Effect of Modisco Corn as Supplementary Feeding to Increas-ing Production and Quantity of Albumin Breast Milk

Agnes Isti Harjanti[1], Mudy Oktiningrum[2], Anifatus Saadah[3]

[1,2,3] Institute of Health Science STIKES Telogorejo Semarang, Indonesia

Corresponding author: agnes@stikestelogorejo.ac.id/ agnes@students.unnes.ac.id.

Abstract: Data from Indonesia in 2019 recorded that 65,8% of breastfeeding was given to babies; in 2021, there was a decrease to 52,5%. According to the ministry of health regulations records, there has been aslight increase from 4.58.595 babies, but only 66% will get sufficient breast milk in 2022. Ob-jective this study aims to analyze the relationship between the provision of modisco corn sup-plementary feeding and the quantity of albumin in breast milk. Modisco is a modified dietetic skim and cotton sheet oil mix with corn. Methods this type of research was a quantitative study, with the independent variable being modisco corn supplementary feeding and dependent varia-ble being breast milk production and increased breast milk albumin. The sample in this study consisted of 102 respondents who were breastfeeding mothers giving modisco corn twice daily for ten days of administration. Quantitative data were analysed using deskriptive and bivariate with Paired T-Test and T independent test. Results that albumin levels in the pre-test case were 35.2053 g/100ml in the case group and 17.629 g/100 ml in the control. Postest as many as 60.2018 g/100 ml in the case group and 28.2577 gr/100 ml in the control group. There is a difference in al-bumin level with 2-tiled sig 0,009 <0,05. There was an effect of increasing milk production with P-Value of 2-tiled sig 0,000. Conclusion that there is a difference in the increase in breast milk pro-duction after giving modisco corn supplementary between case and control groups.

Keywords: Breast Milk Production; Breast Milk Albumin

INTRODUCTION

Data from Indonesia in 2019 recorded that 65.8% of breastfeeding was given to babies; in 2021, there was a decrease to 52.5%. According to the Kepmenkes records, there has been a slight increase from 4,58,596 babies, but only 66% will get sufficient breast milk in 2022. (Ames et al., 2023). Judging from these data, breastfeeding in infants is very low, with a prolonged increase. Breast milk is the leading baby food, which can pro-vide complete nutrition and supports the baby's further growth. In his journal Devo-tion (Liu et al., 2019), Harjanti suggests that a lack of breast milk can hinder the growth of the ba-by's brain and other physical growth, resulting in stunting.

Research by Nopalia Surya (Siregar & Ritonga, 2020)(Nunuk Nurhayati, 2022) says that an increase in baby weight can occur due to solid nerve suction, which is, of course, related to the problem of sufficient breastfeeding. With sufficient milk production coupled with strong baby suction, the baby will get the fulfillment of breast milk to grow with a marked increase in body weight.

In Central Java, the prevalence of undernourished babies in 2018 reached 13.70%, while in 2021, malnutrition was included in the stunting category with a rate of 24.4%, and in 2022 it decreased to 21.6% (24). The main factor contributing to the incidence of underweight babies is the adequacy of breast milk, which is still low (Lockyer et al., 2021)).

Breast milk production is a factor in breastfeeding until the baby is at least six months old. Nunuk Nurhayati's research, in year 2022 shows that babies who get suf-ficient breast milk without formula milk grow according to usual weight standards (Sánchez et al., 2021). Research by Hamima Rani et al. states that breastfeeding factors are also influ-enced by the job of the baby's mother. Mothers with limited time to care for their chil-dren tend to be unable to breastfeed their babies because they have to work (Lockyer et al., 2021). Breast milk production depends on the baby's suction pattern, which can stimulate oxytocin from the pituitary to secrete breast milk. So, if a mother rarely breastfeeds her baby, milk production will gradually decrease (Nunuk Nurhayati, 2022)

The phenomenon in Boja District, Kendal Regency, is that many mothers still give formula milk because they have to leave their babies at work—mothers who cannot get enough breast milk account for 70% of 40 breastfeeding mothers (Liu et al., 2019) Mothers' motivation to breastfeed is reduced due to low breast milk production. Under these conditions, the results of weighing babies showed that 54% of babies aged 0–6 years had a weight less than the expected standard. The quality and amount of breast milk can influence the increase in baby weight. The quality of breast milk can increase body weight, including the protein content in the form of albumin, which can help grow cell size(Rahmawati & Prayogi, 2017).

