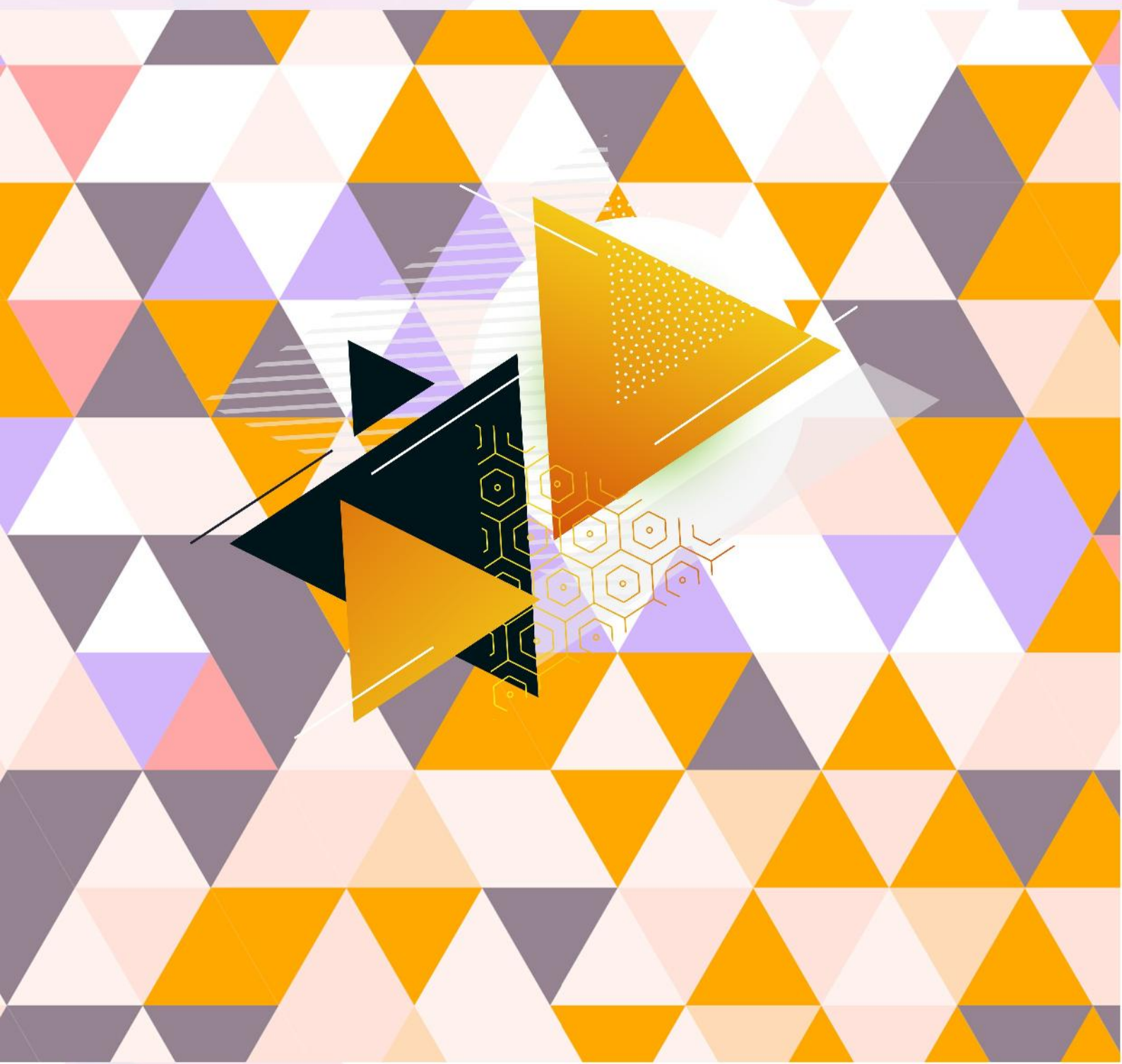


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The Effect of Yoga on Menstrual Pain Reduction in Adolescents

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ABSTRACT

Menstrual pain is pain that is characterized as brief pain before or during menstruation. Yoga is one of the relaxation techniques that can produce endorphin hormones. Endorphin hormones are produced in the brain and the spinal cord arrangement can function as a natural sedative that produces a sense of comfort thereby reducing pain. The purpose of this study is to determine the effect of yoga on menstrual pain reduction in adolescents. The research method used is Quasi-Experimental Design with a Pre-Test and Post-Test One Group Design research design, carried out from 16 April to 16 September 2019. The population in this study were all adolescents, amounting to 69 people in boarding schools pondok madinah Makassar, a sample of 30 people who experienced menstrual pain. The results showed the percentage of respondents who reduced menstrual reduction after doing yoga by 28 people (93.3%) and who did not reduce the reduction in menstrual pain by 2 people (6.7%). From the Wilcoxon test results obtained value $\rho = 0,000 < 0.05$ ($p < \alpha$) means that there is an influence of yoga on the reduction of menstrual pain in adolescent girls at Pondok Madinah Islamic Boarding School in 2019. Yoga is an alternative as a non-pharmacological treatment to reduce menstrual pain.

