

Effectiveness of the Combination of Cat Stretching With Green Tea on Pain Intensity of Primary Dysmenorrhea

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ABSTRACT

Dysmenorrhea is lower abdominal pain during menstruation which is usually accompanied by sweating, headaches, diarrhea, and vomiting. It can be treated non-pharmacologically, namely by stretching with green tea. The results of a preliminary study conducted on students at Hang Tuah University Pekanbaru were that they did not know that yoga (cat stretching) with herbal products (green tea) could reduce dysmenorrhoea. This research aimed to determine the effectiveness of the combination of stretching paint with green tea on the intensity of dysmenorrhea in midwifery undergraduate students at Hang Tuah University Pekanbaru in 2024. This research used a two-group test post-test design and was quasi-experimental. The sample population of 298 female students in this study used purposive sampling taking into account the inclusion criteria with a sample size of 40 respondents divided into 2 groups, 20 for the experimental group, 20 for the control group, and data collection via questionnaire links and questionnaire sheets. Wilcoxon Test and Mann-Whitney Test analysis methods. The results of the Wilcoxon test showed that there was an effect of giving a combination of stretching paint and green tea on the intensity of dysmenorrhoea pain (p-value=0.000). The Mann-Whitney test showed that there was a difference in the intensity of dysmenorrhoea pain in the two groups (p-Value=0.000). It is hoped that future research can use samples that are not small or have more than 40 respondents.

KEYWORDS: Dysmenorrhea, Cat Stretching, Green Tea

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1. INTRODUCTION

Dysmenorrhea is pain in the lower abdomen accompanied by symptoms of sweating, headache, diarrhea, and vomiting. Dysmenorrhea is divided into 2 types, namely primary and secondary. Primary dysmenorrhoea is menstrual pain without abnormalities in the genital organs and often occurs in 15-25 years, and secondary dysmenorrhea is menstrual pain accompanied by abnormalities in the genital organs, especially in women aged over 30 years (Ju et al., 2014. Tsamara et al. al., 2020).

Data on the prevalence of dysmenorrhoea in the world is 1,769,425 (90%) women experience mild dysmenorrhoea and 10-15% experience severe dysmenorrhoea. Dysmenorrhea rates in various Southeast Asian countries vary, in Malaysia 69.4%, Thailand 84.2% in Indonesia the incidence of dysmenorrhoea is 64.25%. This data shows that the incidence of dysmenorrhoea in Indonesia is still quite high at 64.25%, primary dysmenorrhoea at 54.89%, and secondary dysmenorrhea at 9.36% (WHO, 2022).

The high incidence of primary dysmenorrhoea is due to several characteristics, namely adolescent girls whose age at menarche is too early, having a long menstrual period, excessive blood loss during menstruation, genetics that experience dysmenorrhoea, abnormal menstrual cycles, body mass index, physical activity, knowledge. Regarding handling dysmenorrhoea, stress, lack of exercise, and rarely consuming herbal drinks, which also inhibit blood circulation. If you don't pay attention, it can make a person unable to move, disturb concentration, feel restless, nausea, vomiting, headaches, wheezing, fatigue, defecating too often, feeling anxious during menstruation, temporary loss of consciousness, and fatal consequences if ignored, which are indications of endometritis as a uterine complication. Non-cancerous tissue membranes such as fibroid tumors outside the uterus. So it is necessary to prevent dysmenorrhea both pharmacologically and non-pharmacologically (Saraswati et al, 2020. S. A. Setiawan & Lestari, 2018).

Effectiveness of the Combination of Cat Stretching With Green Tea on Pain Intensity of Primary Dysmenorrhea

Pharmacological therapy is one way to reduce dysmenorrhoea by immediately making some teenagers use anti-pain medication more often or by pharmacological methods. However, this drug only relieves pain temporarily, if consumed for a long time it can trigger effects in the form of dependence on the substance, stomach problems, anemia, and psychological mental impacts that make users feel unable to free themselves from the drug (Widiatami et al., 2018). Non-pharmacological therapy is the right treatment to reduce dysmenorrhoea, easy to do independently, easy to obtain, does not have dangerous side effects, and does not require a lot of money, such as doing yoga stretching (cat stretching) with steeping herbal products (green tea).

