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The Effectiveness of Red Ginger Tamarind Tea (Kusamera Tea) on Reducing Menstrual Pain in Adolescent Girls

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ABSTRACT

Pain that occurs during menstruation that is common in adolescent adolescents due to an increase in prostaglandins (PG). F2-alpha which is a cyclooxygenase (COX-2) that results in hypertonus and vasoconstriction in the myometrium. Acid turmeric contains Curcumine and anthocyanins will work in inhibiting cyclooxygenase (COX-2) reactions. Red ginger has a fairly high content of essential oils and the chemical content of gingerol in red ginger is able to block prostaglandins so that it can reduce pain during menstruation. The purpose of this study is to determine the effectiveness of the red ginger acid turmeric on reducing the intensity of menstrual pain. Type of Quantitative Research, The research design used is pre-experiment with one group pretest-postest design. The number of samples was 60 adolescent female respondents at ITKes Icme Jombang, who experienced menstrual pain. In this study, the sample was treated by consuming 200cc/day of sour turmeric during the 1st-3rd day of menstruation, and pain measurements were carried out before and after consuming red ginger tamarind turmeric. In sampling, the data analysis was carried out using the purposive sampling technique with the T-test. The results of the statistical test were obtained with a mean of 1. 268Sd 0. 058 p value 0.000 means that H0 is rejected and Ha is accepted, which means that there is an Effect of Giving Red Ginger Sour Turmeric Decoction on Menstrual Pain in Adolescent Women. With Mean menstrual pain before being given a decoction of turmeric red ginger acid Turmeric ginger acid tea is effective in reducing menstrual pain in adolescent girls during menstruation.
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Keywords: Red Ginger Tamarind Tea; Menstrual Pain

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INTRODUCTION

Menstruation or menstruation refers to the periodic discharge of blood and body cells from the vagina that comes from the wall of a woman's uterus. Typically menstruation begins between 10 and 13 years of age, depending on a section of factors including a woman's health, nutritional status and weight relative to height. Menstruation lasts once a month until a woman reaches the age of 45-50 years[1]. Generally, during menstruation, many women feel complaints in the form of pain that lasts 2-3 days, starting the day before menstruation begins. The pain during menstruation (dysmenorrhea) felt by every woman is different, some are slightly disturbed but some are so disturbed that they cannot carry out daily activities and make them have to take breaks and even be forced to miss school. Generally, during menstruation, many women feel complaints in the form of pain that lasts 2-3 days, starting the day before menstruation begins. The pain during menstruation (dysmenorrhea) that every woman feels is different, some are slightly disturbed but some are so disturbed that they cannot carry out daily activities and make them have to take breaks and even be forced to miss school[2]. The impact on women during dysmenorhea is physical weakness, lack of movement and stress[3]. Pain felt before and during menstruation often appears nausea, dizziness and weakness[4]. Pain forces sufferers to rest, often women leave their activities and for adolescent girls, many do not attend lectures and do not follow the learning process, so that learning activities can be disturbed, concentration can decrease or even none, and the material given during learning that takes place cannot be captured by adolescent women who experience dysmenorrhea[5]. 20% of adolescent adolescents stay at home more often for rest and limit physical activity during menstrual pain. As a result of complaints of menstrual pain in adolescent girls, it has an impact on disruption of daily activities so that it causes school absences < 3 days and is unable to do any activities and this will reduce the quality of life in each individual[6]. In general, 50-60% of them need analgesic drugs to treat this menstrual pain problem[7]. The purpose of this study was to analyze the effectiveness of giving turmeric tea with red ginger acid on reducing the intensity of menstrual pain in adolescent girls.

METHOD

Type of Quantitative Research, The research design used is pre-experiment with one group pretest-postest design. The number of samples was 60 adolescent female respondents who experienced menstrual pain. The data collection technique in this study uses a data collection instrument, namely the numerical pain rating scale (NRS) assessment sheet. In this study, the sour turmeric drink used is one sachet of sour turmeric drink in the form of tea bag powder with the composition: turmeric extract 9 grams, tamarind extract 2 grams, ginger 20 gr then brewed with warm water as much as 200 cc during menstruation once a day and the results are analyzed data with a T test

RESULTS

Table I Distribution of Frequency Distribution of Intensity of Disminore Before and After Administration of Turmeric Ginger Sour

Variable	Characteristics of the Research Subject		
	Category	Frequency (n)	Percentage (%)
Intensity of menstrual pain Before drinking ginger acid turmeric tea	Light	29	48
	Keep	31	52
Intensity of Dysmenorrhea After Drinking the Turmeric Ginger Acid	Usual	37	62
	Light	23	38

Based on table I, the intensity of menstrual pain before being given treatment of adolescent girls mostly experienced menstrual pain with moderate intensity as much as 52% while mild 48%, after treatment by giving tea brewed containing turmeric ginger acid, the intensity of menstrual pain became mild by 38% and did not feel pain as much as 62%.