Keywords : *Teenagers, yoga, menstrual pain.*

INTRODUCTION

Adolescence is a period of change that occurs from childhood to adulthood including changes that occur in biological, psychological and social. In adolescence, there is rapid progress in the maturity of sexual organ function, known as puberty. In adolescent women, puberty is marked by the occurrence of menstruation or the first menstruation. Menstruation is bleeding that occurs in women periodically and cyclically from the uterus accompanied by removing the endometrial lining¹.

One of the most common disorders during menstruation or menstruation is dysmenorrhea or painful menstruation. Dysmenorrhea is pain that is felt in the lower abdomen that usually occurs before, during or after menstruation. or menstruation, dysmenorrhoea is divided into two types, namely primary and

secondary dysmenorrhoea. Primary dysmenorrhoea is dysmenorrhoea which occurs due to myometrial contraction due to prostaglandin production without any abnormalities in the pelvis while secondary dysmenorrhoea is dysmenorrhoea accompanied by abnormalities in the pelvis (10).

Symptoms of dysmenorrhoea include cramps and lower abdominal pain, lower back pain, nausea, diarrhea, vomiting, fatigue, fainting, weakness and headaches.

The risk of dysmenorrhoea is higher in women who have being overweight, smoking, drinking alcohol and early menarche (before age 11 years)².

The incidence of dysmenorrhea in the world according to WHO in 2012 was 1,769,425 people with 10-15% experiencing severe dysemorea. On average, more than 50% of women in

each country experience dysmenorrhoea. In America the percentage is around 60% and Sweden around 72%. In Indonesia, the incidence of dysmenorrhoea in women of productive age is estimated at 55%. The incidence of dysmenorrhoea in women of childbearing age in Indonesia in 2010 was 64.25% consisting of 54.89% primary dysmenorrhoea and 9.36% with secondary dysmenorrhoea. Whereas in South Sulawesi in 2010 it was stated that the percentage of women who experienced menstrual disorders in the age range 10-59 years was 14.9% of women with a background of living in urban areas.

At this time in Indonesia there are more women who experience dysmenorrhea who do not report or visit a doctor, which is the fact that as many as 90% of Indonesian women have experienced dysmenorrhea, this can be due to the lack of knowledge about dysmenorrhea³. The number of dysmenoea incidents in the field is always more than the reports claimed by the Health Office and related agencies. This happens because health costs are considered relatively expensive.

Because many women often ignore dysmenorrhoea and do not make proper treatment efforts, this condition can be dangerous if left alone because the pain can be a symptom of endometritis or other secondary dysmenorrhea disease and can even cause pelvic inflammation and even infertility⁴.

The results of Basic Health Research (2011) say that when menstruation occurs, women will feel pain in their stomachs. The pain or dysmenorrhoea that is felt by each woman is different, the menstrual pain that is felt can be in the form of a vague pain or also a strong pain that can interfere with activities, some even feel no pain at all¹⁰.

For the implementation of pain

management can be done by using several methods including pharmacological and non pharmacological. Pharmacological methods are using anti-pain drugs while non-pharmacological methods can be done with relaxation, hypnotherapy, warm water compresses, regular exercise or exercise, yoga, distraction and massage. Non-pharmacological pain management is safer to use because it does not cause side effects like drugs, because non-pharmacological uses a physiological process⁵.

Treatment that can be done in dysmenorrhea usually uses non-steroidal anti-inflammatory drugs. Apart from medication, pain can also be relieved by adequate rest, regular exercise (especially walking), massage, warm compresses in the abdominal area and yoga⁵. Yoga With breathing exercises, the mind can focus on delivering oxygen to the painful area, one of which is the abdominal area. This is effective in relieving menstrual pain. Yoga is a combination of activities that contain elements of stretching, bending, focusing, pressing, breathing, strength, endurance, balancing and appreciation. Yoga only involves the muscular system, the respiratory system and does not require other tools so it is easy to do at any time. The principle of the yoga movement is to improve blood circulation⁶.

According to research conducted by Oktariani (2017) which shows that the value of Asymp.Sig. (2-tailed)=0.000. If the results of this study indicate the value of Asymp.Sig. (2-tailed)<0.05 (0.000<0.05) then Ho is rejected and Ha is accepted which means that there is an effect of yoga therapy on the level of dysmenorrhea in female teaching midwives at Aisyiyah University Yogyakarta in 2017⁷.