Research conducted by (Ayu & Chandrika, 2023) on the relationship between knowledge and attitudes of teenagers regarding yoga cat stretch exercise as management of dysmenorrhoea at SMA Negeri 1 Kediri showed a very significant positive correlation ($r = 0.804$). At SMAN 1 Negeri Agung Way Kanan Regency, research was also conducted (Jannah & Setianingsih, 2021) on the impact of green tea consumption on pain related to dysmenorrhoea in adolescent girls. Dysmenorrhoea pain in adolescent girls is influenced by green tea consumption, the p-value is 0.000.

RESEARCH METHODS

This type of research is quasi-experimental with a two-group pretest-post-test design, namely grouping members of the experimental group and the control group. This study examined the changes that occurred in the experimental group and control group after different treatments. This research was carried out at Hang Tuah University Pekanbaru in May-June 2024. The population in this study were all level 1 students in the Bachelor of Midwifery Study Program totaling 81 people at Hang Tuah University Pekanbaru. Samples were taken using a non-probability sampling technique, namely purposive sampling with a total of 40 people, where sampling was based on certain considerations made by the researcher himself, based on previously known characteristics or characteristics of the population (Notoatmodjo, 2012), with sample criteria. Data Collection Techniques, Primary Data Primary data in this study is data taken on the level of dysmenorrhoea pain before and after the experimental group was given a combination of stretching paint with green tea infusion and the control group only had stretching paint alone for respondents using the NRS pain scale (Numeric Rating Scale).). Data obtained from respondents who were given an explanation of the purpose of this research and who were willing to be respondents signed the informed consent that had been provided as proof of their willingness. Secondary Data Data collected from Hang Tuah University Pekanbaru regarding the number of undergraduate Midwifery students. Data analysis using univariate and bivariate analysis.

HASIL DAN PEMBAHASAN

Penelitian yang telah dilakukan di Universitas Hang Tuah Pekanbaru tentang efektivitas kombinasi cat stretching dengan seduhan green tea terhadap intensitas nyeri dismenorea pada mahasiswi S1 Kebidanan, dengan jumlah sampel sebanyak 40 orang 1. univariate analysis

Table 4.1: Characteristics of respondents based on age at menarche, and age of Bachelor of Midwifery students at Hang Tuah University, Pekanbaru

Karakteristik		Kelompok Eksperimen		Kelompok Kontrol	
		F	%	F	%
Usia Menarche	<11 Tahun	16	80.0	12	60.0
	>11 Tahun	4	20.0	8	40.0
	Total	20	100	20	100
Umur	18 tahun	6	30.0	3	15.0
	19 tahun	14	70.0	17	85.0
	Total	20	100	20	100

According to the inclusion criteria, the following research results were obtained:

Based on the number of respondents of 16 people (80.0%), table 4.1 shows that the majority of respondents in the experimental group were less than 11 years old at menarche. 12 people (60.0%), in the control group were less than 11 years old, representing the majority at menarche. For the age of the experimental group, the average age was 19, amounting to 14 respondents (70.0%). In the control group, the average age was 19 years, there were 17 respondents (85.0%) at Hang Tuah University, Pekanbaru.

Table 4.2: Frequency distribution based on knowledge and stress in Bachelor of Midwifery students at Hang Tuah University, Pekanbaru

Variabel		Kelompok Eksperimen		Kelompok Kontrol	
		F	%	F	%
Pengetahuan	Baik	10	50.0	11	55.0
	Cukup	9	45.0	8	40.0
	Kurang	1	5.0	1	5.0
	Total	20	100	20	100
Stres	Normal	5	25.0	4	20.0
	Ringan	6	30.0	5	25.0
	Sedang	8	40.0	11	55.0
	Berat	1	5.0		
	Total	20	100	20	100

Source: Primary Data, 2024

Based on Table 4.2, it can be seen that the majority of respondents in the experimental groups had sufficient understanding with 9 people (45.0%) and 1 person (5.0%) less. In the Control group, they had sufficient understanding, with 8 respondents (40.0%) and 1 person (5.0%) less. Most of the stress in the experimental group experienced moderate stress, amounting to 8 people (40.0%). In the Control group, 11 people (55.0%) experienced moderate stress.

