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The effectiveness of red ginger extract to decreasemenstrual pain level in adolescent at Al Husna 2 Islamic Boarding School Kediri year 2016

Rochmanita Sandya Afindaningrum[1], Rahma Kusuma dewi[2]

[1,2]Faculty of Health Science, Kadiri University

sandyafinda@gmail.com, rkusde@gmail.com

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Abstract

Dismenorea is menstrual problems that is oftenexperienced adolescent and is caused by the occurence of uterine contractions due to increased prostaglandin. The content of gingerol in ginger red can overcome dysmenorrhoea by blocking prostaglandin. The purpose of this study was to know the effect of red ginger drink to the decline in the level of menstrual pain (in adolescent at Boarding school Al Husna 2 Kediri. Pre-experimental research design used by the approach of one group pretest posttest design. The population of this study was all students who experience dismenorea. Sample of adolescents who experience dismenoreawere 17 people with accidental sampling. The average pain score before treatment was 2.53, after treatment average pain score was 1, 59 based on the description, it shows that there was a decrease in pain scores of 0.94 or 37.1%. Normality test is known that the distribution of data in pain scores before being treated distribution is not normal with a p-value of <0.05 while after treated with distribution data is not normal P <0.05, making the results statistically using the Wilcoxon test showed the value of P = 0.000 (p <α = 0,05). There is an influence of red ginger drink to the decline in the level of menstrual pain (dysmenorrhoea) in adolescent at Boarding school Al Husna 2 Kediri. Respondents are advised to drink red ginger when dysmenorrhoea.

Keywords*: red ginger, adolescent, menstrual pain*

INTRODUCTION

Menstruation is the process shedding endometrial tissue in the absence of mature egg cells which are fertilized by sperm. Menstruation is a natural thing, and naturally so as to ensure that all normal women will experience this process. However, in reality many women who experience menstrual problems, including menstrual pain. Menstrual pain is also called dismenorea caused by uterusuterine contractions, endometrium release is effect increased of prostaglandins.

In the United States, peak incidence primary dysmenorrhoea occurs in adolescence and early 20s. The incidence of dysmenorrhoea in adolescent girls reported

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to be about 92%. In Indonesia the incidence of dismenorea 64.25% 54.89% consisted of 9.36% of primary and secondary dysmenorrhoea. In the capital of East Java, Surabaya found 1.07% - 1.31% of the number of patients with dismenorea who come to obstetric.

Dysmenorrhoea is often considered normal and trivial, so it can lead to delayed diagnosis of endometriosis and chronic pelvic inflammation. Although 80% of cases of dysmenorrhoea in adolescent due to intrinsic uterine factors and associated with an imbalance of sex steroids without organic abnormalities in the pelvis, although rare, secondary dysmenorrhoea can be found with the most common cause is infection and endometriosis, or abnormalities of pelvic organs such as adenomyosis, myoma uteri, chronic pelvic inflammatory disease, ovarian tumors, or endometrial polyps.

Menstrual pain should be treated immediately because it affects the mental and phycal function of individual.Menstrual pain can be overcome using pharmacologi therapy or non-pharmacological. Pharmacological therapy with analgesic medications that can relieve pain by blocking prostaglandins that cause pain. Therapy using analgesic drugs hasharmful side effects on other body systems. Non-pharmacological therapy can be done with herbal medicine, supplements, medical care, relaxation, hypnoterapi and acupuncture. Herbal therapy can be done by using traditional medicines derived from plant ingredients. Plant ingredients that are believed to reduce pain, namely, cinnamon, soy bean, cloves, turmeric, ginger (ginger), oso dresie, chinese herbs. Ginger is as effective as mefenamic acid and ibuprofen which server to reduce complaints of menstrual pain. Red Ginger is a variant of ginger which has a high volatile oil content. Red Ginger contains 2.58 to 2.72% of oil and has a very spicy with a pungent smell that is often used for making ginger oil and drugs.