In line with Erna Dewi's research

(2019) she also found good research results

shows that of the 70 respondents, before doing yoga exercises, the majority were moderate pain, moderate pain was 58.34%, mild pain was 28.33%, and severe pain was controlled by 13.33%. After being given yoga exercises, the pain scale decreased, namely 18.33% of women who had no pain, 76.67% of mild pain, 5% of moderate pain, and no controlled or uncontrolled severe pain⁸.

Based on data from the National Health and Nutrition Examination Survey (NHANES), the average age of menarche (first menstruation) in adolescents in Indonesia is 12.5 years with a range of 9-14 years. The incidence rate of primary type dysmenorrhea is around 54.89%, while the rest of patients with secondary dysmenorrhea are around 45.11%. Dysmenorrhea occurs in adolescents with a prevalence ranging from 43% to 93%, where around 74-80% of adolescents experience mild dysmenorrhea, while the incidence of endometriosis in adolescents with pelvic pain is estimated at 25-38% and in adolescents who do not respond positively to treatment for menstrual pain, endometriosis was found in 67% of cases at laparoscopy¹¹.

In South Sulawesi, there is no accurate data on girls who experience dysmenorrhea, but previous research has concluded that around 65% have dysmenorrhea with varying degrees of pain. Respondents who experienced mild pain were 57.7%, moderate pain was 38.5%. This shows that dysmenorrhea is still high in South Sulawesi.

A preliminary study conducted at the Islamic Boarding School in Madinah Makassar in November 2018 was as many as 40 students. A simple interview was conducted on 22 students and found who experienced menstrual pain, 1 (4.6%) students said they asked permission to go home to rest in the

dormitory and could not attend lessons, 7 (31.8%) students coped with it by smearing eucalyptus oil, 4 (18.2%) coped with medication and 10 (45.4%) students were left alone.

They said this situation interfered with the concentration of learning in class and made them lazy to do activities. Of all students who experience menstrual pain, they do not know that yoga can help reduce menstrual pain.

This shows that the large number of students who experience menstrual pain at the Islamic Boarding School Madinah Makassar so it is deemed necessary to conduct research. The Islamic Boarding School in Madinah Makassar has never been used as a location in a similar study before.

Based on the above reviews, the authors are interested in conducting research more on "The Effect of Yoga on Menstrual Pain".

The introduction contains the research background, the problem and ends with the research objectives. The background is described using an inverted pyramid method starting from the global, national and local levels. Include the size in International System (SI units), for example, meters, kilograms, or liters. Use standard abbreviations. Sentences that start with numeric units are written with letters. The entire text content uses Times New Roman font, size 11 pt, Margin 2.5 cm on all sides, with 1.5 spaces and a maximum of 20 pages including abstract.

METHODS

This research is a quantitative study using a Quasi-Experimental Design and a Pre-Test and Post-Test One Group Design research design. The pre-test group was measured before being given yoga treatment in the first month and the post-test group was measured on the first day of the second month of menstruation, after being given yoga treatment for three

days before menstruation. This research was conducted at the Islamic Boarding School Madinah Makassar on April 16 to September 16 2019. The population in this study were all adolescents, totaling 69 people in the Makassar Islamic boarding school. The sample in this study were 30 young women who experienced Menstrual pain at the Pondok Madinah Islamic Boarding School in Makassar from April to September 2019. The sampling technique used in this study was purposive sampling, which was selected as much as the number of samples needed. Data analysis used the Wilcoxon Test¹².

RESULTS AND DISCUSSION

In Table 1, it can be seen that of the 30 respondents at the Makassar Islamic Boarding School in 2019, the highest number of respondents was 16-17 years old as many as 16 people (53%) and the lowest number was 14-15 years old as many as 14 people (46, 7%).

Table 1. Characteristics of Respondents by Age

Age (Years)	N	%
14-15	14	46.7
16-17	16	53.3
Total	30	100

Table 2 can be seen that of the 30 respondents at the Makassar Islamic Boarding School in 2019, the highest number of menarche was 19 people (10-12 years) (63.3%) and the lowest, 13-15 years (11 people) (36.7%).

Table 2. Characteristics of Respondents by Menarche

Menarche Age (Years)	n	%
10-12	19	63.3
13-15	11	36.7
Total	30	100

Table 3 can be seen that of the 30 respondents at the Pesantren Pondok Madinah Makassar in 2019, the highest number of menstrual cycles was regular as many as 23 people (76.7%) and the lowest number was irregular as many as 7 people (23.3%).

Table 3. Characteristics of Respondents Based on Menstrual Cycle

Menstrual cycle	n	%
Regular	23	76.7
Irregular	7	23.3
Total	30	100

In Table 4, it can be seen that of the 30 respondents, the highest amount of pain before being treated was 14 people (46.7%) at moderate pain level, while the lowest amount of pain in respondents was 0 people (0%) at the painless level.

