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ORIGINAL ARTICLE

Differences in the Efficiency of Hot and Cold Compresses against Degree of Dysmenorrhea among Adolescents

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Abstract

Background: Ukhwatul Muslim Islamic Boarding School, Goa Regency aims to determine the difference in the efficiency of hot and cold packs on the degree of dysmenorrhea among teenagegirls. **Methods:** This study is semi-experimental with a comparative design. All the respondents who participated in this study were those who knowledged dysmenorrhea at the Ukhwatul Muslim Islamic boarding school in Goa Regency, which had around 30 students. 16 samples were sampled using a non-probable sample type. The test used in this study is a statistical test, that is, a pair of t-tests. **Results:** For the variable cold compress against dysmenorrhea based on the results of the t-test, p = 0.000 < α = 0.05 and the average value is 5.125, which means that H0 is rejected and HA is accepted, and for the variable hot compress versus degree of dysmenorrhea based on t-test results, is p = 0.000 < α = 0.05. It has been done. **Conclusion:** Dysmenorrhea in adolescents has the impact of administering hot packs and cold packs, while cold packs have additional impacts to hot packs.

Keywords: Dysmenorrhea, menstrual pain, cold compress, Hot compress.

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Introduction

Dysmenorrhea is pain that spreads to the lower back and thighs. This pain happens well earlier or closely at the beginning of period and continues an insufficient times, although in some cases it can last several days. Consequences of a fresh study show that about 10% of teenage girls with dysmenorrhea knowledge a teenage inability to perform daily tasks due to an absence rate of 1-3 days per month or acute pain.(Novia, 2017).

In Indonesia, the occurrence of menstrual pain is 107,673 (64.25%), of which 59,671 (54.89%) are primary menstrual pain and 9,496 (9.36%) are secondary menstrual pain (Healthy Data , 2016). The prevalence rate of dysmenorrhea in East Java was 64.25%, of which 54.89% had primary dysmenorrhea and 9.36% had secondary dysmenorrhea. In Surabaya, among 1.07% and 1.31% of patients with dysmenorrhea accessible to the maternity section. (Setianingsih & Widyawati, 2016)

The impact of dysmenorrhea is that it can delay with learning events and daily events. If pain is felt severely, then the teenager concerned does not enter the school. Many females do not yet know how dysmenorrhea is preserved, so problems can arise. Pain can be overcome by doing various alternatives, both pharmacologically and non-pharmacologically. Pharmacologically it can be overcome by using analgesic drugs. Meanwhile, non-pharmacological management of pain can be done in multiple ways, including Transcutaneous Electrical Nerves Stimulation (TENS), acupuncture, distraction actions, deep breathing techniques, guided imagination, biological feedback, music therapy, and compresses (hot compresses and cold compresses). Non-pharmacological pain management is safe to use because it does not cause side impacts like drugs because non-pharmacological therapy uses physiological mechanisms. (Oktasari et al, 2017).

Hot and cold compresses are both impactive, easy, and inexpensive non-pharmacological therapies. However, until now there are still many women who have not used this treatment in reducing pain, especially dysmenorrhea. This dysmenorrhea is often suffered in all women, especially in young women, one of which is pesantren Ukhwatul Muslimin, GOWA Regency, which is a madrasa school whose average student is predominantly more women.

Based on the above case, the researchers are interested in conducting research on "differences in hot and cold contraction skills against degree of dysmenorrhea among young women at ukhwatul Muslimeen Islamic boarding school in GOWA Regency".

Methods

Research design

Quasi-Experiments with a comparative research approach (differences/ comparisons). That is by looking at the difference in efficiency among the application of hot compresses and cold

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compresses. The method used is an opposite-treatment non-equivalent regulator set design with pretest and post-test, which is a study that provides treatment to each intervention group that is then evaluated on the outcome of the intervention.

The citizens in this study was whole number of teenagers with dysmenorrhea that was equal to 16. Probablity Sampling type of Total *Sampling* is the overall sampling of the existing population. The total sample in this study was 16 respondent observation sheets. In this study, it used buli-buli and hot water (40-46^{0}C), kirbat and ice cubes for compressing actions to clients. It then uses a pain scale to determine the intensity of the pain the client feels both before and after being given the treatment. Univariate analysis is carried To get an overview by describing each variable used in the study, namely the frequency distribution. On univariate analysis is carried out to obtain a general idea of the characteristics, *hot compresses and cold compresses*. Bivariate analysis is aimed at answering the research objectives and testing the research hypothesis to determine the existence of a comparison of independent and dependent variables using paired T test statistics.