The analgesic effect of red ginger rhizome associated with the elements contained in the red ginger. Gingerol compounds, shogaol, zingerone, diaryiheptanoids and its derivatives especially paradol in the know can inhibit the siklooksigenase enzyme resulting in decreased formation of prostaglandin biosynthesis cause a reduction in pain. The results of a preliminary study conducted by researchers at the boarding school Al-Husna 2 Kediri obtained from 27 respondents teens, 19 of them experienced dysmenorrhoea.

RESEARCH METHODS

This study isa pre experimental study using one group pretest posttest design. The independent variable of this research is the red ginger drink and the dependent variable is the level of menstrual pain (dysmenorrhoea). Data collection method in this study uses primary data, namely by measuring numerical pain scale. The population in this study were all female students at Al Husna Islamic boarding schoolin Kediri, amounting 19 people. The sample technique uses accidental sampling. Samples are obtained as much 17 adolescent. Inclusion criteria were adolescents aged 10-19 years, menstrual pain, and had no history of uterine disease. Univariate analysis performed by descriptive statistics to describe the characteristics of each research variable and bivariate analysis performed using Wilcoxon test

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RESULTS AND DISCUSSION

Table 1. Characteristics of respondents

Characteristics	Frequency	Presentation
Age		
14-16 years	3	29.4
17-19	12	70.6
Menstrual cycle		
21-35 days	17	100
Age of menarche		
<12 years	5	29.4
13-14 years	10	58.8
> 14 years	2	11.8
Handling		
Taking medication	2	11.8
Drinking herbal medicine	0	0
Break	6	35.3
Just ignore it	9	52.9

Characteristics of respondents based the intensity of menstrual pain

Table 2. intensity frequency distribution menstrual pain before administration of red ginger drink

Pain intensity of dysmenorrhoea	Frequency	Presentation (%)
Painless	0	0
mild pain	9	52.9
moderate pain	7	41.2
severe pain	1	5.9
Severe pain unbearable	0	0
Amount	17	100

Basedon table 2 can be interprested that the majority of respondents, 9 (52.9%) of respondents experienced mild pain before administration of red ginger drinks.

Characteristics of Respondents based. The intensity of menstrual pain

Table 3.frequency distribution of menstruai pain intensity after red ginger drink

Dismenorea Pain Intensity	Frequency	Presentation (%)
Painless	8	47.1
mild pain	8	47.1
moderate pain	1	5.9
severe pain	0	0
Severe pain unbearable	0	0
Amount	17	100

Based on table 3 it can be interpreted that from 8 respondents (47.1%) adolescents intensity of menstrual pain becomes the painless after drinking red ginger.

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Analysis Effect of Red Ginger Drink

Table 4. Effect of Red Ginger Drink Against Menstrual Pain Levels decline

			not Pain	After Mild pain	Moderate pain	Total
Before	Mild pain	amount	7	2	0	9
		Percentage	41.2%	11.8%	0.0%	52.9%
	moderate pain	amount	1	6	0	7
		Percentage	5.9%	35.3%	0.0%	41.2%
	severe pain	amount	0	0	1	1
		Percentage	0.0%	0.0%	5.9%	5.9%
Total		amount	8	8	1	17
		Percentage	47.1%	47.1%	5.9%	100%
ρ value = 0.000 α = 0.05						

Based on table 4 can be interpreted that 17 respondents before gave the red ginger drink as much as 1 (5.9%) of respondents experiencing severe pain, 7 (41.2%) respondents had moderate pain, and 9 (52.9) of respondents experienced mild pain. After gave a red ginger drink none had severe pain controlled, 1 (5.9%) respondents had moderate pain, 8 (47.1%) had mild pain and 8 (47.1) of respondents did not feel the pain anymore. In data obtained from this study, the normality datawas tested using Shapiro Wilk normality and known distribution is not normal. If the data is not the normal distribution of the statistical test with Wilcoxon. The results of statistical test analysis using Wilcoxon signed rank test in known that the value of 0.00 p value less than the value of α =0.05 (0.00 <0.05), meaning that there is the effect of ginger ale red to decrease menstrual pain levels in adolescent.

