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Effectiveness Of Giving Rosella Drink To Reduce Dysminore In Adolescent Girls at Amanah 1 Middle School Medan

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ABSTRACT

The World Health Organization (WHO) estimates that in 2020, the incidence of dysmenorrhea will be 1,769,425 (90%) women suffering from dysmenorrhea, with 10-16% suffering from severe dysmenorrhea. The purpose of the study was to determine the effectiveness of providing rosella drinks in reducing dysmenorrhea in adolescent girls at SMP Amanah 1 Medan. The research method was a quasi-experimental design with a one-group pretest-posttest design. The population was all teenage girls in grades VII and VIII who experienced dysmenorrhea, totaling 32 people. The sample used a purposive sampling of 15 people. Data were collected through observation sheets and numerical rating scales. Data analysis was carried out univariately and bivariately using the sample T test. The study's results showed Frequency distribution of the dysmenorrhea pain scale at the time of the pre-test was eight people (53.3%) with a moderate pain scale, while the dysmenorrhea pain scale after giving rosella drink was 11 people (73.3%) with a mild pain scale. The results of the T-Test statistical test showed a p-value of 0.000 <0.05. The conclusion is that there is effectiveness of giving rosella drinks in reducing dysmenorrhea in female adolescents at SMP Amanah 1 Medan. It is recommended that health workers be more proactive in providing counseling on dysmenorrhea and women's reproductive health to students the education office adds a curriculum on reproductive health and schools should prepare rest areas for adolescents who experience dysmenorrhea.

Keywords: Dysmenorrhea, Adolescent Girls, Rosella.

INTRODUCTION

Dysmenorrhea is related to the occurrence of disorders due to the menstrual phase in the form of pain in the uterus, lower abdomen, thighs, sides of the abdomen, suprapubic and can even spread to the lower legs and can occur in more than one location that can interfere with the activities of adolescent girls and even require rest to overcome these complaints. Physical pain will spread to the psychological condition of adolescent girls and have an impact on their quality of life.

Dysmenorrhea incidents generally occur in women aged 20-25 years. The percentage of dysmenorrhea incidents is highest in unmarried women at 62%. The World Health Organization (WHO) estimates that in 2020 the incidence of dysmenorrhea will be 1,769,425 (90%) women suffering from dysmenorrhea, with 10-16% suffering from severe dysmenorrhea. Globally, the incidence of dysmenorrhea is an average of 50% experienced by women who have menstruated(World Health Organization 2022).

The average incidence of dysmenorrhea in young women is in the percentage range of 16.8-81%. In European countries, dysmenorrhea occurs by 45-97%, where the lowest prevalence is in Bulgaria (8.8%) and the highest reaches 94% in Finland. In the United States, dysmenorrhea is the cause of absenteeism of adolescent girls in school(Lis and Rohaeni 2022).

The 2019 Indonesian health profile states that in Indonesia the incidence of dysmenorrhea is 64.25% consisting of 54.89% primary dysmenorrhea and 69.36% secondary dysmenorrhea. The incidence of primary menstrual pain reaches 54.89%, while the rest are sufferers of the secondary type, which results in them being unable to do any activities and this will reduce the quality of life in each individual. The incidence of dysmenorrhea is evenly 40-80% and 20-25% of women experience severe dysmenorrhea to unbearable dysmenorrhea. Adolescents with severe dysmenorrhea receive low grades (7.5%), decreased concentration (87.1%) and are absent from school (80.6%)(Ernita, Djamaludin, and Yulendasari 2022).

Dysmenorrhea occurs when the pain receptors induce peripheral afferent nerve fibers, namely A-delta fibers and C fibers. A fibers have myelin so they can transmit pain quickly, sharp sensations, can localize the source of pain clearly and detect pain intensity. C fibers do not have myelin, are very small, so they are poor at conveying visceral and continuous localized impulses.(Ningtyas et al. 2023).

The causes of the high prevalence of primary dysmenorrhea are influenced by several characteristics such as dysmenorrhea in childhood, family history of dysmenorrhea, prolonged menstrual cycles, smoking, alcohol and caffeine consumption, and sleep quality, poor health, consumption of certain foods, lack of physical activity or exercise, obesity and stress.(Wildayani, Lestari, and Ningsih 2023).

