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The Effect of Childbirth Gymnastic Towards Physiological Change on Post-Partum Mother Day I-III in Balikpapan Maternity Clinic

Sonya Yulia^{1(CA)}, Nina Mardiana²^{1(CA)}Midwifery Department, Health Polytechnic of East Kalimantan, Indonesia; sonyayuliasahetapi@gmail.com
(Corresponding Author)²Midwifery Department, Health Polytechnic of East Kalimantan, Indonesia; mail-b@example.com

ABSTRACT

Maternal Mortality Rate in the world is more than one millions every year; the most significant maternal mortality on childbirth of 49.125% and 50% occurs in the first 24 hours. It can be prevented through childbirth gymnastic because it can help accelerating the physiological change like uterine involution, lochea, defecation, and urination, and breast milk production. This research aims to comprehend the effect of childbirth gymnastic towards post-partum maternal physiological change day I-III. This experimental research used randomized two group design. Samples were selected by purposive sampling (30 for experiment group and 30 for control group). The research instruments were observation check list and interview guide. Data were presented in the form of mean, mode and standard deviation, then analyzed by using independent sample t-test. There was an effect of childbirth gymnastic on uterine involution (p-value 0.000); there was an effect of childbirth gymnastic on lochea change (p-value 0.000); there was childbirth change on defecation change (p-value 0.000) and there was an effect of childbirth gymnastic on breast milk production (p-value 0.000).

Keywords: Childbirth gymnastic, Physiological change

INTRODUCTION

Background

Giving birth is something that is extremely complex because in one side, happiness happens before childbirth but on the other side, risks that possibly threaten the safety of mother and child. Therefore, the control towards pregnant mother in childbirth is highly needed⁽¹⁾.

The right handling will help mother in facing giving birth and decrease the risks after giving birth that may happen during childbirth period. The physiological changes in childbirth period can be helped through childbirth gymnastic. Childbirth gymnastic according to Resder is particular body movements done by mother after giving birth until the childbirth gymnastic ends addressed to help curing the pelvis muscle power, tightening stomach muscle, forming strong body attitude and preventing complication⁽²⁾. Wiknjosastro explains that childbirth gymnastic is done to return the changes that happened during pregnancy period, giving birth can be like usual. The benefits of childbirth gymnastic is to return the pelvis muscle power like before pregnancy, tighten stomach and perineum muscles, form strong body attitude, and prevent complication. The complication that can be prevented as early as possible is post-partum bleeding⁽¹⁾.

The best childbirth gymnastic done after giving birth, but there are still many maternal childbirth who do not practice childbirth gymnastic. There are three reasons of maternal childbirth do not practice childbirth gymnastic after giving birth. First, because the maternal childbirth do not know how to practice childbirth gymnastic; Second, because they are highly happy and what they think is only the newly baby-born, and; Third, because they are sick. Childbirth gymnastic is better to do in 24 hours after giving birth regularly every day after 6 hours of normal giving birth and 8 hours after maternal caesarean section and they are allowed to practice childbirth gymnastic⁽³⁾.

When practicing childbirth gymnastic, stomach muscle contractions occur that will help the uterine involution process. The fast involution will prevent the bleeding in scale IV that may affect on pain and

maternal mortality. The mortality rate due to bleeding after giving birth in Indonesia is still high which is of yaitu 5.1% from giving birth numbers ⁽⁴⁾.

Coad and Dunstall explain that the late involution process that can cause lochea releasing continuously, pervaginam bleeding without pain and post-partum bleeding are those who cause mortality. The bleeding that still occurs continuously is also dangerous because bleeding is one of the main cause of maternal mortality in perinatal period which is about 5-15% from all childbirth. The most significant cause from post-partum bleeding is of 50-60% because of weakness and there is no uterine contraction uterus ⁽⁵⁾.

The research result conducted by Larson et al that conducted survey randomly regarding the effect of childbirth gymnastic for maternal childbirth on 1003 American women admitted that after joining childbirth gymnastic program with regular training, they experienced stronger creasing on womb. Besides, they also experienced weight loss for six weeks after giving birth. In addition, in the study of 1432 maternal childbirth in Sweden that practice childbirth gymnastic, it is found that majority of 71% of the women experience good body metabolism and faster physical cure ⁽⁶⁾.

The research conducted by Nurhidayati regarding childbirth gymnastic with elimination on pregnant women find the result showing that there is a relation between childbirth gymnastic and elimination smoothness (defecation) on maternal childbirth. Hence, the research concludes that childbirth gymnastic will help the smoothness of defecation after giving birth ⁽⁷⁾.

Nilawati Maternity Clinic is one of the clinics in Balikpapan with giving birth total monthly is 30 childbrths in average. Nilawati Maternity Clinic conducts childbirth gymnastic and adheres posters about childbirth gymnastic temporarily in Maternity Clinic.

