



THE EFFECT OF DYSMENORRHOEA EXERCISES WITH TRADITIONAL KALIMANTAN MUSIC IN REDUCING THE SCALE OF PAIN IN ADOLESCENTS

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ABSTRACT

Dysmenorrhea occurs because the endometrium contains high amounts of prostaglandins which have an impact on the systemic response, which can affect various processes in the body, one of which is increasing the activity of the large intestine, causing symptoms of nausea, diarrhea, headaches, emotional changes and a burning sensation that accompanies pain during menstruation. The impacts that occur if dysmenorrhea is not treated are disruption of daily life activities, Retrograde menstruation (menstruation that moves backwards), infertility (sterility) and infection. In addition to the above impacts, emotional conflict, tension and anxiety can all play a role and cause feelings of discomfort and unfamiliarity. Tension usually worsens a bad situation at any time. A little discomfort quickly develops into a big problem with all the annoyance that accompanies it. Thus anxiety, feelings of unhappiness or even feelings of pressure are all not uncommon. Therefore, dysmenorrhea must be treated so that impacts such as the above do not occur. The nature and degree of this pain vary, from mild to severe. This research is quasi-experimental with a non-equivalent design with control group (two group pre test – post test). The population of all female students at SMA Nusantara Class I and II is 61 people, with a sample of 19 people taken using simple random sampling. The measuring tool for identifying dysmenorrhea uses a numerical pain scale. The treatment given is dysmenorrhea exercises with Traditional Kalimantan Music 3 times in a row a week before the female students menstruate, before conducting the t-test, a normality test was conducted to determine whether the data was normally distributed or not. The Shapiro-Wilk test was used. The results obtained from the p-value normality test are 0.96, because the p value > 0.05 then the data is normally distributed. So the data for both groups are equally normally distributed. The mean pain scale before the intervention was given in the treatment group was 5.89 (moderate pain), in the control group it was 5.33 (moderate pain) while the mean pain scale after dysmenorrhea exercises in the treatment group was 2.33 (mild pain) and in the the control group was 5.0 (moderate pain). Statistical test analysis using the Independent T-test showed that the p-value was $0.006 < \alpha=0.05$, indicating that there was a significant influence of dysmenorrhea exercise on reducing dysmenorrhea in class I and II female students at SMA Nusantara Balikpapan. Doing dysmenorrhea exercises 3 times in a row a week before menstruation can reduce pain in female students. So it is necessary to encourage women who experience dysmenorrhea to do dysmenorrhea exercises with Traditional Kalimantan Music.

Keywords: dysmenorrhea; dysmenorrhea gymnastics; teenager; traditional kalimantan music

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INTRODUCTION

Menstruation or menstruation or menstruation are physiological changes in women that occur periodically and are influenced by reproductive hormones, starting from menarche to menopause (Syafudin, 2011). Menstruation is sometimes accompanied by abnormalities or disorders including premenstual tension (tension before menstruation), mastodynia (pain in the breasts before menstruation), mittelschmerz (pain during ovulation), and dysmenorrhea (Manuaba, 2009). Dysmenorrhea can be treated with pharmacological or non-pharmacological actions/therapy. Pharmacological therapy is therapy that can help reduce

dysmenorrhea by consuming non-steroidal anti-inflammatory drugs (NSAIDs) (Price, 2006). The use of these drugs can have side effects that can be dangerous for the body, including gastric ulcers or peptic ulcers (the most common side effects) which are sometimes accompanied by secondary anemia due to gastrointestinal bleeding, impaired platelet function (Gunawan, 2010).