The group of breastfeeding mothers who breastfeed their babies is a community group that needs special attention, especially in increasing breastfeeding coverage in the Boja District, Kendal Regency. Some people do not pay attention to the need for additional food for breastfeeding mothers to increase their milk production. This is because they did not receive information and education to support a group of breast-feeding mothers about the importance of additional nutrition during breastfeeding. The result of Harjanti et al.'s dedication to corn cod is an additional food for breast-feeding mothers that is very easy to make, tastes better and is not dull. Modisco corn also empirically contains lots of vitamins, minerals, fiber, protein, and carbohydrates, which can increase the quality of breast milk (Liu et al., 2019). With these problems, this research is focused on empowerment in providing fashionable corn extra food to breastfeeding mothers.The introduction should briefly place the study in a broad context and high-light why it is important. It should define

the purpose of the work and its significance. The current state of the research field should be carefully reviewed and key publica-tions cited. Please highlight controversial and diverging hypotheses when necessary. Finally, briefly mention the main aim of the work and highlight the principal conclu-sions. As far as possible, please keep the introduction comprehensible to scientists out-side your particular field of research.

METHOD

The population of this study was all mothers who breastfed babies aged 0–6 months in Kendal Regency, in April–May 2023, namely 120 breastfeeding mothers. The sample used was 102 respondents. With the technique of random sampling using random numbers. The sample ratio is 1:1. The case group has 51 samples, and the con-trol group has 51 samples.

The research design was a simple experiment. The design of this study used a case-control design, namely that the sample group with a ratio of 1:1 would be given treatment in the form of independent corn supplementary feeding in the case group, and the control group had no treatment. Then measurements of milk production and the baby's weight were carried out 1 month later..

Data collected during the pre-test and post-test, data were collected from 52 breastfeeding women in the case group and 52 breastfeeding moms in the control group. In order to test albumin levels and the amount of breast milk produced, breast milk from the case and control groups was pumped, placed in a breast milk bag, and transported to the laboratory using a cooler.

Utilising Paired T-test 2-tiled and T-independent test 1-tiled designs, a statistical analysis was performed on the quantitative data.

The frequency of breastfeeding, the volume of breast milk produced in millilitres, and the albumin levels in breast milk were all analysed. The Kolmogorov Smirnove test was used to determine normality, and descriptive statistics like mean and stand-ard deviation (SD), median, and mode were used to summarise continuous data. To compare the means of more than two variables, one- and two-way analyses (the Paired T-test and the T-independent test) were run, and statistical cross tabulations were employed to ascertain the differences between the variables. All analyses were conducted with a significance level of $p < 0.05$. Version 36 of SPSS was used for all analyses (IBM Corp).

RESULTS

The results of the research have been conducted were statistically analized and presented This section presented in the form of table as follows: The results of the desnalized criptive analysis of breast milk production in the 2 groups of cases and controls summerised in Tabel 1

Table 1. Descriptive Analysis of Breast Milk Production in Case and Control Groups.

Statistic	Case	Control
N	51	51
Mean	1.559 ml	872 ml [1]
Median	1.600 ml	800 ml
Mode	1.600 ml	800 ml
Standard Deviation	194 ml	147 ml

[1]The average value of breast milk production after being given intervention in 10 days of observation. The breast milk production in the intervention group was greater than in the control group.

Table 2. Descriptive Analysis of Breastfeeding Frequency in Case and Control

Statistic	Case	Control
N	51	51
Mean	15.9 times	8,69 times[1]
Median	16 times	8 times
Mode	16 times	8 times
Standard Deviation	1,9 times	1,5 times

[1]The average value of breastfeeding frequency after being given intervention in 10 days of observation. The frequency breastfeeding of the intervension group was more frequent than the control group

Table 3. Descriptive Analysis of Pre Test Breast Milk Albumin Levels for the Case and Control Groups

Statistic	Case	Control
N	51	51
Mean	35.2053 g/100ml	17.9629 g/100ml [1]
Median	14.8879 g/100ml	11.2415 g/100ml
Standard Deviation	37.2358 g/100ml	27.0830 g/100ml

[1]The average value of albumin levels in pre test breast milk before given intervention in 10 days of observation

Table 4. Descriptive Analysis of Post-Test Breast Milk Albumin Levels for the Case and Control Groups.

