



The Effect of Public Exercise on Increasing Breast Milk Production in Post Partum Mothers in Puskesmas Tanjung Tiram

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ABSTRACT

In Indonesia, there are many postpartum mothers who cannot exclusively breastfeed for 6 months due to decreasing milk production, causing mothers to give formula milk. Meanwhile, efforts to increase breast milk production can be obtained apart from using green vegetables, but also through Postpartum Gymnastics. This research is a quasi-experimental research method with the design used in this study using One group pre-test and post-test. The study was conducted at the Tanjung Tiram Health Center, Batu Bara Regency 2021. The study population was 30 people, with a sample of 15 respondents. The sampling technique used was non-probability sampling with incidental sampling. Data analysis used univariate analysis, bivariate analysis with Paired Sample t-test to determine differences in breast milk production before and after postpartum exercise. Based on the results of data analysis, t count = 18.52, with $df = 14$ and (5%) obtained t table = 2.042. It turns out that t count $>$ t table (18.52 $>$ 2.042), meaning that H_0 is rejected, and H_a is accepted. This means that there is an increase in breast milk production after postpartum exercise for postpartum mothers at the Tanjung Tiram Health Center, Batu Bara Regency 2021. It is recommended that health workers are expected to provide health education to postpartum mothers about the benefits and proper techniques of postpartum exercise so as to increase the coverage of exclusive breastfeeding.

Kata kunci:

Senam Nifas
Produksi ASI
Ibu Post Partum

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ABSTRAK

Di Indonesia terdapat banyak ibu nifas yang tidak dapat menyusui secara eksklusif selama 6 bulan dikarenakan produksi ASI yang semakin menurun sehingga menyebabkan ibu memberikan susu formula. Sedangkan upaya untuk memperbanyak produksi ASI selain diperoleh dengan memanfaatkan sayur sayuran hijau juga dapat melalui Senam Nifas. Penelitian ini adalah penelitian metode Quasi Eksperimental dengan desain yang digunakan dalam penelitian ini yaitu dengan menggunakan One group pretest and post test. Penelitian dilakukan di Puskesmas Tanjung Tiram Kabupaten Batu Bara 2021. Populasi penelitian sebanyak 30 orang, dengan jumlah sampel 15 responden. Teknik pengambilan besar sampel menggunakan teknik nonprobability sampling dengan acidental sampling. Analisis data menggunakan analisis univariat, analisis bivariat dengan Paired Sample t-test untuk mengetahui perbedaan produksi ASI sebelum dan sesudah diberikan senam nifas. Berdasarkan hasil analisa data didapatkan t hitung = 18.52, dengan $df = 14$ dan α (5%) didapatkan t table = 2.042. Ternyata t hitung $>$ t table (18.52 $>$ 2.042), berarti H_0 di tolak dan H_a diterima. Artinya terdapat peningkatan produksi ASI setelah dilakukan senam nifas pada ibu post partum di Puskesmas Tanjung Tiram Kabupaten Batu Bara 2021. Disarankan petugas kesehatan diharapkan memberikan pendidikan kesehatan kepada ibu nifas tentang manfaat dan teknik Senam Nifas yang tepat sehingga meningkatkan cakupan ASI Eksklusif.

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INTRODUCTION

Mother's Milk (ASI) is an incomparable liquid created by Allah to meet the nutritional needs of babies and protect them against possible disease attacks. The balance of nutrients in breast milk (ASI) is at the best level and has the best shape for a young baby's body (Baskoro, 2018). A mother often experiences problems in exclusive breastfeeding, one of the main obstacles is the production of breast milk that is not smooth. This will be a factor causing the low coverage of exclusive breastfeeding for newborns (Anggraini, 2019).

The results of a study written in the journal *Pediatrics* in 2006 as quoted by UNICEF, revealed that infants fed formula milk (baby milk) were 25 times more likely to die in the first month of life than babies who were exclusively breastfed (Perinasia, 2019). According to WHO data (2016), worldwide exclusive breastfeeding coverage is only around 36% during the 2007-2014 period. Based on the results of Riskesdas (2012), the coverage of exclusive breastfeeding in Indonesia is 54.3%, where the highest percentage is in NTB Province at 79.7% and the lowest is in Maluku Province at 25.2% (Ministry of Health RI, 2015).

Exclusive breastfeeding starting with early initiation of breastfeeding which is continued for 6 months and breast milk (ASI) is continued until the child is 2 years old, can help accelerate the achievement of goal number 4 Millennium Development Goals (MDGs), namely reducing the child mortality rate which means it is a target to reduce by two thirds the mortality rate of children under 5 years old (Basic Health Research, 2010).

