



THE EFFECT OF YOGA TRAINING BUTTERFLY POSE, CHILD POSE, CAT AND COW POSE ON THE INTENSITY OF PRIMARY MENSTRUAL PAIN (DYSMENORRHEA)

Salwa Rizky Aprillia¹; Sri Wahyuni²; Dhias Widiastuti³;
Poltekkes Kemenkes Semarang

Corresponding author: Salwa Rizky Aprillia
Email: salwawarizky@gmail.com

ABSTRACT

Dysmenorrhea is a gynecological problem that requires good, appropriate and comprehensive treatment. One of the treatments to reduce dysmenorrhea is by doing yoga. Objective: Knowing the effect of yoga training Butterfly Pose, Child Pose, Cat and Cow Pose on the intensity of primary menstrual pain (dysmenorrhea) in level I female students (first semester of the 2022/2023 academic year) at the Poltekkes Kemenkes Semarang Dormitory. The research method used True Experimental Design with Pretest - Posttest Control Group Design. The population in this study were level I students (first semester of the 2022/2023 academic year) at the Polytechnic Dormitory of the Ministry of Health Semarang who experienced dysmenorrhea and with the Purposive Sampling technique obtained a sample of 30 students. The research instrument used a standardized Numeric Rating Scale (NRS) checklist. Data analysis using univariate and bivariate analysis. The results showed the initial measurement of primary dysmenorrhea intensity (mean experimental group = 6.13 and mean control group = 4.80), And the final measurement of primary dysmenorrhea intensity (mean experimental group = 4.40 and mean control group = 5.53). There is a difference in the intensity of primary dysmenorrhea in the initial measurement and the final measurement of the data of the experimental group and the control group with a significance of <0.05. In conclusion, there is an effect of yoga training In Butterfly Pose, Child Pose, Cat and Cow Pose on the intensity of primary menstrual pain (dysmenorrhea) in level I female students at the Poltekkes Kemenkes Semarang Dormitory. The existence of this research is expected to be able to add insight and knowledge related to yoga as one of the non-pharmacological treatments for primary menstrual pain (dysmenorrhea) and the application of yoga can be a solution to solving health problems, especially in female students who experience primary menstrual pain (dysmenorrhea).

Keywords: *Yoga Training, Butterfly Pose, Child Pose, Cat and Cow Pose, Dysmenorrhea*

Introduction

Adolescence is a transition process from childhood to adulthood characterized by rapid changes in body development. Adolescence is also known as a period of change which includes developmental changes including physical,

psychological and psychosocial aspects (Pratiwi RY, 2018).

In adolescent girls there is a physical change, namely changes in the reproductive organs which are characterized by the arrival of menstruation. Menstruation or better known as

menstruation is the process of decay of the uterine wall consisting of blood and body tissue. Every woman has a different menstrual experience. Some women experience menstruation without any complaints, but not a few of them experience menstruation accompanied by complaints, resulting in discomfort in carrying out an activity. Menstrual disorders that are commonly and most often experienced by women are menstrual disorders that cause physical discomfort and can interfere with daily activities such as dysmenorrhea or often known as menstrual pain (Irianti, 2018).

According to the World Health Organization (WHO) the number of dysmenorrhea in the world is very large, on average more than 50% of women experience primary dysmenorrhea. The prevalence of dysmenorrhea in each country varies. The prevalence in the United States is approximately 85%, in Italy it is 84.1% and in Australia it is 80%. The average prevalence in Asia is approximately 84.2% with specifications of 68.7% in Northeast Asia, 74.8% in Middle East Asia, and 54.0% in Northwest Asia. Prevalence in Southeast Asian countries also varies (Tsamara et al., 2020).

Based on data from the Indonesian Ministry of Health in 2019, the incidence of dysmenorrhea in Indonesia was 64.52%, consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea. The incidence rate of dysmenorrhea in women of reproductive age in Central Java has reached 56% (Lail, 2019).

Dysmenorrhea is a gynecological problem that is often complained of by adolescent girls. Various impacts that can be caused by dysmenorrhea include limited physical activity, pain or pain in the lower back area, headache, nausea, vomiting, abdominal cramps, and dysmenorrhea accompanied by abnormalities or disorders of the reproductive system can trigger infertility. Dysmenorrhea is a problem that requires good, appropriate and comprehensive treatment.

