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## Effect Difference of Kegel Exercise and Sough Relaxation Exercise to Decrease Perineum Pain of Post-Partum Mother

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### Abstract

The postpartum period begins after the birth of the placenta and ends when the uterus returns as before pregnancy, which lasts for 6 weeks. In addition, the experience of perineum pain due to lacerations will also affect the activities of daily life. This research aimed to know the difference of influence of kegel exercises and sough relaxation exercises in the decrease of perineum pain in postpartum mother, using two group pre test-post test design. The research conducted at Sudiang Raya Community Health Center Makassar with population were all post partum mother and sampling technique was done by purposive sampling then obtained the number of samples as much as 20 respondents. Respondents divided into 2 groups, group 1 was 10 respondents who did kegel exercises and group 2 that was 10 respondents who did sough relaxation exercises. Data analysis used Wilcoxon and Mann-Whitney Test. The results showed that there were difference of mean perineum pain before and after kegel exercises obtained p-value 0,005 where  $0,005 < 0,05$ . There were difference of mean perineum pain before and after sough relaxation exercises in p-value 0,005 where  $0,005 < 0,05$ . There were different effects of perineum pain after Kegel exercises compared with after sough relaxation exercises in p-value obtained 0,000 where  $0,000 < 0,005$ . It can be concluded that kegel exercises are more effective and have greater influence compared to sough relaxation exercises against decreased perineum pain in post partum mothers. It is therefore recommended for post partum mothers to perform kegel exercises to reduce postpartum perineum pain.

**Keywords:** Abdominal Exercise; Kinesio Tapping; Warm Compress; Visual Analoge Scale and Dysmenorrhea.

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## **1. Introduction**

Pregnancy and labor are likely to cause the pelvic floor to weaken or break down so that it can not function properly. The puerperium begins after the birth of the placenta and ends when the uterine devices return like pre-pregnancy, which lasts for 6 weeks [1].

After delivery the mother will also experience various psychological disorders, one of which is a pain disorder that reaches 70% caused by stitches on the perineum. A study conducted in the UK showed that 85% of deliveries would normally occur perineum trauma. More than 2/3 of these women will require suturing [2].

Based on the study in Nigeria, 76 primary post partum bleeding women treated from 2002 to 2006 caused laceration of the birth canal (11.84%). Research in Indonesia with a large-scale survey conducted as long as two months in post partum mother, most of the mothers said still feel pain in their perineum, 77% of them are primiparous and 52% multiparous. Wound healing in perineum ruptures varies, some are normal (6-7 days) and some are late [3].

Perineum injuries that are healed late will cause the post partum mother will feel pain long enough. This pain causes unpleasant effects such as pain and fear to move. As for actions that can be given to help accelerate wound healing and reduce postpartum perineum pain such as Kegel exercises and sough relaxation exercises [4]. Pain management strategy is one of the ways used in the health field to overcome the pain experienced by maternity and postpartum. Kegel exercises will help post partum healing by making contraction and relaxation alternately in the pelvic floor muscles, blood circulation to the birth canal, speeding the healing of any wound there so that the pain felt by the postpartum mother will decrease/reduced [1].

In addition to Kegel exercises, exercises that can be exercised are sough relaxation exercises. Sough relaxation techniques are one of the techniques in behavioral therapy developed by Jacobson and Wolpel to reduce tension and anxiety. This technique is done with deep breath, slow breath (withstand maximum inspiration) and exhale slowly. In addition to reducing the intensity of pain, sough relaxation techniques can also improve lung ventilation and increase blood oxygenation [5].

The purpose of the study was to determine the difference of effect of kegel exercises and sough relaxation exercises on the decrease of perineum pain in post partum mothers.

## **2. Methods and Materials**

### ***2.1.Types of research***

The study was conducted at Sudiang Raya Community Health Center Makassar in March-June 2017. This research type is experimental research with quasi experimental method by using two group pre test-post test design.

### ***2.2. vPopulation and Sample***

The population in this study were all post partum mothers Sudiang Raya Community Health Center Makassar in March-June 2017. The sample of the research was post partum mother that fulfilled the criteria of inclusion and exclusion criteria. The technique used in the sampling is purposive sampling that is based on the criteria set by the researcher, the criteria that have been determined by the researcher to obtain the sample as much as 20 people. All samples obtained based on the above criteria then divided randomly into 2 groups of samples ie the first group of 10 people were given Kegel exercises intervention and the second group as many as 10 people were given sough relaxation exercise intervention.