The average menstrual pain before being given the treatment of infusion of turmeric tea with ginger acid 2.70 adolescent girls experience pain during menstruation on the first day to the third day after being given the treatment drops to 1.33 adolescent girls experience mild menstrual pain.

There is a difference in menstrual pain in adolescents before being given ginger acid turmeric tea treatment with a P value of 0.00<0.05, meaning that after being given ginger acid turmeric tea treatment, adolescent girls experienced an average decrease in menstrual pain of 1.3 times compared to before drinking ginger acid turmeric tea.

DISCUSSION

The effectiveness of ginger acid turmeric tea on reducing menstrual pain in adolescent girls

Menstrual pain should be overcome immediately because it will affect the mental and physical functions of the individual so that it can reduce the impact of dysmenorrhea. Menstrual pain can be overcome using pharmacological or non-pharmacological therapy. Pharmacological therapy with the administration of analgesic drugs that can relieve pain by blocking prostaglandins that cause pain. Therapy using analgesic drugs has harmful side effects on other body systems. Non-pharmacological therapy can be carried out with herbal treatment, the use of supplements, medical treatment, relaxation, hypnotherapy and acupuncture. Herbal therapy can be done by using traditional medicine derived from plant ingredients. Plant ingredients that are believed to reduce pain are, cinnamon, soybeans, cloves, turmeric, ginger, oso dresie, Chinese herbs[8].

When adolescent girls experience menstruation in the reproductive system there is no fertilization of the ovum after ovulation, female reproductive hormones drop drastically because the corpus luteum is involuted. This results in all endometrial conditions that have been prepared in advance for implantation as a result of fertilization to fall out as well. All glands decay, there is a decrease in nutrients, and vasospasm of blood vessels in the endometrium[9]. Vasospasm will cause an inflammatory reaction that will activate the metabolism of arachidonic acid and will eventually release prostaglandins (PG). Especially PGF2-alpha which will cause vasoconstriction and hypertonus in the myometrium. Hypertonus is what will cause primary dysmenorrhea[10]. Increased production of prostaglandins can cause menstrual pain. This increase will result in uterine contractions and vasoconstriction of blood vessels, so the blood flow to the uterus decreases so that it does not get an adequate oxygen supply, causing pain[9]. An increase in prostaglandins that cause menstrual pain in adolescent girls can also be caused by psychiatric factors or stress, for example when a student wants to take an exam or has a problem during menstruation. These stress factors can decrease resistance to pain. The first sign that indicates a state of stress is a reaction that appears, namely the tightening of the muscles of the individual's body filled with stress hormones that cause blood pressure, heart rate, body temperature, and breathing to increase. On the other hand, when stressed, the body will produce excessive hormones adrenaline, estrogen, progesterone and prostaglandins. Estrogen can cause an excessive increase in uterine contractions, while progesterone is inhibiting contractions.

Ginger sour turmeric drink is a drink that is processed with the main ingredients turmeric, tamarind and red ginger. Naturally, turmeric is believed to contain active ingredients that can function as analgetic, antipyretic, and anti-inflammatory. Curcumine and anthocyanin will work in inhibiting cyclooxygenase (COX) reactions so as to inhibit or reduce the occurrence of inflammation so that it will reduce or even inhibit uterine contractions. The mechanism of inhibition of uterine contractions through curcumine is by reducing the injection of calcium ions (Ca2+) into the calcium channels in the uterine epithelial cells. The content of tannins, saponins, sesquiterpenes, alkaloids, and phlobotamins will affect the autonomic nervous system so that it can affect the brain to be able to reduce uterine contractions. And as an analgesic agent, curcumenol will inhibit the excessive release of prostaglandins[10]. Acid turmeric extract can reduce pain during menstruation because the natural content in turmeric and acids is curcumine and anthocyanin which function to inhibit the cyclooxygenase (COX) reaction where this reaction will produce prostaglandins, prostaglandins themselves are hormones that cause pain so that if this reaction is inhibited, pain will not arise. According to Wulandari, 2018 The content of phenolic compounds in turmeric is believed to be used as an antioxidant, analgetic, anti-microbial, anti-inflammatory[11]. More specifically, the curcumine content in turmeric can inhibit the occurrence of cyclooxygenase (COX) reactions so that it can inhibit and reduce inflammation and will reduce and

