

Research Article

Effectiveness of warm compress and cold compress to reduce laceration perineum pain on primiparous at Candimulyo Magelang 2015

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ABSTRACT

Background: The problem that most felt the presence of perineal laceration was pain. In the postpartum mothers experience pain because of perineal lacerations cause unpleasant effects such as pain and fear to move, so it can cause many problems. The solve of this problem can be administered with pharmacologic therapy and nonpharmacologic therapy. Non-pharmacologic therapy can be given to reduce pain include stimulation of the skin, giving warm and cold compresses. Warm compress is the act of giving a sense of warmth to the client specific parts of the body and a cold compress is provide a sense of cold on the client by using ice water on the body that feels pain. Objective of the study was to determine the effectiveness of warm compress and cold compress against the perineal laceration primiparous.

Methods: This study using Quasi Experiments with two group pretest and posttest with Mann Whitney test. Total sample is 36 people, 18 people warm compresses and 18 people cold compresses, by using accidental sampling technique. Techniques warm compresses and cold compresses performed three times during one day.

Results: This study shows that there is a difference between therapeutic warm compresses and cold compresses.

Conclusions: Cold compress more effective in reducing laceration perineum pain on primiparous.

Keywords: Warm, Cold, Compress, Perineum laceration pain

INTRODUCTION

The incidence of maternal perineal laceration cases around the world at 2009 was 2.7 million. This incidence is expected to increase by 6.3 million at 2050. Post partum mother suffered perineal laceration in the United States as many as 26 million, 40 % of them experienced midwife perineal laceration because of negligence. This negligence improve expenses include costs about 10 million dollars/year. Data shows that mothers who have perineal laceration in Australia is 20.000 cases. Perineal laceration is the big problem in the maternal postpartum in Asia, that is equal to 50 % of total cases in the world.¹ Perineal laceration suffered 75% of normal birth in Indonesia. On the year of 2013, it is 1.951 spontaneous birth, 57% of mothers who had stitched perineum (28% caused of episiotomi, and 29% caused of spontaneous

rips. Perineum rigid and inelastic will inhibit the second stage of labor and can increase the risk to the fetus. Also caused extensive perineal tears to level III. It is often found in primitua namely primigravid aged over 35 years.²

Some labor occurs lacerations of the cervix, vagina and perineum, edema and bruising.³ The perineum laceration is a wound in the muscular area covered by skin between the vagina and anus introitus caused by a tear because of childbirth. During normal childbirth, perineal and vaginal lacerations can be caused by sudden head expenditure and fast, the size of the excessive newborn, and a mother who is torn tissue. In other situations, lacerations can be caused by a difficult birth with forceps, breech extraction, or contraction of the pelvic outlet that encourages head towards the posterior.⁴ Perineum rupture occurs in almost

all of the first delivery, and not infrequently also the next delivery. Perineum ruptures generally occur in the midline and can be extensive if the head of the fetus is born too soon, the pubic arch angle is smaller than usual, the fetal head through the door lower pelvis with a larger size than sirkumferentia suboccipito bregmatika. When the chief opened the vulva, perineum to stretch and thin out his left hand hold and pressing the back of the fetal head towards the right hand hold the anus and perineum to prevent rupture of the perineum.⁵

Perineal lacerations can lead to bleeding according to occurred degree lacerations. In the perineal laceration degree I and II rarely result in bleeding, but the perineal laceration degree III and IV often cause of postpartum hemorrhage.⁶⁻⁸ Perineum lacerations is the second leading cause of postpartum hemorrhage.⁹ The problem that most felt the presence of perineal laceration was pain. In the postpartum mothers, experience pain because of perineal lacerations cause unpleasant effects such as pain and fear to move, so it can cause many problems including sub involution of the uterus, lochea expenditure which is not smooth, and post partum hemorrhage.¹⁰

The efforts to reduce perineal laceration pain can be administered with pharmacologic therapy and nonpharmacologic therapy. Pharmacologic therapy is the administration analgesia of drugs that can be injected, by intravenous infusion, or by blocking the nerves that conduct perineal laceration pain and given analgesics such as mefenamic acid but these drugs have side effects that can cause pain in the stomach mother.¹¹ Nonpharmacologic therapy can be given to reduce pain include stimulation of the skin, giving warm and cold compresses, breathing techniques, hypnosis, Transcutaneous Electrical Nerve Stimulation (TENS), acupressure, skin stimulation technique is rubbing the back of aromatherapy massage, yoga, and acupuncture.¹¹

