the breast as a receptor to cause the contraction of myoepithelial cells. Contraction of myoepithelial cells results in milk that has been made by the alveoli and enters the ductal system and will eventually flow through the lactiferous ducts into the baby's mouth (Rahmi et al., 2020)

The novelty in this study is that breast care and soy milk were given at the same time in two different groups, whereas in previous studies other people only carried out one treatment in one study.

CONCLUSION

Based on research conducted from January to May 2021 on the effectiveness of breast care and giving soy milk to postpartum mother's milk production in the work area of the Sidomulyo Health Center in Pekanbaru City, it can be concluded that: The average milk production in the breast care group is 171.90 ml (SD: 42.9), the average milk production in the soy milk group was 84.10 ml (SD: 15.9) and there was a difference in breast milk production in postpartum mothers who received breast care and those who were given soy milk (p-value = 0.000) that is breast care is more effective in increasing milk production.

SUGGESTION

It is hoped that the Sidomulyo Health Center, the Sarinah Pratama Clinic, and the Midwife at PMB Hasna Dewi can provide advice to postpartum mothers who are breastfeeding so that they can...
implement breast care as one of the routines at home for postpartum mothers who are breastfeeding to increase breast milk production and support the success of exclusive breastfeeding.

**REFERENCE**