Statistic	Case	Control
N	51	51
Mean	60,2018 g/100ml	28,2577 g/100ml[1]
Median	68,7792 g/100ml	17,9428 g/100ml
Standard Deviation	31,2926 g/100ml	28.5366 g/100ml

[1]The average value of albumin levels in post-test breast milk after given intervention in 10 days of observation. Albumin levels in breast milk in intervension group were higher than those in the control group.

Bevariate Analysis Effec of modisco corn suplementary feeding on the case group.

Table 5. Bevariate Analysis of Pre test and Post test Breast Milk Albumin Levels on the Case Group.

Statistic	Result
t	3.759[1]
df	50
2 tiled sig	0,000
Lower	11.6413
Upper	38.3517

[1]Bevariate analisis with Paired T-test in the same sample pre - post variables as a result (t=3,759) with significansi 0,000 < 0,05. Before and after using modisco corn supplements there was a difference.

There were differences in levels of breast milk albumin before and after 2 tiled sig 0.000 > 0.05, with the result that the t value is 3,759 > t table 1,646, which has a very big effect. With the conclusion that each administration of modisco corn supplementary twice within a period of 10 days increases 3,759 g/100 ml of breast milk albumin.

Table 6. Bevariate Analysis of Pre test and Post test Breast Milk Albumin Levels on the Control Group

Statistic	Result
t	1.679[1]
df	50
2 tiled sig	0,099
Lower	8.9282
Upper	9.9964

[1]Bevariate analisis with Paired T-test in the same sample pre - post variables as a result (t=1.679) with significansi 0,099 > 0,05.

There was no difference level albumin in breast milk between pre and post test, with 2 tiled sig 0.099 > 0.05, with the result that the t value is 1,679 and the t table value is 1,646, which has very little effect. It can be concluded that there was an increase in breast milk albumin levels of 0.033 g/100 ml for 10 days.

Table 7. Bevariate Analysis post test of differences elevated Breast Milk Albumin Levels on the case and control Groups

Statistic	Result
t	2.674[1]
df	100
2 tiled sig	0,009

[1]Bevariate analisis with Paired T-Independent test in the same sample post test as a result (t=2.674) with significansi 0,009 < 0,05.

There was a difference in increasing albumin levels in breast milk between the case and control groups before and after, with a 2-tiled sig of 0.009 < 0.05 and the t value being 2,674 > 1,646 from the t table. It can be concluded that there was a difference of 2.674 g/100 ml times the increase in milk albumin levels.

Table 8. Bevariate Analysis post test of differences elevated Breastfeeding frequency on the case and control Groups

Statistic	Result
t	21.177[1]
df	100
2 tiled sig	0,000

[1]Bevariate analisis with T-independent test in the same sample post test as a result (t=21.177) with significansi 0,000 <0,05.

There was a difference in the frequency of breastfeeding between the case and control groups where the intervention group breastfeeding more often, with 2 tiled sig = 0.000 < 0.05, with the result that the t value is 21.177> 3.174 from the t table. It can be concluded that there was a difference of 21.177 times the frequency of breastfeeding between the case and control groups.

Table 9. Bevariate Analysis post test of differences increase in milk production on the case and control Groups.

Statistic	Result
t	21.162[1]
df	100
2 tiled sig	0,009

[1]Bevariate analisis with T-independent test in the same sample post test as a result (t=21.162) with significansi 0,009.

There was a difference in the increase in breast milk production between the case and control groups, with a 2-tiled sig of 0.009 < 0.05, with the result of the t value being 21,162 > 3,174 from the t table. It can be concluded that there was a difference of 21.162 ml of breast milk production within 10 days between the case and control group.