Exercises that can be used to treat dysmenorrhea are special exercises, which focus on helping stretch the abdominal, pelvic and waist muscles. Dysmenorrhea exercises can be done 5 times in a row a week before menstruation, because dysmenorrhea exercises are effective in reducing menstrual pain (Ismarozzi, 2015). Dysmenorrhea exercise movements are carried out with several exercise movements such as exercises to relax stiff back muscles, exercises to strengthen back & stomach muscles, exercises to strengthen stomach & back muscles, exercises to strengthen stomach muscles & relax hip muscles, exercises to strengthen & relax stomach, back, hip and knee. This movement can be done independently, in groups or with the help of an instructor (Kuantaraf, 2009). When we exercise, our body will produce endorphins which are produced in the brain and spinal cord. Endorphin hormones function as natural sedatives, causing a feeling of comfort (Anurogo, 2011). The higher endorphin hormone will reduce or relieve the pain a person feels so that a person becomes more comfortable, happy, and facilitates the delivery of oxygen to the muscles (Sugani and Priandarini, 2010).

Dysmenorrhea exercises were chosen by researchers because dysmenorrhea exercises are easy to do and do not require equipment. This exercise also does not require expensive costs, is easy to do and of course does not cause dangerous side effects for the body. By doing exercise gradually, it will provide a relaxing sensation and can reduce pain (Badriyah and Diati, 2008). Researchers chose class I and II female students as research respondents because the age of class I and II female students is in the age range where dysmenorrhea usually occurs. Female students can also apply dysmenorrhea exercises to themselves, and can spread the benefits of dysmenorrhea exercises to their peers and other people. This is related to research conducted by Puji (2009), which stated that dysmenorrhea exercise was effective in reducing menstrual pain or dysmenorrhea in teenagers, namely that around 73.33% of teenagers experienced a decrease in pain from moderate level pain to mild level pain and as many as 26.67% experienced reduction of pain from severe pain to moderate pain. Based on the background above, Identifying the effect of dysmenorrhea gymnastics with traditional Kalimantan music on reducing dysmenorrhea in female students at SMA Nusantara Balikpapan.

METHOD

This type of research is experimental in the form of a quasi experimental design with a non-equivalent control group design. A non-equivalent control group design is a research design used to compare the results of a health program intervention with a control group that is similar but does not need to be exactly the same group (Notoatmodjo, 2012). Researchers chose this type of research to determine the differences in the level of menstrual pain between the group that was treated with dysmenorrhea exercises (experimental group) and the group that was not treated (control group). The population in this study were female students in class I and II of SMA Nusantara Balikpapan City with a population of 61 people. The sample required in this research was 18 female students. The sampling technique in this research uses simple random sampling, namely a sampling technique from the population carried out randomly, without paying attention to the strata in the population. Data collection was conducted on 18 people consisting of 9 female students who did not receive dysmenorrhea exercise therapy and 9 female students who received dysmenorrhea exercise therapy at SMA Nusantara

Balikpapan. The intervention given was dysmenorrhea exercise 3 times in a row in one week and was carried out one week before menstruation.

The research was started from August 25, 2023 to September 24, 2023, with a sample size of 9 respondents for the treatment group and a sample size of 9 respondents for the control group. The selection of respondents was carried out according to the inclusion criteria and randomly by drawing rolled paper, then an explanation was given about the research including the objectives, benefits and risks of the research to be carried out, if the student is willing to be a respondent to this research, then sign the consent form (informed consent). It can be concluded that the average dysmenorrhea of the group that received dysmenorrhea exercise decreased from 5.9 (moderate pain) to 2.3 (mild pain) with a different mean of 3.56, the average was obtained after the students did dysmenorrhea exercise, while in students who did not receive dysmenorrhea exercise therapy, the average pain was from 5.3 (moderate pain) to 5.0 (moderate pain) with a different mean of 0.33 which was still on the moderate pain scale. Treatment Group (N=9) the results obtained from the p-value normality test are 0.286, because the p value > 0.05 then the data is normally distributed. Likewise, in the Control group (N=9) the results obtained from the p-value normality test are 0.96, because the p value > 0.05 then the data is normally distributed. So the data for both groups are equally normally distributed. Then the next step is to test the variance using the Levene's test.

