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Research Article

The Effectiveness of Giving Red Ginger Water and Warm Compresses to Reduce the Intensity of Dysmenorrhoea Pain in Adolescent Girls

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Abstract:
The incidence of dysmenorrhoea in the world averages 50% of women in each country experiencing dysmenorrhoea. In Indonesia, dysmenorrhoea causes adolescent girls (59.2%) to experience decreased activity, (5.6%) skip school and (35.2%) do not feel disturbed. Lampung Province in 2020 was quite high with 54.9%. Waykanan County at 88.4%. The purpose of the study was to see the effectiveness of giving red ginger water and warm compresses in reducing the intensity of dysmenorrhoea pain in adolescent girls. The implementation time is in September-October 2023 with a population of 811 people in Negeri Agung. The number of research samples was 34 samples with 2 groups. The research method uses a quasi-experimental design with a two-group pretest-posttest research design, data obtained from secondary data and primary data using Numerical Rating Scale (NRS) sheets, Univariate and Bivariate data analysis. The results showed that there was a difference in pain intensity before and after ginger water was given with a value of α 0.000 < 0.5 and there was a difference in pain intensity before and after a warm compress with a value of α 0.000 < 0.5. It can be concluded that giving ginger water and warm compresses are equally effective in overcoming dysmenorrhoea with a value of α 0.040 which means < 0.05. There was a decrease in dysmenorrhoea pain after being given red ginger water with an average of 2.36 and a decrease in dysmenorrhoea pain after being given a warm compress with an average of 2.06.
Keywords: Dysmenorrhoea, Juveniles, Red Ginger Water, Warm Compresses

1. INTRODUCTION

Dysmenorrhoea greatly affects young women, it can result in disrupting daily activities. Young women who feel dysmenorrhoea pain during menstruation reduce their activities, especially during learning activities at school. Young women think that desminorea pain during menstruation is normal and do not know the cause of desminorea pain that is felt without knowing how to handle it (Putri et al., 2019). Common menstruation symptoms that might lower quality of life and impair daily living activities and work productivity include dysmenorrhea and heavy menstrual bleeding (HMB) (Payne, 2019). The prevalence of menstruation pain worldwide is highly documented. In every nation, the prevalence of dysmenorrhea is over 50% among women (Munro et al., 2022).

Worldwide, 90% of teenage girls suffer from menstruation issues, and over 50% of women who are menstruating have primary dysmenorrhea (Azhary et al., 2022). In Indonesia, dysmenorrhoea causes adolescent girls (59.2%) to experience decreased activity, (5.6%) skip school or work, and (35.2%) consider it normal (Wuni et al., 2023).

Several ways to reduce menstrual pain can be done pharmacologically and non-pharmacologically (Pan et al., 2022). Most adolescent girls take drugs that function curatively where in general 50-60% of adolescent girls still need analgesic drugs to treat dysmenorrhea pain. However, these drugs can cause side effects that harm consumption (Chen et al., 2023). The usual administration of analgetic drugs is given aspirin, ponstan, novalgin. In addition, therapy that can be given is by using hormonal drug therapy, namely nonsteroidal prostaglandin drugs with the types of ibuprofen and naproksen drugs and cervical canal dilatation (Silva et al., 2022).

Treatment of dysmenorrhoea other than pharmacological can be done nin-pharmacologically (Acheampong et al., 2019). In order to help reduce dysmenorrhoea can be given using natural ingredients such as spices, warm compresses given to the back, lower abdomen, warm baths, giving sports massage, aromatherapy, listening to music, reading books or watching movies can help reduce desminorea pain. Ginger plant (Zingibers Officinale Rosc) with its

rhizome is useful for providing analgesics, antipyretics, and anti-inflammatory that can help reduce menstrual pain in adolescent girls (Zhang et al., 2022). The warm effect of compresses can cause vasodilation to blood vessels which will increase blood flow to tissues as well as enlarged cells and build up of repaired substances that can make desminorea pain can be reduced due to reduced blood supply to the endometrium.

Drawing from the findings of Indah and Utary's study conducted on female students at SMK Swasta PAB 5, which revealed test results with a p-value of 0.001 ($p<0.05$) indicating that ginger drinks are effective in reducing the intensity of dysmenorrhea pain, the study concluded that acupressure, ginger consumption, and the differences between the two interventions on the intensity of dysmenorrhea pain in women (Sari & Listiarini, 2021).

The results of the study entitled the effect of red ginger decoction on menstrual intensity in women level II MTs Pondok Pesantren Al-Jihad Pontianak as many as 19 samples by producing p value = 0.000 < 0.05. The results of research that have been conducted state that there is an effect of giving red ginger decoction on reducing the intensity of dysmenorrhea in adolescent girls level II MTs Pondok Pesantren Al-Jihad Pontianak.

The gap from this study is that researchers will combine red ginger boiled water and warm compresses to see the effectiveness of giving red ginger boiled water with warm compresses to reduce desminorea pain. It is hoped that after giving red ginger boiled water and warm water compresses can help reduce desminorea pain. The purpose of this study was to combine and see the effectiveness of giving red ginger water and warm compresses to reduce the intensity of dysmenorrhoea pain in adolescent girls.