Effectiveness of the Combination of Cat Stretching With Green Tea on Pain Intensity of Primary Dysmenorrhea

Table 4.4: Dysmenorrhoea Pain Scale before and after and after being given Paint Streach-ing with Green Tea Brewing to Bachelor of Midwifery Students at Hang Tuah University Pekanbaru

N	Skala Nyeri	Kelompok Eksperimen				Kelompok Kontrol			
		Pre test		Post test		Pre test		Post test	
		F	%	F	%	F	%	F	%
1	Nyeri Ringan Skala 1	0	0	9	45,0	0	0	0	0
2	Nyeri Ringan Skala 2	0	0	8	40,0	0	0	5	25,0
3	Nyeri Ringan Skala 3	7	35,0	3	15,0	7	35,0	6	30,0
4	Nyeri Sedang Skala 4	0	0	0	0	1	5,0	9	45,0
5	Nyeri Sedang Skala 5	13	65,0	0	0	12	60,0	0	0
Total		20	100,0	20	100,0	20	100,0	20	100,0

Source: Primary Data, 2024

Based on the table above, before being given treatment to the experimental group, before being given treatment among the 20 samples, there were 65% Pain Scale 5, and 35% Pain Scale 3. After being given treatment to the experimental group among the 20 samples, there were 15% Pain Scale 3, 40% Pain Scale 2, and 45% Pain Scale 1. In the control group among the 20 samples, there were 60% Pain Scale 5, 5% Pain Scale 4, and 35% Pain Scale 3. After being given treatment, the control group of the 20 samples had 45% Scale Pain 4, 30% Pain Scale 3, 25% Pain Scale 2

Table 4.3: Dysmenorrhoea pain level before and after and after being given Streaching Paint with Green Tea Brewing to Midwifery Undergraduate Students at Hang Tuah UniversityPek-anbaru

Responden	Kelompok Eksperimen		Kelompok Kontrol	
	Sebelum	Sesudah	Sebelum	Sesudah
Mean	4,30	1,70	4,30	3,20
Min-Maks	3-5	1-3	3-5	2-4
SD	0,979	0,733	0,979	0,834

Source: Primary Data, 2024

The table above shows the dysmenorrhoea pain scale in the experimental group. The dysmenorrhoea pain scale before the treatment was a mean of 4.30 with an average pain of 3-5 and after stretching with green tea, the mean was 1.70 with pain decreasing an average of 1. -3. In the control group, before it was carried out, the mean was 4.25 with an average pain of 3-5 and after the Stretching paint was carried out, the mean was 3.20 with pain decreasing on average 2-4.

2. Bivariate Analysis

Bivariate analysis was conducted to determine the effectiveness of the combination of stretching paint with green tea infusion on the intensity of dysmenorrhoea pain in female undergraduate midwifery students. After conducting a normality test using the Shapiro-Wilk Test, namely:

Table 4.4: Normality test for dysmenorrhoea pain levels before and after and after being given Streaching Paint with Green Tea Brewing

Perla- kuan	Shapiro-Wilk			df
	Statis- tic	Taraf Signif- ikan	Nilai Sig- nifikansi	
Pretest kel kontrol	0,650	0,05	0,000	20
Postest kel kontrol	0,778	0,05	0,000	20
Pretest kel ek- sperimen	0,608	0,05	0,000	20
Postes kel ek- sperimen	0,784	0,05	0,000	20

Source: Primary Data, 2024

Data on dysmenorrhoea pain levels before and after treatment in undergraduate midwifery students at Hang Tuah University Pekanbaru were not normally distributed, according to the results of the normality test which showed that data on pain levels in the control group and experimental group before and after receiving treatment obtained a significance value of $0.000 < 0.05$. To ensure the difference in mean pain intensity between the experimental group and the control group, the Wilcoxon matched pairs test was used. In addition, the Mann-Whitney test was used because the data was not normally distributed and to determine whether there was a difference in the average dysmenorrhoea pain between the two samples.