DISCUSSION

Breast milk production can be influenced by several internal and external factors, including nutritional, hormonal, psychological, internal, and baby factors, and the en-vironment as an external factor. Nutrition is a significant factor in increasing breast milk production during breastfeeding (Rani et al., 2022). Nutrition is needed to help prolactin pro-duce lots of quality breast milk. In previous data, it was found that 70% of breastfeed-ing mothers in the Boja region experienced problems with milk production, which tended to decrease, and tended to add formula milk as a substitute for breast milk (Harjanti et al., 2022). The breastfeeding mothers studied did not get used to adding additional food as a distraction to increase nutritional intake during breastfeeding. At the same time, the baby's need to breastfeed could reach more than 12 times a day. In the results of the descriptive analysis of breast milk production in the 2 case groups and controls, the average milk production value after intervention in 10 days of observation was 1,559 ml. Many found around 1,600 ml/day; in the case group, it was 800 ml/day. There was an increase in breast milk in the

case group after being given Modisco Corn supple-mentary food for ten days with the provision of giving Modisco corn supplementary twice a day. The bivariate results show a difference in the increase in breast milk pro-duction between the case and control groups.

Bivariate analysis results using independent t-test statistical analysis with un-paired variables From the table, there is a difference in the increase in breast milk production with 2-tiled sig 0.009 < 0.05, with the result of the t value being 21,162 > 3,174 from the t table. It can be concluded that there is a difference of 21,162 ml of breast milk production in 10 days between the case and control groups.

Breast milk production in the first week after birth is 550 ml/day. Within 2–3 weeks, there is an increase of around 800 ml/day, and breast milk production can reach 1.5–2 L per day. Newborn babies need breast milk at around 5-7 ml per drink, while babies 2–6 months need to drink around 570–900 ml daily. The average baby's daily drink is taken from 750 ml divided by the frequency of drinking. The formula is 750/feeding frequency, the intake obtained in 1 drink. Milk production can be seen in the adequacy of the baby's breastfeeding, which can be seen in an increase in body weight of 500 grams per 2 weeks for babies who are directly breastfed (Mudjihartini, 2023).

Mature breast milk is produced in larger quantities and divided into two parts: foremilk and hindmilk. Foremilk contains more vitamins, protein, and water, while hindmilk contains fat, which can be 4-5 times more than foremilk. For milk comes out when the baby sucks for the first time until there is a let-down reflex, after which hind milk comes out (Zhang et al., 2016).

This is in line with Arifin Siregar's (Siregar & Ritonga, 2020) research on exclusive breastfeeding and the factors that influence it, including nutritional factors that do not have an immedi-ate effect both in terms of quantity and nutritional value, but if the lack of nutrition continues, it will affect the glands that can produce milk (Liu et al., 2019) The breast milk cannot work correctly, and breast milk is not produced. Respondents were also measured ten days after receiving additional food to get better results in this study. Arifin Siregar's research found that milk production in malnourished mothers only reached between 700 and 800 ml/day, whereas, in this study, breastfeeding mothers who were given supplement Modisco corn could produce between 1200 and 2000 ml of milk.

The frequency of breastfeeding affects the letdown reflex movement from the ba-by's sucking to the nipple, causing stimulation of the anterior pituitary to produce ox-ytocin, which helps emit breast milk (Liu et al., 2019). The baby's suction is needed to expedite the release of breast

milk so that the breast milk glands will continuously form milk pro-duction (Lok et al., 2017). If a mother is lazy about breastfeeding, breast milk will not be produced because the pituitary glands will not produce it, and over time, breast milk production will decrease. Breastfeeding a baby does not need to be scheduled according to the baby's needs (Lok et al., 2017). When the baby is hungry, the baby cries and is immediately given breast milk, but if the baby continues to sleep for more than 2 hours, he must be wok-en up and given breast milk[9]. In this study, descriptive analysis results showed that breastfeeding frequency in the two groups of cases and controls was 15.9 times/day in the case group after being given Modisco corn supplemantry, while in the control group it was 8.69 times/day. The most frequent breastfeeding frequency among re-spondents was 16 times per day in the case group and eight times per day in the con-trol group. These results showed an increase in the frequency of breastfeeding in the case group compared to the control group.

Differences in the Frequency of Breastfeeding between the Case and Control Groups: According to the results of bivariate analysis using independent t-test statisti-cal analysis with unpaired variables, there is a difference in the frequency of breast-feeding with a 2-tiled sig of 0.000 < 0.05, and the result of the t value being 21,177 > 3,174 from the t table. It can be concluded that there is a difference of 21.177 times the frequency of breastfeeding between the case and control groups.