Dysmenorrhea treatment can be divided into two ways, namely pharmacological and non-pharmacological treatments. One of the non-pharmacological treatments to reduce dysmenorrhea is yoga. Exercise, such as yoga practice, is a non-pharmacological intervention

that is safe to use because it utilizes physiological processes.

Yoga is believed to control the nervous system so that it can reduce pain. In addition, the benefits obtained from practicing yoga include increasing blood circulation throughout the body, increasing lung capacity when breathing, reducing body, mind and mental tension, and yoga is also believed to reduce the fluid that accumulates in the waist which causes pain during menstruation (Arini et al., 2020).

Yoga is one of the relaxation techniques recommended to reduce the level of dysmenorrhea. Yoga positions performed during menstruation should relax the body, do not interfere with the direction of blood circulation that must go down and out, do not consume too much energy and do not cause hormonal disturbances (Widayati et al., 2020).

The results of a preliminary study at the Poltekkes Kemenkes Semarang central campus dormitory conducted by researchers to first-year students (first semester of the 2022/2023 academic year) showed the results of 43 students there were 38 students who experienced dysmenorrhea or menstrual pain with the majority aged 19 years. Respondents who experienced dysmenorrhea handled pain in various ways, including pharmacological treatment (painkillers) as many as 3 respondents (7.9%), drinking herbal medicine as many as 6 respondents (15.8%), doing non-pharmacological treatment (exercise, yoga, warm compresses, aromatherapy, and others) as many as 13 respondents (34.2%), and never handling the menstrual pain (dysmenorrhea) they felt as many as 16 respondents (42.1%).

Based on this background, the researcher is interested in conducting a study entitled "The Effect of Yoga Training Butterfly Pose, Child Pose, Cat and Cow Pose on the Intensity of Primary Menstrual Pain (Dysmenorrhea) in Level I Students at the Poltekkes Kemenkes Semarang Dormitory". Training Yoga Butterfly Pose, Child Pose, Cat and Cow Pose is a yoga movement that is included in the Hatha Yoga movement.

Hatha yoga is a branch of yoga that focuses on physical and mental health. Hatha yoga includes light physical exercise so it is good for beginners who want to start yoga. Hatha yoga can help with health, strength, flexibility, balance of

the body and mind. Training Hatha Yoga movements with Butterfly Pose, Child Pose, Cat and Cow Pose are believed to relax the body and improve blood circulation so that it can reduce menstrual pain.

The purpose of this study was to determine the effect of Yoga Training Butterfly Pose, Child Pose, Cat and Cow Pose on the Intensity of Primary Menstrual Pain (Dysmenorrhea) in Level I students at the Poltekkes Kemenkes Semarang Dormitory.

Methods

This study uses the True Experimental method with pre-test post-test control group design. The population was first year female students in the dormitory of Poltekkes Kemenkes Semarang who experienced dysmenorrhea, namely 38 female students.

Sampling using purposive sampling technique with regard to inclusion and exclusion criteria. The sample in this study amounted to 30 respondents. Each respondent was divided into 15 experimental group respondents and 15 control group respondents.

This research instrument uses the Numeric Rating Scale (NRS) pain scale which indicates the level of menstrual pain (dysmenorrhea) on a 0-10 numerical scale.

Data analysis techniques used univariate and bivariate analysis. Univariate analysis aims to determine the central tendency analysis (mean, standard deviation, lowest value, and highest value). Meanwhile, bivariate analysis was conducted to determine whether there was a difference between before and after treatment, and to test whether there was a difference between two samples. In this study, the bivariate analysis used the t-test.

Results and Discussion

UNIVARIATE ANALYSIS

Table. 1 Central tendency distribution of primary dysmenorrhea intensity of experimental group

Source: Primary Data, 2023

Table 1 shows the primary dysmenorrhea intensity score of the experimental group in the pre-test obtained a mean of 6.13 with a standard deviation of 1.767, the lowest value is 4 and the highest is 9. While the primary dysmenorrhea

intensity score in the post-test obtained a mean of 4.40 with a standard deviation of 1.549, the lowest value is 3 and the highest is 6.