Table 4.4: Effectiveness of Giving Paint Stretching Against Dysmenorrhoea Pain in Control Group and Experimental Group Students at Hang Tuah University Pekanbaru

Tingkat nyeri dis- menorea	Kelompok Kontrol	Kelompok Eksperimen						
		n	Mea n Ran k	Sum of Ran ks	n	Mean Rank	Su m of Ra nks	Asy mp. Sig.
Pre- test	Neg ativ a	18	9.50	171.0	20	10.50	210.	00
Post test	Ran ks							0,00
Posi tive	0 ^b	.00	.00	0 ^b	.00	.00		

Effectiveness of the Combination of Cat Stretching With Green Tea on Pain Intensity of Primary Dysmenorrhea

Ranks		
Ties	2 ^c	0 ^c
Total	20	20

* Wilcoxon

Based on table 4.4 above, shows that the control group's pretest and posttest had a negative score of 18 students with an average score of 9.50, resulting in a total score of 171.00. Meanwhile, in the pretest and posttest of the positive control group of 0.00, two tie values were the same, the average value was 0.00 and the total assessment obtained in both tests was 0.00.

Table 4.4 of the experimental group shows that 20 female students with an average score of 10.50 and a total score of 210.00 were in the negative pretest and posttest range. Meanwhile, there were no female students whose tie scores were the same as the average score of 0.00 in the pretest and post-test of the positive experimental group and 0.00 was the total achieved.

Table 4.5: The Effectiveness of the Combination of Stretching Paint with Green Tea Brewing on the Intensity of Primary Dysmenorrhoea in Undergraduate Midwifery Students at Hang Tuah University, Pekanbaru

	Hasil Pretes Postes Nyeri Dismenorea
Mann-Whitney U	44.000
Wilcoxon W	254.000
Z	-4.371
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000 ^b

*Mann Whitney

Based on the results of the Mann-Whitney Test statistics, it is known that the Asympg.The Sig (2-tailed) value is 0.000 <0.05, so Ho is rejected, or there is a significant difference in the intensity of dysmenorrhoea pain in students from the control group who were given stretch paint with the other groups. The experiment was given stretching paint with steeping green tea. From the results of this analysis, it can be concluded that the treatment affected the intensity of dysmenorrhoea pain in students in the control group stretching paint and the experimental group who were given stretching paint with green tea brewing.

DISCUSSION OF FINDINGS

a. The Effectiveness of the Combination of Stretching Paint with Green Tea Brewing on the Intensity of Primary Dysmenorrhea in Midwifery Undergraduate Students at Hang Tuah University, Pekanbaru in the Experimental Group

Based on the results of the data analysis, it was found that there was a reduction in dysmenorrhoea pain in the experimental

group before and after. All respondents in the experimental group experienced a decrease in dysmenorrhoea pain.

The results of this study are in line with Zuraida & Keta that there is an influence of the combination of yoga and lavender aromatherapy on dysmenorrhoea in young women (Zuraida & Keta, 2020). This is in line with Benita Rosalie's research on UKRIDA Medical Faculty students after consuming green tea bags, the pain intensity felt by the respondents after 4 hours decreased, green tea has a high polyphenol content and has anti-inflammatory activity resulting from the inhibition of prostaglandin formation by the pathway. cyclooxygenase (Benita Rosalie, 2016). This is in line with Zhang's research on women aged between 21 and 44 years who consuming green tea before and after experienced a decrease in dysmenorrhoea pain, this is because green tea contains catechins which are effective COX-2 inhibitors that prevent excess production of uterine prostaglandin levels, which is the main pathogenesis of primary dysmenorrhoea. In addition, catechins inhibit the activity of phospholipase A2, an enzyme involved in the production of arachidonic acid, and as a result, reduce the production of additional prostaglandins from arachidonic acid thereby reducing dysmenorrhea pain (Zhang et al., 2019; Revia Sari, 2022). This is also in line with Witri's research that using green tea aromatherapy before and after also affects students of the Bachelor of Nursing Study Program at Karya Husada University Semarang because the aroma of green tea is produced from catechins which are widely used for breathing in men. -reduce stress, and anxiety, and stimulate endorphin hormones in the body as a herbal analgesic and herbal relaxant, which can reduce dysmenorrhoea (Witri Hastuti et al 2023, Astriana & Chintia, 2019).

