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EFFECT OF GIVING COMBINATIONS *PETRISSAGE MASSAGE* WITH KENANGA AROMATHERAPY ON THE LEVEL OF DYSMENORRHEA

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ABSTRACT

Background: In 2020, the prevalence of dysmenorrhea in Indonesia was 64,25%. About 54,98% had primary dysmenorrhea, and 9,36% had secondary dysmenorrhea. The continuity of abdominal muscle contraction causes the pain of dysmenorrhea during the menstrual period. A combination of gentle massage and linalool in aromatherapy will stimulate the hypothalamus to produce endorphin hormones to reduce the tension of the uterus's muscle due to the menstrual.
Objective: To understand the effect of combining *petrissage massage* with Cananga aromatherapy for dysmenorrhea in teenage girls at senior high school.
Methods: This research used Pre-experimental method with one group pre-test and post-test approach. The sampling technique used a rule of thumb by the number of 30 people of teenage girls at the high school. A parametric test and paired t-test processed the data.
Result: After received the intervention, 28 respondents (93%) with dysmenorrhea diminished, whereas 2 respondents (7%) remained dysmenorrheic. The pre- and post-test analytical result was p = 0,000 (p0,05), indicating that combining petrissage massage with Cananga aromatherapy for dysmenorrhea had an impact. .
Conclusion: A combination of *petrissage massage* with Cananga aromatherapy can reduce dysmenorrhea

Keywords: *Petrissage Massage, Cananga Aromatherapy, Dysmenorrhea, Teenage Girls*

INTRODUCTION

Menstruation is a sign of maturity in women. Usually occurs when a girl turns 9-12 years old. Menstruation occurs in women every month until menopause, normally after the age of forty. The menstrual cycle itself varies depending on a person's condition. Most women will get their period around 3-8 days, with an average cycle of 28 days[1].

Studies in America show that the highest prevalence of menstrual pain occurs in teenager, between 20-90%. Meanwhile, a study in Sweden found that the prevalence of dysmenorrhea occurred in 90% of women aged 19 years, 67% of women aged 24, and 10% of women aged 24 who experienced dysmenorrhea reported disturbing pain [1]. According to research conducted by Purba (2013), in Indonesia, dysmenorrhea in adolescents is 64.25%, with 54.89% experiencing primary dysmenorrhea and 9.36% experiencing secondary dysmenorrhea [2–4].

Most women choose to treat menstrual pain by taking pain relievers. Treatment of menstrual pain (dysmenorrhea) can be divided into 2 categories pharmacological and non-pharmacological. The pharmacological treatment that is usually used to reduce dysmenorrhoea is the NSID group. This drug can effectively reduce menstrual pain, but long-term use can irritate the digestive tract due to the direct toxic effects of NSAIDs on the gastric mucosa so that the mucosa becomes damaged. NSAID interactions with other drugs occur more often because NSAIDs are one of the most widely used drugs. As an alternative treatment is non-pharmacological. One of the non-pharmacological treatments for menstrual pain that can be done is using aromatherapy and massage [5,6].

Aromatherapy has a positive effect because it is known that fresh, fragrant aromas stimulate sensory receptors and ultimately affect other organs so that they can strongly affect emotions[7]. According to the research results conducted, ylang aromatherapy greatly influences the decrease in menstrual pain levels. This is because the content of linalool in lavender aromatherapy will stimulate the central nervous system to produce endorphins so that the body relaxes and pain can be controlled [8].

Apart from the use of aromatherapy, other non-pharmacological treatments that can be done are massage. *Massage* can be done in the dotted area acupressure (shoulders and hands) for 5-10 minutes. By doing massage, the body will become more relaxed and relieve the pain that is being experienced. Sumiati et al. (2017) say that massage of petrissage significantly reduces menstrual pain. This is evidenced by the results of his research, which showed a decrease in the level of pain felt by the respondents [9].

The other study by Najafi, et.al, (2021) about The Effect of Aromatherapy Alone or in Combination with Massage on Dysmenorrhea stated that Aromatherapy with herbal medicine reduces dysmenorrhea. This treatment is very effective when aroma oils are combined with massage or when a mixture of aroma oils is used for the treatment of dysmenorrhea.[10]

After a preliminary study was conducted on January 24 2020, at Kebakkramat State High School, 8 students said they felt nauseous the first few days of menstruation, 3 students said they had a fever the first 1-2 days of menstruation and 2 students said they sometimes experienced low back pain during menstruation. However, this did not hinder them in carrying out their daily activities.

METHODS

The study design used is Experimental research from *Pre-Experimental* with *One Group Pretest-Posttest Design*, which means that researchers will intervene in one group to determine the effect of the treatment given. The intervention was giving a combination both petrissage massage and kenanga aromatherapy on the level of dysmenorrhea. The target population in this study were all Kebakkramat State Senior High School students, totalling 186 of female students. The sampling technique in this study was by *Non Probability Sampling* form of technique purposive *sampling. That* is, sampling was done deliberately according to the criteria desired by the researcher (Notoatmodjo, 2012).

