

THE EFFECT OF GIVING RED GINGER WATER ON DYSMENORRHEA PAIN IN ADOLESCENT WOMEN IN THE REGIONSARI BUILDING HEALTH CENTER WORK

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ABSTRAK : PENGARUH PEMBERIAN AIR JAHE MERAH TERHADAP NYERI DISMENOIRE PADA REMAJA PUTRI DI WILAYAHKERJA PUSKESMAS GEDUNG SARI

Latar belakang: Dismenore atau nyeri menstruasi merupakan masalah ginekologi yang umum dialami oleh wanita dari berbagai usia. WHO didapatkan kejadian sebesar 1.769.425 jiwa (90%) wanita yang mengalami dismenore. Prevalensi dismenore mencapai 59,7%, dengan 12% berat, 37% sedang, dan 49% ringan. Di Provinsi Lampung dismenore cukup tinggi, hasil penelitian sebanyak 54,9% wanita mengalami dismenore (Indrayani et al., 2022). Dari hasil presurvey dipuskesmas gedung sari dar 7 responden yang mengalami nyeri dismenore nyeri berat sebanyak 1 (15%), nyeri sedang 4 (60%), nyeri ringan 2 (25%). Dalam upaya meningkatkan kesehatan reproduksi remaja, Pelayanan Kesehatan Reproduksi Esensial menjadi penting untuk dijadikan sebagai pintu masuk promosi kesehatan (Mariza et al., 2020)..

Tujuan penelitian: untuk Mengetahui Pengaruh Pemberian Air Jahe Merah Terhadap Nyeri Dismenore Pada Remaja Putri Di Wilayah Kerja Puskesmas Gedung Sari Tahun 2024..

Metode: Penelitian ini menggunakan desain pre-eksperimental dengan pendekatan one group pretest-posttest. Penelitian dilakukan pada bulan Juni – Juli 2024 terhadap remaja putri dengan menggunakan teknik purposive sampling sehingga diperoleh 30 responden. Data dikumpulkan dengan menggunakan kuesioner kemudian dianalisis dan disajikan dalam bentuk tabel karakteristik.

Hasil penelitian: rata-rata nyeri dismenore sebelum intervensi adalah 4,67 dan menurun menjadi 3,20 setelah pemberian air jahe merah. Analisis statistik menunjukkan terdapat pengaruh yang signifikan pemberian air jahe merah terhadap penurunan nyeri dismenore (p -value = 0,000) pada remaja putri dengan nyeri dismenore usia ≤ 12 sebanyak 7 orang (23,3%) dan ≥ 13 sebanyak 23 orang. orang (76,7%).

Kesimpulan: Dari penelitian ini terdapat pengaruh pemberian air jahe merah terhadap nyeri desminorea pada 26 remaja putri di wilayah Puskesmas Gedung Sari. Sehingga disarankan bagi remaja putri yang mengalami nyeri desminore untuk mempertimbangkan penggunaan jahe sebagai alternatif alami untuk mengurangi nyeri.

Kata Kunci: Dismenore, air jahe merah, remaja

ABSTRACT

Background: Dysmenorrhea or menstrual pain is a common gynecological problem experienced by women of all ages. WHO found that the incidence of 1,769,425 people (90%) of women experienced dysmenorrhea. The prevalence of dysmenorrhea reached 59.7%, with 12% severe, 37% moderate, and 49% mild. In Lampung Province, dysmenorrhea is quite high, research results show that 54.9% of women experience dysmenorrhea (Indrayani et al., 2022). From the results of the presurvey at the Gedung Sari Health Center, 1 (15%) of the 7 respondents experienced severe dysmenorrhea, 4 (60%) had moderate pain, 2 (25%) had mild pain. In an effort to improve adolescent reproductive health, Essential Reproductive Health Services are important as an entry point for health promotion (Mariza et al., 2020).

