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Effectiveness of parental sugar java turmeric drink (curcuma tamarindus) on menstruation pain in adolesce

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ABSTRACT

Dysmenorrhea is a symptomatic phenomenon including abdominal pain, cramps and back pain. The aim of this study was to analyze the effectiveness of the palm sugar turmeric drink (Curcuma Tamarindus) on menstrual pain in adolescent girls in Sei Mencirim Village, Sunggal District, Deli Serdang Regency. The research design uses a quasi-experimental design research method, Posttest-Only Control Design type, namely there are two groups, each selected randomly (R). The first group was given treatment (X) and the other group was not. The group that is treated is called the experimental group and the group that is not treated is called the control group. The population in this study were 20 teenagers who experienced menstrual pain who were divided into two groups and observed for 4 days starting from the first day of menstruation. In this study, the effect of treatment was analyzed using the Non-Parametric Independent Sample T test (man Whitney U) in SPSS with version 17, the result was p = 0.001 where p < 0.05, which means there was a difference in pain reduction in the control group and the treatment group, where In the treatment group, almost all or 78.6% of the pain was reduced on the 2nd day of menstruation. The research output will be published in a reputable national journal and the expected results in this research will be a reduction in the scale of pain in adolescents during menstruation so that there are no longer obstacles to activities in adolescents caused by pain during menstruation.

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1. Introduction

Adolescence is a transition period between childhood and adulthood. At the beginning of adolescence, you will experience a period of striking changes both physically and psychologically. This stage is called puberty. Puberty in girls usually occurs at the age of 10 to 14 years. These various changes aim to prepare your body physically and psychologically to enter adulthood (murti ani, sulistyani prabu aji, ika novita sari, 2022).

Menstruation is a normal physiological condition and a predictable process, where the inner lining of the uterus (endometrium) is removed by the body. Menstruation is periodic bleeding as an

integral part of a woman's biological function throughout her life cycle. The menstrual process can cause potential problems for women's reproductive health related to fertility, namely menstrual patterns(A'yun, 2018) .

Menstrual pain can be managed with pharmaceutical and non-pharmacological approaches. NSAID class drugs can relieve pain by blocking prostaglandins, which are the cause of pain during menstruation, and are one of the pharmacological therapies, however the use of drugs has side effects which are also the result of complex interactions between drug molecules and specific sites of action in the body's biological systems (Baequny & Hidayati, 2016). If the pharmacological effects occur to an extreme, it will have a negative impact on the body's biological systems (Irawan Ria, 2023).

Turmeric has many benefits for human life, for example as a kitchen spice and as a herbal medicine, one of which can be used to reduce dysmenorrhea pain, because turmeric contains curcumin and anthocyanins which function to help facilitate menstruation and reduce cramps or stomach pain (Rahmatika, 2022). Curcumin is also able to work to inhibit the cyclooxygenase (COX) reaction which can inhibit uterine contractions and can reduce inflammation, thereby reducing dysmenorrhea pain during menstruation (Kristianti et al., 2016).

According to the World Health Organization (WHO) in 2022, menstrual pain was reported by 84.1% of women, with 43.1% reporting that the pain occurred during each period, and 41% reporting that the pain occurred during several periods). Considering the parameters of menstrual pain, need for medication, and inability to function normally (absence from studying or social activities) alone or together, the prevalence of dysmenorrhea was 84.1% when only considering menstrual pain, 55.2% when considering the relationship between period. Menstrual pain is a very common problem, but the need for medication and the inability to function normally are less common. However, at least one in four women experience annoying menstrual pain characterized by the need for treatment and absence from study or social activities (Indriastuti, 2009).

In Indonesia, the incidence of dysmenorrhoea is 64.25%, consisting of 54.89% primary dysmenorrhoea and 9.36% secondary dysmenorrhoea. Over the last 50 years, 75% of women have experienced menstrual pain. Symptoms of primary dysmenorrhoea usually occur in women of reproductive age and women who have never been pregnant and as many as 61% occur in unmarried women (Fitriyah, 2014).

According to the Health Research and Development Agency of the Ministry of Health of the Republic of Indonesia in 2023, the prevalence of dysmenorrhea is very high throughout the world, on average more than 50% of women suffer from primary dysmenorrhea. In Indonesia, around 55% of women of childbearing age now suffer from menstrual pain. The incidence (prevalence) of menstrual cramps varies from 45% to 95% in women of childbearing age and the incidence of primary dysmenorrhea is 54.89%, the remainder is secondary dysmenorrhea.