Dysmenorrhea has negative effects, both in the long term and short term. In the long term, dysmenorrhea can trigger infertility, even dysmenorrhea that occurs due to other

pathological causes can cause death. While in the short term, dysmenorrhea can affect daily activities, especially for adolescents, including difficulty concentrating, often absent from lectures, emotional conflict, tension, anxiety, and disrupting the learning process, feeling uncomfortable, decreased activity in the learning process, some sleep in class during learning activities, limited physical activity, and absence from the learning process(Karlinda, Oswati Hasanah, and Erwin 2022).

Teenage girls who experience dysmenorrhea will be affected by activity restrictions, especially school activities. Learning activities are a very important principle in learning interactions that involve not only physical activity but also mental activity. If a female student experiences dysmenorrhea, school activities will be disrupted and absenteeism is not uncommon.

Dysmenorrhea will reduce concentration in learning, or even make it difficult to concentrate, even if learning materials are provided.(Putri, Yunus, and Fanani 2017). Setyowati (2018) explained that the effects of dysmenorrhea in adolescent girls include decreased concentration in class (59%), sports (51%), class attendance (50%), social interaction (36%), homework (35%), ability tests (36%) and grades (29%). Therefore, dysmenorrhea is significantly associated with absenteeism, schoolwork, participation in sports, and socializing with friends.(Heni Setyowati ER 2018).

Teenage girls who experience dysmenorrhea during menstruation tend to ignore the pain they feel and consider it trivial and normal where the treatment is only by resting. Some dysmenorrhea sufferers tend to use their own medication without consulting or a prescription from a doctor to reduce dysmenorrhea pain. The use of pharmacological drugs must still be considered and their use minimized because drugs can cause dependency and are also contraindicated for users.(Wulanda, Luthfi, and Hidayat 2020)

The use of painkillers can use non-pharmacological methods in the form of giving herbal food or drinks. One of the herbal plants that can be used is rosella or in Latin is Hibiscus Sabdariffa Linn. The fruit of the rosella plant itself, both the petals and the seeds, contain grossypeptin, anthocyanin, gluside hibiscin, and flavonoids, so it can be used for pain relief during dysmenorrhea.(Nurdin, Nurdjanah, and Astuti 2015).

Rosella flowers are believed to reduce pain with a duration of 7-12 hours after regular infusion of rosella tea. Rosella flowers can reduce dysmenorrhea because they contain sadiative (sedative), anthocyanin, beta-carotene, vitamins C, A, D, B1, B12 and rosella

flower petals that contain anthocyanin pigments that are included in the flavonoid and antioxidant groups. The antioxidant content in Rosella Tea is 1.7 mm0l/prolox, which is higher than the amount found in the Cat's Whiskers plant. The content of Vitamin C (Ascorbic Acid) in Rosella Flower Tea is known to be 3x more than grapes, 9x more than oranges, 10x more than star fruit, and 3x more than guava.(Siagnian 2023).

Benefits of rosella in the leaves, flowers, and roots Rosella has properties as a diuretic, expectorant, prevents vertigo, anti-spasmodic, uterorelaxant, emollient, anti-scorbat, anti-pyretic, anti-rheumatic and smoothes intestinal static movement. In addition to being a food ingredient, rosella is also used as a basic ingredient in making medicine. The benefits of consuming processed Rosella flower products include being able to smooth bowel movements, reduce fever and antibacterial(Fahyuni, Rohmah, and Anwar 2019).

Research conducted by Ramli (2017), stated that there was a difference in the time of decreasing dysmenorrhea pain between the group that received ginger concoction, namely during 72 hours of menstruation, with the group that received Rosella tea which decreased at 48 hours. This proves that rosella tea is more effective in reducing dysmenorrhea compared to ginger concoction.(Ramli and Santy 2017).

In line with the research topic conducted by Qomariah, et al. (2020) on adolescent girls who experience dysmenorrhea using a literature review design, it was found that by providing herbal plants such as boiled rosella tea and turmeric honey drinks, there was an effect of providing herbal drinks on dysmenorrhea pain.(Qamariah et al. 2020).

METHOD

The design used is Quasi-experimental design with one group pretest posttest design. The design of this study began by observing the decrease in dysmenorrhea (pain scale in dysmenorrhea) then given rosella decoction and observed again the decrease in dysmenorrhea (pain scale in dysmenorrhea). The location of this study was conducted at SMP Amanah 1 Medan.