### **2.3. Inclusion Criteria**

1. Post partum mother aged 18-40 years.
2. Post partum mother who has perineum pain.
3. Post partum mother with normal delivery.
4. Post partum mothers who are willing and agree to be respondents.

### **2.4. Exclusion Criteria**

1. Post partum mother who experienced bleeding.
2. Poor post partum mother.
3. Postpartum mothers who have cardiovascular and pulmonary disorders.

### **2.5. Data Collection Procedures**

At the beginning of the study all samples were measured perineum pain values perceived using VAS (Visual Analog Scale), after a history and examination.

1. Tools used: vital sign, VAS, mat/bed and stopwatch.
2. Implementation.
  - a. Measure vital sign.
  - b. Measures perineum pain using VAS before intervention and results are included in the pre-test value.
  - c. Then respondents were asked to perform kegel exercises for first group respondents and doing relaxation breathing exercises in the second group responders in accordance with the dose that has been determined. After 6 times given each action each group, then measured again the value of the pain using the VAS is made as post test data by looking at objective criteria that have been determined
3. Evaluation:  
Obective Pain Criteria:
  - a. 0: No pain.
  - b. 1-3: Mild pain.
  - c. 4-6: Moderate pain.

- d. 7-9: Very painful but still bearable.
- e. 10: Very painful and unbearable.

(Smeltzer, 2002, in Amalia and Mafticha [6])

## **2.6. Intervention Implementation Procedures**

Intervention given to treatment group I was Kegel Exercise, while in treatment group II Sough Relaxation Exercise.

Kegel Exercise Implementation Procedure.

1. Check the respondent's vital sign.
2. Then measure pain using VAS before the action (pre test), then record the result.
3. After that instruct the respondent to do Kegel exercises in the following way:
  - a. The mother is instructed to tighten the anus as it holds the defecation of urethral and vaginal wrinkles such as blocking urination. Hold for 10 seconds, breathe normally, then relax.
  - b. Relax and rest for 3 seconds, then mother re-instructed to repeat the above exercise slowly 10 repetitions.
  - c. After 10 repetitions of Kegel exercises, measure back post test pain, record the results so on the next action.
  - d. Kegel exercises are performed 3 times a week for 6 times action. One time the action is repeated for 10 reps. It lasts for 20 minutes.

Sough Relaxation Exercise Implementation Procedure.

1. Check the respondent's vital sign.
2. Then measure pain using VAS before the action (pre test), then record the result.
3. After that instruct the respondent to do sough relaxation exercise in the following way:
  - a. Try to relax and calm down.
  - b. Draw a deep breath through the nose with a count of 1,2,3, then hold for about 5-10 seconds.
  - c. Exhale through the mouth slowly.
  - d. Encourage repeating procedures up to 15 repetitions, alternating short breaks every 5 times.
  - e. After 15 repetitions of sough relaxation exercise, then measure the respondent's pain record the result of post test. And so on in the next action.
  - f. Sough relaxation exercise deeply done 3 times a week for 6 times action. Lasted approximately 20 minutes.

## **2.7. Data analysis**

Wilcoxon and Mann Whitney test was conducted to determine the difference of effect of kegel exercises and sough relaxation exercises on the decrease of perineum pain in post partum mothers.

**3. Result**

**Table 1:** Distribution of Mean, Standard Deviation and Difference in Groups 1 and Group 2 based on VAS Pre Test and Post Test values

Sample Group	Mean and Standard Deviation		
	Pre Test	Post Test	Differences
1 <sup>st</sup> Group	8,920±	2,660±	6,260±
	0,623	0,705	0,523
2 <sup>nd</sup> Group	8,910±	5,450±	3,460±
	0,990	1,289	1,660

Table 1 showed the average VAS values in group 1 (Kegel Exercise) and group 2 (Sough Relaxation Exercise). In group 1 (Kegel Exercise) got the average value of pre test of  $8,920 \pm 0,623$  and the mean value of post test  $2,660 \pm 0,705$  with difference of  $6,260 \pm 0,523$ . This suggests that Kegel Exercise can result in a decrease in perineum pain with an average decrease of 6,260.