Gita Ayu Indria's research in 2021, Primary menstrual pain usually starts during adolescence, when the ovulation cycle begins to become regular. The cause of primary menstrual pain is currently still unclear, but several theories suggest that myometrial contractions will cause ischemia in the uterus, causing pain. Myometrial contraction is caused by prostaglandin synthesis. Prostaglandins are said to reduce or temporarily inhibit the blood supply to the uterus, which causes the uterus to experience a lack of oxygen, causing myometrium to contract and feel pain (Indria, 2021).

Dysmenorrhea (painful menstruation) is abdominal pain that originates from uterine cramps that occurs during menstruation. Dysmenorrhea painSeverity is related to a person's limitations in carrying out activities and work. Treatment that can be done for dysmenorrhea is divided into two Pharmacologically, dysmenorrhea pain can be treated with analgesic therapy Meanwhile, non-pharmacologically, dysmenorrhea pain can be treated by giving parents a drink of Javanese turmeric (curcuma tamarindus) for menstrual pain in adolescents, so this is an urgent matter for this research.

From the results of an initial survey conducted in Sei Mencirim Village on a group of mosque teenagers in Hamlet V, 15 young women were found. 11 of them said they always experienced menstrual pain every month and had never consumed turmeric acid drinks and did not understand that turmeric

acid drinks could reduce menstrual pain. If the problem of menstrual pain continues, this can cause discomfort for young women to carry out activities. Based on the description above, the author is interested in conducting research on the effectiveness of tamarind turmeric drinks on menstrual pain in young women in Sei Mencirim Village, Sunggal District, Deli Serdang Regency in 2023.

2. Research methods

This research uses a quasi-experimental design research method, using the Posttest-Only Control Design type, namely there are two groups, each selected randomly (R). The first group was given treatment (X) and the other group was not. The group that is treated is called the experimental group and the group that is not treated is called the control group. In this research, the effect of treatment was analyzed with a difference test, using t-test statistics. The location of the research was in Sei Mencirim Village, Sunggal District, Deli Serdang Regency. The time of the research was carried out from May to December 2023. The population in this study was all teenagers in Sei Mencirim Village in May, totaling 28 people and all of them were used as research samples. The data collected, processed and analyzed using the Normality Test, with the aim of assessing the distribution of data in a data group or variable is normally distributed or not. In this study, the statistical normality test used by Shapiro Wilk was used. After the normality test was carried out, the parametric sample independent T test was then carried out.

3. Analysis And Results

Table 1.
Distribution of Control Group Respondents Based on Age of Teenagers in Sei Mencirim Village in 2023

Age	Frequency	Persentase (%)
< 15 years	2	14,3
15-20 Years	12	85,7
>20 years	0	0
Total	14	100

Based on Table 1, it was found that 85.7% of the control group teenage respondents were aged 15-20 years and 14.3% were aged <15 years.

Table 2.
Distribution of Treatment Group Respondents Based on Age of Adolescents in Sei Mencirim Village in 2023

Age	Frequency	Persentase (%)
< 15 years	4	28,6
15-20 Years	10	71,4
>20 years	0	0
Total	14	100

Table 2 shows that 71.4% of the teenage respondents in the treatment group were aged 15-20 years and 28.6% were <15 years old.

Time of Pain During Menstruation

Table 3.
Distribution of Control Group Respondents Based on Time of Period of Pain During Menstruation in Adolescents in Sei Mencirim Village in 2023

Time of Pain	Frekuensi	presentase (%)
Before menstruation	2	14,3
Before up to 1 day of menstruation	1	7,1
Before up to 2 days of menstruation	1	7,1
Before up to 3 days of menstruation	8	57,1
Before up to >3 days of menstruation	2	14,3
Total	14	100

Based on Table 3., it shows that of the control group adolescent respondents, 57.1% of the time pain lasted during menstruation until the 3rd day of menstruation and 7.1% of the time the pain lasted until day 1 and day 2 after menstruation.