The researcher assumes that there is an effect of giving a combination of stretching paint and green tea on the intensity of dysmenorrhoea pain in undergraduate midwifery students because doing yoga makes the muscles that are experiencing tension relax. The abdominal muscles that experience tension during dysmenorrhea when given yoga or body exercises that focus on the pelvic area, cause the tense abdominal muscles to relax combined with steeping green tea, the content contained in Green tea will also relax and relax the working system of tense nerves and muscles. There are many combinations of stretching paint as well as green tea, but no one has combined the two yet. For several studies, currently, no one has said that green tea combined with stretching paint can reduce dysmenorrhoea, so with the results of this study it is proven that the combination of stretching paint with steeping green tea can reduce the intensity of dysmenorrhoea pain.

b. Effectiveness of Paint Stretching on the Intensity of Primary Dysmenorrhea in Undergraduate Midwifery Students at Hang Tuah University Pekanbaru in the Control Group

Based on the results of data analysis, the control group was not optimal in reducing pain before and after, there were 2 respondents with the same score on the dysmenorrhoea pain scale because they did not have any green tea brewing and also the stress experienced by most of the control group, they did not

Effectiveness of the Combination of Cat Stretching With Green Tea on Pain Intensity of Primary Dysmenorrhea

know about treatment. dys-menorrhoea has an impact on students' psychological aspects and makes students lose concentration.

This is by research findings which show that all respondents experienced moderate to severe dysmenorrhoea before receiving stretch exercise paint. After the cat stretch exercise, the level of discomfort for each respondent was moderate and endorphins, which are released by the pituitary gland, can lighten a person's mood and increase relaxation. Therefore, giving stretch exercise paint to young women helps reduce the severity of the dysmenorrhoea pain they experience (Apirda et al., 2023, Aprilina et al., 2020, Purwaningsih et al., 2017, Utami, 2017, Wulandari, 2020).

In line with the results of Deharnita's research, there is an effect of combining cat stretch training techniques with dysmenorrhoea exercises to reduce dysmenorrhoea in young women because doing cat stretches strengthens the lower abdomen so blood circulation becomes smooth (Deharnita, 2020).

Dysmenorrhoea arises due to several factors, one of which is related to the incidence of dysmenorrhoea is age. It often occurs at a young age because at a young age, the reproductive organs are not ready to experience changes and do not function optimally. In old age, menstruation is more frequent and after giving birth, the cervix will increase in size so that in old age the incidence of dysmenorrhoea is rarely found (Astuti & Adkhana, 2019). Girls who experience menarche < 12 years are 1.6 times more likely to experience dysmenorrhoea than those aged 12-14 years, where age < 12 years is the age at risk for adolescent girls experiencing their first menstruation (Lail, 2019).

Researchers' assumptions based on the results of this research, researchers can conclude that cat stretching is an intervention that is easy, cheap, and uses the body's physiological processes. This therapy is used to reduce uterine contractions, reduce cramps in the lower abdomen, and improve blood circulation so that in the end it can reduce the intensity of dysmenorrhoea pain in female students. It's just that it's less effective if it's not combined with green tea.

CONCLUSION

Based on the results, there was effectiveness of giving stretching paint with green tea infusion in the experimental group before being given a pain scale (4.30) and after being given a pain scale (1.70) for primary dysmenorrhoea pain in undergraduate midwifery students at Hang Tuah University Pekanbaru in 2024. It is known that the difference in the effectiveness of the experimental group, all respondents decreased their pain scale values, while in the control group, there were 2 respondents whose pain scale values remained with a p-value of 0.000 for primary dysmenorrhoea in midwifery undergraduate students at Hang Tuah University, Pekanbaru in 2024. It is known that the frequency distribution of the knowledge of the experimental group was 50% and the control group, 55%, almost all respondents have good knowledge of primary dysmenorrhoea pain in undergraduate midwifery students at Hang Tuah University, Pekanbaru in 2024. It is known that the frequency

distribution of stress in the experimental group is 40% and the control group is 55%, almost all female students are in the medium stress category of primary dysmenorrhoea in female students. Bachelor's degree in midwifery from Hang Tuah University Pekanbaru in 2024.

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Effectiveness of the Combination of Cat Stretching With Green Tea on Pain Intensity of Primary Dysmenorrhea

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