The purpose This research aims to determine the effect of giving red ginger water on dysmenorrhea pain in young women in the Gedung Sari Health Center work area in 2024

Methods: This research uses a pre-experimental design with a one group pretest-posttest approach. The research was conducted in June - July 2024, on young women using a purposive sampling technique so that 30 respondents were obtained. Data was collected using a questionnaire and then analyzed and presented in the form of a characteristic table.

Results showed that the average dysmenorrhea pain before the intervention was 4.67 and decreased to 3.20 after administering red ginger water. Statistical analysis showed that there was a significant effect of giving

red ginger water on reducing dysmenorrhea pain (p -value = 0.000) among young women with dysmenorrhea pain aged ≤ 12 as many as 7 people (23.3%) and ≥ 13 as many as 23 people (76.7%).

Conclusion: From this research, there was an effect of giving red ginger water on desminorrhea pain in 26 young women in the Gedung Sari health center area. So it is recommended that young women who experience desminore pain consider using ginger as a natural alternative to reduce pain.

Keywords: Dysmenorrhea, ginger water, adolescents

INTRODUCTION

Adolescence is a phase of dynamic development in a person's life and is a transition period from childhood to adulthood. During this period, many physical, psychological, and biological changes occur (Aprilia et al., 2022). This is when the reproductive organs mature, one of which in adolescent girls is marked by menstruation (*haid*). Menstruation is periodic vaginal bleeding resulting from the shedding of the uterine endometrial lining (Mufflihah, 2018).

Menstruation, or *haid*, refers to the periodic discharge of blood and body cells from the vagina which originate from the wall of a woman's uterus. Menstruation usually starts between 10 and 13 years of age, depending on a number of factors including the woman's health, nutritional status, and body weight relative to height. Menstruation lasts once a month until women reach the age of 45-50 years (Hermayanti et al., 2019). Generally, many women experience complaints of pain during menstruation which lasts for 2-3 days, starting the day before their period begins. The pain during menstruation (**dysmenorrhea**) felt by each woman varies; some are slightly bothered, while others are very disturbed to the point of being unable to carry out daily activities and having to rest or even be forced to be absent from school (Aulya et al., 2021).

Dysmenorrhea, or painful menstruation, is one of the most common gynecological problems experienced by women of various ages. Data from the WHO in 2017 found that the incidence of 1,769,425 people (90%) of women experienced dysmenorrhea, 10-15% of whom experienced severe dysmenorrhea. The incidence of dysmenorrhea in the world is very large, with a pooled worldwide prevalence of 71.3% (95% CI 68.7%-73.8%). On average, more than 50% of women experience it. A longitudinal study from Sweden reported that dysmenorrhea occurred in 90% of women aged less than 19 years and 67% of women aged 24 years (Anurogo, 2018). (p. 3) From research results in the United States, the percentage of dysmenorrhea incidence is around 60%, Sweden 72%, and in Indonesia 55% (Anurogo, 2018). (p. 3) Research in the United States states

that dysmenorrhea is experienced by 30-50% of women of reproductive age and 10-15% of them lose job opportunities, interfere with study activities at school and family life (Rachmawati et al., 2020).

The prevalence of dysmenorrhea reaches 59.7% (p. 1). Of those who complain of pain, 12% is severe, 37% is moderate, and 49% is mild (p. 1). This incidence decreases with increasing age and increasing births (Asmarani, 2020) (p. 3). In Indonesia, the figure is estimated at 55% of women of reproductive age who suffer from pain during menstruation (Siagian, 2019) (p. 3). In Lampung Province itself, the incidence of dysmenorrhea is quite high; research results found that 54.9% of women experienced dysmenorrhea (Indrayani et al., 2022) (p. 3). Data from the Lampung Provincial Health Office has not classified dysmenorrhea; the incidence of dysmenorrhea in Bandar Lampung City falls into other categories related to complaints and complications, namely 19,375 people (12.08%) (Indrayani et al., 2022)

The impacts on women during dysmenorrhea are physical weakness, reduced movement, and stress. Due to this menstrual pain, many young women go to the doctor for consultation and treatment. The pain felt before and during menstruation often causes nausea, dizziness, and weakness. This pain is so severe that it forces sufferers to rest, often women leaving their jobs, and many adolescent girls not attending school or participating in the learning process, so that learning activities can be disrupted, concentration can decrease or even disappear, and the material provided during ongoing learning cannot be absorbed by young women experiencing dysmenorrhea (Sabaruddin, 2017).