Results of a preliminary study in Community Health Centre of Candimulyo Magelang, shows that the number of maternal postpartum from January - March 2015 is 167 mothers. The average number of birth is 50 postpartum mothers. The results of interviews with health center midwife get information that from 50 mothers postpartum there were 35 (70%) who experienced postpartum maternal perineal laceration, and of the total number of maternal postpartum 80% of women experience perineal laceration pain. Midwives using pharmacological methods for reducing postpartum pain, which provide analgesic drugs, but perineal laceration pain problems cannot be solved optimally. Therefore, there should be alternative other measures to reduce the pain, which is developing a non-pharmacological method has no side effects, simple, and convenient for the mother. However, studies that discuss the effectiveness of both therapies against pain perineal laceration is still limited, so that researchers interested in comparing the effectiveness of warm compresses and cold compresses to primiparous perineal laceration pain in the Community

Health Centre of Candimulyo Magelang. The objective of this study was to determine the effectiveness of warm compress and cold compress against the perineal laceration primiparous.

METHODS

This study is Quasi experimental. Quasi-experimental study design is one that is used to search for causal relationships or cause-effect relationship.¹² The aim of the study was to examine a phenomenon or effect arising from the existence of a particular treatment. This research uses two group pretest and posttest design. Subjects who participated in this study were divided into two intervention groups. One intervention group were treated in the form of warm compresses on the perineum mother, while the other intervention group were given treatment in the form of cold compresses on the perineum mother.

The population was maternal postpartum primiparous in Community Health Centre of Candimulyo Magelang, a number of people is 167 people. The sample in this study was taken from the mother's postpartum in Community Health Centre of Candimulyo Magelang, consisting of 19 villages include: Tampir Wetan, Podosoko, Tegal Sari, Kembaran, Tampir Kulon, Tempak, Sido Mulyo, Mejing, Surojoyo, Candimulyo, Tempur Sari, Purworjo, Surodadi, Tembelang, Sonorejo, Giyanti, Kebon Rejo, Trenten, and Bateh. Sample selection technique used in this research is to use accidental sampling technique, by choosing who happened to be or found in Community Health Centers or midwife inadvertently and meet the criteria of the sample. Then, the researchers take a sampling to see one by one respondent in the home of the respondents according to the inclusion and exclusion criteria. Respondents were divided into two groups, namely primiparous postpartum given intervention in the form of warm compress and primiparous postpartum given intervention in the form of a cold compress. As for the selection of the sample as a group warm compress and cold compress researchers used a simple random sampling technique is to use a roll of paper that was given the number 1 and number 2. After that, the respondents were asked to take one of two rolls of paper, if the respondents get the number 1 then respondents are given in the form of warm compress therapy, whereas if the respondent get number 2 then the respondent is given in the form of a cold compress therapy.

The sample used in this study was 18 people for a warm compress intervention group and 18 people for a cold compress intervention group. Thus, the overall sample required is 36 people. This study was carried out in May-July 2015 through several phases such as: preparation, implementation of research, and reporting the results.

An instrument used in data collection is Numeric Rating Scale (NRS), which serves to observe the level of perineal laceration pain. The instruments used have been

tested for validity and reliability.¹³ with $r = 0.767-0.943$ and $p = 0.000$, which means that the instrument is valid and reliable. Perineal laceration pain measurement performed before and after being given compress. Before to compress researchers provide images NRS (Numerical Rating Scale) to measure pain containing a pain scale of 0-10, and then respondents select the numbers to show how much pain scale of perceived then do the compress. After compressing the researchers asked mothers showed the pain scale.

The procedure on the research is explain about the purpose of a warm compress or cold compress and then reposition the mother relaxed with legs bent or dorsal recumbent position, do compresses on the perineum using a washcloth and repeated 3 times compress, any compression performed pause for 30 minutes. On warm compresses done for 20-25 minutes at a temperature of 37-41 °C, while in the cold compress is done for 10-15 minutes at a temperature of 13 °C. How to measure the temperature of the water is by using a thermometer dipped into the water. This tool is used to measure the temperature of cold water or warm water. Water thermometer using mercury or alcohol as a bookmark temperature.