Table 4. Frequency Distribution of Pain Levels Before Yoga

Pre-test Level Pain	n	%
No Pain	0	0
Mild Pain	7	23.3
Moderate Pain	14	46.7
Severe Pain	9	30
Total	30	100

In Table 5, it can be seen that of the 30 respondents at the Pesantren Pondok Madinah Makassar in 2019, the highest number of pain after being treated with respondents was 24 people (80%) at a mild pain level, while the lowest number of pain in respondents was 0 people (0%) in severe pain level.

Table 5. Frequency Distribution of Pain Levels After Yoga

Post-test Level Pain	N	%
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No Pain	5	16.7
Mild Pain	24	80
Moderate Pain	1	3,3
Severe Pain	0	0
Total	30	100

Table 6 can be seen that of the 30 respondents, the highest number of pain before treatment was 14 people (46.7%) at moderate pain level, while the highest number of pain after treatment was 24 people (80%) at mild pain level. By using the Wilcoxon test, it was found p value = 0,000 where $p < \alpha$ (0,000 < 0.05), which means that H_0 was rejected and H_a was accepted, so that there was an effect of yoga on reducing menstrual pain in adolescents at the Pesantren Pondok Madinah Makassar in 2019.

Table 6. The Effect of Yoga on Decreasing Menstrual Pain

Post-test level Pain	Doing Yoga				p Value
	Before		After		
	n	%	n	%	
Not Pain	0	0	5	16.7	0.000
Mild Pain	7	23.3	24	80	
Pain Moderate	14	46.7	1	3,3	
Pain Weight	9	30	0	0	
Total	30	100	30	100	

In this study, the results of the univariate analysis indicated that there were 30 respondents at the Pondok Madinah Islamic Boarding School in Makassar in 2019. The results of the bivariate analysis showed that of the 30 respondents, the highest amount of pain before treatment was 14 people (46.7%) at moderate pain level, while the highest number of pain after treatment was 24 people (80 %) at a mild pain level. By using the Wilcoxon test obtained p value = 0,000 where $p < \alpha$ (0,000 < 0.05), which

means that H_0 is rejected and H_a is accepted, which means that there is an effect of yoga on reducing menstrual pain in young women at the Pesantren Pondok Madinah Makassar in 2019.

There is a significant change regarding menstrual pain before and after yoga on the reduction of menstrual pain in adolescent girls shows that evidence yoga serves to treat menstrual pain. In accordance with the theory of Smeltzer and Brenda (2002) that yoga involves the muscular and respiratory systems so that it does not need other tools and is easy to do at any time. The principle underlying pain relief by relaxation techniques lies in the physiology of the autonomic nerves which are the parts of the peripheral nervous system that maintain the homeostasis of the individual's internal environment.

In addition, research conducted by In line with Erna Dewi's research (2019) also found research results showing that of 70 respondents, before doing yoga exercises, the majority were moderate pain and after being given yoga exercises experienced a decrease in the pain scale, namely the majority experienced pain. mild and none of the respondents experienced controlled or uncontrolled severe pain

Thus the researchers assume that yoga during menstruation can reduce menstrual pain that is felt because with yoga movements and relaxation techniques it can produce endorphin hormones, which are neuropeptides produced by the body when relaxed or calm, which creates a sense of comfort and increases endorphin levels in the body to reduce pain during contractions. The respondents who do not experience a decrease in menstrual pain can be caused by choosing the type of food that is inaccurately, eating spicy and acidic foods that can increase menstrual pain, or eating fast food that contains lots of sugar and salt can cause sugar levels to become unstable and convert testosterone

to estrogen which means it also increases the amount of estrogen levels where the high estrogen hormone can cause PMS symptoms. especially cramps. In addition, the age of respondents who are still young is related to psychology that is still unstable which can trigger anxiety and has not been able to adapt well to menstrual pain that is felt so that the pain is felt to be heavier. In Andarmoyo (2013) age is also used as a means of determining tolerance to pain. Tolerance increases with age and understanding of pain⁹.

CONCLUSION

The results showed that of the 30 respondents before doing yoga, the number who felt severe pain was 9 people (30%), 14 people felt moderate pain (46.7%) while 7 people felt mild pain (23.3%).) and there were no respondents who did not feel pain. Of the 30 respondents after doing yoga, 4 people (13.3%) did not feel pain 22 people felt mild (73.4%) while those who felt moderate pain as many as 4 people (13.3%) and no respondent felt severe pain. This study proves that there is a decrease in the incidence of menstrual pain in adolescents who do YOGA.

YOGA is an alternative option to treat menstrual pain or dysmenoea (non-pharmacological treatment) and as a preventive measure.

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