There are several ways to relieve symptoms of menstrual pain, namely by pharmacological and non-pharmacological methods. Pharmacological drugs that are often used are analgesics and anti-inflammatories such as mefenamic acid, ibuprofen, and others. However, the use of pharmacological drugs causes side effects such as stomach problems and a decrease in blood (anemia). Meanwhile, many things are done in non-pharmacological treatment to reduce pain in primary

dysmenorrhea, such as the use of warm compresses, regular exercise, and consuming herbal products that are believed to be effective (Aritonang, 2019).

Herbal therapy can be done by using traditional medicines derived from plant ingredients. Plant ingredients that are believed to reduce pain are cinnamon, soybeans, cloves, turmeric, ginger, *oso dresie*, and Chinese herbs. Ginger is as effective as mefenamic acid and ibuprofen, which function to reduce menstrual pain complaints. Ginger contains substances that are effective for relieving pain during menstruation. Red ginger is a variant of ginger that has a high essential oil content. Red ginger contains 2.58-2.72% essential oil and has a very spicy taste with a sharp aroma, so it is often used for making ginger oil and medicines (Intiyaswati, 2022).

The analgesic effect of squeezed red ginger rhizome is related to the elements contained in red ginger. Compounds such as gingerol, shogaol, zingerone, diarylheptanoids and their derivatives, especially paradol, are known to inhibit the cyclooxygenase enzyme, resulting in a decrease in the formation or biosynthesis of prostaglandins which causes a reduction in pain (Intiyaswati, 2022).

Research shows that there is effectiveness between red ginger water and dysmenorrhea where the p -value = 0.0001 (Karomah, 2022). There is an effect of giving red ginger drink on reducing the level of menstrual pain (dysmenorrhea) in young women at SMPN I Sidoarjo. Respondents are advised to use red ginger drink to overcome menstrual pain (Intiyaswati, 2022). The results showed that dysmenorrhea pain before being given red ginger drink was in the moderate pain category, namely 16 people (40.0%). Dysmenorrhea pain after being given red ginger drink was in the no pain category, namely 20 people (50.0%). The Wilcoxon test results showed that the correlation between the two variables was -5.823 with a significance of 0.000. This shows that the correlation between the average of the two variables before and after is strong and significant (Resna et al., 2019).

The adolescent group is one of the groups vulnerable to the neglect of reproductive health rights. In fact, adolescence is the age where reproductive organs are vulnerable to reproductive tract infections, pregnancy, and drug use. One effort to overcome reproductive health problems in adolescents is through Essential Reproductive Health Services within the scope of Adolescent Reproductive Health. The goal is to make adolescents the main focus and entry point for

efforts to promote reproductive health services (Mariza et al., 2020)

Based on a survey at the Gedung Sari Health Center, it is known that data on dysmenorrhea has never been recapitulated or collected, so the exact data on how many adolescents experience complaints of dysmenorrhea is not known, as is the case with the Bandar Jaya Health Center where the incidence of dysmenorrhea is not known because data collection has never been carried out.

Based on the results of the pre-survey conducted on January 4, 2024, in the working area of the Gedung Sari Health Center, interviews were conducted with adolescents who happened to be experiencing dysmenorrhea. Of the 7 young women, 1 (15%) revealed that when they had their period it felt very painful, sometimes even causing them to ask for permission not to go to school. 4 (60%) young women said that during menstruation they experienced back pain and lower abdominal cramps on the first day of their period, 2 (25%) said that during menstruation their whole body felt sick and tired, so they were less able to participate in activities on the first day of their period. Of these 7 young women, none knew that red ginger water could help reduce menstrual pain, so they had been consuming pain relievers whenever they experienced dysmenorrhea.