In group 2 (Sough Relaxation Exercise), got the mean of pre test of  $8,910 \pm 0,990$  and post test value  $5,450 \pm 1,289$  with difference  $3,460 \pm 1,660$ . This suggests that the provision of Sough relaxation exercise can result in a decrease in pain with an average decrease of 3,460.

**Table 2:** Normality Test

Group of Data	<i>Shapiro- Wilk Test</i>			
	1 <sup>st</sup> Group		2 <sup>nd</sup> Group	
	Stat	p	Stat	p
Pre-test	0,827	0,031	0,818	0,024
Post-test	0,737	0,002	0,834	0,037

Table 2 showed the results of the normality test with Shapiro-Wilk Test. In group 1 (Kegel Exercise), the results obtained Shapiro-Wilk test before intervention with p value  $<0,05$ , after intervention with p value  $<0,05$ . This shows that group 1 (Kegel Exercise) data is not normally distributed.

In group 2 (Sough relaxation exercise), the result of Shapiro-Wilk test was obtained before intervention with p

value  $<0,05$ , after intervention  $p <0,05$ . This suggests that group 2 data (Sough relaxation exercise) is not normally distributed.

Looking at the overall results of the requirements analysis test above, the researcher can decide to use non parametric statistic test (Wilcoxon test) for each group of samples (group 1 and group 2) and non-parametric statistic test (Mann-Whitney Test) to prove the magnitude of the effect between the two sample groups as the choice of statistical tests.

**Table 3:** Wilcoxon Test Results on Kegel Exercise Group and Sough Relaxing Exercise Group

Group of Data	1 <sup>st</sup> Group		2 <sup>nd</sup> Group	
	Pre Test	Post Test	Pre Test	Post Test
Mean	8,920	2,660	8,910	5,450
SB	0,623	0,705	0,990	1,289
p	0,005		0,005	

The table 3 showed the Wilcoxon Test results on the Kegel Exercise group and the Sough Relaxing Exercise Group. In the Kegel Exercise group, with  $p$  value =  $0,005 <0,05$  which means that there is a significant difference after kegel exercises. This suggests that giving kegel exercises can have a significant effect on the decrease of perineum pain in post partum mothers.

In the sough relaxation group, with the  $p$  value =  $0,005 <0,05$  which means that there is a significant difference after the inner relaxation breathing exercises. This suggests that the provision of sough relaxation exercises may have a significant effect on the decrease in perineum pain in post partum mothers.

**Table 4:** Mann-Whitney Test Results on VAS Values between Kegel Exercise Group and Sough Relaxation Exercise

Group of Data	1 <sup>st</sup> Group	2 <sup>nd</sup> Group
Mean Differences	6,260	3,460
SB	0,705	1,2895
$p$	0,000	0,000

The table 4 showed Mann-Whitney Test result that is  $p$  value =  $0,000 <0,05$  meaning that there is significant difference between result of therapy group of kegel exercise with group of relaxation of breath deep. Similarly, seen from the mean difference value indicate the difference of treatment result which in group of kegel exercises produce decrease of perineum pain in post partum mother bigger that is 6,260 from group of sough relaxation that produce decrease of perineum pain 3,460.

This suggests that the provision of Kegel exercises can result in a significantly greater decrease in perineum pain in post-partum mothers than in sough relaxation exercises.

#### **4. Discussions**

Based on the results of the research can be seen that before kegel exercise intervention, the mean value of pain was 8,920 and standard deviation was 0,6233. After the kegel exercises intervention the mean value of pain changed to 2,660 and standard deviation to 0,7058.

The pain felt by postpartum mothers after kegel exercises decreased from the mean value of pre test pain was 8,920 to the mean value of post test 2,660 with average difference of 6,260. This is caused by doing kegel exercises properly will accelerate blood circulation to the perineum and surrounding areas and the stretching of the perineum muscles, this will help reduce the pain felt by the postpartum mother because it will be more comfortable with the wound of the perineum which used to be moved after giving birth with a exercise exercises kegel, other than that the perineum wound will also soon recover, because the muscle function and blood circulation back to normal [2].