Roser Porta, et.al. (2021) (Rahmawati & Prayogi, 2017) research on the Analysis of Factors that Influence Breast Milk Production for Working Mothers is in line with the results of this research, which states that there is a relationship between the frequency of breastfeeding and breast milk production with a P.Value of 0.004. In this study, breastfeeding frequency in the case group was higher, with a difference of 7.21 times compared to the control group. The breastfeeding frequency was between 8 and 21 times a day, while in the control group, it was between 5-8 times a day.

Albumin in breast milk shows one of the nutritional values needed for baby growth (Vass et al., 2023). Quality breast milk will contain sufficient albumin. Albumin helps help the formation of body organ cells so that babies thrive (Verd et al., 2018). Malnourished breastfeed-ing mothers have low albumin levels. This study examined albumin levels in breast milk to measure breast milk quality in breastfeeding mothers aged 0–6 months (Zhang et al., 2016). The results of the descriptive analysis of breast milk albumin levels in the 2 case and con-trol groups with an average pre-test milk albumin level in the 10-day observation were 35.2053 g/100 ml times/day in the case group after being given modisco corn supplement. In contrast, in the control group, it was 17.9629

g/day 100 ml. In contrast, the respondent's albumin level, which often appeared, was 10.3584 g/100 ml in the case group and 14.2332 g/100 ml in the control group.

The nutritional composition and non-nutritional bioactive factors in breast milk can increase babies' survival and healthy development (Alan G Lourenço 1, Marilena C Komesu 2, Geraldo Duarte 3, Luiz A Del Ciampo 1, Marisa M Mussi-Pinhata 1, 2017). The nutritional composi-tion of breast milk has benefits as an anti-infective and anti-inflammatory agent, growth factor, and prebiotic (Verd et al., 2018). Influences on differences in the composition of breast milk include maternal and environmental factors and expression and management of breast milk (e.g., storage and pasteurization) (Liu et al., 2019). Several b ioactive components found in breast milk are being developed and tested for application as prophylactic or thera-peutic agents (Anita Rahmawati, 2017), (7. Yeliz Suna Dağ and Emriye Hilal Yayan, 2022)..

Breast milk contains different proteins at each phase, depending on the baby's needs. The protein content in breast milk is divided into three protein groups: whey, casein, and mucin complex. Alpha-lactalbumin and serum albumin are the main pro-teins found in breast milk (Sánchez et al., 2021). Serum albumin modulates plasma oncotic pressure and transports various substances such as bilirubin, ions, fatty acids, and exogenous lig-ands such as drugs (Zhang et al., 2016). Serum albumin can also help the human liver function in body homeostasis (Vass et al., 2023). In this study, the results showed that after respondents were given additional Modisco corn food supplement, there was an increase in albumin levels. Results of descriptive analysis of post-test breast milk albumin levels in the two groups of cases and controls showed that the average post-test breast milk albumin levels in 10 days of observation were 60.2018 g/100 ml times/day in the case group after being given Modisco corn supplement, while in the control group, it was 28.2577 g/100 ml, while the albumin levels that frequently appeared in respondents were 12.8259 g/100 ml in the case group and 53.7142 g/100 ml in the control group. This is following Ser-gio Verd, (Verd et al., 2018), regarding testing the protein content of mother's milk (breast milk) and formula milk in babies aged 6–12 months, which shows that the formation of breast milk requires nutritious food so that breast milk has nutritional value in terms of albumin content (Vidianti, 2018). Providing additional Modisco food consisting of origi-nal modisco formula 100 ml ingredients 10 g skim milk or 12 g full cream 5 g sugar, 5 g oil Ingredients: 10 g skim milk or 12 g full cream 5 g sugar, 5 g margarine Ingredi-ents: complete- Full cream milk 12 g (1 1/4 tbsp of fresh milk 100 g 14 cup sugar 7.5 g 1 14 tsp margarine 5 g ½ tbsp, and the original modisco mixed with corn amount of 250 g. Energy Nutritional Value: 100 Cal Protein: 3.6 g Fat: 5 g Energy Nutritional Value: 100 Cal Protein:

3.6 g Fat: 5 g. Nutritional Energy Value: 130 Cal Protein: 3 g Fat: 7.5 g, value added protein from corn 3,27g/100g.[3] it is necessary to provide additional food for breastfeeding mothers to increase albumin levels in breast milk. Modisco corn supplement is effective in increasing albumin levels by 60.18 g/100 ml/day when given for ten days with a frequency of administration of 2 times a day.