Based on the problems mentioned above, the researchers were interested in researching further the effect of giving red ginger water on dysmenorrhea pain in young women in the working area of the Gedung Sari Health Center in 2024.

RESEARCH METHODS

The type of research used in this study is quantitative research, using a pre-experimental design with a one group pre-test post-test approach. The research was carried out in the area of the Gedung Sari Health Center in June - July 2024.

The population in this study in the working area of the Gedung Sari Health Center totaled 465 young women. Due to the large number of the existing population, the researcher used purposive sampling, which is a non-probability sampling method where the researcher selects individuals or sample units based on special considerations deemed important for the research purposes. The sample in this study consisted of young women aged 12-15 years who experienced dysmenorrhea, were willing to be respondents, and were willing to drink boiled red ginger water. In this study, 30 young women who experienced menstrual pain were taken as samples. The independent variable is

red ginger water. The dependent variable is dysmenorrhea.

(10.0%), while the category \geq is greater than or equal to $\geq 29-42$ days was 27 respondents (90.0%).

RESEARCH RESULTS

Univariate Analysis

Based on Table 1 above, it can be seen that the characteristics of respondents based on age at menarche category \leq is less than or equal to ≤ 12 years were 7 respondents (23.3%), while the category \geq is greater than or equal to ≥ 13 years was 23 respondents (76.7%). Characteristics of respondents based on family history category within the family history were 3 respondents (10.0%), while the category not within the family history was 27 respondents (90.0%). Characteristics of respondents based on menstrual cycle category \leq is less than or equal to ≤ 28 Days were 3 respondents

Table 1
Respondent Characteristics Based on Age at Menarche, Family History, and Menstrual Period

Respondent Characteristics	F	%
Age at Menarche		
≤ 12 Years	7	23,3
≥ 13 Years	23	76,7
Family History		
Yes	3	10,0
No	27	90,0
Menstrual Cycle		
≤ 28 Days	3	10,0
$\geq 29-42$ Days	27	90,0

Table 2
Average dysmenorrhea in young women before being given red ginger water in the Gedung Sari Health Center Area

Variabels	Mean	SD	Min	Max	N
Before giving ginger water	4.67	0.7	4	6	30

Based on Table 2, which contains data on the average dysmenorrhea in young women before being given red ginger water in the Gedung Sari Health Center Area, the table presents descriptive statistics including the mean, minimum (Min), maximum (Max), and number of respondents (N) for the dysmenorrhea variable before the intervention. (p. 6) Based on the research results conducted on 30 young women, it can be seen that the average level of dysmenorrhea in young women before being given red ginger water was **4.67**. (p. 6) This indicates that, on a certain scale, the average

intensity of menstrual pain experienced by adolescents is quite high.

Then, from the research results, it can be seen that the lowest dysmenorrhea level experienced by respondents was 4. This indicates that no adolescents reported a dysmenorrhea level below 4 before the intervention. Based on the research results, it can also be seen that the highest dysmenorrhea level experienced by respondents was 6. This shows that there were adolescents who experienced dysmenorrhea with an intensity of 6, which is the highest value in this sample.

Table 3
Average dysmenorrhea in young women after being given red ginger water in the Gedung Sari Health Center Area

Dysmenorrhea	Mean	SD	Min	Max	N
After	3.20	1.0	2	5	30

Based on Table 3 which contains data on the average level of dysmenorrhea in young women after being given red ginger water in the Gedung Sari Health Center Area. The table presents descriptive statistics including the **mean** value (average), **standard deviation** (SD), **minimum** (Min) value, **maximum** (Max) value, and number of respondents (N) for the dysmenorrhea variable after the intervention. Based

on the table, it can be explained that the average level of dysmenorrhea in young women after being given red ginger water was 3.20. This shows that, after the intervention, the average intensity of menstrual pain experienced by adolescents decreased compared to before the intervention (before: 4.67, after: 3.20).