RESULTS

This study result show that a cold compress is more effective therapies to reduce perineal lacerations pain intensity in primiparous. The results can be seen in the following table:

Table 1: Normality test pain intensity before action is taken on a group of warm compresses and cold compresses group.

		Shapiro-Wilk		
		Statistic	df	Sig
Pre Test	Warm Compress 1	0.638	18	0.000
	Cold Compress 1	0.566	18	0.000
	Warm Compress 2	0.566	18	0.000
	Cold Compress 2	0.624	18	0.000
	Warm Compress 3	0.520	18	0.000
	Cold Compress 3	0.520	18	0.000

*Shapiro-wilk

Based on table intensity scale test for normality using the Shapiro-Wilk pain because there are only a 36 of respondents sample. Shapiro-Wilk will give more accurate results when samples are held for less than 50 respondents.¹⁴ At the normality test of pain intensity scale before action is taken on the group warm compresses and

cold Kompes group using the Shapiro-Wilk test p value = 0,000, this means that the value of $p < 0.05$, which indicates that the data distribution is not normal.

Table 2: Differences in pain intensity before and after warm compresses action against perineal laceration pain.

Variable		Mean	Mean Different	P Value
Pain intensity 1	Before	2.55	0.28	0.025
	After	2.27		
Pain Intensity 2	Before	2.27	0.11	0.157
	After	2.16		
Pain Intensity 3	Before	2.22	0.34	0.014
	After	1.88		

* Wilcoxon test

The above table shows that the average of pain intensity before being given a warm compress first action (20-25 minutes) was 2.55 and after warm compresses therapy average is 2,27. The difference between before and after being given a warm compress therapy is 0.28 with $p = 0.025$. This means $p < 0.05$, which shows that there are differences in pain intensity before and after warm compresses.

Average of pain intensity before being given a warm compress second action (20-25 minutes) was 2.27 and after warm compress therapy is 2,16. The difference between before and after being given a warm compress therapy of 0.11 with $p = 0.157$. This means that $p > 0.05$, which showed no difference in pain scale before and after warm compresses.

Table 3: Differences in pain intensity before and after the act of cold compresses against perineal laceration pain.

Variable		Mean	Mean Different	P Value
Pain intensity 1	Before	2.72	0.34	0.014
	After	2.38		
Pain Intensity 2	Before	2.38	0.61	0.001
	After	1.77		
Pain Intensity 3	Before	1.77	0.44	0.005
	After	1.33		

* Wilcoxon test

The above table shows that the average of pain intensity before being given a cold compress first action (10-15 minutes) was 2.72 and after given cold compresses therapy is 2.38. The difference between before and after being given a cold compress therapy of 0.34 with $p = 0.014$. This means $p < 0.05$, it shows that there are differences in pain intensity before and after a cold compress.

Average of pain intensity before being given a cold compress second action (10-15 minutes) was 2.38 and after given cold compresses therapy is 1.77. The difference between before and after being given a cold compress therapy is 0.61 with $p = 0.001$. This means $p < 0.05$, it shows that there are differences in pain scale before and after a cold compress.

Average of pain intensity before being given cold compress third action (10-15 minutes) was 1.77 and after given cold compresses therapy is 1.33. The difference between before and after being given cold compress therapy is 0.44 with $p = 0.005$. This means $p < 0.05$, it shows that there are differences in pain scale before and after warm compresses.

Table 4: Differences in pain intensity before and after being given a warm compress and cold compress.

	Mean	Mean Different	P Value
Cold Compress 1	0.34	0.06	0.486
Warm Compress 1	0.28		
Cold Compress 2	0.61	0.50	0.009
Warm Compress 2	0.11		
Cold Compress 3	0.44	0.10	0.002
Warm Compress 3	0.34		

* Wilcoxon test

The above table shows that the average of the pain intensity after the intervention between two groups: warm compress and cold compress group at the first measurements obtained $p = 0.486$ ($p > 0.05$) it means that there is no significant difference between the two groups. In the measurement of pain intensity both obtained $p = 0.009$ ($p < 0.05$) means that there are significant differences between the two groups. The third measurement of pain intensity obtained $p = 0.002$ ($p < 0.05$) it means that there are significant differences between the two groups. More effective therapies to reduce pain perineal lacerations intensity in primiparous is a cold compress.