Table 4.
Distribution of Treatment Group Respondents Based on Time of Period of Pain During Menstruation in Adolescents in Sei Mencirim Village in 2023

Time of Pain	Frekuensi	presentase (%)
Before menstruation	0	0
Before up to 1 day of menstruation	0	0
Before up to 2 days of menstruation	10	71,43
Before up to 3 days of menstruation	3	21,43
Before up to >3 days of menstruation	1	7,14
Total	14	100

Table 4. shows that of the teenage respondents in the treatment group, there were 10 people (71.43%) whose pain during menstruation lasted until day 2 and there was 1 person (7.1%) who experienced pain during menstruation for >3 days.

Pain Reduction

Table 5.
Distribution of Control Group Respondents Based on Menstrual Pain in Adolescents in Sei Mencirim Village in 2023

Menstrual Pain	Frequency	Persentase(%)
Reduce	5	35,7
Not reduced	9	64,3
Total	14	100

Based on Table 5 above, it can be explained that 64.3% of adolescent respondents in the control group did not experience reduced pain during menstruation and 35.7% of adolescents experienced reduced menstrual pain.

Table 6.
Distribution of Treatment Group Respondents Based on Menstrual Pain in Adolescents in Sei Mencirim Village in 2023

Menstrual Pain	Frequency	Persentase(%)
Reduce	11	78,6
Not reduced	3	21,4
Total	14	100

Based on Table 6 above, it can be explained that 78.6% of adolescent respondents in the treatment group experienced a reduction in pain after drinking the palm sugar and tamarind turmeric drink.

Comparison of Giving Palm Sugar Turmeric and Tamarind Drinks to Menstrual Pain in Adolescents

Table 7.
Comparison of Giving Palm Sugar Turmeric and Tamarind Drinks to Menstrual Pain in Adolescents in Sei Mencirim Village in 2023

	Menstrual Pain						
group	Decreased		Not Reduced		Total		P value
	f	%	f	%	f	%	0,001
Control	5	35,7	9	64,3	14	100	

Treatment	11	78,6	3	21,4	14	100	
Total	16	57,1	12	42,9	28	100	

Based on Table 7, in administering turmeric and tamarind palm sugar drinks, there were differences between the treatment group and the control group with the results obtained p = 0.001 < 0.05 where 64.3% of adolescent respondents in the control group had no reduction in menstrual pain, while in the adolescent group respondents almost all of the treatment or 78.6% experienced a reduction in menstrual pain

Table 8.
Normality test results

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
totalp	.288	28	.000	.714	28	.000

a. Lilliefors Significance Correction

Based on the results of the normality test, a sig comparison value of 0.000 < 0.05 was obtained so that the data was not normally distributed.

Table 9.
Independent T Test Results for Non-Parametric Samples (man Whitney U)

Test Statistics[b]	
	totalp
Mann-Whitney U	34.000
Wilcoxon W	139.000
Z	-3.204
Asymp. Sig. (2-tailed)	.001
Exact Sig. [2*(1-tailed Sig.)]	.002[a]
Exact Sig. (2-tailed)	.001
Exact Sig. (1-tailed)	.001
Point Probability	.000
a. Not corrected for ties.	
b. Grouping Variable: grupkp	

The results of the independent sample T test obtained asymp sig 2 tailed 0.001 < 0.05 so that there is an effect of giving palm sugar and tamarind turmeric drinks on menstrual pain in young women in Sei Mencirim Village, Sunggal District, Deli Serdang Regency in 2023.

Discussion

From table 5. it shows that the majority of teenage respondents in the control group or 64.3% experienced no reduction in menstrual pain. This is because the control group did not consume the turmeric, tamarind, palm sugar drink to reduce pain during menstruation. Apart from that, 57.14% of teenage respondents in the control group experienced menstrual pain before menstruation for up to 3 days of menstruation. Meanwhile, the treatment group that was given the turmeric, tamarind, palm sugar drink from table 4.6 shows that the majority or 71.4% of their menstrual pain was reduced.

This is because the treatment group was given to drink turmeric and tamarind with palm sugar, where the turmeric and tamarind drink contains the active compounds curcumine and anthocyanin which function as menstrual pain relievers (Felicia et al., 2015). Turmeric and tamarind both have anti-

inflammatory properties which can inhibit or reduce inflammation thereby reducing or even inhibiting uterine contractions. Apart from being an anti-inflammatory, turmeric tamarind is also useful as an analgesic and antipyretic. This is in accordance with Winarso's (2014) research on the effect of drinking turmeric tamarind on reducing the level of primary dysmenorrhea pain in students at Madrasah Tsanawiyah Negeri Jatinom Klaten . The results obtained were that respondents who did not experience dysmenorrhea after drinking turmeric tamarind were 38.6%, which is included in the pain category. 47.7% mild and 13.6% of respondents with moderate pain. So it can be concluded that Ha is accepted, which means there is an effect of drinking tamarind turmeric on reducing the level of dysmenorrhea pain for female (Winarso, 2014) .