Result

Hot compresses and cold compresses

Above Table 1, it explains that degree of dysmenorrhea has the impact of giving hot compresses and cold compresses. This can be seen from the results of a meaningfully added t-test opposed to hot compresses and cold compresses with p-values = 0.000 < (0.05), and it can be seen that there is a difference between the mean morals previous and later giving hot compresses, which is 1.625 before and after giving cold compresses, which is 3000. This proves that cold compresses have a greater impact on reducing levels of dysmenorrhea.

Discussion

The results bilingual study in Table 1, it is stated the paired t test of the hot contraction group showed results of p = 0.000 < (0.05) and mean value = 1.625. This suggests that hot compresses have an impact on the degree of dysmenorrhea.

Results of research obtained agree with findings of researchers conducted by El Carlina (2015), entitled "Reduction of primary dysmenorrhea pain through hot contractions in adolescents". A p value of 0.000 was obtained from 18 respondents.

Another theory supporting the results of this study is Potter and Perry's (2013) theory that Warmness from spine will pass to the body, causation the blood vessels to expand, which may reduce muscle spasms to reduce stress strain. contraction and reduce or eliminate perceived pain.

According to the researchers, hot packs are a method of using hot temperatures that can cause physiological impacts. Hot compresses can be used to treat pain and reduce fitted muscles. Hot packs are achieved using hot tubes or hot water bottles where heat is transferred from the tubes to the body to dilate blood vessels and reduce muscle tension so that perceived pain lessens or disappears.

Hot compresses have several impacts, including removing blood vessels and improving blood circulation to these tissues, resulting in the vasodilation impact of blood vessels increasing plasma movement. Raised plasma movements can rule out inflammatory products such as bradykinin, histamine, and prostaglandins that cause local pain. It can stimulate nerve cells that close the gate to prevent the transmission of pain impulses to the spinal cord and brain.(Sani, 2013)

In the reduction in the scale of pain in hot compresses, there was a dissimilar reduction in pain in each respondent, this was an individual sense. Where these sensations cannot be paralleled with one another because of the diverse nature of each respondent. Pain can be interpreted as a sensation of discomfort that will eventually interfere with daily activities, psychic and others (Asmadi, 2011).

The impact of cold compresses on the degree of dysmenorrhea

Bilingual analysis in Table 1, it is stated that the paired t test in the cold compress group showed results of p = 0.000 < (0.05) and average value = 3000. This suggests that cold compresses affect the degree of dysmenorrhea.

A cold compress is to install a substance with a low temperature on the body for therapeutic purposes (Kusyati 2013). The administration of cold compresses at the pain site can reduce the excitability of free nerve endings thereby reducing sensitivity to excitatory pain (Novita, 2013).

After a cold compress, the majority of respondents with mild pain intensity were found. The respondent was able to communicate mild pain well neutrally. While respondents can describe a decrease in pain experienced during and after a gradual cold compress, this mild pain can make the respondent feel more relaxed and comfortable. The results of this study are consistent with researchers conducted by Francisca et al (2018), titled "Effect of cold compresses on the reduction of pain intensity in women with dysmenorrhea knowledge in Rayon Ikabe tologoma, p value =

Table 1: Impact of hot Compresses and Cold Compresses on Degree of Dysmenorrhea in Ukhawatul Muslim Islamic Boarding School, GOWA Regency

No.	Hot Compress		Cold Compress	
	Pre	Post	Pre	Post
1	6	5	6	3
2	8	7	9	6
3	8	6	9	5
4	6	5	7	5
6	7	5	8	4
7	8	6	8	5
8	6	4	9	7
9	7	5	9	6
	Mean = 1.625		Mean = 3000	
	Std. Deviation: 0.518		Std. Deviation: 0.756	
	Significance p: 0.000		Significance p: 0.000	

Source, Primary Data 2019

(0.000) < (0.050) and z value = (- 3.750) which means that the administration of cold compresses is able to reduce the intensity of pain in adult women by 3.75 times faster."