In the case group, there was an increase in breast milk albumin levels. Bivariate test results in the case group with Paired T-Test, paired test with the same sample with the pre-post variable, showed a difference in breast milk albumin levels before and after with 2-tiled sig 0.000 > 0.05 with t value results of 3,759 > t table 1,646, which has a considerable influence. The conclusion is that each administration of Modisco corn Supplemant was twice per/day juring ten days and produced increases 3,759 g/100 ml of breast milk albumin. The results of the Bevariate test in the control group with the Paired T-Test with the same sample with the pre-post variable show that there is no difference in breast milk albumin levels before and after with 2 tiled sig 0.099 > 0.05, with the result that the t value is 1.679 and the t table value is 1.646, which has minimal effect. It can be concluded that there was an increase in breast milk albumin levels of 0.033 g/100 ml for ten days.

The difference in post-test breast milk albumin levels between the case and con-trol groups was carried out by an independent t-test, namely an unpaired variable, with the following results: The table above shows a difference in post-test breast milk albumin levels between the case and control groups with a 2-tiled sig of 0.009 < 0.05, with the result of the t value being 2,674 > 1,646 from the t table. It can be concluded that there is a difference of 2,674 g/100 ml in the increase in breast milk albumin levels.

Breast milk is a baby food with perfect nutritional content according to the needs of babies. Breast milk also contains enzymes, so it is easily digested, and the existing nutrients are easily absorbed into the body (Yi & Kim, 2021). The first breast milk that comes out is called colostrum breast milk (Liu et al., 2019). It contains immune substances and complete nutri-tion. The nutritional composition contained in colostrum milk includes energy 58 Kcal, protein 2.3 gr, casein 0.5 mg, alpha-lactalbumin 140 mg, lactoferrin 330 mg, se-cretory IgA 364 mg, fat 2.9 gr, lactose 5.3 gr, calcium 29 mg, and vitamin A 151mg. The composition of breast milk produced > 30 days includes energy 70 Kcal, protein 1.1 gr, casein 0.4 mg, alpha-lactalbumin 187 mg, lactoferrin 167 mg, secretory IgA 162 mg, fat 2.9 gr, lactose 5.3 gr, calcium 28 mg, and vitamin A 151mg (Damanik et al., 2022). Breast milk also contains protective substances that make babies rarely sick, including lactobacil-lus bifidus (Sánchez et al., 2021) (which converts lactose into lactic acid and acetic acid); this substance makes digestion acidic, thereby inhibiting the growth of microorganisms; lactoferrin

functions to increase iron and can also help bacterial growth (Lyons et al., 2020); lizozyme is in the form of an enzyme that can break down the walls of bacterial sheaths and be anti-inflammatory; this enzyme collaborates with peroxide and ascorbate to protect against Eschercoli and salmonella bacteria; Complement C3 and C4; anti-streptococcus factor; antibodies; cellular immunity, namely the form of cells whose function is to kill microorganisms, forming C3 and C4, lysozyme, and lactoferrin (Saputri et al., 2019), (Mediani et al., 2020). The calorie needs of breastfeeding mothers are 2700 kcal, with 60–70% carbohydrate needs, 10–20% protein, and 20–30% fat (Lockyer et al., 2021). These calorie needs come from their daily food intake. Food will help form breast milk in terms of quality and quantity because the nutrients from the food consumed will be formed (Ames et al., 2023).

Breast milk also contains protective substances that make babies rarely sick, in-cluding lactobacillus bifidus (which converts lactose into lactic acid and acetic acid) (Lockyer et al., 2021), (Ahonen et al., 1998) this substance makes digestion acidic, thereby inhibiting the growth of microorganisms; lactoferrin functions to increase[21] iron and can also help bacterial growth; lizozyme is in the form of an enzyme that can break down the walls of bacte-rial sheaths and be anti-inflammatory; this enzyme collaborates with peroxide and ascorbate to protect against Eschercoli and salmonella bacteria;[20] Complement C3 and C4; anti-streptococcus factor; antibodies; Cellular immunity, namely the form of cells whose function is to kill microorganisms, forms C3 and C4, lysozyme, and lac-toferrin (Ames et al., 2023). The increase in breast milk albumin levels depends on the type of food breastfeeding mothers consume. Modisco Corn, in terms of nutritional content, con-tains foods that have much nutritional value, from protein, vitamins, minerals, and electrolytes, so that they can improve quality. Breast milk and the amount of breast milk production (Zhang et al., 2016).

