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EFFECT OF COMBINATION THERAPY PROGESSIVE MUSCLE RELAXATION AND CLASSICAL MUSIC ON REDUCING DYSMENORRHEA

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Research Report

ABSTRACT

Introduction: *Dysmenorrhea is a pain commonly felt during menstruation in the lower abdomen to the thighs, and the pain lasts for one to several days during menstruation. Dysmenorrhea can affect daily activities if not treated properly. The purpose of this study was to determine the effect of combined therapy of progressive muscle relaxation and classical music on reducing menstrual pain (dysmenorrhea) in junior high school students at SMPN 2 Kedungadem, Bojonegoro District.* ***Methods:*** *This research applied pre-experimental design (one group pre-posttest). The sample was 37 female students who were randomly obtained by using a simple random sampling. The data was gathered through a numerical pain rating scale. Then, it was tabulated and analyzed using Paired T-test.* ***Results:*** *The results showed that there was a significant effect with a value of p=0.000 or p <0.05, meaning that the combination therapy of progressive muscle relaxation and classical music can reduce menstrual pain (dysmenorrhea).* ***Conclusions:*** *It is hoped that the combination therapy of progressive muscle relaxation and classical music can be used as an alternative to reduce menstrual pain (dysmenorrhea).*

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INTRODUCTION

Adolescence is a transition from childhood to adulthood. One of the characteristics of maturity or puberty in adolescent girls is menarche. Menarche is the onset of menstruation in a girl at puberty, which usually occurs at the age of 11-14 years. This indicates that the child has entered the stage of maturity of the sexual organs in his body (Sukarni & Wahyu, 2015). Menstruation is periodic bleeding that occurs in the uterus and is experienced about 14 days after ovulation due to the shedding of the endometrial layer in the uterus (Agustin et al., 2022). Physical disorders are often experienced in women who experience menstruation. This pain ranges from mild to severe to very severe. It occurs due to the excessive release of prostaglandin hormones and results in increased uterine contractions resulting in pain during menstruation (Akbar et al., 2016; Mahundingan & Andriani, 2023).

In Indonesia, the prevalence of dysmenorrhea is 64.25%, of which 54.89% is primary dysmenorrhea and 9.36% is secondary dysmenorrhea. Primary dysmenorrhea affects 60-70% of adolescents, with three-quarters of them experiencing mild to severe pain and a quarter very severe pain. Based on preliminary studies conducted by Setianingsih and Widyawati at SMP Tri Tunggal II Surabaya in 2018, it was found that 94% of female students experienced severe pain (Setianingsih & Widyawati, 2018). Based on preliminary studies conducted by researchers at SMPN 2 Kedungadem, Bojonegoro District, as many as 10 adolescent girls experienced dysmenorrhea, 8 (80%) experienced moderate pain and 2 (20%) experienced severe pain.

Several Factors can cause primary dysmenorrhea including 1) psychiatric factors, when adolescent girls are emotionally unstable, 2) constitutional factors, factors which can reduce resistance to pain, for example, because there is anemia and chronic disease, 3) cervical canal obstruction factor usually in women with the uterus in hyperantiflexion, 4) endocrine factors, the endometrium produces prostaglandins which cause smooth muscle movement so that excess prostaglandin hormones and released in the bloodstream will lead to dysmenorrhea, 5) allergic factors caused by toxins during menstruation (Mubarak et al., 2015). Dysmenorrhea can interfere

with one's daily activities, such as decreased work efficiency and individual quality, disruption of the learning process, or missing school, sometimes there are even students who ask permission to go home because they cannot stand the dysmenorrhea they feel (Celik & Apay, 2021; Komariyah et al., 2020).

Dysmenorrhea can be treated with either pharmacological or non-pharmacological therapies (Mubarak et al., 2015). Warm compresses, massage, yoga, hypnosis, distraction (listening to classical music), and progressive muscle relaxation belong to the non-pharmacological treatments. Furthermore, another non-pharmacological method that can be used to reduce dysmenorrhea is a combination therapy using progressive muscle relaxation and classical music. It aims to calm the mind and body and reduce excessive muscle tension or pain. Relaxation techniques themselves are movements that can be done independently and can be used to reduce stress and can reduce pain (Akbar et al., 2016; Solehati & Kosasih, 2015)

Based on Fira and Kusumawati's research, progressive muscle relaxation techniques work optimally to reduce the pain scale because this technique affects the response to feel relaxed and reduce muscle tension (Fira et al., 2021). Classical music can provide a comfortable and happy effect on the listener and evoke emotions and feelings of comfort. This is affected by alpha waves produced by music, which will slow down brain waves and have a calming effect so that it can be effective in reducing the scale of dysmenorrhea (Heryani & Utari, 2017).

The information provided above addresses the advantages of progressive muscle relaxation and the potential efficacy of classical music in reducing menstrual pain (dysmenorrhea). The purpose of this study was to determine the effect of combined therapy of progressive muscle relaxation and classical music on reducing dysmenorrhea in junior high school students of SMPN 2 Kedungadem, Bojonegoro.