Next, the lowest minimum dysmenorrhea level recorded after the intervention was **2**. This

indicates that there were adolescents who reported a lower dysmenorrhea level after consuming red ginger water. Then, the highest dysmenorrhea level recorded after the intervention was 5. This shows that the maximum value of dysmenorrhea intensity decreased compared to before the intervention (before: 6, after: 5).

Overall, this table provides an overview that after the red ginger water intervention, the average

level of dysmenorrhea experienced by young women experienced a **significant decrease**. This decrease is indicated by a lower average value, even though the data spread increased slightly. These results show that the administration of red ginger water can help reduce the intensity of menstrual pain in young women in the Gedung Sari Health Center Area.

Table 4
Data Normality Test

Variable	Giving Red Ginger Water	Shapiro Wilk	Description
Dysmenorrhea	Before	0.000	Not normal
	After	0.001	Not normal

The results of the data normality test using the Shapiro-Wilk test for the dysmenorrhea variable in young women before and after being given red ginger water in the Gedung Sari Health Center Area. This normality test is important to determine whether the data distribution follows a normal distribution, which is one of the important requirements in parametric statistical analysis..

The Shapiro-Wilk test results showed a *p*-value of 0.000, which is smaller than the significance level $\alpha = 0.05$. Therefore, it can be concluded that the distribution of dysmenorrhea data before the intervention did not follow a normal distribution. The description in the table also states that this data is not normal. Then, the Shapiro-Wilk test results showed a *p*-value of 0.001, which is also smaller than the significance level $\alpha = 0.05$. This shows that the distribution of dysmenorrhea data after the intervention also did not follow a normal distribution. The description in the table again states that this data is not normal.

Overall, the results of the normality test show that both dysmenorrhea data before and after the

administration of red ginger water do not follow a normal distribution. Thus, the statistical analysis approach used in the next stage must consider these characteristics. In this context, **non-parametric analysis** is more suitable for use because it does not require assumptions of data normality. The non-parametric analysis used in this study was the **Wilcoxon test** to determine the effect of giving red ginger water on the level of dysmenorrhea in young women.

Bivariate Analysis

The table presents the analysis of the effects of red ginger water administration on dysmenorrhea pain among female adolescents. The analyzed variable is the difference in pain levels before and after the intervention. Based on the table, it is observed that 26 female adolescents experienced a decrease in pain (Negative Ranks) with a mean rank of 13.50. No subjects experienced an increase in pain (Positive Ranks), while 4 subjects reported no change in pain intensity before and after the intervention (Ties).

Table 5
The effect of giving red ginger water on dysmenorrhea pain in young women in the Gedung Sari Health Center work area

Pain after - before intervention	N	Mean	<i>p</i> -value
Negative Ranks	26	13,50	0.000
Positive Ranks	0		
Ties	4		

The bivariate analysis using the Wilcoxon test yielded a *p*-value of 0.000, indicating that the results are statistically highly significant. A *p*-value of less than 0.05 demonstrates a significant difference in pain levels before and after the

administration of red ginger water. In other words, red ginger water administration significantly reduces dysmenorrhea pain among female adolescents within the working area of the Gedung Sari Public Health Center.

DISCUSSION

Univariate Analysis

Respondent Characteristics

Based on Table 1, which illustrates the characteristics of the respondents in this study, out of the 30 participants, 23 individuals (76.7%) experienced menarche at the age of ≥ 13 years, while 7 individuals (23.3%) experienced menarche at the age of ≤ 12 years. This indicates that the majority of respondents experienced menarche at an older age. Menarche is the first menstrual period in a female, marking the onset of reproductive capability. The age of menarche is influenced by various factors, such as genetics, nutritional status, and general health conditions. Research suggests that a later age of menarche is typically associated with slower physical development and better nutritional status (Notoatmodjo, 2014).