The initial study conducted by the researcher that is done in Nilawati Maternity Clinic in February 20-21 2017 towards 6 post-partum women obtain the interview result that all post-partum women practice childbirth gymnastic because it is included into maternal childbirth service in Nilawati Maternity Clinic; while Asih Nilawati Maternity Clinic of Balikpapan does not practice childbirth gymnastic; only posters about childbirth gymnastic adhered on the wall.

Based on the explanation above, the researcher is interested to conduct a research regarding to the effect of childbirth gymnastic towards physiological change on post-partum mother Day I-III in Nilawati Maternity Clinic and Asih Maternity Clinic in 2017.

Objective

Based on the explanation above, the researcher is interested to conduct a research regarding to the effect of childbirth gymnastic towards physiological change on post-partum mother Day I-III in Nilawati Maternity Clinic and Asih Maternity Clinic in 2017

METHODS

The type of this research was quasi experimental study, with randomized two group design. Samples were selected by purposive sampling (30 for experiment group and 30 for control group). The research instruments were observation check list and interview guide. Data were presented in the form of mean, mode and standard deviation because the type of data were scale (numerical)⁽⁸⁾, then analyzed by using independent sample t-test.

RESULTS

Normality Test (Shapiro Wilk Test)

Table 1. Table for normality test results

Measurement	Significance	Conclusion
Experiment Involution	0.512	Normal
Control nvolution	0.133	Normal
Experimental Lochea	0.077	Normal
Control Lochea	0.114	Normal
Experimental Defecation	0.055	Normal
Control Defecation	0.062	Normal
Experimental Urination	0.299	Normal
Control Urination	0.400	Normal
Experimental Breast Milk	0.023	Normal
Control Breast Milk	0.190	Normal

It can be concluded that all data distributed normally and could be continued to hypothesis testing.

Descriptive Analysis

Table .2. The score value of physiological change of post-partum mother of experimental group with childbirth gymnastic and control group with early mobilization

Variables	Group	Mean	Mode	Standard Deviation	Standard Error	Min-Max
Uterine Involution	Experimental	3.63	3.8	0.3827	0.0699	2.8-4.3
	Control	3.05	3.0	0.5374	0.0981	2.0-4.1
Lochea	Experimental	1.17	1	0.379	0.069	1-2
	Control	1.63	2	0.490	0.089	1-2
Defecation	Experimental	1.33	1	0.758	0.138	0-3
	Control	2.50	2	0.731	0.133	1-4
Urination	Experimental	2.63	3	0.556	0.102	1-3
	Control	1.67	2	0.479	0.088	1-2
Breast Milk Production	Experimental	5.63	5	1.066	0.195	3-7
	Control	4.23	4	0.858	0.157	3-7

Hypothesis Testing

Table 3. The difference between physiological change of post-partum mother of experiment group with childbirth gymnastic in Nilawati Maternity Clinic of Balikpapan and control group with early mobilization in Asih Maternity Clinic of Balikpapan

Variables	Group	Mean diff.	SE diff.	CI 95%	t	P-value
Uterine Involution	Experimental	0.6800	0.0566	0.0566-0.7934	12.088	0.000
	Control					
Lochea	Experimental	-0.467	0.133	0.693 - 0.240	-4.125	0.000
	Control					
Defecation	Experimental	-0.167	0.192	1.552- 0.782	-6.067	0.000
	Control					
Urination	Experimental	0.967	0.134	0.698-1.235	7.211	0.000
	Control					
Breast Milk Production	Experimental	1.400	0.250	0.900-1.900	5.602	0.000
	Control					

DISCUSSION

The Effect of Childbirth Gymnastic towards Uterine Involution

Based on the research data, it reveals that there is an average difference of uterus fundus height of 0.6800 cm. This shows that the change of uterus fundus height in experimental group is better than the height change of uterus fundus of control group in which the average height of uterus fundus almost reaches 4 cm under symphysis.

This research result is in line with the research conducted in America on 50 post-partum women that practice childbirth gymnastic after giving birth showing that uterine involution process occurs faster and really helps in breast milk production release ⁽⁹⁾.

It is also in line with the research conducted by Trimawarti that conducted a research about the effect of childbirth gymnastic towards uterine involution on post-partum women day I-III which found that post-partum women that got childbirth gymnastic treatment well have height decrease of uterus fundus faster. It means that there is an effect of childbirth gymnastic towards the height of uterus fundus ⁽¹⁰⁾.