Contraction and relaxation of these muscles also help to relieve discomfort in the perineum, this feeling may arise due to childbirth, and the goal of recovery by improving local circulation and reducing edema [7]. This is in line with the research by Martini [8] entitled "The Effectiveness of Kegel Exercise to Accelerate Perineum Wound Healing in Postpartum Mother Kalitengah Communiy Health Center Lamongan" which result showed  $p = 0,001$  ( $p < 0,05$ ) so it can be concluded that kegel exercises effective to accelerate wound and reduce perineum pain.

Result of the research showed that before sough relaxation exercise intervention, the perineum pain has a mean value of pain 8.910 and standard deviation 0.9905. After the sough relaxation exercises the mean value of pain changed to 5,450 and standard deviation 1.2895.

In accordance with the opinion by Sulistyangsih (2010), that perineum pain in postpartum mothers can be caused by perineum tissue ruptured by labor, the process of perineum elasticity after delivery, tears in the nerves around the wound, perineum seams, swelling or abrasions around the vagina and emphasis baby's head at birth [2].

Pain felt by post partum mother after sough relaxation exercises was decrease, from pain mean value of pre test was 8,910 become mean value of post test 5,450 with average difference 3,360. This is because after the sough relaxation the mother feel more calm and relaxed so that the pain impulse is felt less. This also fits with Potter & Perry's theory that relaxation can help reduce pain [2].

The technique of sough relaxation exercise is believed to stimulate the body to release endogenous opioids, namely endorphins and encephalin. Endorphin hormone is a type of substance that morphine serves as a barrier to the transmission of pain impulses to the brain. So when the peripheral pain neuron sends a signal to the synapse, there is a synapse between the peripheral neurons and the neuron that leads to the brain where the

substance P should produce an impulse. At that time, endorphins will block the release of P substances from sensory neurons, so the pain sensation becomes lessened [9].

The decrease on pain intensity experienced by the respondents is due to increased focus on the pain experienced by respondents to switch to the implementation of deep breathing relaxation so that the supply of oxygen in the tissues will increase and the brain can relax. The relaxed brain will stimulate the body to produce endorphins to inhibit the transmission of pain impulses to the brain and can decrease the sensation of pain that ultimately causes the pain intensity experienced by respondents is reduced [9].

This is also in line with the research by Imamah and his colleagues [10] entitled "The Effect of Relaxation Technique on Pain Reduction of Perineum Suture Injury on Post Partum Mother at Muhammadiyah Hospital Lamongan" from the results of the study obtained  $p = 0,001$  ( $p < 0,05$ ) it means that there is influence of relaxation technique to decrease pain of perineum wound at post partum mother.

There is a difference in the effect of Kegel exercises compared to the deep breathing relaxation exercises against the decrease in perineum pain in post partum mothers after the intervention. This study showed that after the average kegel exercises and the difference of post partum mother pain mean was  $2,660 \pm 6,260$  while after the relaxation exercises in the mean breath and the difference of post partum mother's pain was  $5,450 \pm 3,460$ . This showed that with Kegel exercises the postpartum mother's perineum pain is lessened compared to the post partum mother who exercises with sough relaxation technic.

The difference of the influence due to because kegel exercises that performed by post partum mother will directly affect the pelvic floor muscles and blood circulation in the perineum becomes more smooth so it can reduce pain. While the sough relaxation exercise in the way of pain relief is dependent on the psychology and tranquility created by the mother. Most mothers are not able to concentrate properly when they feel pain in the perineum so that the postpartum mothers do not experience significant pain relief when compared with the Kegel exercise group.

So it can be said that Kegel exercises greater influence compared with the sough relaxation exercises against the decrease in perineum pain in post partum mothers.

This is in line with the research Makzizatunnisa and Hidayah [2] entitled "Kegel Exercise and Relaxation of Breath Effectiveness In the Perineum Pain on Post Partum Mother in BPM Prima Boyolali" which result showed there were different effects of kegel exercises and relaxation of breath ( $p$ - value 0.036 where  $0.036 < 0.05$  thus concluded Kegel exercises are more effective than deep breathing relaxation).

## **5. Conclusion**

Abdominal exercise and kinesio taping resulted in significant dysmenorrhea changes. giving of warm compresses and kinesio taping results in significant dysmenorrhea changes. Abdominal exercise and kinesio taping were significantly more influential than warm compresses and kinesio taping on dysmenorrhea changes.



## **Conflict Interest**

The author declares there is no conflict interest.

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