During pregnancy there is an increase in the hormones prolactin, total estradiol, free estradiol, estrone, estriol, progesterone and placental lactogen, while dehydroepiandrosterone sulfate levels decrease. Estrogen (estradiol) and estrogen (estriol) prepare the development of the mammary glands for lactation (Hubertin, 2017).

In Indonesia, there are many postpartum mothers who cannot exclusively breastfeed for 6 months due to decreasing milk production, causing mothers to give formula milk. Meanwhile, efforts to increase breast milk production are not only obtained by using green vegetables, but also through Postpartum Gymnastics.

According to Cunningham (2016), most postpartum mothers are reluctant to move because they are worried that the movement will actually cause effects such as pain and bleeding. In fact, postpartum women who do not do postpartum exercise have a bad impact, such as bleeding or infection. There are still many postpartum mothers who are afraid to move so they use part of their time to sleep continuously.

The benefits of postpartum exercise are to improve blood circulation, body shape or posture, tighten muscle tone, especially uterine muscles in the process of uterine involution and help mothers to be more relaxed and fresh. Mothers who are fresh and have a strong body can help the hormones oxytocin and prolactin work optimally. Because hormones will work actively when blood circulation is smooth. Increased body metabolism can increase energy in the body to provide optimal breast milk (Danuatmaja, 2019).

Based on the profile of the Batu Bara District Health Office in 2017, it is known that the number of babies receiving exclusive breastfeeding is 45%. From these data, of course, this is still far from the exclusive breastfeeding coverage target set by the government, which is 80%. Based on an initial survey conducted by researchers at the Tanjung Oyster Public Health Center, there were 30 mothers who had babies of 6 months and who had been given formula milk under 6 months as

many as 20 people, with the reason that very little milk came out while breastfeeding.

Based on this description, it is stated that the post partum mother is still high who do not give breast milk to her baby, the researchers are interested in examining the effect of postpartum exercise on increasing breast milk production in post partum mothers in the Tanjung Tiram Health Center Work Area, Batu Bara Regency 2021.

METHOD

Research Design and Type

This study uses a quasi-experimental method with the design used in this study using One group pre test and post test.

Place and Time of Research

The location of the research will be carried out at the Tanjung Oyster Health Center, Coal Regency in 2021. The reason the researcher chose this location as the research location is because there has never been a research done on giving postpartum exercises to increase breast milk production.

For postpartum mothers and based on an initial survey conducted by researchers at that location, postpartum mothers who visited the Tanjung Oyster Health Center, Coal Regency, in 2021 the prevalence was an average of 30 visits. The location is one of the vehicles for the practice of researchers so as to facilitate the bureaucratic process for research permits and collecting research data and observations of researchers during practice. The time of this research starts from February 2021 to July 2021.

Population and Sample

The population in this study were all post partum mothers who visited the Tanjung Oyster Health Center in Coal Regency in 2021 from February to March with a total of 30 patients.

The sample is part of the number and characteristics possessed by the population. if the subject is less than 100 it is better to take all so that the study is a population study and if the subject is large it can be taken between 10-50% or 20-25% or more. In this study, sampling was carried out using the incidental method, which means that the sampling technique was based on anyone who coincidentally met a suitable researcher as a data source as many as 15 people (Arikunto, 2015).

Sampling technique is a sample selection process used in the assessment of the existing population so that the number of samples will represent the entire existing population. The sampling technique used is incidental sampling, which means that the sampling technique is based on anyone who coincidentally meets a suitable researcher as a data source with criteria for post partum mothers on days 4 to 7 (normal, SC, VE), the condition of the baby is healthy and the mother not exposed to infectious or contagious diseases. post partum mothers who visited the Tanjung Oyster Health Center in Coal Regency in 2021.

Data Collection Method

Primary data is data obtained from the first source, either from individuals or individuals such as interviews or the

results of filling out observation sheets. This study uses primary data where the researcher makes direct observations of postpartum mothers at the Tanjung Oyster Health Center, Coal Regency in 2021 by measuring breast milk production before (pre-test) and after (post-test) giving postpartum gymnastics to postpartum mothers. Observations were carried out by the researcher himself by providing an explanation to the respondent or the respondent's family about the purpose of the research and what treatment was given.

Secondary data is data obtained from a second source, from the research site. Secondary data was obtained from the Tanjung Oyster Health Center in the Coal Regency, seen at the post partum mother visit in February 2021..

Variables and Operational Definitions

The research variable is a concrete form of the conceptual framework that has been compiled in the research. So that a study was conducted on the research variables. In the research method there are two research variables, namely:

- a) The independent variable (Independent Variable) in this study is the provision of Postpartum Gymnastics.
- b) The dependent variable in this study is breast milk production.