During menstruation, the endometrial cells that exfoliate release of prostaglandins (a compound of strong hormones consisting of esential fatty acids). Prostaglandins stimulates the uterine muscle cause uterine ischemia (decreased blood supply to the uterus) through contraction of the myometrium and vasocontriction (narrowing of blood vessels). If excessive levels of prostaglandins that enter the blood in addition to dysmenorrhoea can also be found other effects such as nausea, vomit, diarea, flushing (involuntary responses of the nervous system that triggers dilation of skin capilleraies, can be redness or burning sensation.[3]

Based on the results of study, respondents are likely to experience moderate pain intensity and mild pain before administration of red ginger drink. Most respondents, it only leave when menstrual pain came. Non-pharmacological therapy can be done with herbal medicine, supplements, medical care, relaxation, hypnotherapy and acupuncture. Herbal therapy can be done by using traditional medicines derived from plant material. One of the changes in plants that are used as herbal therapy is red ginger.[3]Ginger is as effective as mefenamic acid and ibuprofen are used to reduce menstrual pain. Ginger contains substances that are efficacious for relieve pain during menstruation. Red Ginger is a variant of ginger that has a high volatile oil content. The content of essential oil in ginger is quite high at around 2.58 to 3.9% of the dry weight.

The Results of study in adolescent at Al Husna 2 Islamic Boarding Schoolshowed that after gave of red ginger drink, most of the respondents (47.1%) or 8 respondents already do not feel the pain. Results of the analysis showed the effect of ginger boiled water against dismenorea pain intensity (ρ value 0,000 <0.05.

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Results of study in adolescent before gave of red ginger drink menstrual pain perceived level is 1 (5.9%) of respondents experiencing severe pain, 7 (41.2%) of respondents had pain moderate and 9 (52.9%) had mild pain, after gave red ginger drinks are some of the respondents (47.1%) or 8 respondents do not feel pain anymore, 8 (47.1%) of respondents experienced mild pain, and 1 (5.90%) respondents had moderate pain, and no respondents who experienced severe yeri controlled. Statistical test with Wilcoxon test obtainedp value 0.00 then va ρ value <α (0.00 <0.05

Analgesic effect of red ginger associated with the elements contained in the red ginger. Gingerol compounds can inhibit enzymes in the know siklooksigenase resulting in decreased formation or biosynthesis of prostaglandn which cause a reduction in pain. Ginger has the same effectiveness as ibuprofen in reducing pain. Ibuprofen is known to be very effective and quickly absorbed after oral administration. Peak concentrations in plasma is very short, which between 15 minutes 1 hour. One hour after oral consumption of ginger its major components: 6-shogaol, 10-gingerol, 6-gingerol, and 8-gingerol are detected in the plasma in rats and humans. Red ginger work as well as Ibuprofen to inhibits prostaglandin synthesis. Herbal medicine similar or ibuprofen very easily absorbed by the gastrointestinal system. Ginger can work as pain-killers and have minimal side effects. Ginger is as effective as mefenamic acid on pain relief in primary dysmenorrhea. Ginger does not have adverse effects and is an alternative treatment for primary dysmenorrhea. The current major treatment for primary dysmenorrhea is usuing NSAIDs to reduce abdominal pain by attenuating uterine hypercontractily. However, NSAIDs are not completely effective and have considerable adverse effects, morbidity, and mortality associated with their use. Results of study in adolescent atAl Husna 2 Islamic Boarding School showed that after gave of red ginger the level of menstrual pain (dysmenorrhoea) was reduced after gave beverages because gingerol compounds contained in ginger are analgesics that can reduce menstrual pain. Research conducted by Rahnama et al (2012) showed that ginger is an effective and safe therapy to relieve pain during menstruation.[13]The results of systematic review and metaanalysis which is conducted James *et al* (2015)provide suggestive evidence for the effev\ctiveness of ginger in treating primary dysmenorrhea

CONCLUSION

Menstrual Pain Score in adolescent atAl Husna 2 Islamic Boarding School before gave red ginger ale with an average value of 2.53 and Menstrual Pain Score in adolescent after gave of red ginger ale with an average value of 1.59. Gave drinks red ginger significant effect on the reduction of menstrual pain in adolescent at Al Husna 2 Islamic Boarding School, where the provision of drinks red ginger can decrease the pain score of 37.1%. It is recommended to use red ginger as a menstrual pain reliever.

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