Exercise in Pregnancy Facilitate The Delivery Process of Labor in Cutnyak Dhien Hospital

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Abstract: During pregnancy, efforts to maintain and improve maternal require extra attention so that the health condition of the mother is maintained or at least the same as health condition berfore pregnancy. The use of exercise in pregnancy is reported to reduce the incidence of caesarean section. Pregnant exercise can also reduce the risk of stress a pain during chilbirth. In addition, the core of exercise in pregnancy itself in practicing breathing berfore labor. The purpose of this study was to determine the effect of exercise in pregnancy on the smooth delivery process and determine how much influence the exercise in pregnancy on the smooth delivery process. This research belongs to the type of experimental research and used is *Quasi Experimental* design which is an experimental study where the determination of the research object is not carried out randomly or also known as Non-randomized pre test-post test control group design. The object of research is divided into 2 groups, namely the Treatment Group (TG, n= 8) and the Control Group (CG, n= 8). The determination of the research sample was carried out using a consecutive sampling technique. The location of this research is the Cutnyak Dhien Hospital. The results showed that there was a significant difference in the average length of the delivery process for pregnant women who did exercise in pregnancy with those who did not do exercise in pregnancys (P-value < 0,05). Exercise in pregnancy can help the delivery process of pregnant women so that the mother and child are safe.
Keyword: Pregnancy, Exercise, Labor

Introduction

The maternal mortality rate according to the Indonesian Health Demographic Survey (IDHS) has increased from 228 per 100,000 live births to 359 per 100,000 live births. The direct causes of maternal death are bleeding 60-70%, eclampsia 10-20%, and infections 10-20% (KEMENKES, 2018). One of the causes of bleeding is uterine atony as a result of weakness of uterine contractions or maternal weakness, whereas sepsis is the impact of prolonged labor. One effective health intervention to prevent maternal illness and death is prenatal care (Naviri, 2011).

During pregnancy efforts to maintain and improve maternal health require extra attention so that the health condition of the mother is maintained or at least the same as the health condition before pregnancy (Dayana *et al.,* 2019). Matters that require attention include nutrition, lactation preparation, regular pregnancy checkups, improved personal and environmental hygiene, sexual life, rest and sleep, stopping habits that are detrimental to health and affecting the fetus (Such as smoking), carrying out movements and exercise pregnant (Obara & Sobel, 2014). There are efforts aimed at maintaining the health of the mother and the fetus, besides that it is also intended to prepare for childbirth and childbirth such as preparation for lactation and exercise in pregnancys (Salvesen *et al.,* 2014).

Five factors influence the delivery process (5P), namely Passage (Pelvic size and muscles of the birth canal), Power (His and straining forces), Passanger (Fetus, placenta, and amniotic fluid), Psychological mother, and Helper (KEMENKES, 2016).These five factors must work synergistically. If one of them experiences interference it will hamper the labor process and only strength (His and straining) can be manipulated from outside without endangering the fetus in the labor process (Agnesti & Hendrik, 2009). Abnormalities in energy factors can be caused by the occurrence of his that is not in accordance with the phase (Insertia), his irregular, there is no coordination and synchronization between the contractions of the parts (Inkoordinate) and his too strong and too frequent so that there is no relaxation of the uterus (Tetanik). The foregoing can cause labor congestion, if not treated immediately it will cause fetal distress and uterine rupture. Efforts that can be done by pregnant women so that labor can run smoothly can be controlled by doing exercise in pregnancy (Imdad & Bhutta, 2012). Exercise in pregnancy is not a strange thing, but it does not mean all understand and realize that exercise in pregnancy is useful for pregnant women. Pregnant exercise can also reduce the risk of stress and pain during childbirth.In addition, the core of exercise in pregnancy itself is practicing breathing before delivery. So that just before the birth of the baby, the mother can relax and master the situation (Rachel *et al.*, 2020)

The benefits of routine exercise in pregnancys are not only for the comfort of the mother during pregnancy, but also provide many benefits in childbirth (Jardine, 2020). Benefits of exercise in pregnancy during the first stage can reduce the incidence of prolonged labor, reduce pain and reduce maternal anxiety in the face of childbirth because routine exercise in pregnancy exercises can affect the elasticity of muscles and ligaments in the pelvis, regulate breathing techniques and improve posture (Obara & Sobel, 2014).The benefits of exercise in pregnancy during the second stage can help mothers undergo normal labor with a normal length of labor as well, because in exercise in pregnancy the mother has been guided how to push and regulate breathing, regulate contractions and relaxation, and train the flexibility of the abdominal wall muscles and pelvic floor so as to facilitate labor process (Artal, 2016). During labor stage III and stage IV exercise in pregnancy is very useful in preventing excessive bleeding, because it can improve the ability to coordinate the strength of uterine muscle contractions (Gatford, 2018).

Methods

This research is experimental research and uses a *Quasi-Experimental* design, which is an experimental study where the determination of the research object is not carried out randomly or also known as Non-Randomized Pretest-Posttest Control Group Design. The object of research is divided into 2 groups, namely the treatment group and the control group (Surya, 2011).