DISCUSSION

Statistical test show that the pain intensity was difference before and after warm compresses and cold compresses, with $p = 0.002$ ($p < 0.05$), it means that H_0 is rejected and H_a accepted. These results indicate that there is a significant difference between before and after warm compresses or a cold compress to reduce primiparous perineal laceration pain. From these two techniques compress, cold pack is more effective in reducing pain intensity perineal lacerations in primiparous postpartum mothers with an average of 0.44 greater than the average of 0.34 a warm compress.

These results are supported by other studies that stated there are significant cold compress against the perineal wound pain reduction on postpartum mothers.¹⁵ that. The level of pain experienced by the mother postpartum is 60%, and after being given a cold compress level of pain was reduced to mild pain is 75%. A similar study also stated that there were study which involved 20 mothers with postpartum perineal lacerations were divided into 2 groups of the intervention, the intervention group sat soak warm water and one grup sat soak ice water. This study showed on wound healing, there is no significant different in wound healing on both therapies, but ice water therapy is more effective to decrease in pain levels.¹⁶

Perineal pain management due to laceration can be solved in two ways: pharmacological and non-pharmacological. Pharmacological pain management is done by giving analgesia medication that can be injected, by intravenous infusion, or by blocking the nerves that conduct perineal laceration pain and given analgesics such as mefenamic acid. While non-pharmacological pain management includes a variety of measures that stimulate physical and cognitive behavior. Physical handling includes stimulation of the skin (massage), warm compresses, cold compresses, and reflexology. Cognitive behavioral interventions include actions distraction, relaxation techniques and therapeutic touch.¹⁷

Compress has been known in the field of nursing since the first as a way to reduce the pain. Compress is a method of maintenance of body temperature using liquid or tools that may cause hot or cold very effective in reducing labor pain. Warm temperatures are given in the back, groin or perineum. The use of warm applications can use warm water bottle and a towel or washcloth. Cold applications can be provided on the face, chest, back, or areas that are comfortable and fresh relaxation effect by using a towel or washcloth.¹⁸ Warm compress is the act of giving a sense of warmth to the client by using a liquid or a tool that creates a feeling of warm in certain body parts that need while cold compress is placing a substance with low temperatures aimed at healing therapy.¹⁹

Cold compress is a procedure to put an object on the body's cold outside. Physiologis impact is vasoconstriction of the blood vessels, reduce pain, and reduce the activity of nerve endings in the muscles. After being given cold compress on the perineum majority of postpartum mothers experience a mild pain level. The use of cold compress proven to relieve pain, cold therapy analgesic effect by slowing down the speed of nerve conduction of pain impulses reaching the brain less.¹⁴ Cold compress will cause postpartum mothers feel comfortable, because the analgesic effect of a cold compress is lowered so that the nerve conduction velocity implus pain to the brain less thus reducing the sensation of pain perceived.²⁰

After the data analysis using the Wilcoxon test using consecutive sampling technique, pre-test and post-test without control group and manually counted results obtained with table count = 12 = 40, with a significance level $p = 0.05$ is obtained W count smaller than W table, then H_0 is rejected it means there is the influence of a cold compress to the reduction of perineal wound pain in puerperal women, thus it is known that there are differences in the level of pain in puerperal women between before and after treatment that a cold compress, of the overall puerperal women were given treatment (cold pack) as many as 20 people, before being given a cold compress most of the level of pain experienced by the mother postpartum is pain were as many as 12 (60%) and after being given a cold compress pain was reduced to the level of pain light as many as 15 (75%).¹⁴

Other study stated that the cold gel pack can reduce the pain associated with DB and C in cardiac surgery patients. Data analysis showed significant reduction in pain scores ($P < 0.001$) after cold gel application. Forty-five (90%) patients were inclined to reapply the gel pack in the future.²¹

Labour pain is probably reduced based on gate theory using cold. Pain control by cold maybe improves labour progression without affecting mother and foetus adversely. The two groups were not significantly different considering demographic data, gestational age, foetal weight, rupture of membranes and primary severity of pain. Degree of pain was lower in cold therapy group during all parts of active phase and second stage. Duration of all phases was shorter in cold therapy group in all phases. Foetal heart rate, perineal laceration, type of birth, application of oxytocin and APGAR score were not significantly different between two groups.²²

The statement above stated that cold compress more effective in reducing laceration perineum pain on primiparous. Therapy cold compress can be used as alternative technique to treat laceration perineum pain without side effect.

CONCLUSION

Cold compress more effective in reducing laceration perineum pain on primiparous.

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