Table. 2 Central tendency distribution of primary dysmenorrhea intensity of control group

NRS	N	Mean	SD	Min	Max
Pre-Test	15	4.80	1.568	2	7
Post-Test	15	5.53	1.187	4	7

Source: Primary Data, 2023

Table 2 shows the primary dysmenorrhea intensity score of the control group in the pre-test obtained a mean of 4.80 with a standard deviation of 1.568, the lowest value is 2 and the highest is 7. While the primary dysmenorrhea intensity score in the post-test obtained a mean of 5.53 with a standard deviation of 1.187, the lowest value is 4 and the highest is 7.

BIVARIATE ANALYSIS

Table. 3 Shapiro Wilk Normality Test Test of Normality

	Shapiro-Wilk	
	Sig.	N
Experiment Group	0.101	15
Control Group	0.273	15

Table 3 shows the results of the Test of Normality with a Sig. value for the experimental group of 0.101 and a Sig. value for the control group of 0.273. Because the Sig. value of both groups > 0.05, the primary dysmenorrhea intensity data of the experimental group and the control group are normally distributed.

Table. 4 Differences in Primary Dysmenorrhea Intensity of Pre-Test and Post-Test data of Experimental Group Paired Sample Test

		N	Mean	Sig. (2-tailed)
		Pair 1	Pre-Test	15
	Post-Test	15	4.40	

NRS	N	Mean	SD	Min	Max
Pre-Test	15	6.13	1.767	4	9
Post-Test	15	4.40	1.549	3	6

Table 4 shows the results of the Paired Sample t test pre-test and post-test scores with a Sig value.

(2-tailed) of 0.000 or p-value < 0.05, which means that there is a difference in the intensity of primary dysmenorrhea in the pre-test and post-test data of the experimental group.

Table. 5 Differences in Primary Dysmenorrhea Intensity of Pre-Test and Post-Test data of Control Group Paired Sample Test

		N	Mean	Sig. (2-tailed)
Pair 1	Pre-Test	15	4.80	0.010
	Post-Test	15	5.53	

Table 5 shows the results of the Paired Sample t test pre-test and post-test scores with a Sig value. (2-tailed) of 0.010 or p-value < 0.05, which means that there is a difference in the intensity of primary dysmenorrhea in the pre-test and post-test data of the control group.

Table. 6 Homogeneity Test Tests of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.234	1	28	0.276

Table 6 shows the results of Tests of Homogeneity of Variances of primary dysmenorrhea intensity data of the experimental group and control group with a Sig. value of 0.276 or p-value > 0.05, which means that the primary dysmenorrhea intensity data of the experimental group and control group are the same or homogeneity.

Table. 7 Differences in Primary Dysmenorrhea Intensity in Experimental Group with Control Group Independent Sample Test

		N	Sig. (2-tailed)
Group	Experimental	15	0.001
	Control	15	

Table 7 shows the results of the Independent Sample t test on the post-test data of the experimental group and the control group have a difference with a Sig value. (2-tailed) of 0.001 or p-value < 0.05, which means that there is a significant difference (real) in the intensity of

primary dysmenorrhea between the experimental group and the control group.

DISCUSSION

Average Intensity of Primary Menstrual Pain (Dysmenorrhea) in the Experimental Group

The univariate results of the primary dysmenorrhea intensity of the experimental group showed an average score on the initial measurement (pre-test) before being given the intervention of Yoga Training Butterfly Pose, Child Pose, Cat and Cow Pose of 6.13 with a standard deviation of 1.767, the lowest score was 4 and the highest was 9. While the average score on the final measurement (post-test) after being given the intervention of Yoga Training Butterfly Pose, Child Pose, Cat and Cow Pose was 4.40 with a standard deviation of 1.549, the lowest score was 3 and the highest was 6.

The results of this study are in line with research (Hadianti & Ferina, 2021) which states that there is an effect of yoga practice on the level of menstrual pain in female students with a numerical pain rating scale before yoga practice of 5.15 and after yoga practice showing a scale of 3.00.