Regarding menstrual cycles, 27 respondents (90.0%) had cycles ranging from 29 to 42 days, while 3 respondents (10.0%) had shorter cycles of 28 days or less. This indicates that the majority of respondents have menstrual cycles classified as normal to long. A normal menstrual cycle typically ranges from 21 to 35 days; cycles that are significantly longer or shorter may indicate hormonal imbalances or specific health conditions (Kusmiran, 2019).

In terms of menstrual cycles, 27 respondents (90.0%) had cycles ranging from 29 to 42 days, while 3 respondents (10.0%) had shorter cycles of 28 days or less. This indicates that the majority of respondents possess menstrual cycles classified as normal to long. A normal menstrual cycle typically ranges from 21 to 35 days, where longer or shorter cycles may indicate hormonal imbalances or certain health conditions (Wardani et al., 2021).

The mean score of dysmenorrhea pain before the administration of red ginger water

Dysmenorrhea, known as *nyeri haid* in Indonesian, varies in nature and severity, ranging from mild to severe lower abdominal cramping that radiates to the back or legs. Severe cases can interfere with daily activities, forcing sufferers to rest and abandon work or their daily routine for hours or even days. While almost all women experience some discomfort in the lower abdomen during menstruation, the term dysmenorrhea is only used when the pain is severe enough to disrupt activities and require medication. The uterus consists of muscles that contract and relax; while these contractions are typically not felt, frequent and intense contractions can impair blood flow to the

uterus, resulting in pain (Soesilowati & Annisa, 2018).

In the study conducted at the Gedung Sari Public Health Center, the lowest dysmenorrhea level reported by respondents was 4. This indicates that no adolescent reported a pain level below 4 prior to the intervention, meaning all respondents experienced significantly disruptive menstrual pain before receiving red ginger water. Furthermore, the highest level recorded was 6, indicating that some adolescents experienced dysmenorrhea with an intensity of 6, the maximum value in this sample. In other words, several adolescents experienced very severe menstrual pain before the intervention.

These findings are supported by Lestari et al. (2022), where out of 20 respondents, more than half (11 respondents or 55%) reported a pain scale of 6, while a small portion (2 respondents or 10%) reported a scale of 4, and 7 respondents (35%) reported a scale of 5 (Lestari et al., 2023).

Another study by Maulida (2023) also supports these results, showing that after the administration of red ginger, there was a shift in the distribution of pain levels: 74.6% of respondents reported no pain (scale 0), and only 7.9% experienced mild pain. This indicates that the majority of respondents experienced a significant improvement in comfort, with most feeling no pain after consuming red ginger (Maulida et al., 2023).

The researcher assumes that the high level of dysmenorrhea among female adolescents in the Gedung Sari Public Health Center area reflects a significant prevalence of menstrual pain in this population. With an average pain intensity of 4.67, it is evident that the majority of female adolescents experience disruptive menstrual pain, which can negatively impact their quality of life, including daily activities and academic performance.

This assumption is based on the fact that the minimum reported dysmenorrhea score was 4, showing that no respondent experienced mild pain or was pain-free before the intervention. All respondents experienced moderate to high-intensity pain, reflecting that dysmenorrhea is a serious and common health issue among female adolescents in this region.

Additionally, with a maximum dysmenorrhea score of 6, the researcher assumes that some adolescents experience very severe pain that may require specific medical attention or more intensive intervention. The diversity in pain levels suggests individual variations in response to menstrual pain, influenced by factors such as genetics, lifestyle, and general health conditions.

Average Dysmenorrhea Pain After Red Ginger Water Administration

Red ginger possesses properties that provide a warming sensation to the body, as well as anti-rheumatic, analgesic, and anti-inflammatory effects. Compounds such as shogaol and gingerol contained in red ginger can help reduce pain. Ginger also functions as an anti-inflammatory agent by inhibiting the cytochrome oxidase (COX) enzymes, which ultimately reduces the production of prostaglandins involved in the inflammatory process. By inhibiting the COX enzyme, red ginger diminishes prostaglandin production—the primary mediator of inflammation—resulting in decreased activity of prostaglandins and leukotrienes that cause inflammation (Maulida et al., 2023).