MATERIALS AND METHODS

This study used a pre-experimental one-group pre-post design with one subject group. The subject group was observed before the intervention and reobserved after the intervention to know the cause and effect of the intervention. The population in this study was 41 junior high school students who experienced dysmenorrhea. The sample size was calculated using the finite formula and a total of 37 respondents was obtained. The sample was selected using simple random sampling.

The inclusion criteria in this study were all junior high school students who experienced dysmenorrhea, all junior high school students who agreed to serve as research subjects by signing informed consent forms, and cooperative junior high school included in the study. On the other hand, the exclusion criteria were junior high school students who did not sign informed consent forms and who were not present at the time of the study. Then, the data were analyzed by using a paired t-test.

Before carrying out progressive muscle relaxation actions accompanied by classical music, female students who experienced dysmenorrhea were measured for their pain levels. The implementation of the intervention began with the provision of progressive muscle relaxation exercises which included 14 movements at the time of signing the Informed Consent. The 14 movements included [1] Frown the forehead and eyebrows until they wrinkle and then relax again slowly for 10 seconds, [2] Close the eyes as strongly as possible until the tension of the muscles of the eye area feels tense, [3] close the mouth while pressing the teeth as hard as possible forward, [4] Make the letter O on the lips, then pull as hard as possible forward, [5] Press the head towards the back until it feels tense in the neck muscles, [6] Bend and lower the chin until it touches the chest. [7] Clasp the hands while making a fist, 8] Slowly bend the wrists backward, 9] Clasp the hands and bring the fists to the shoulders, 10] Bring the shoulders as high as possible, 11] Lift the body from the back of the chair, then puff out the chest, 12] Pull the abdomen as hard as possible until it feels tense, 13] Pull the abdomen as hard as possible, 14 Straighten the soles of the feet (Saleh et al., 2017). Then, after being given progressive muscle relaxation exercises, the respondents were asked to understand and memorize the movements. The intervention of progressive muscle relaxation combination therapy accompanied by instrumental classical music was given for 1 intervention time for 15-20 minutes, after which the menstrual pain scale (dysmenorrhea) was observed again using the Numeric pain scale after giving the combination of progressive muscle relaxation therapy and classical music.

The instrument used in this study was Standard Operating Procedures on the variable of progressive muscle relaxation combination therapy and classical music, while on the variable of dysmenorrhea, pain intensity using the Pain scale observation sheet using the Nurmerik Rating Scale (NRS). The place of this research was conducted at SMPN 2 Kedungadem, Bojonegoro District. This research was conducted from

February 2023 to April 2023. The research has been carried out with ethical feasibility with No. 2922 / EC /KEPK - S1 / 06 / 2023.

RESULTS

The results of the characteristics of respondents in this research can be seen in Table 1.

Table 1. Characteristics of Research Respondents of Adolescent Girls at SMPN 2 Kedungadem, Bojonegoro District (n= 37).

Characteristics	Combination Therapy Progressive Muscle Relaxation and Classical music	
	Frequency (f)	Percentage(%)
Age		
12 Years	8	21,6%
13 Years	20	54,1%
14 Years	9	24,3%
Total	37	100%
Menarche		
9 Years	2	5,4%
10 Years	5	13,5%
11 Years	12	32,4%
12 Years	16	43,2%
13 Years	2	5,4%
Total	37	100%
Length of Menstruation		
5 Days	2	5,4%
6 Days	1	2,7%
7 Days	10	27,0%
8 Days	7	18,9%
9 Days	12	32,4%
10 Days	3	8,1%
12 Days	1	2,7%
14 Days	1	2,7%
Total	37	100%

Table 1 shows that more than half of the respondents, 20 respondents (54.1%), were 13 years old. Based on menarche almost half of the respondents, 16 respondents (43.2%), experienced menarche at the age of 12 years. Based on data on the length of menstruation, it is known that 12 respondents (32.4%) experienced long menstruation, which lasted for 9 days.

Table 2. Analysis of Dysmenorrhea Intensity Before and After the Intervention Combination Therapy of Progressive Muscle Relaxation and Classical Music (n= 37)

Intesitas Dismenore	N	Min-Max	Mean	SD	t	Nilai Sig (2-tailed)
Pre Intervention	37	1-8	4,19	1,998	13.712	0,000
Post Intervention	37	0-6	2,14	1,843		

Table 2 the average value of pain before the intervention was 4.19, after the intervention decreased to 2.14. The results of statistical analysis showed a p-value (sig 2-tailed) of 0.000 <0.05, meaning that there was an effect of combined therapy of progressive muscle relaxation and classical music on reducing dysmenorrhea.

DISCUSSION

This study was designed to determine the effectiveness of a combination therapy of progressive muscle relaxation and classical music on reducing menstrual pain (dysmenorrhea).