2. MATERIAL AND METHOD

The method used was quasi-experimental using a two-group pretest-posttest research design and data obtained using secondary data obtained through data sources on the incidence of dysmenorrhoea cases in women in the Negeri Agung District area and primary data taken through direct interviews with women using observation sheets. The population of this study was all women aged 18-25 years in Negeri Agung District, Waykanan Regency with a total sample of 118 adolescents. The sampling method used consecutive sampling and obtained 34 samples divided into 2 groups, the implementation time was September-October 2023.

The instruments in this study used Numeric Rating Scale (NRS) measurement sheets and questionnaire questions regarding menarche age, family history, period of m entrruation, MSQ. The study used univarat and bivariate analysis using the Chi-Square test.

The adolescent group of respondents was given a pre-test using a pain Numeric Rating Scale (NRS) sheet to determine the level of menstrual pain before treatment on the first day and the adolescent group of study respondents were given red ginger water 1 time a day and warm water compresses were given 1 time a day. Respondents will be observed and interviewed with a Numeric Rating Scale (NRS) sheet in order to see the level of menstrual pain after the intervention.

3. RESULT AND DISCUSSION

3.1 Result

1. Univariate Analysis

a. Normality test

Table 1. Normality Test of Drinking Ginger Water and Warm Compresses

Variable	Group			
	Giving Ginger Water		Warm Compress	
	n	p value	n	p value
Intensity of Menstrual Pain	17	0,000*	17	0,000*

**test of Normality: Shapiro wilk*

The results of table 1 can be concluded that respondent data is not normally distributed with p values of 0.000 < 0.05. so that the next test to be used is the Wilcoxon and Man Whitney test.

b. Characteristics of Respondents

Table 2. Characteristics of Respondents

Variable	N	Intensity of Menstrual Pain	
		Before	After
		Mean±Max	Mean±Max
Giving Ginger Water	17	5,12±6	2,36±3
Warm Compress	17	5,00±6	2,06±3

The results of table 2 can be concluded that both groups decreased after the intervention.

a. Differences in Intensity of Menstrual Pain Before and After Ginger Water

2. Analisis Bivariat

Table 3. Differences in Desminorea Pain Intensity Before and After Ginger Water

Variable	N	Intensity of Menstrual Pain		Difference	P value
		Before	After		
		Mean±SD	Mean±SD	Mean±SD	0,000*
Giving Ginger Water	17	5,12±0,66	2,36±0,437	2,76±0,23	

**Uji Wolcoxon*

The results of table 3 concluded that the average menstrual pain before being given ginger water was 5.12 and after being given ginger water the average pain intensity decreased to 2.36. The results of the study concluded that there was a difference in pain intensity before and after ginger water with a value of α 0.000 < 0.5.

b. Differences in Intensity of Menstrual Pain Before and After Applying Warm Water Compresses

Table 4. Differences in Pain Intensity

Variable	N	Intensity of Menstrual Pain		Difference	P Value
		Before	After		
		Mean±SD	Mean±SD	Mean±SD	
Warm Compress	17	5,00±0,55	2,06±0,556	2,94±0	0,000*

**Uji Wolcoxon*

The results of table 4 concluded that the average menstrual pain felt before being given ginger water was 5.00 and after being given ginger water the average pain intensity decreased to 2.06. It can be concluded that there is a difference in pain intensity before and after ginger water with a value of α 0.000 < 0.5.

c. The Effectiveness of Giving Ginger Water and Warm Compresses on the Intensity of Menstrual Pain

Table 5. The Effectiveness of Giving Ginger Water and Warm Compresses

Variable	N	Intensity of Menstrual Pain		Difference	P value
		Before	After		
		Mean±SD	Mean±SD	Mean±SD	
Giving Ginger Water	17	5,12±0,66	2,36±0,437	2,76±0,23	0,040*
Warm Compress	17	5,00±0,55	2,06±0,556	2,94±0	

**Uji Man Whitney*

The results of table 5 were concluded from both groups with each of the 17 respondents who were given ginger water and warm compresses, having a value of α 0.040 which means < of 0.05. The conclusion is that giving ginger water and warm

3.2 Discussion

1. Differences in Intensity of Menstrual Pain Before and After Ginger Water

The results of table 3 concluded that the average menstrual pain before being given ginger water was 5.12 and after giving ginger water the average pain intensity decreased to 2.36. The results of the study concluded that there was a difference in pain intensity before and after ginger water with a value of α 0.000 < 0.5.

The results of research conducted by Karomah in 2022 concluded that there is an effectiveness between red ginger water and dysmenorrhoea with a p value = 0.0001. It can be concluded that there is effectiveness between red ginger water and dysmenorrhea (Karomah & Yuliani, 2022).