Based on Table 4.3, after the red ginger water intervention, there was a significant change in the dysmenorrhea levels experienced by the female adolescents. The average dysmenorrhea level after the intervention was 3.20, indicating a decrease compared to the pre-intervention average of 4.67. This suggests that the red ginger water intervention is effective in reducing the intensity of menstrual pain. This reduction may be attributed to the anti-inflammatory properties of red ginger, which help reduce uterine muscle contractions that cause dysmenorrhea pain.

Furthermore, the minimum dysmenorrhea level after the intervention was 2, indicating that some adolescents reported lower pain levels after consuming red ginger water. This shows that red ginger water is not only effective in general but also provides a significant impact on individuals who experienced more severe pain before the intervention. The maximum dysmenorrhea level also decreased from 6 before the intervention to 5 after the intervention. This confirms that red ginger water is capable of lowering the intensity of dysmenorrhea pain, although some individuals still experienced relatively high pain levels.

The results of this study are consistent with Lestari et al. (2021). Based on Table 5.2, it is known that among 20 respondents, the mean dysmenorrhea score before the intervention was 3.10 with a standard deviation of 0.641. Pain intensity after the intervention decreased because the ginger drink intervention was able to control or reduce pain in students experiencing dysmenorrhea. Another study by Maulida (2023) also aligns with these findings, reporting descriptively that the average menstrual pain intensity score after treatment was lower at 1.22, compared to the pre-treatment average of 2.18.

The researcher's assumption based on these results is that red ginger has great potential as an alternative therapy for managing dysmenorrhea in female adolescents. With results showing a significant decrease in pain intensity, this study confirms that red ginger can be used as an effective and safe non-pharmacological intervention. The researcher also recommends the routine consumption of red ginger water during menstruation to reduce dependence on medications that may have side effects.

Bivariate Analysis

The Effect of Red Ginger Water Administration on Dysmenorrhea Pain among Female Adolescents in the Gedung Sari Public Health Center Working Area

Dysmenorrhea is a painful condition experienced during menstruation, typically manifesting as lower abdominal cramps, which may be accompanied by other symptoms such as nausea, vomiting, or back pain. Red ginger, or *Zingiber officinale var. rubrum*, is a herbal plant frequently used in traditional medicine due to its active compounds, such as gingerol and shogaol, which possess anti-inflammatory and analgesic properties.

Red ginger water contains active compounds that can help reduce inflammation within the body, including the pelvic area. This contributes to the reduction of menstrual pain by influencing neurotransmitter pathways involved in pain perception and aiding in the relaxation of uterine muscles that contract during menstruation, thereby reducing cramps and perceived pain. Furthermore, red ginger can enhance blood circulation, potentially minimizing blood stagnation in the pelvic region and alleviating pain associated with dysmenorrhea.

In the analysis presented in Table 4.5, the results regarding the effect of red ginger water administration on dysmenorrhea pain among female adolescents show that 26 adolescents experienced a decrease in pain (Negative Ranks) with a mean rank of 13.50. This indicates that the majority of respondents felt a reduction in pain following the intervention. No adolescents experienced an increase in pain (Positive Ranks), and 4 adolescents reported the same level of pain before and after the intervention (Ties). These findings reflect the effectiveness of red ginger water administration in reducing dysmenorrhea pain.

The bivariate analysis using the Wilcoxon test yielded a p-value of 0.000, indicating that these results are statistically highly significant. A p-value of less than 0.05 signifies a significant difference between pain levels before and after the

administration of red ginger water. Consequently, it can be concluded that the administration of red ginger water significantly reduces dysmenorrhea pain among female adolescents in the working area of the Gedung Sari Public Health Center.