Dysmenorrhea is pain felt during menstruation in the lower abdomen to the thighs accompanied by a stabbing feeling caused by an imbalance of the hormone progesterone in the blood to cause pain (Khasanah & Astuti, 2015). The progressive muscle relaxation technique is one of the alternative therapies for handling menstrual pain (Hamdy Nasr Abdelhalim et al., 2023). Progressive muscle relaxation is a therapy carried out by relaxing the muscle areas of the face, neck, abdomen the leg muscles which will cause a feeling of peace and improve physical fitness (Aldinda et al., 2022; Amal et al., 2021), while the healing properties of music are combined with ailments and physical, emotional, mental, and spiritual circumstances (Febri, 2022).

Dysmenorrhea usually occurs two to three years after menarche, usually in the first month or year of menstruation. The age of menarche is

divided into 3, namely early menarche when a woman experiences menarche or first menstruation at the age of < 12 years, normal when aged 12-13 years and late menarche when a woman experiences menarche at age > 14 years. Age of first menstruation < 11 years has a 3.4 times greater risk of experiencing primary dysmenorrhea than age of first menstruation > 11 years. In addition to the age of menarche, dysmenorrhea is also influenced by the length of menstruation which is more than normal (>7 days) will cause excessive bleeding and will cause uterine contractions longer (Mulyani et al., 2022) (Soesilowati & Annisa, 2016).

The average menstrual discomfort (dysmenorrhea) decreased as a result of the combination therapy of progressive muscle relaxation and classical music. With a value of p = 0.000 or P < 0.05, it means that there is an effect of combined therapy of progressive muscle relaxation and classical music on reducing menstrual pain (dysmenorrhea). In their research, (Kristina et al., 2021) explain how using progressive muscle relaxation techniques can help with menstrual pain (dysmenorrhea) with an average value of pain intensity before intervention to 4.89 and after the intervention, the average value was 3.42 which decreased the average pain by 1.47 so that in this case it can be interpreted that progressive muscle relaxation affects reducing the intensity of menstrual pain (dysmenorrhea). The classical music is in line with research conducted by (Stiefani, 2023) explaining that classical music can reduce menstrual pain (dysmenorrhea) with an average value before being given an intervention of 2.61 and after being given an intervention 0.57, which means that there is an influence between classical music and a decrease in menstrual pain (dysmenorrhea).

Similar research on the effect of progressive muscle relaxation in dealing with dysmenorrhea was delivered by (Akbar et al., 2016) this study shows progressive muscle relaxation works optimally on the pain scale because it causes respondents to relax and reduce muscle tension. The p-value of the Wilcoxon signed rank test statistical test results is 0.000 (<0.05), indicating that the effect of progressive muscle relaxation is due to a decrease in menstrual pain (dysmenorrhea) in adolescent girls. While classical music is supported by research (Febri, 2022) is a procedure that blends the therapeutic effects of music with a person's needs in terms of their physical and mental health as well as their emotional, mental, spiritual, cognitive, and social demands, the value of the Wilcoxon signed rank test statistical test with a p-value of 0.000 or smaller than the significance value of 0.05, which means that there is an effect of classical music therapy on reducing menstrual pain (dysmenorrhea).

Progressive muscle relaxation can be done when the client feels relaxed. When the condition is relaxed, the muscles do not experience tension. When the muscles do not experience tension, it can reduce the sympathetic nervous system and will further activate the parasympathetic nervous system. Then this will make the secretion of catecholamines and cortisol decrease so that it will release more endocrine hormones. Endocrine hormones produced in the body can help relieve pain, and give a feeling of happiness and cells can repair their damage (Malinda & Wulandari, 2022). Using classical music can release waves that can balance and slow down brain waves, namely alpha waves which will distract attention and uncomfortable feelings. These alpha waves will have the effect of slowing down the brain waves so that they will provide calmness, more relaxation, satisfaction and reconcile feelings (Rangga et al., 2021).

According to the preceding description, progressive muscular relaxation therapy combined with classical music can lessen the severity of dysmenorrhea because by doing progressive muscle relaxation the body will release endocrine hormones which are useful to help relieve pain. With the addition of classical music accompaniment, brain waves will be slowed down so that it will feel calm relaxed, and reconcile feelings. Thus, the provision of progressive muscle relaxation exercises accompanied by classical music is effective for reducing the intensity of menstrual pain.

CONCLUSIONS

Dysmenorrhea is a reproductive problem frequently experienced by adolescent girls. Based on the test results, it can be concluded that progressive muscle relaxation and classical music are effective in reducing dysmenorrhea in junior high school students at SMPN 2 Kedungadem, Bojonegoro District as perceived from the pre-test and post-test results, p-value = 0.000 (p <0.05). Combining progressive muscle relaxation with classical music is one option for non-pharmacological therapy to treat dysmenorrhea. Dysmenorrhea pain in adolescent girls is reduced after a combination therapy intervention of progressive muscle relaxation and classical music. In this situation, the use of progressive muscle relaxation and classical music can significantly reduce dysmenorrhea.

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