The sample in this study used purposive sampling, where in selecting the sample the researcher made considerations, so that the number of samples was 15 people. The sample of this study was taken by purposive sampling, namely 15 female adolescents to be given a pre-test and post-test of the dysmenorrhea pain scale. The sampling criteria include: female adolescents in grades VII and VIII who experience dysmenorrhea during

menstruation, female adolescents who are willing to be respondents, female adolescents whose menstrual cycles are regular. The inclusion criteria in this study are: female adolescents in grade IX who do not experience dysmenorrhea during menstruation, female adolescents who drink herbal medicines or medicines to relieve dysmenorrhea, female adolescents who experience irregular menstruation.

The rosella decoction given in this study was 1 glass, then after 7 hours the pain scale will be observed by the researcher. Rosella decoction is made in the following manner: 1) put 2.5 grams of dried rosella into a glass. 2) Pour warm water, cover the glass and wait for 5 minutes until the water turns red. 3) Add 21.3 grams of kaliandra honey. 4) Consume in a dose of 200 milliliters and drink while warm. The decrease in dysmenorrhea is a condition of the pain scale in junior high school girls' dysmenorrhea. To measure the decrease in dysmenorrhea using a numeric rating scale pain scale with a categorization of no pain (scale 0), mild pain (scale 1-3), moderate pain (scale 4-6) and severe pain (scale 7-10).

In this study, the data obtained from the research instrument were processed and analyzed using statistical tests, namely the t-test. Before conducting the hypothesis test, the submission of data analysis requirements was carried out first, namely the normality test to determine whether the data obtained was normally distributed or not.

RESULTS AND DISCUSSION

Research results regardingeffectivenessThe effect of giving rosella drink on reducing dysmenorrhea in female adolescents at Amanah 1 Middle School, Medan is presented in the following table:

1. Univariate Analysis

Table1. Dysmenorrhea Pain Scale in Adolescent Girls Pre and Post Test

Respondent No.	Pre Pain	Post Pain
1.	4 (moderate pain)	1(mild pain)
2.	3 (mild pain)	0(pain not painful)
3.	5 (moderate pain)	1(mild pain)
4.	5 (moderate pain)	2(pain not pain)

5.	6 (moderate pain)	1(mild pain)
6.	3(mild pain)	0(no pain)
7.	3(moderate pain)	1(mild pain)
8.	6(moderate pain)	2(mild pain)
9.	7(moderate pain)	2(mild pain)
10.	5(moderate pain)	1(mild pain)
11.	6(moderate pain)	2(mild pain)
12.	3(moderate pain)	1(mild pain)
13.	2(moderate pain)	0(mild pain)
14.	5(moderate pain)	2(mild pain)
15.	8(moderate pain)	3(mild pain)
Average	**4.73**	**1.27**

Based on the table above, out of 15 respondents, the most respondents experienced moderate pain in the post-test results and the most respondents experienced mild pain in the post-test with an average pain score of 4.73 in the pre-test and an average pain score of 1.27 in the post-test.

Table 2 Average Scale of Dysmenorrhea Pain in Adolescent Girls Pre and Post Test

No	Dysmenorrhea	Mean	SD	Min-Max
1.	Pre	4.73	1.71	2-8
2.	Post	1.27	0.884	0-3

Based on the table above, it shows that the average pain scale for dysmenorrhea is 4.73 with a minimum score of 2 and a maximum of 8, while after giving rosella drink, the average pain scale was 1.27 with a minimum score of 0 and a maximum of 3.

2. Bivariate Analysis

To find out the effectiveness of giving Rosella drinks to reduce dysmenorrhea in female adolescents at SMP Amanah 1 Medan, see the table below:

Normality Test

Table 3 Normality Test of the Effectiveness of Giving Rosella Drinks to Reduce Dysmenorrhea in Adolescent Girls at Amanah 1 Middle School, Medan

No	Group	Shapiro Wilk		
		Statistics	f	Sig.
1	Pre-Giving Rosella Drink	0.945	15	0.446
2	Post Giving Rosella Drink	0.888	15	0.063

Based on the table above, the results of the normality test obtained the significance of the Shapiro-Wilk test calculation results before the intervention with a value of 0.446 and after the intervention with a value of 0.063> 0.05 (data values are normally distributed). Because the data is normally distributed, the test used to take the hypothesis is to use parametric statistical calculations, namely with the sample T test.