inhibit uterine contractions that cause menstrual pain, turmeric drinks as a pain reliever in primary dysmenorrhea have minimal side effects. The active compound or chemical contained in turmeric is curcumine[12]. Curcumine will work in inhibiting cyclooxygenase (COX-2) reactions so as to inhibit or reduce the occurrence of inflammation so that it will reduce or even inhibit uterine contractions. And curcumenol as an analgetic will inhibit the release of excessive prostaglandins through the uterine epithelial tissue and will inhibit uterine contractions so that it will reduce the occurrence of dysmenorrhea. Tamarind contains anthocyanins and tannins which have a much different effect from non-stroid anti-prostaglandin drugs in reducing pain by reducing muscle tension in the myometrium during menstruation. Tamarind is believed to have content as an antioxidant, analgetic, antimicrobial, anti-inflammatory, anti-pyretic and can cleanse the blood. Ginger contains substances that are efficacious to relieve pain during menstruation. Red ginger is a variant of ginger that has a fairly high content of essential oils. Red ginger contains 2.58-2.72% essential oils and has a very spicy taste with a sharp aroma so it is often used for ginger oil and medicine. The analgesic effect of the squeeze of red ginger rhizomes is related to the elements contained in red ginger. Compounds such as gingerol, shogaol, zingerone, diaryiheptanoids and their derivatives, especially paradol, are known to inhibit the enzyme schooxygenase so that there is a decrease in the formation or biosynthesis of prostaglandins which causes reduced pain. The analgesic effect of red ginger rhizome juice is related to the elements contained in red ginger. Gingerol compounds are known to inhibit the enzyme schooxygenase so that there is a decrease in the formation or biosynthesis of prostaglandins which causes reduced pain. Ginger has the same effectiveness as ibuprofen in reducing pain. In general, ibuprofen is known to be very effective and quickly absorbed after oral administration. The peak concentration in the plasma is very short, between 15 minutes and 1 hour. The work of ibuprofen is the same as ginger, which is to inhibit the synthesis of prostaglandins. Drugs and herbs that are similar to ibuprofen are very easily absorbed by the gastrointestinal system. The decrease in dysmenorrhea intensity experienced by respondents was due to the impulse of warmth which is the effect of ginger extract which hits the painful part of the abdomen, namely the lower abdomen. The warmth of ginger is responded to by nerve endings located in the skin and are sensitive to temperature. This stimulation sends impulses from the peripheral nerves to the cerebrum so that awareness of the local temperature arises and triggers the body's reaction to maintain the body's normal temperature.

Red ginger in sour turmeric tea is also part of one of the non-pharmacological methods used to relieve dysmenorrhea. Ginger is a natural anti-inflammatory or pain reliever during menstruation. Ginger contains gingerol, gingerol is able to reduce menstrual pain, namely by suppressing the production of prostaglandins and leukotrin in the endometrium which results in strong contractions so that pain called dysmenorrhea or menstrual pain arises, while according to Hawarti (2010) explained

that alpha linolenic acid functions as an anti-bleeding outside of menstruation, while capsaisin substances function to inhibit the release of the enzyme cyclooxygenase which functions as a regulator of synthesis Prostaglandins. The content of 20 grams of red ginger given to adolescents in the study, the content has been known, namely: 4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl, guanosine, curcumene, zingiberence, farnesene, beta-bisabolene, betasesquiphellandrene, cis-6-shagaol, gingerol, 6-(3,5-dimethyl-furan-2-yl)-6-methyl-hept-3-en-2-one. The content of aleorisin in ginger rhizomes such as gingerol, shogaol and gingeron has antioxidant activity above vitamin E. Antioxidants can help all cells and tissues of the body repair and overcome inflammation or inflammation. Gingreol in ginger is also anticoagulant, which can prevent blood clots. This is very helpful in the production of menstrual blood. Another source said that ginger can reduce the production of prostaglandins, which are known to be the main cause of menstrual pain Oleorisin works in inhibiting the cyclooxcygenase (COX) reaction so as to inhibit inflammation that will reduce uterine contractions[13].

CONCLUSION

Kusamera tea (the ginger tamarind turmeric) is effective in reducing the intensity of menstrual pain in adolescent girls. The results of this research can be used as learning materials in academic activities and implemented into community service activities and become innovative products from universities that will be patented as entrepreneurial product materials

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