In this study, the researchers determined the sample size to be used as many as 30 respondents was determined using the Rule of Thumb, and were taken randomly after chosen by inclusive and exclusive criteria. The inclusive criteria were: students who experienced dysmenorea every period, students who did not take any medicine or other treatment to reduce dysmenorea, and student who were willing to be a respondent. While the exclusive criteria was the student who did not follow the research procedure from start to finish. We distributed questionnaires to collect the data about the dismenorea on their period respondents. From 186 students, there were 98 students who met the criteria, then we random to got 30 respondents..

After obtaining the selected samples, the researcher determines the treatment schedule according to the menstrual schedule for treatment by the researcher. Before carrying out therapy, researchers distributed research questionnaires as a pre-test regarding the menstrual pain scale with a numerical rating scale. Then, after the therapy had been completed for 20 minutes, the researchers distributed the menstrual pain questionnaire again as a post-test. After the pre-test and post-test data were collected from all respondents, the data was processed using the dependent t-test to determine the effectiveness of this therapy.

RESULT

Identification of Respondent Characteristics

Table 4.1 Frequency Distribution of Respondent Characteristics based on Age and Activities in young women at Kebakkramat State Senior High School

Category	Frequency	Presentase
Age		
16 years	18	60
17 years	12	40
Menarche		
10 years	7	23,3
11 years old	8	26,7
12 years old	10	33,3
13 years old	5	16,7
Activity		
School Activities	23	76,7
School and outside school activities (ex-curricular, tutoring, etc.)	6	20
School and Work Activities	1	3,3
Total	**30**	**100**

The results of data analysis showed that most of the research respondents were 16-year-old girls, with 18 female students (60%). Most of the respondents experienced their first menstruation at 12, as many as 10 girls (33.3%). Among the 30 female students who were respondents, the majority only carried out school activities

without additional activities outside of school, with 23 female students (76.7%).

Table 4.2 Differences in Menstrual Pain Scales for Young Women Before and After Intervention

	Pretest	**Posttest**
Mean	4,47	2,03
Median	4,50	2,00
std. Deviation	1,432	1,245
Min.	2	0
Max.	7	5

Based on the data in Table 4.2, it can be seen that the average respondent's menstrual pain scale before the intervention was carried out was 4.47 with a standard deviation of 1.432. The minimum score is 2 and the maximum score is 7. Meanwhile, after the intervention, the average respondent's pain scale is 2.03 with a standard deviation of 1.245. The minimum score is 0 and the maximum score is 5.

Analysis of Changes in Menstrual Pain Before and After Intervention

The normality test in this study uses the test *Sapphire-Wilk.* This is because the sample taken is <50 respondents.

Table 4.3 Normality Test for Menstrual Pain Data

	Shapiro-Wilk		
	Statistic	Frequency	*p-value*
Pretest	.940	30	.093
Posttest	.931	30	.052

Based on the table above, the normality test results obtained before and after the intervention were normally distributed with p-value> 0,05.

Table 4.4 Changes in Menstrual Pain Before and After Given the Combination*Petrissage Massage* with Kenanga Aromatherapy

	Mean	**Std. Deviation**	**Df**	***p-value***
Pretest-Postest	2.433	.971	30	.001

Based on table 4.4 analysis paired *t-test* p-value results obtained *value* = 0.001 < α (0.05) which means there is a change in menstrual pain *pretest* and *posttest* given the combination of intervention *petrissage massge* with ylang aromatherapy.

DISCUSSION

Based on the research that has been done, the results show that there is an effect of giving the combination *petrissage massage* with ylang aromatherapy to the level of *dysmenorrhea* in young women at SMA Negeri Kebakkramat class XI. This is indicated by changes in the pain scale experienced by respondents after the intervention. Menstrual pain (dysmenorrhea) is caused by contractions of the abdominal muscles that occur continuously during menstrual bleeding. The contractions that occur will cause the muscles to become tense and cause pain. Pain during menstruation is caused by pieces of uterine lining tissue or blood clots that come out through the cervix, especially if the cervical canal is narrow[3].

Respondents experienced a decrease in pain intensity after the intervention of giving aromatherapy. Before the intervention, most respondents in the study experienced moderate menstrual pain. However, after the intervention, most respondents experienced a decrease in pain to a mild pain scale. His research also explained that the decrease in pain was due to the content of linalool, which is in the aromatherapy used. Content *linalool* aromatherapy will stimulate the

hypothalamus to release endorphins and serotonin hormones, which will then help relieve pain due to menstruation[8,11].

This research is also supported by research conducted by Sumiati (2017), which states that there is an effect of giving *petrissage massage* for reducing menstrual pain. Before the intervention, the majority of respondents experienced moderate menstrual pain. After the intervention, most respondents experienced a decrease in the intensity of menstrual pain to mild menstrual pain. After the intervention, some respondents no longer felt the menstrual pain they used to feel. The study also explained that petrissage *massage* could reduce pain intensity because *massage* can improve disturbed blood circulation so that the body becomes more relaxed and reduces pain[9].