Operational definition is operationally defining variables based on observed characteristics, thus enabling researchers to make observations or measurements carefully on an object. The operational definition is determined based on the parameters that are used as measurements in research, while measurement is a way in which variables can be measured and their characteristics determined (Sugiyono, 2017).

Data Measurement Method

Research instruments are tools that will be used for data collection. This research instrument can be in the form of: observation forms and other forms related to data recording and so on. Based on a study conducted on the existing problems, a research instrument was selected in this study using a questionnaire, and post partum mothers were asked to explain how many times the mother breastfeeds in a day.

Research Measurement Tools

The measuring instrument for milk production used by this researcher is the question of how many times the mother breastfeeds in a day.

Data Collection Procedure

Researchers measure milk production directly to the respondents by using questions. How to obtain data by measuring breast milk production before and after giving the intervention and then writing down the data into the observation sheet.

Data Processing

Data processing is one part of a series of research activities after data collection. Raw data, which needs to be processed so that it becomes information that can finally be used to answer research objectives. The data processing is carried out through the following stages:

- a) Editing (Editing)
 - Editing is an activity for checking and correcting the contents of a form or questionnaire. The questionnaires

returned by respondents were checked for completeness, especially the identity of the respondents and the answers given. Researchers do editing in the field so that if there is an error in the data, it can be corrected immediately.

- b) Coding
 - After all the questionnaires have been edited, then the "coding" or "coding" is carried out, namely changing the data in the form of sentences or letters into numeric data or numbers. Researchers mark each answer with a number and then enter it in the work table so that it is easier for readers.
- c) Data Entry or Processing
 - Entering data that has been coded with the help of computers.
- d) Cleaning (Data Cleaner)
 - If all data from each data source or respondent has been entered, it needs to be checked again to see the possibility of code errors and incomplete data, then corrections or corrections must be made.

Data Analysis

The purpose of univariate analysis is to explain or describe the characteristics of each variable under study in a simple manner which includes age, gender, respondent's occupation and breast milk production in the intervention group which is presented in the form of a frequency distribution table.

This analysis is needed to explain or find out whether there is a significant effect or difference between the independent variable and the dependent variable. Bivariate analysis was carried out after the characteristics of each variable were known. Data were analyzed for bivariate calculations in this researcher using: Paired Sample t-test to determine differences in breast milk production before and after postpartum exercise. With a degree of confidence of 95% a variable is said to be related or influential when the p value (0.05). From the results of statistical calculations with a probability value (p) with a level of error, if the value of p then the research hypothesis is rejected and if p then the research hypothesis is accepted.

RESULTS AND DISCUSSION

Results

After conducting research on the Effect of Postpartum Gymnastics on Increasing Breastmilk Production in Post Partum Mothers at Tanjung Tiram Health Center, Batu Bara Regency 2021, the data obtained are as follows:

Univariate Analysis

Frequency Distribution Based on Breast Milk Production Before Postpartum Exercises for Post Partum Mothers at Tanjung Tiram Health Center, Batu Bara Regency 2021 (table 1).

Table 1.
Frequency Distribution

Breast milk production	Total	
	n	%
Breast milk production		
Baby BAK 4 x	7	46.7
Baby BAK 5 x	8	53.3
Total	15	100
Breastmilk Production Quantity		

Baby BAK 6 x	5	33.3
Baby BAK 7 x	7	46.7
Baby BAK 8 x	3	20.0
Total	40	100

Based on Table 1. It can be seen that the distribution of the frequency of breast milk production before postpartum exercise was carried out from 15 respondents (100%), the majority of 5x BAK babies amounted to 8 respondents (53.3%),

and the minority of 4x BAK babies amounted to 7 respondents (46.7%). the distribution of the frequency of breast milk production after postpartum exercise is from 15 respondents (100%), the majority of 7x BAK babies are 7 respondents (46.7%), and the minority of 8x BAK babies are 3 respondents (20%).

Paired Samples Test

	Paired Differences				t	df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
Pair 1 ProduksiASI1 - ProduksiASI2	-2.333	.488	.126	-2.604	-2.063	-18.520	14	.000

Table 3
The Effect of Postpartum Gymnastics on Increasing Breast Milk Production

Variabel	Mean	SD	SE	P Value	n
Breastmilk Production Quantity Before	4.53	0.51	0.13	0.000	15
after	6.87	0.74	0.19		

The average milk production in the measurement before the postpartum exercise was performed was 4.53 with a standard deviation of 0.51. In the measurement after postpartum exercise, the average milk production was 6.87 with a standard deviation of 0.19. It can be seen that the mean difference between measurements before and after postpartum exercise is 2,333 with a standard deviation of 0.488. The results of the statistical test obtained a value of 0.000, so it can be concluded that there is a significant difference between breast milk production before and after postpartum exercise for postpartum mothers at the Tanjung Tiram Health Center, Batu Bara Regency 2021.