Table 4 Effectiveness of Giving Rosella Drinks to Reduce Dysmenorrhea in Adolescent Girls at Amanah 1 Middle School, Medan

Variables		Intervention			*Sig.*
		Mean	Difference	SD	
Giving Rosella Drink	Pre	4.73	3,467	1.71	0,000
	Post	1.27		0.884	

Based on the table above, the effectiveness of giving rosella drink to reduce dysmenorrhea in female adolescents at SMP Amanah 1 Medan, the average pain scale pre-test was 4.73 and post-test 1.27 with a difference of 3.467.

Effectiveness of Giving Rosella Drink to Reduce Dysmenorrhea in Adolescent Girls at SMP Amanah 1 Medan in 2024The results of the statistical test using the simple t-test obtained a p-value of 0.000 < 0.05, which indicates that there is effectiveness in providing rosella drinks in reducing dysmenorrhea in female adolescents at SMP Amanah 1 Medan.

DISCUSSION

Dysmenorrhea Pain Scale in Adolescent Girls Before Being Given Rosella Drink at Amanah 1 Middle School, Medan

Based on the results of research on female adolescents regarding the scale of dysmenorrhea before being given rosella drink at SMP Amanah 1 Medan, the pain scale was 4.73 because the adolescents allowed this condition to interfere with the learning process.

This study is in line with the research conducted by Nurul Aini Siagian, Yunita Syahputri Damanik, Salsalina Br. Tarigan (2023) entitled "The Effect of Giving Rosella Tea and Ginger Potion on Changes in Menstrual Pain Intensity in Class VIII Students at SMP Negeri 1 Deli Tua in 2023". In measuring the pain scale in the pretest group, the results showed that out of 15 respondents, the average pain was 5.53 with the lowest pain being 5 and the highest being 6(Siagian, Damanik, and Tarigan 2023).

Dysmenorrhea is pain during menstruation. This pain is felt in the lower abdomen and or the square of Michael. Pain can be felt before or after menstruation can be colicky or continuous. Dysmenorrhea is very painful menstruation, especially in the lower abdomen and back and usually feels like cramps. Dysmenorrhea is painful uterine cramps associated with menstruation. In addition, discomfort in the lower pelvis, women also experience back pain, spreading to the thighs, nausea, vomiting, diarrhea, headaches various symptoms begin 1-3 days before menstruation and several days of bleeding(Mukhoirotin 2019).

According to the researcher's assumption, the scale of dysmenorrhea before being given rosella drink was caused by hormonal imbalance which is closely related to adolescent activities in learning, inappropriate food consumption during menstruation such as drinks containing caffeine and the existence of certain food diets in adolescents and nutritional conditions that are not in accordance with the needs of adolescents. This will certainly increase hormonal imbalance so that it can cause tension in the myometrium muscles in the uterus. As a result, it causes dysmenorrhea in adolescents.

Pain Scale Dysmenorrhea in Adolescent Girls After Being Given Rosella Drink at Amanah 1 Middle School Medan

Based on the results of the study, the frequency distribution of the pain scale of dysmenorrhea after giving rosella was no pain for 4 people (26.7%) and mild pain for 11

people (73.3%). After giving rosella drink, the average decrease in dysmenorrhea was 1.27 with a difference of 3.467.

This research is in line withNurul Aini Siagian, Yunita Syahputri Damanik, Salsalina Br. Tarigan (2023) with the title "The Effect of Giving Rosella Tea and Ginger Concoction on Changes in Menstrual Pain Intensity in Class VIII Students at SMP Negeri 1 Deli Tua in 2023". In the posttest pain scale measurement, the results showed that out of 15 respondents, the average pain scale was 2.80 with the lowest value of 2 and the highest of 4. The content of Rosella Flowers is believed to be able to reduce pain with an estimated 7-12 hours after routine administration of Rosella tea infusion.(Siagian et al. 2023).

Rosella flower petals (Hibiscus abdariffa L.) contain flavonoids. Flavonoid compounds found in Rosella flowers are good as antioxidants for the human body. The antioxidant content can inhibit free radicals. As for the leaves, flowers, and roots of Rosella, they have properties as diuretics, expectorants, prevent vertigo, anti-spasmodics, uterorelaxants, emolins, anti-scorbat, anti-pyretics, anti-rheumatic and smooth bowel movements. In addition to being a food ingredient, rosella is also used as a basic ingredient in making medicine. The benefits of consuming processed Rosella flower products include facilitating bowel movements (stimulating movement), reducing heat and being antibacterial. Almost all parts of the Rosella plant contain bioactive chemical components. These chemicals include phenols, anthocyanins, flavonols, protocatechuic acid (PCA), while Rosella flower petal extract is known to contain flavonoids, polysaccharides and acids that play a role in providing certain pharmacological effects.(Fahyuni et al. 2019).