In the case of another theory that supports the results of this study conducted by Karthik (2013) regarding the effect of cold compresses on reducing the severity of breast dam pain in postpartum mothers, the results of the study found a critical value z = - 1.96 < z count = - 2,877. It can be concluded that the administration of cold compresses has the effect of reducing the severity of breast-thumping pain in postpartum mothers. This is reinforced by (Price & Wilson, 2016) that cold therapy not only reduces muscle spasms but can also cause painkiller effects that slow down the speed of nerve delivery so that less pain reaches the brain. Thus, the perceived pain will decrease.

The decrease in pain scale varies between each respondent, this occurs because there is a balance of neurosensory activity, and the density control fibers of the brain control the defense process where the process is within each respondent. Neuro delta-A and C release substance P to transmit emotion through the immune system. The number of blood transfusions varies with each person, after which the pain response will be different (Potter & Perry, 2013).

The reasons for the decrease in the scale of pain are 1). Age, 2) gender, 3) culture where every culture has a belief in how to show pain, there are cultures that show that pain is a natural thing, others are more intolerant, 4) the meaning of pain is related to cognition, if a person has repeated knowledge of similar pain and can handle it well, then it will make it easier to interpret pain sensations, 5) Attention, where increased attention is associated with increased levels of pain, 6) knowledge of the past, whether a person can easily cope with pain depends on past pain knowledge in dealing with pain, 7) coping patterns will make it easier for someone to overcome pain, and conversely harmful coping patterns will make it difficult for a person to overcome. Pain (Rofiqoh, 2017).

Comparison of hot and cold compresses opposed degrees of dysmenorrhea

In this study, both the hot pack and cold pack therapy groups were able to drastically reduce pain levels. Paired t-test results in the hot twitch and cold twitch groups at the 95% confidence level or á = 5% (0.05) return p value = 0.000 < 0.05. Thus, Ho was rejected. This means that there is a significant difference between hot packs and cold packs against the reduction of dysmenorrhea when comparing the average (average) values of 8 respondents before and after the hot pack, which is 1,625, and the average value of 8 respondents before and after the cold pack. 3000. This shows that cold packs are much more effective at reducing the degree of dysmenorrhea than hot packs.

In the case of cold compresses, shifting the pain perception to a more dominant coolness is a type of elevation that has been achieved so that respondents feel more comfortable (Cozier, 2011), in hot compresses it does not have the same effect as cold compresses. Hot compresses only relieve pain by relieving inflammatory products like bradykinin, histamine, and prostaglandins, which cause local pain. Hot compresses also don't have a local anesthetic effect that can reduce local pain.

This is in agreement with previous research by Ulandari and Ramadaniah (2018) that compared the results of the hot pack group and the cold pack group with the p-value of 0.000 < of the hot pack and cold pack group (0, 05). The average range obtained between changes in pain intensity in the cold pack group was larger, namely 34.44 and hot packs were 16.56, while respondents who knew mild menstrual pain after applying hot packs were lower than those who knew mild menstrual pain after applying cold packs. This is because cold packs can reduce muscle tension for longer than hot packs.

Another theory strengthened by researchers led by Ratnasari (2015) shows that there was a difference in the pain received by the respondents prior to administering the cold packs, and that the active phase with P was the result of the effects of the cold packs. To reduce labor. Pain: < showed a significant value of 0.00 (z = - 4.243) where z < means 0.05, demonstrating that cold packs have a significant effect on reducing the pain caused by cold packs. The pain from a cold pack can reduce blood flow to your body where you feel the pain. Cold compresses that reduce the severity of pain caused by a person's endorphin levels, the higher the endorphin levels, the milder the pain feels. Endorphin production can be increased through skin stimulation. One of the stimuli for the skin is the action of cold compresses.

From the results of this study, the researchers hypothesized that cold packs may reduce muscle tension for longer than hot packs. Therefore, based on existing theories and data, it can be concluded that cold packs are more influential in reducing pain perception and increasing comfort than hot packs.

Conclusion

The efficiency of giving hot compresses to the degree of dysmenorrhea is characterized by p-value = 0.000 < (0.05) and average value = 1.625, the efficiency of giving cold compresses to the degree of dysmenorrhea is denoted by p-value = 0.000 < (0.05) and average value = 3000. Pesantren Ukhwatul Muslim, Gowa Regency

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