DISCUSSION

The Effect of Postpartum Gymnastics on Increasing Breast Milk Production in Post Partum Mothers at Tanjung Tiram Health Center, Batu Bara Regency 2021

Based on the results of data analysis, t count = 18.52, with df = 14 and (5%) obtained t table = 2.042. It turns out that t count > t table (18.52 > 2.042), meaning that Ho is rejected and Ha is accepted. This means that there is an increase in breast milk production after postpartum exercise. Postpartum exercise is a form of early ambulation for postpartum mothers, one of which is to facilitate the involution process. In addition, postpartum gymnastics functions to improve blood circulation so that the hormones oxytocin and proactin are able to work optimally in the alveoli area.

According to Handerson and Cristin (2005), most postpartum mothers are reluctant to move because they are worried that the movement will cause effects such as pain and bleeding. In fact, postpartum women who do not do postpartum exercise have a bad impact, such as bleeding or infection. There are still many postpartum mothers who are afraid to move, so they use some of their time to sleep continuously. Postpartum exercise or postnatal exercise is

better done immediately after delivery (with the mother's condition is healthy, which is usually six hours after delivery).

In his research, Saufika applied postpartum gymnastics exercises in 10 steps. (1) the position of the body supine and relaxed, then do abdominal breathing. (2) supine posture with both legs straight ahead, raise both hands straight up until the palms meet then lower. (3) Lying relaxed with the position of the hands beside the body and knees bent, slowly lift the buttocks and then lowered. (4) the position of the body lying down with the left hand beside the body, right hand on the stomach and bent knees, lift the head until the chin touches the chest while contracting the muscles around the anus and contracting the abdominal muscles. (5) sleep on your back, legs straight, together with lifting your head until your chin touches your chest, your right hand reaches your bent left knee. (6) supine sleeping position, legs straight and hands beside the body, then knees bent towards the stomach 90 degrees. (7) sleep on your back with your legs straight, hands beside your body, lift your legs together in a straight line while contracting your stomach and then lower them slowly. (8) nungging position, breathe through abdominal breathing, wrinkle the anus. lying position, legs straight, hands beside the body, raise both legs straight 90 degrees and then lower them. (10) sleeping on your back with straight legs, both palms placed behind your head and then getting up to a sitting position (Yetti, 2010).

The benefits of postpartum exercise are to improve blood circulation, body shape or posture, tighten muscle tone, especially uterine muscles in the process of uterine involution and help mothers to be more relaxed and fresh. Mothers who are fresh and have a strong body can help the hormones oxytocin and prolactin work optimally. Because hormones will work actively when blood circulation is smooth. Increased body metabolism can increase energy in the body to provide optimal breast milk (Diane and Cooper, 2019).

The oxytocin hormone will reach the alveoli and then will affect the intrinsic muscles of the breast so that contractions occur in these intrinsic muscles. Contractions can occur because of the triggering factors of energy metabolism. This

energy metabolism is formed by pyruvic acid derived from glucose which is flowed from the circulatory system through arterial capillaries (Verralls, 2018).

Intrinsic muscle contractions which will affect the production of breast milk in the mammary glands where this milk production requires metabolic materials to be converted into metabolic waste. The rest of this metabolism can be partially absorbed through the veins and partly can be absorbed through the lymph vessels and then into the lymph system and in the end both will empty into the superior vena cava. From the superior vena cava, this flow will continue to the cardiovascular system which flows through the arteries into the circulation system and then returns to flow metabolic materials to assist the production of breast milk in the mammary glands, causing the release of breast milk in the lactiferous ducts (Verralls, 2016).

In metabolic processes in the body, oxygen and glucose are needed which must be available quickly in the alveoli cells. The protein consumed by the mother cannot be processed perfectly when the blood circulation is not smooth. Therefore, postpartum exercise is very influential on the smooth circulation of blood, which will accelerate the process of aerobic metabolism and accelerate the production of breast milk along with the hormone oxytocin.

Verralls Sylvia. 2016. *Anatomi dan Fisiologi Teraan dalam Kebidanan*. Jakarta

CONCLUSIONS AND SUGGESTIONS

The conclusion in this study is that there is a significant increase between breast milk production before and after postpartum exercise for post partum mothers at Tanjung Tiram Health Center, Batu Bara Regency 2021 with a t count > t table ($18.52 > 2.042$).

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