According to the assumption of researchers, giving rosella drink can reduce the scale of dysmenorrhea pain because of its flavonoid content which can help relieve menstrual pain by inhibiting oxidative enzymes, thereby reducing menstrual pain. Added with the flavonoid content found in honey can control the smooth muscles of the uterus so that it can reduce pain during menstruation.

Effectiveness of Giving Rosella Drink to Reduce Dysmenorrhea in Adolescent Girls at Amanah 1 Middle School, Medan

The pain scale of dysmenorrhea in adolescent girls before being given rosella drink showed...the average decrease in dysmenorrhea was 4.73 after giving rosella drink, the

average decrease in dysmenorrhea was 1.27 with a difference of 3.467. The results of the simple t-test statistical test obtained a p value of 0.000 <0.05, which indicates that there is Effectiveness of Giving Rosella Drinks to Reduce Dysmenorrhea in Adolescent Girls at SMP Amanah 1 Medan.

This research is in line withSri Wahyuni (2023) with the title "The Effect of Giving Salarindu (Dried Rosella and Honey Infusion) on Reducing Primary Dysmenorrhea Pain in Adolescent Girls". The results of the Wilcoxon analysis showed a p-value of 0.000 is less than 0.05 so that Ha is accepted and Ho is rejected which means there is a significant effect of giving Selarindu (Dried Rosella and Honey Brew) on reducing pain. Primary Dysmenorrhea in young women(Rev. 2023).

Dysmenorrhea is pain during menstruation. This pain is felt in the lower abdomen and or the square of the michealis. Pain can be felt before or after menstruation can be colicky or continuous. In addition, discomfort in the lower pelvis, women also experience back pain, spreading to the thighs, nausea, vomiting, diarrhea, headaches various symptoms begin 1-3 days before menstruation and several days of bleeding(Mukhoirotin 2019).

The pathogenesis of primary dysmenorrhea is closely related to the increase of prostaglandin F2α and leukotrienes. Increased prostaglandin F2α (PGF2α) increases the secretory endometrium and symptoms of dysmenorrhea include uterine hypercontractility, severe cramping complaints and other symptoms. Arachidonic acid as a precursor of prostaglandin production is found in increased amounts in the endometrium during the ovulatory cycle. Arachidonic acid is converted to PGF2α, PGE2 which is involved in increasing myometrial contractions. During menstruation, these contractions reduce uterine blood flow and cause ischemia and sensitization of pain fibers.(Mukhoirotin 2019).

According to the researcher's assumption, dysmenorrhea is a condition experienced by many women. This pain usually occurs before or during menstruation and can vary from mild to severe. This condition can be exacerbated by several factors including uterine contractions, stress and long menstrual duration. There are several efforts to reduce dysmenorrhea including taking painkillers, warm compresses on the stomach, doing relaxation techniques, etc. In this study, efforts to reduce dysmenorrhea pain by giving rosella drinks are believed to be very effective in reducing the scale of dysmenorrhea pain in adolescent girls which can be seen from the decrease in the pain scale before and after

the intervention. This is influenced by the content of rosella drinks in the form of flavonoids which can help relieve menstrual pain by inhibiting oxidative enzymes, thereby reducing the occurrence of menstrual pain. If the oxidative enzyme is suppressed through the function of flavonoids, it will reduce prostaglandin synthesis so that the intensity of menstrual pain will also decrease.

CONCLUSION AND SUGGESTIONS

From the research results obtained in the study on the effectiveness of giving rosella drinks to reduce dysmenorrhea in female adolescents at SMP Amanah 1 Medan, it was found that the frequency distribution of dysmenorrhea pain scales at the time of the pre-test was a maximum of 8 people (53.3%) with a moderate pain scale, while the dysmenorrhea pain scale after giving rosella drinks was a maximum of 11 people (73.3%) with a mild pain scale. The results of the T-Test statistical test showed a p value of 0.000 <0.05. The conclusion is that there is effectiveness in giving rosella drinks in reducing dysmenorrhea in female adolescents at SMP Amanah 1 Medan. It is recommended that health workers be more proactive in providing counseling on dysmenorrhea and women's reproductive health to students, the Education Office adds a curriculum on reproductive health and schools should prepare a rest area for adolescents who experience dysmenorrhea.

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