Consuming red ginger water, the sensation that is first felt is the spicy taste of red ginger in the mouth which then respondents will feel a warm sensation in the body that can facilitate blood circulation (Melia et al., 2022). Essential oil contained in red ginger is a powerful compound to overcome pain because of how it works which is able to block prostaglandins and stimulate blood circulation so that it has an effect that can reduce pain during dysmenorrhoea (Karomah & Yuliani, 2022).

2. Differences in Intensity of Menstrual Pain Before and After Applying Warm Water Compresses

The results of table 4 concluded that the average menstrual pain before being given ginger water was 5.00 and after being given ginger water, the average pain intensity decreased by a value of 2.06. The conclusion that can be given is that there is a difference in pain intensity before and after ginger water is given with a value of α 0.000 < 0.5.

Dahliana conducted research on 35 adolescents in 2022. Before receiving intervention, 26 adolescents (74.3%) reported moderate pain during menstruation, while 9 adolescents (25.7%) reported mild pain. Following intervention, 21 adolescents (60.0%) reported painlessness and 12 adolescents (34.3%) reported mild pain. The results showed a significant relationship between warm compresses and a decrease in pain intensity (p value = 0.00). The final result was given that warm compresses had an effect on reducing dysmenorrhea in female students at SMP Sriguna Palembang (Dahliana et al., 2022).

Warm water compress therapy was chosen because it is more effective than other non-pharmacological therapies, besides being able to reduce pain intensity well this therapy can be done independently at home (Patmawati & Pawestri, 2022). The benefits that can be provided by warm water compresses make blood circulation smooth, vascularization smooth and vasodilation occurs which will relax the muscles because the muscles will get excess nutrients flowed by blood so that muscle contractions decrease (Goswami et al., 2022). Giving warm compresses causes vasodilation in the area of pubic symphisis which can open blood flow making blood circulation smooth again so that relaxation in the muscles results in decreased muscle contraction. In the final result, the intensity of pain decreases, the adolescent response feels more complicated, becomes able to carry out activities, provides quality of life and psychological responses can be more controlled so that it is not easy to get emotional. The benefits of warm compresses can also dilate blood vessels, stimulate stiffness. Warm compresses can also relieve pain (Kaur et al., 2020). The conclusion that can be obtained that warm compresses can provide benefits to reduce pain intensity at the time of Desminorea.

3. The Effectiveness of Giving Ginger Water and Warm Compresses on the Intensity of Menstrual Pain

The results of table 5 were concluded from both groups with each number of respondents 17 people who were given ginger water and warm compresses, getting a value of α 0.040 which means < of 0.05. The final result of giving ginger water and warm compresses is equally effective in overcoming menstrual pain.

According to research done by Karomika in 2019, ginger is a more effective menstruation pain reliever. Pain intensity before and after warm compresses differs, with a pvalue of 0.000 < α (0.05) for the pain values extracted. After administering ginger, there was a difference in p-value effectiveness of 0.000 < (0.05), with warm compresses having a value of 1.375 and ginger treatment having an average pain of 0.625. Giving ginger is more effective than warm compresses because red ginger contains many high volatile components (volatile oils) and non-volatile ones (oleoresins) (Herlinadiyaningsih, 2020). The content of red ginger is used as a remedy for colds, digestion, disorders, as an analgesic, antipyretic, anti-inflammatory, reduces the amount of cholesterol, prevents depression and incompetence (Preciado-Ortiz et al., 2023). The content of gingerol, shogaol, paradol, zingeron, and some cans of gingerdione inhibits cyclooxygenase and lipoxygenase, thus inhibiting biosynthetic prostaglandins and

leukotrienes. Reducing from forming prostaglandins and leukotrienes this eases the pain (Srivastava et al., 2019). In an experiment conducted on a mouse to test the anti-inflammatory effect of red ginger, it showed the results that red ginger rhizome extract has the same anti-inflammatory properties as NSAIDs.

It is hoped that adolescents can apply compresses and consume ginger boiled water when experiencing desminorea so as to reduce the pain felt and health workers provide health education to adolescents as an effort to increase adolescent knowledge about how to handle desminorea appropriately and safely for adolescents, namely by using warm compresses and decoction of red ginger.

The problem faced by researchers during this study is that many women experience desminorea pain. The limitations of researchers who do not have a team in conducting research make it difficult for researchers to take a wider sample. It is hoped that the next researcher will have many teams in conducting desminorea research so that adolescents who experience desminorea complaints can be carried out special therapy in the Negri Agung sub-district of Waykanan Regency.

4. CONCLUSION

The results of the study found a difference in pain intensity before and after ginger water with a value of α 0.000 < 0.5 and there was a difference in pain intensity before and after being given a warm compress with a value of α 0.000 < 0.5. It can be concluded that giving ginger water and warm compresses are equally effective in overcoming desminorea with a value of α 0.040 which means a < of 0.05. There was a decrease in dysmenorrhoea pain after being given red ginger water with an average decrease of 2.36 and a decrease in dysmenorrhoea pain after being given red ginger water with an average decrease of 2.06.

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