This is following research conducted by Ogai*et al* (2013) on petrissage *massage*. In his research, it was concluded that *petrissage massage was* very influential in reducing muscle tension experienced by respondents. This is evidenced by the respondents who received the intervention in the form of petrissage *massage* during sports breaks had higher fitness results than respondents who did not get the intervention *petrissage massage*[12].

The content of *linalool acetate in* ylang aromatherapy can reduce menstrual pain. Content *linalool* Volatile matter will stimulate the sensory nerves in the nose, which will then be carried to the olfactory system. The stimulus received by the olfactory system will be sent to the hypothalamus. The hypothalamus will work by releasing endorphins and serotonin hormones that are capable relieve the nervous system and strained muscles[13].

In addition to the content of linalool in aromatherapy, *massage* also reduces menstrual pain. According to research by Astarani (2015), gentle massage on certain points stimulates the hypothalamus to release endorphins. The endorphins released will inhibit the passage of pain stimuli to the central nervous system by giving a sense of relaxation to the body. Hence, combining petrissage massage with Cananga aromatherapy effectively reduces menstrual pain. This is because the relaxing effect caused by aromatherapy and gentle massage will stimulate the performance of the uterine muscles to become lighter and reduce the intensity of pain felt [14].

Based on the analysis of the characteristics of the respondents, it was found that the average age of the respondents at the age of 16 was 18 people (60%). These results indicate that the respondents in this study were teenagers. Several 10 female students (33.3%) experienced their first menstruation at the age of 12 years. As many as 23 out of 30 respondents (76.7%) only do school activities without doing activities outside of school, such as extracurricular activities, tutoring or work.

According to research conducted by Pundati (2016), predisposing factors that influence the occurrence of dysmenorrhea include the age of menarche. Adolescent girls will generally experience their first menstruation at 12-14 years old. Someone who experiences menstruation earlier tends to experience menstrual pain. In addition, the number of activities carried out also affects the presence or absence of pain. This is because the more time spent doing activities, the more attention will be diverted from the pain[15].

The average result of the respondent's pain scale before the intervention was 4.47, with a standard deviation of 1.432. After the intervention, the average respondent's menstrual pain scale was 2.03, with a standard deviation of 1.245. The minimum score on the pain scale before the intervention is 2, and the maximum score on the pain scale is 7. After the intervention, the minimum score on the pain scale is 0, with the maximum score on the pain scale being 5. This indicates a significant change in the menstrual pain scale felt by the respondent after the intervention.

Based on the Shapiro-Wilk test, The result shows that the data is normally distributed. This is indicated by the results of data processing p *value* >0.05. Test results *paired t-test* for comparison of pain intensity before and after being given treatment in the form of a combination *petrissage massage* with ylang flower aromatherapy showed a p-value of 0.001 or a p-value < (0.05), which means *petrissage massage* with ylang aromatherapy can reduce the intensity of menstrual pain. The final results showed that the respondents experienced decreased pain intensity, so Ha was accepted.

According to Novia (2008), the condition of a person's body also greatly influences the success or failure of a given intervention. This is because the condition of the body is closely related to endurance. A person's weak immune system can inhibit the effects that should be caused by petrissage *massage*. The weaker a person's immune system, the easier it is to feel pain. In addition, a person's emotional state can also affect the success of the intervention. Someone who experiences emotional stress tends to have higher estrogen and adrenaline hormones. High levels of this hormone will increase uterine contractions, causing an increase in menstrual pain [11].

Combination giving *petrissage massage* with ylang aromatherapy includes the application of complementary midwifery care that can be applied to support the midwifery services provided. There are many types of complementary medicine, one of which is massage. According to research conducted by Kostania (2015), the number of midwives who provide complementary care is still small. Utilizing this new knowledge, a midwife can improve the quality of client services [16].

This research has limitations: the distance between the researcher and the respondent. Researchers were not able to provide direct intervention to some respondents. Therefore, the researchers replaced it by sending the respondents a video on how to do the intervention and Cananga aromatherapy. This could confuse the research results.

CONCLUSION

1. Characteristics of the majority of respondents are young women aged 16 years, and as many as 18 students (60%). As many as 10 people (33.3%) had their first menstruation at the age of 12 years. Among the 30 respondents, 23 female students (76.7%) only did school activities.
2. There was a significant difference in the results in the respondent's menstrual pain scale before and after the intervention was carried out in the form of a combination of *petrissage massage* with ylang aromatherapy. The average menstrual pain scale before the intervention was 4.47, and the average menstrual pain scale after the intervention was 2.03
3. There was a change in menstrual pain for class XI SMA Negeri Kebakkramat before and after administration of petrissage *massage* with ylang aromatherapy with a value *p-value* = 0,001 (p<0,05).

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