The determination of the research sample was carried out using a consecutive sampling technique. The location of this research is the Cutnyak Dhien Hospital. The number of samples in this study were 16 pregnant women with a ratio 1 : 1, which consisted of a total sample of the case group was 8 pregnant women and the control group 8 pregnant women. The researchers compared 2 groups of maternity women in which one group of pregnant women who were given treatment in the form of a given exercise in pregnancy from the age of pregnancy entered 32 weeks until before delivery with a dose of exercise 1-2 times a week and one group as control where pregnant women were not given exercise. The statistical test in this study used the sample dependent t-test and is presented in the form of a frequency table.

Result

The number of samples in this study was 16 people consisting of 2 groups, the first group of mothers who did not do exercise in pregnancy and the second group of mothers who participated in the exercise in pregnancys. Exercise in pregnancy is carried out 14 times over 7 weeks.

Table 1. Respondent Characteristics

No	Respondent Characteristics	Total Samples		Stage of Labor							
				Stage 1				Stage 2			
				1-6 Hours		7-13 Hours		0.5-1 Hours		2 Hours	
		n	%	n	%	n	%	n	%	n	%
1	Maternal age group										
	• 25-30 years	12	75	5	41.7	7	58.3	6	50	6	50
	• 31-35 years	4	25	2	50	2	50	3	75	1	25
2	Mother of Parity										
	• 1 orang	2	12.5	1	50	1	50	1	50	1	50
	• 2 orang	10	62.5	5	50	5	50	4	40	6	60
	• 3 orang	4	25.0	1	25	3	75	4	100	0	0
3	Mother of education	12	75	7	58.3	5	42.7	7	58.3	5	42.7
	• Low	4	25	3	75	1	25	2	50	2	50
	• High										
4	Gestational age										
	• 30-33 weeks	8	50	3	37.5	5	63.5	3	37.5	5	63.5
	• 34-38 weeks	8	50	4	50	4	50	6	75	2	25

Table 2. Differences in the average length of delivery in pregnant women

Exercise In Pregnancy	Mean	Standard Deviation (SD)	Standard Error (SE)	P-Value	n
Group of pregnant women who do pregnancy exercises	4.50	1.93	0.420	0.000	8
Group of pregnant women who do not do pregnancy exercise	10.63	1.18	0.681		8

The average length of time for mothers to do exercise is 4.50 with a standard deviation of 1.93 hours, while for mothers who did not do exercise in pregnancy, the labor process was 10.63 hours with a standard deviation of 1.18. The results of the statistical test showed that the value of P = 0.000, which means that at 5% alpha there is a significant difference in the average length of delivery hours for pregnant women who do exercise in pregnancys with those who do not do exercise in pregnancys.

Discussion

Respondents in the pregnant exercise group with the characteristics of age 25-30 years were 7 pregnant women and age 31-35 years 1 pregnant woman. The average parity of pregnant women who do exercise in pregnancy is 2 people. The average length of delivery for pregnant women who do exercise in pregnancy significantly the labor process does not last long both at stage I and stage 2. In the group of pregnant women who do regular exercise in pregnancy 1-2 times a week. Pregnant women who do exercise in pregnancy have an average length of labor of 4.50 hours, while pregnant women who do not do physical exercise have an average length of labor of 10.63 hours. It is concluded that exercise in pregnancy is very helpful in the delivery process of pregnant women. This is by the results of the statistical test, the value of P = 0.000, which means that at 5% alpha there is a significant difference in the average length of labor for pregnant women who do exercise in pregnancy with pregnant women who do not do exercise in pregnancys.

The results of study found that nutrition to the fetus through the placenta is very important for fetal development and growth. Exercise in pregnancy is very helpful in the transportation of nutrients to the placenta. Pregnant women who routinely do exercise in pregnancys can facilitate exercise in pregnancy and affect the transportation of nutrients to the placenta (Mangwiro *et al.,* 2019*).* Mirea's research suggests that pregnant women who attend pregnancy classes three times a week affect the ability to make correct and effective contractions in preventing primary complications in pregnant women (Mireia Pelaez *et al.,* 2013). Another study conducted on women suffering from Diabetes Mellitus found that exercise and diet of pregnant women affect metabolic dysfunction and the microbiome which has an impact on the health of mothers and their offspring in the long term (Gustafsson *et al.,* 2016). During childbirth, it takes energy to push to be able to open the uterine door during contractions, without the force of pushing the child cannot be born safely.[19] Exercise in pregnancy trains pregnant women to gather energy during childbirth and is carried out on pregnant women in the third semester (Petrov *et al.,* 2016).

Conclusion

Exercise in pregnancy can train pregnant women to gather energy during childbirth so that the labor process is not too long both during stage 1 and period 2. Exercise in pregnancy can be done 1-2 times a week. The results of the statistical test showed that the value of P = 0.000, which means that at 5% alpha there is a significant difference in the average length of delivery hours for pregnant women who do exercise in pregnancys with those who do not do exercise in pregnancys.

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