Apart from that, this is also confirmed by research by Lilis, et al (2020) where respondents were given 150 ml of sour turmeric drink once a day for 4 days, 2 days before menstruation until the 2nd day of menstruation. Of the 32 respondents, the dysmenorrhea pain scale decreased before and after administration of tamarind turmeric by 1.8168 (Syamsuryanita & Ikawati, 2022). Apart from that, in line with Sri Mulia Sari's research, the reason teenagers do not take anti-pain medication is because they are afraid of the side effects that may occur in the long term. To reduce their complaints, they prefer to rest and consume concoctions derived from traditional plants, namely tamarind turmeric herbal medicine because it is considered safe for consumption and more economical in terms of costs (Armayanti & Damayanti, 2021). Comparison of Giving Gua Palm Turmeric and Tamarind Drinks Against Menstrual Pain in Adolescents by looking at the results of statistical tests using the Non-Parametric Independent Sample T Test (man Whitney U) in SPSS with version 17, the result was $p = 0.001$ where $p < 0.05$, indicating that There is an effect of giving palm sugar and tamarind turmeric drinks on menstrual pain in young women in Sei Mencirim Village, Sunggal District, Deli Serdang Regency in 2023.

In the treatment group, 78.6% of teenage respondents had less menstrual pain on the second day of menstruation. This is in accordance with the opinion of Marlina (2012), that turmeric and sour drinks contain a combination of turmeric and tamarind which has greater antioxidant activity. Tamarind is a fruit that has high antioxidant levels and its antioxidant levels will increase when combined with other spices (Sugiharti & Febriana, 2021). Research shows that giving turmeric drinks mixed with acid can reduce the pain scale of dysmenorrhea. Acid functions to improve blood circulation so that it can prevent blood vessel constriction during dysmenorrhea (Safitri, 2018).

According to the researcher's assumptions, based on the research results, it can be seen that changes in menstrual pain that occur in respondents are caused by many things, such as irregular menstrual cycles, hormones, uterine contractions, and inflammation of the pelvic muscles. Respondents who experience menstrual pain will overcome this in various ways, for example consuming sour turmeric drinks can be used as one non-pharmacological therapy in the form of herbal drinks which can be used to reduce the scale of pain during menstruation. Apart from reducing menstrual pain, tamarind turmeric can treat vaginal discharge, increase body endurance, lower blood sugar levels and prevent acne. Turmeric also contains antioxidants and anti-inflammatory properties and turmeric is called curcumin which has potent anti-inflammatory effects (Widowati et al., 2020). This active substance helps stop the action of enzymes and cytokines which can cause inflation in the body. Therefore, using the turmeric and sour herbal drink can reduce menstrual pain in young women. Apart from that, menstrual pain can occur due to an imbalance of the hormone progesterone in the blood, causing pain, psychological factors also play a role in causing menstrual pain in some women. Therefore, non-pharmacological management is safer to use because it does not cause side effects like drugs and regular exercise.

4. Conclusion

After conducting research in Sei Mencirim Village, the following conclusions can be drawn: 64.3% of control group adolescent respondents had no reduction in menstrual pain and 57.14% of the pain lasted until the 3rd day of menstruation. 71.4% of adolescent respondents in the treatment group had reduced menstrual pain. This is because the treatment group was given a turmeric, tamarind, palm sugar drink.

There are differences in menstrual pain in the control group and the treatment group. In the treatment group, 78.6% of adolescent respondents had reduced menstrual pain, namely on the 2nd day of menstruation. Based on the results of statistical tests using the Non-Parametric Independent Sample T Test (man Whitney U) on SPSS with version 17, the results obtained were p = 0.001 where p < 0.05, which means there is an effect of giving palm sugar and tamarind turmeric drinks on menstrual pain in teenage girls in Sei Mencirim Village, Sunggal District, Deli Serdang Regency in 2023. In this researcher, there is a limitation in this research, namely parameters pain is difficult to do in research because measuring the intensity of pain is very difficult subjective and individual, the possibility of pain of the same intensity being felt very different by two different people

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