A faster involution process also occurs in control group which is the mother given early mobilization. It explains that early mobilization also accelerates the curing of involution process but its change is not as quick as possible if the mother practices childbirth gymnastic. In uterine involution control group in maternal childbirth, it

is influenced by other factors which have significant role. Pada kelompok kontrol involusio uterus pada ibu nifas dipengaruhi juga oleh faktor-faktor lain seperti paritas seperti yang dikemukakan oleh Mochtar yang menyatakan bahwa faktor paritas juga memiliki peranan yang cukup penting. Maternal primipara of uterine involution process occurs faster while the more children she has, the more decreasing the muscle release and elasticity level. Besides, there is a mother with uterine involution which is not that faster. It is also caused by giving factor which takes long time as expressed by Mochtar that explains that longer giving birth will give fatigue effect on mother which eventually it will make the muscles lose energy⁽¹⁰⁾.

The result of this research proves that the involution process can be faster if post-partum mother is helped by practicing childbirth gymnastic as expressed by Coad and Dunstall that explain that longer involution pricess can cause lochea release continuously, pervaginam bleeding without pain and post-partum bleeding that leads to death⁽⁵⁾.

Based on the research result, it is seen that post-partum mother basically does not ignore to practice childbirth gymnastic if it becomes the care procedure of maternal childbirth, as expressed by Syariah that explain that generally the mother after giving birth is afraid of moving too much; the mother is worried that the movements she does cause unwanted effects, whereas if the giving-birth mother does early ambulation, the mother can smooth the occurrence of uterine involution process⁽¹²⁾.

Childbirth gymnastic is very recommended to do after giving bith, but there are still maternal childbirth who do not practice childbirth gymnastic. There are three reasons of maternal childbirth do not practice childbirth gymnastic after giving birth. First, because the maternal childbirth do not know how to practice childbirth gymnastic; Second, because they are highly happy and what they think is only the newly baby-born, and; Third, because they are sick. Chilbirth gymnastic is better to do in 24 hours after giving birth regularly every day after 6 hours of normal giving birth and 8 hours after maternal caesarean section and they are allowed to practice childbirth gymnastic⁽³⁾.

This research result is in line with the research conducted in America on 50 post-partum women that practice childbirth gymnastic after giving birth showing that uterine involution process occurs faster and really helps in breast milk production release⁽¹⁵⁾.

The Effect of Childbirth Gymnastic towards Lochea

The research result reveals that there is a significant effect between childbirth gymnastic and lochea change on post-partum mother in Midwife Maternity Clinic. This research proves that the theory expressed by Mochtar that explains that childbirth gymnastic can accelerate the curing of physiological process of post-partum mother, one of them is lochea⁽¹³⁾.

It is strengthened by the research data which show that in experimental group, the highest score is 2 while the lowest score is 1. It explains that after doing childbirth gymnastic, there is a quite big lochea change. The normal physiological conition is as expressed by Mochtar that explain that rabas uterus that comes out after the baby is born which is frequently known as lochea, firstly it is red, then it changes to be dark red or brown red. The flow that comes out must be decreasing more⁽¹⁰⁾.

The research data finds that not all lochea condition of post-partum mother that has practiced childbirth gymnastic has same betterment. It is also same as that not all post-partum mother given early mobilization has bad lochea. It is because there is the effect of uterus involution process, post-partum mother with uterus involution process which is faster, her lochea condition is better than the mother who has late uterus involution.

The result of this research proves that approximately the lochea condition is influenced by involution process; if the involution process is faster, then its lochea change becomes better. Late involution process can make lochea release continuously, pervaginam bleeding without pain and post-partum bleeding that leads to death⁽⁵⁾.

The Effect of Childbirth Gymnastic towards Defecation

Based on the research data, it can be seen that in experimental group, childbirth gymnastic is done in which its defecation in average is 1.33 and defecation in control group in average is 2.5. It shows that there is an average change of defecation of 0.467 cm. It explains that the elimination change in form of defecation in experiment group is better than the elimination change in control group in which the defecation problem is more faced by control group than experimental group.

In the early childbirth before practicing childbirth gymnastic, the most happening problem experienced by maternal childbirth is the difficulty to start and finish defecation, strain hard when defecation, cold sweaty body, feces mass which is hard and difficult to defecate, the feces is hard, hotter, much darker, and its number is less than usual, the feeling is not good when defecation, painful in the rectum area when defecation, and painful on stomach when defecation. After doing childbirth gymnastic, the problem that is experienced by maternal

childbirth becomes less which are feces mass which is hard and difficult to defecate, the feces is hard, hotter, much darker, and its number is less than usual, the feeling is not good when defecation.