Average Intensity of Primary Menstrual Pain (Dysmenorrhea) in the Control Group

Univariate results of primary dysmenorrhea intensity in the control group without the intervention of Yoga Training Butterfly Pose, Child Pose, Cat and Cow Pose showed an average score in the initial measurement (pre-test) of 4.80 with a standard deviation of 1.568, the lowest score was 2 and the highest was 7. While the average score in the final measurement (post-test) was 5.53 with a standard deviation of 1.187, the lowest score was 4 and the highest was 7.

The results of this study are in line with research (Tri, 2018) on adult women in Kediri which shows that respondents who were not given yoga therapy mostly experienced increased menstrual pain (65%).

Average Difference in Primary Menstrual Pain Intensity (Dysmenorrhea) in the Initial Measurement (Pre-Test) and Final Measurement (Post-Test) of the Experimental Group

The Shapiro-Wilk Test of Normality results show that the sig value. (p-value) of the experimental group is 0.101, where $0.101 > 0.05$ which means the data is normally distributed.

The results of the Paired Sample t test showed that the average score of primary menstrual pain intensity (dysmenorrhea) in 15 experimental group respondents both in the initial measurement (pre-test) and the final measurement (post-test) were equally categorized in moderate menstrual pain intensity according to the Numeric Rating Scale (NRS). However, the average pre-test and post-test results of the experimental group had a difference of 1.73. The average test results show that the mean intensity of primary menstrual pain (dysmenorrhea) in the experimental group has decreased.

In addition to the mean value, the probability or significance value (2-tailed) of the experimental group data is also obtained, which is 0.000 or p-value < 0.05 , which means that the average pre-test and post-test values of the experimental group before and after the yoga training intervention are significantly different.

The results of this study are in line with research (Arini et al., 2020) which states that respondents in the experimental group who were given yoga experienced a decrease in menstrual pain (dysmenorrhea), where most experienced mild pain as many as 9 respondents (60%) and almost half did not experience menstrual pain (dysmenorrhea), namely 6 respondents (40%).

The results of research (M. Wati et al., 2018) also show that yoga has the effect of reducing the intensity of dysmenorrhea, and abdominal stretching exercise has the effect of reducing the intensity of dysmenorrhea.

Another study conducted by (Ashari, 2020), showed that most respondents experienced mild pain (65%) after doing yoga.

Similarly, the results of research (Ningsih et al., 2018), showed that the intensity of menstrual pain (dysmenorrhea) in 30 staff of PT Willbes Global Subang Regency experienced

a change to be lighter after practicing yoga techniques and abdominal stretching exercise.

Average Difference in Primary Menstrual Pain Intensity (Dysmenorrhea) in the Initial Measurement (Pre-Test) and Final Measurement (Post-Test) of the Control Group

The results of the Shapiro-Wilk Test of Normality show that the sig. (p-value) of the control group is 0.273, where $0.273 > 0.05$ which means the data is normally distributed.

The results of the Paired Sample t test showed that the average score of primary menstrual pain intensity (dysmenorrhea) in 15 control group respondents both in the initial measurement (pre-test) and the final measurement (post-test) were both categorized in the category of moderate menstrual pain intensity according to the Numeric Rating Scale (NRS). However, the average pre-test and post-test results in the control group had a difference of 0.73. The average test results show that the mean intensity of primary menstrual pain (dysmenorrhea) in the control group has increased.

In addition to the mean value, the probability or significance value (2-tailed) of the control group data was also obtained, which is 0.010 or p-value < 0.05 , which means that the average pre-test and post-test scores of the control group are significantly different.

The results of this study are in line with research (Hadiani & Ferina, 2021) which states that there is an effect of yoga practice on the level of menstrual pain in female students with a numerical pain rating scale before and after yoga practice which shows a difference in scale of 2.15 and with a bivariate test showing a p value of 0.000.

Likewise, research conducted (Ashari, 2020) on adult women showed that respondents who were not given treatment with yoga practice, most experienced severe menstrual pain (70%).

The results of this study are also in line with research conducted (Syaiful, 2018) on women in Gresik which shows that before being treated with yoga and abdominal stretching exercise, most people feel heavy menstrual pain (67.5%).

Difference in Intensity of Primary Menstrual Pain (Dysmenorrhea) in Experimental Group with Control Group

The Test of Homogeneity of Variances results show that the sig value. (p-value) of the research group data is 0.276, where $0.276 > 0.05$, which means that the data group comes from a population that has the same variance or homogeneity.