CONCLUSION

There were differences increase in breast milk production, breastfeeding frequen-cy, breast milk albumin level, in post-test between case and control groups were car-ried out by T-independent test, after 10 days administration modisco corn in breast-feeding mother. Modisco corn is able to increase breast milk production and increase albumin levels in breast milk if given to breastfeeding mothers for a minimum of 10 days.

Conflict of Interest

The authors declare no conflicts of interest. The founder had no rule in the design of the study, in the collection, analyses, or interpretation of the data in the writing of the manuscript or in the de-sision to publish the result.

Acknowledgment

The authors would like to thank the mother and cadres who participated and help in this study. Cadres support helps made corn modisco and delivers it to the participants

REFERENCES

I. N. Saputri, D. Y. Ginting, and I. C. Zendato, "Pengaruh Pijat Oksitosin Terhadap Produksi Asi Pada Ibu Postpartum," *J. Kebidanan Kestra*, vol. 2, no. 1, pp. 68–73, 2019, doi: 10.35451/jkk.v2i1.249.

B. Indonesia, "Data ASI Eksklusif Indonesia," *bps.go.id/indicator/30/1340/1/persentase-bayi-usia-kurang-dari-6-bulan-yang-mendapatkan-asi-eksklusif-menurut-provinsi.html*, no. BPS, 2022.

A. I. Harjanti, M. Oktiningrum, and F. Glori, "Empowerment of Health Cadres in Utilizing Local Foodstuffs through Modisco Corn Processing to Increase Breast Milk Production for Postpartum Mothers," vol. 01, no. 02, pp. 64–70, 2022, doi: 10.55299/ijcs.v1i2.294.

N. S. Damanik, P. Simanjuntak, and P. N. Febrina Sinaga, "Pengaruh Pijat Bayi Terhadap Peningkatan Berat Badan Pada Bayi Umur 0-6 Bulan," *Indones. Heal. Issue*, vol. 1, no. 1, pp. 83–89, 2022, doi: 10.47134/inhis.v1i1.15.

L. Zhang *et al.*, "Changes over lactation in breast milk serum proteins involved in the maturation of immune and digestive system of the infant," *Data Br.*, vol. 7, pp. 362–365, 2016, doi: 10.1016/j.dib.2016.02.046.

N. Mudjihartini, "COMPARISON OF SERUM ALBUMIN LEVELS IN THE BREAST MILK OF BREASTFEEDING INFANTS AGED 1-3 MONTHS AND 4-6 COMPARISON OF SERUM ALBUMIN LEVELS IN THE BREAST MILK OF BREASTFEEDING INFANTS AGED 1-3 MONTHS AND 4-6 MONTHS," vol. 1, no. 2, 2023.

Nunuk Nurhayati, "BERAT BADAN BAYI USIA 0-6 BULAN YANG DIBERI ASI TANPA SUSU FORMULA DENGAN BERAT BADAN BAYI YANG DIBERI SUSU FORMULAo Title," *Semin. Publ. Ilm. Kesehat. Nas.*, vol. 1, no. Pemberian ASI, pp. 1–7, 2022, [Online]. Available: https://spikesnas.khkediri.ac.id/SPIKesNas/index.php/MOO/article/view/69

H. Rani, M. Yunus, S. Katmawanti, and H. E. Wardani, "Systematic Literature Review Determinan Pemberian ASI Eksklusif di Indonesia," *Sport Sci. Heal.*, vol. 4, no. 4, pp. 376–394, 2022, doi: 10.17977/um062v4i42022p376-394.

7. Yeliz Suna Dağ and Emriye Hilal Yayan, "The Effect of Circular and Oscillating Breast Massage on the Amount of Breast Milk Produced," *Mary Ann Liebest Publ.*, vol. 17 No.7, no. milk production, 2022, [Online]. Available: https://doi.org/10.1089/bfm.2021.0071

B. Lönnerdal, "Nutritional and physiologic significance of human milk proteins.," *Am. J. Clin. Nutr.*, vol. 77, no. 6, 2003, doi: 10.1093/ajcn/77.6.1537s.