This present research proves that the theory expressed by Novia which explains that after giving birth, the mother frequently experiences constipation. It is caused by the intestinal muscle tone decreases during childbirth process and the initial period of after partum process, diarrhea before giving birth, enema before giving birth, lack of eating, dehydration, hemorrhoid or laceration of giving birth way. The digestive system in childbirth period needs time to return normally. Some ways to do in order that the mother can defecate regularly is with childbirth gymnastic⁽¹³⁾. Hard feces data is caused by the lack of food which has fiber in maternal childbirth as expressed by Diana that states that constipation on post-partum mother can occur in the initial period of childbirth which is caused by the lack of food material in post-partum mother during giving birth and control in defecation phase. Constipation causes psychological disturbance on post-partum mother which influences the smooth production of breast milk. Besides, longer constipation also can cause the occurrence of hemorrhoid on post-partum mother⁽¹⁴⁾.

It is strengthened by the research data which show the score range of pre-test is 2 and the score range of post-test is 3. It explains that after doing childbirth gymnastic, there is a problem similarity regarding defecation. Although research data reveals that defecation experiences significant change but the change of every individual is not same. The data reveal that the post-partum mother that experiences significant defecation change, it is because there is an effect of other factor as expressed by Ambarwati that explains that defecation difficulty in maternal childbirth can be caused by lack of fluid; the other factor is the habit of resist defecation and psychological condition in which the mother feels worried with the stitching wound so that attempting to resist defecation⁽¹⁵⁾.

The Effect of Childbirth Gymnastic towards Urination

Based on the research data, it can be seen that in experimental group given childbirth gymnastic, the average score of urination is 2.63 and control group has average score of urination becomes 1.67. It shows that there is a difference of score of 0.967 between experimental group and control group. In the beginning of childbirth gymnastic and early mobilization, the most happening problem experienced by the maternity childbirth is not yet urinating in 8 hours and its number is less but after doing childbirth gymnastic, the mother urinates < 8 hours with much number. It explains that childbirth gymnastic is effective to prevent urination problem on maternal childbirth.

The research result reveals that there is a significant effect between childbirth gymnastic and urination on post-partum mother in Nilawati Maternity Clinic of Balikpapan which can be seen from p value 0.000 and $t_{\text{count}} 7.211 > t_{\text{table}} = 2.002$.

This research proves that the theory expressed by Diana that explains that childbirth gymnastic also can help elimination disturbance like urination. If in 8 hours, the post-partum mother still cannot urinate yet or once urinate but not exceeding 100 cc, then treatment is needed like catheter application. The mother that cannot urinate will get urethritis, cystitis, and pyelitis. Resisting urination can cause the occurrence urine dam; consequently disturbance occurs in womb contraction so that vaginal discharge is not smooth. If urination difficulty occurs, urine retention may occur⁽¹⁴⁾.

The Effect of Childbirth Gymnastic towards Breast Milk Production

Based on the research data, it can be seen that in experimental group given childbirth gymnastic, the average score of breast milk production is 5.63 and in control group given early mobilization, the average score of breast milk production becomes 4.23. It shows that there is a significant change in which the average score of breast milk production is 1.400; this shows that breast milk production in experimental group is better than the breast milk production in control group. In the beginning of childbirth before being given childbirth gymnastic, the problem that is frequently faced by maternal childbirth is the breast feels tight but the mother is not able yet to breast; however after doing childbirth gymnastic, there is a change in which before it, the breast feels tight, the breast filled soon, the breast is swollen if not breast, the mother breast is not directly deflated after breastfeeding, the breast is still leak after breastfeeding, and after giving the treatment, the problems become decrease especially in experimental group.

The research result reveals that there is a significant effect between childbirth gymnastic and the smooth production of breast milk in post-partum mother in Nilawati Maternity Clinic that can be seen from p-value 0.000 and $t_{\text{count}} 5.602 > t_{\text{table}} = 2.002$.

The research result of Savitri and Suryanti⁽¹⁶⁾, it is found that there is a significant change of breast milk production increase to support exclusive breast milk before and after doing Childbirth Gymnastic in post-partum mother. Childbirth gymnastic can make the blood circulation better and muscle contraction around mammary gland, regular practice on childbirth period after giving birth increases milk production because after giving birth,

estrogen hormone and progesterone hormone decrease. Then, prolactine hormone will form mammae gland that contains milk. With the help of oxytocin hormone, mammae gland contracts so that milk is out and childbirth gymnastic helps this natural process.

The research result explains that childbirth gymnastic is proven to give significant effect towards the increase of breast milk production with score difference in average is 1,400. According to the researcher, the post-partum mother that practices childbirth gymnastic can help the smooth production of breast milk but the practice of childbirth gymnastic must be supported by the seriousness of the mother in practicing it although childbirth gymnastic is highly good to help the physiological change like the smooth production of breast milk.

CONCLUSION

This research can be made as the reference to conduct next research by taking different variable and adding sample numbers in order that the research result can be more representative.

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