The results of the Independent Sample t test show that the statistical summary of the post-test data of the experimental group and the control group has a difference with a Sig value. (2-tailed) of 0.001, which means the p value of the experimental group and the control group < 0.05 . This shows that there is a significant difference between the average intensity of primary menstrual pain (dysmenorrhea) in the experimental group given yoga training intervention and the control group that is not given yoga training intervention.

Based on the results of the research that has been done, it can be seen that yoga training Butterfly Pose, Child Pose, Cat and Cow Pose has an effect on the intensity of primary menstrual pain (dysmenorrhea) in level I female students at the Poltekkes Kemenkes Semarang Dormitory. The effect of yoga training on the intensity of primary menstrual pain (dysmenorrhea) is because yoga has several benefits such as being able to relax the body, improve blood circulation throughout the body, increase lung capacity when breathing, reduce body tension so that it can reduce menstrual pain (dysmenorrhea). The results of this study are in line with several previous studies.

The results of this study are in line with research (Hadianti & Ferina 2021) which shows that there is a significant difference in the average level of dysmenorrhea between groups of adolescents who practice yoga and groups of adolescents who do not practice yoga. Respondents who were given yoga practice experienced lower levels of dysmenorrhea.

Research (Imaroh, 2018) also shows the results that yoga therapy affects menstrual pain (dysmenorrhea) in adult women at Wawa Husada Kepanjen Hospital, Malang Regency.

The results of the study (Rifana and Sugiatno, 2019) showed that the yoga intervention group and the control group without yoga had a difference in reducing the intensity of menstrual pain (dysmenorrhea).

The results of research (Hyun, 2018) with yoga intervention in adolescents also showed the results of menstrual pain scores in the experimental group decreased significantly compared to the control group so that school absenteeism fell to 10% and there was an increase in daily activities.

The results of this study are in accordance with the theory which states that yoga is one of the recognized techniques and can have a positive effect on the health of the whole body. Yoga can also accelerate and stimulate the body's defenses and change the pattern of pain reception at a more advanced stage. Yoga practice is a very effective way to relieve pain and muscle cramps (Antia, 2019).

The results of this study are in accordance with the theory that yoga and breathing movements can stimulate the body to release opioid endorphins, endorphins, so as to provide a sense of comfort and can suppress the pain that arises during menstruation. Exercise such as yoga practice is one of the safer non-pharmacological methods used because it uses physiological processes (Manuaba, 2017).

The results of this study are also in accordance with the theory that yoga can reduce pressure and symptoms in women who experience menstrual pain (dysmenorrhea). Yoga is a relaxation technique that provides a distraction effect so that it can reduce abdominal cramps due to dysmenorrhea. In addition, it can release endorphins to increase the parasympathetic nervous response which results in vasodilation of blood vessels throughout the body and uterus and increases uterine blood flow thereby reducing the intensity of dysmenorrhea pain (Sari et al., 2018).

Conclusion

Based on the results of the analysis in this study, the following conclusions can be drawn:

1. The primary menstrual pain intensity (dysmenorrhea) of the experimental group in the initial measurement (pre-test) and the final measurement (post-test) according to

the Numeric Rating Scale (NRS) scale is in the moderate pain category with a pain scale of 4-6.

2. The primary pain intensity (dysmenorrhea) of the control group in the initial measurement (pre-test) and the final measurement (post-test) according to the Numeric Rating Scale (NRS) scale is in the moderate pain category with a pain scale of 4-6.
3. The primary menstrual pain intensity (dysmenorrhea) of the experimental group in the initial measurement (pre-test) and the final measurement (post-test) has a mean difference of 1.73 and has a significant difference with a probability or significance value (2-tailed) of 0.000 or p-value < 0.05.
4. The primary menstrual pain intensity (dysmenorrhea) of the control group in the initial measurement (pre-test) and the final measurement (post-test) has a mean difference of 0.73 and has a significant difference with a probability or significance value (2-tailed) of 0.010 or p-value < 0.05.
5. The intensity of primary menstrual pain (dysmenorrhea) between the experimental group and the control group has a significant difference with the difference in the Sig value. (2-tailed) of 0.001 or p-value of the experimental group and control group <0.05.

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