S. Siregar and S. H. Ritonga, "Hubungan pemberian asi eksklusif dengan pertumbuhan berat

badan bayi 0-6 bulan di wilayah kerja puskesmas padangmatinggi kota padangsidimpuan tahun 2018," *J. Kesehat. Ilm. Indones.*, vol. 5, no. 1, pp. 35–43, 2020.

B. Liu, F. Gu, W. Ye, Y. Ren, and S. Guo, "Colostral and mature breast milk protein compositional determinants in Qingdao, Wuhan and Hohhot: maternal food culture, vaginal delivery and neonatal gender," *Asia Pac. J. Clin. Nutr.*, vol. 28, no. 4, pp. 800–811, 2019, doi: 10.6133/apjcn.201912_28(4).0017.

K. Y. W. Lok *et al.*, "Increase in weight in low birth weight and very low birth weight infants fed fortified breast milk versus formula milk: A retrospective cohort study," *Nutrients*, vol. 9, no. 5, pp. 1–9, 2017, doi: 10.3390/nu9050520.

B. P. Anita Rahmawati, "Analysis of Factors Affecting Breastmilk Production on Breastfeeding Working Mothers," *J. Ners Midwifery*, vol. 4, no. 2, 2017, [Online]. Available: https://europub.co.uk/articles/analysis-of-factors-affecting-breastmilk-production-on-breastfeeding-working-mothers-A-233992

R. A. Vass *et al.*, "Insulin, Testosterone, and Albumin in Term and Preterm Breast Milk, Donor Milk, and Infant Formula," *Nutrients*, vol. 15, no. 6, pp. 1–9, 2023, doi: 10.3390/nu15061476.

S. Verd, G. Ginovart, J. Calvo, J. Ponce-Taylor, and A. Gaya, "Variation in the protein composition of human milk during extended lactation: A narrative review," *Nutrients*, vol. 10, no. 8, pp. 1–10, 2018, doi: 10.3390/nu10081124.

A. Y. Y. 1 Alan G Lourenço 1, Marilena C Komesu 2, Geraldo Duarte 3, Luiz A Del Ciampo 1, Marisa M Mussi-Pinhata 1, "High Levels of Chemokine C-C Motif Ligand 20 in Human Milk and Its Production by Oral Keratinocytes," *Mary Ann Liebest*, vol. 12, no. 2, 2017, [Online]. Available: iebertpub.com/doi/10.1089/bfm.2016.0067?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed

C. Sánchez, L. Franco, P. Regal, A. Lamas, A. Cepeda, and C. Fente, "Breast milk: A source of functional compounds with potential application in nutrition and therapy," *Nutrients*, vol. 13, no. 3, pp. 1–34, 2021, doi: 10.3390/nu13031026.

L. W. Vidianti, "Kadar Protein Pada ASI (Air Susu Ibu) Dengan Variasi Waktu Penyimpanan Di Suhu Freezer (-15)," 2018.

D. Y. Yi and S. Y. Kim, "Human breast milk composition and function in human health: From nutritional components to microbiome and micrornas," *Nutrients*, vol. 13, no. 9, 2021, doi: 10.3390/nu13093094.

K. E. Lyons, C. A. Ryan, E. M. Dempsey, R. P. Ross, and C. Stanton, "Breast milk, a source of beneficial microbes and associated benefits for infant health," *Nutrients*, vol. 12, no. 4, pp. 1–30, 2020, doi: 10.3390/nu12041039.

F. Lockyer, S. McCann, and S. E. Moore, "Breast milk micronutrients and infant neurodevelopmental outcomes: A systematic review," *Nutrients*, vol. 13, no. 11, pp. 1–16, 2021, doi: 10.3390/nu13113848.

S. R. Ames, L. C. Lotoski, and M. B. Azad, "Comparing early life nutritional sources and human milk feeding practices: personalized and dynamic nutrition supports infant gut microbiome development and immune system maturation," *Gut Microbes*, vol. 15, no. 1, pp. 1–25, 2023, doi: 10.1080/19490976.2023.2190305.

J. Ahonen, K. Rankinen, M. Holmberg, S. Syri, and M. Forsius, "Application of the SMART2 model to a forested catchment in Finland: Comparison to the SMART model and effects of emission reduction scenarios," *Boreal Environ. Res.*, vol. 3, no. 3, pp. 221–233, 1998, doi: 10.1016/j.pcl.2012.10.002.Human.