RESULT

The menstrual pain experienced by female students at SMA Nusantara Balikpapan in the treatment group (N=9) before receiving exercise therapy with traditional Kalimantan music for dysmenorrhea was 5.89 which was in the moderate pain scale interval, with a median of 6.00 (moderate pain) and the pain most commonly felt was on a scale of 7 (severe pain). In the treatment group, before being given the dysmenorrhea exercise intervention with traditional Kalimantan music, the lightest pain felt was on a scale of 3 (mild pain) and the most severe pain felt was on a scale of 7 (severe pain), with a standard deviation of 1.453 and at a 95% confidence level it was within range 4.77 – 7.01. Likewise, in the control group (N=9) before being given dysmenorrhea exercise therapy, the average pain felt was 5.33 in the moderate pain interval, with a median of 6.00 (moderate pain) and the most pain felt during menstruation was 3 (mild pain). In the control group, before treatment, the lightest pain felt was on a scale of 3 (mild pain), the most severe pain felt was on a scale of 7 (severe pain) with a standard deviation of 1.803 and at the 95% confidence level it was in the range 3.95 - 6.72.

The menstrual pain experienced by the treatment group (N=9) after receiving dysmenorrhea exercise therapy was 2.33 on the mild pain scale interval, with a median of 3.00 (mild pain) and the pain most commonly felt was on a scale of 3.00 (mild pain). In the treatment group after the dysmenorrhea exercise, the lightest pain felt was on a scale of 0 (no pain), the most severe pain felt was on a scale of 7 (severe pain) with a standard deviation of 1.225 and at a 95% confidence level it was in the range 1.39 – 3.27 . Likewise, in the control group (N=9) after being given dysmenorrhea exercise therapy, the average pain felt was 5.00 in the moderate pain scale interval, with a median of 6.00 (moderate pain) and the most pain felt during menstruation was on a scale of 7 (pain). heavy). In the control group after the dysmenorrhea exercise treatment, the pain felt was the lightest on a scale of 1 (mild pain), the pain felt the most severe was on a scale of 7 (severe pain), with a standard deviation of 2.179 and a 95% confidence level in the range 3.32 - 6.68.

Dysmenorrhea in the group that received dysmenorrhea exercises decreased from 5.9 (moderate pain) to 2.3 (mild pain) with a different mean of 3.56, this average was obtained

after the female students did dysmenorrhea exercises, while for female students who did not receive dysmenorrhea exercise therapy the average The pain average is from 5.3 (moderate pain) to 5.0 (moderate pain) with a different mean of 0.33 which is still on the moderate pain scale. In the Treatment Group (N=9) the results obtained from the normality test p value were 0.286, because p value > 0.05 the data was normally distributed. Thus, in the Control group (N=9), the results obtained from the p value normality test were 0.96, because the p value was > 0.05 , the data was normally distributed. So the data for the two groups are both normally distributed.

The results of bivariate data analysis to determine whether there was an influence on the level of dysmenorrhea in the treatment group (N=9) and control group (N=9) are shown in table 5.5. Before analyzing the data, a variance test was first carried out. In the experimental group and control group before treatment, the p value obtained from the variance test was 0.224. The p value is greater than 0.05, so the variance of the two groups' data is the same, so to see the results of the t test, use the equal variance test and it is known that the p-value is $0.482 > 0.05$, so H_0 is accepted, meaning that before treatment is given there is no difference in the level of pain in the group that received exercise intervention and the group that did not receive exercise intervention. Meanwhile, in the treatment group and control group after being given treatment the p value obtained was 0.075. The p value is greater than 0.05, so the data variance in the treatment group and the control group is the same, so to see the results of the t test, use the equal variance test and it is known that the p-value is $0.006 < 0.05$, meaning that H_0 is rejected, meaning there is an influence. Dysmenorrhea exercise is significant in reducing dysmenorrhea in female students at SMA Nusantara Balikpapan.

DISCUSSION

The results of the research in the control group and treatment group of 18 female students, after carrying out dysmenorrhea exercises in table 5.4, it can be seen that the mean after carrying out dysmenorrhea exercises in the treatment group (N=9) decreased at a scale interval of 2.33 (mild pain) with a mean difference of 3.56, while in the control group (N=9) the mean pain decreased but remained at the scale interval of 5.0 (moderate pain) with a mean difference of 0.33. The pain scale before doing dysmenorrhea exercises is different from the pain scale after doing dysmenorrhea exercises. These results are in line with research conducted by Ismarozi (2015) "Effectiveness of Dysmenorrhea Exercises in Handling Primary Menstrual Pain in Adolescents at SMPN 14 Pekanbaru" that after carrying out dysmenorrhea exercises in the experimental group the mean was 3.07 (mild pain) and in the control group obtained a mean of 4.33 (moderate pain). Various methods are used to reduce dysmenorrhea pain. Some use pharmacological and non-pharmacological techniques. Many non-pharmacological techniques can be used to relieve pain. According to Kelly (2005) there is one way to reduce menstrual pain, namely by doing aerobic exercise as a stress reliever so that the pain is reduced. According to Morgan & Hamilton (2009), non pharmacological treatment of dysmenorrhea pain takes the form of physical exercise (sports) such as walking, swimming and gymnastics.

Dysmenorrhea exercise is a physical activity that can be used to reduce pain, the focus of which is to help stretch the abdominal, pelvic and waist muscles, apart from that, this exercise can provide a relaxing sensation if done regularly. Because in a relaxed state, the body also stops producing adrenaline and all the hormones needed when we are stressed. So that b-endorphin stores in the body increase and can reduce the pain felt by each individual. When someone exercises, b-endorphin will come out and be captured by receptors in the hypothalamus and limbic system which function to regulate emotions (Badriyah & Diati, 2008). Increasing b-endorphin has been proven to be closely

related to reducing pain, improving memory, improving appetite, sexual ability, blood pressure and breathing (Harry, 2007). From the results of the research above, it can be seen that the average obtained from the group that received exercise treatment after doing exercise 3 times in a row in the week before menstruation tended to decrease from moderate pain to mild pain. Meanwhile, the group that did not receive exercise treatment tended to have moderate pain. The decrease in the pain scale in these respondents was due to the intervention of dysmenorrhea exercises which stimulated the brain and spinal cord to produce endorphins which function as natural sedatives, causing a feeling of comfort. For this reason, relaxation exercises for dysmenorrhea can be used as a non-medical first action when experiencing menstrual pain (dysmenorrhea).

The results of the research above are in line with research conducted by Puji (2009) "Effectiveness of Dysmenorrhea Exercise in Reducing Dysmenorrhea in Adolescent Girls at Smu N 5 Semarang" with a quasi-experimental type of research in one group (one group pre test - post test design). The sampling technique was carried out by purposive sampling with a sample size of 15 people. The results of the Paired Sample t-Test showed a p value of 0.000, which is smaller than the error level (α) of 0.05. In his research, it was proven the effectiveness of dysmenorrhea exercise in reducing dysmenorrhea. Gymnastics is a natural medicine that does not cause side effects on the body because exercise is a technique for maintaining health and fitness. The body reacts when experiencing stress. This stress factor can reduce resistance to pain. The first sign that indicates a state of stress is a reaction that appears, namely the tensing of the individual's body muscles filled with stress hormones which cause blood pressure, heart rate, body temperature and breathing to increase. On the other hand, when stressed, the body will produce excessive amounts of the hormones adrenaline, estrogen, progesterone and prostaglandins. Estrogen can cause an excessive increase in uterine contractions, while progesterone inhibits contractions. This excessive increase in contractions causes pain. Apart from that, the hormone adrenaline also increases, causing the body's muscles to tense, including the uterine muscles, and can cause pain during menstruation (Handrawan, 2008).

CONCLUSION

Researchers saw that changes in pain levels were not only due to the exercise, but could be seen based on other factors such as frequency, continuity and duration of exercise with each movement component in the warm-up, core and cool-down movements each having a duration of around 2.5 minutes. The more you do exercise, the higher your b-endorphin levels will be. When someone does exercise, b-endorphins will come out and be captured by receptors in the hypothalamus and limbic system which function to regulate emotions.

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