The results of this study align with the findings of Maulida (2023), whose data analysis using the Wilcoxon Signed-Rank Test yielded an asymptotic significance (2-tailed) value of 0.000 ($p < 0.05$). This indicates that the administration of red ginger is highly effective in reducing dysmenorrhea pain among students at MAN 3 Banda Aceh. Furthermore, research by Lestari et al. (2021) supports the current findings. Their study reported a negative rank of 20, meaning that all 20 respondents experienced a decrease in menstrual pain (dysmenorrhea). The positive rank was 0, indicating that no respondents experienced an increase in pain intensity after consuming the ginger drink. Additionally, the ties value was 0, showing that no respondent's pain level remained unchanged. Statistical analysis using the Wilcoxon Test resulted in a p-value of 0.000 ($p < 0.05$), leading to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_a). This confirms the significant influence of ginger drinks on dysmenorrhea pain levels among students at SMA N 02 Kota Bengkulu in 2022.

The researcher has several assumptions regarding these study results. The researcher assumes that the active compounds in red ginger, such as gingerol and shogaol, have a strong enough analgesic and anti-inflammatory effect to reduce the intensity of dysmenorrhea pain. Based on previous literature, red ginger has been proven to reduce inflammation and pain in other conditions, and the researcher anticipates that this effect also applies in the context of dysmenorrhea.

Furthermore, the researcher considers that the measurable pain reduction in this study is caused directly by the consumption of red ginger water, rather than by external factors or other variables such as psychological influences or lifestyle changes. The researcher hopes that the significant pain reduction results, as seen in the very low p-value (0.000), indicate that red ginger water effectively manages dysmenorrhea pain.

Next, the researcher assumes that the sample used in this study is representative of the population of female adolescents in the working area of the Gedung Sari Public Health Center. Thus, the study results are expected to be applicable to a wider group with similar characteristics. The researcher also assumes that the red ginger water

intervention was conducted consistently and in accordance with the procedures established in the study, which supports the validity of the results obtained.

CONCLUSION

The average dysmenorrhea score among adolescents before the administration of red ginger water was 4.67, with a standard deviation of 0.7, a minimum value of 4, and a maximum value of 6. Following the intervention, the average dysmenorrhea score decreased to 3.20, with a standard deviation of 1.0, a minimum value of 2, and a maximum value of 5. There is a significant effect of red ginger water administration on dysmenorrhea pain among female adolescents in the Gedung Sari Public Health Center Working Area in 2024 (p-value = 0.000).

RECOMMENDATIONS

The Gedung Sari Public Health Center is encouraged to incorporate red ginger water as a therapy to alleviate dysmenorrhea and to enhance adolescents' knowledge regarding dysmenorrhea management through targeted educational programs. For Adolescents with Dysmenorrhea Adolescents can utilize red ginger as a complementary therapy for at-home management of menstrual pain. When experiencing dysmenorrhea during menstruation, students are encouraged to consume red ginger water as a non-pharmacological effort to reduce pain intensity. For Malahayati University The findings of this study may serve as a reference for academics to improve public health standards, particularly in research related to dysmenorrhea among female adolescents. Furthermore, this research can be utilized as a resource for academic community service (community outreach) programs. For Future Researchers Future researchers are expected to expand the scope of study regarding other benefits of red ginger, such as its efficacy in reducing pain related to the female reproductive system. This may include clinical trials involving female participants to measure the effectiveness of red ginger in addressing menstrual pain, endometriosis, or other reproductive health conditions.

REFERENCES

Adzani, A. N. (2020). Overview of Menstrual Pain Intensity and Management Among Grade XI Female Students Majoring in Culinary Arts in SMK N 6 Yogyakarta Tahun 2020 (Doctoral dissertation, Poltekkes Kemenkes Yogyakarta). *Unite Determination Towards a*

- Healthy Indonesia*.
- Agoes, A. (2016). Tanaman Obat Indonesia. In A. Suslia (Ed.), Buku 1. Jakarta: Salemba Medika.
- Anurogo, D. (2018). Cara Jitu Mengatasi Nyeri Haid (Andi (ed.)). Andi.
- Aprilia, D., Cahyaningrum, & Cahya, P. (2022). Teknik Relaksasi Nafas Dalam untuk Meringankan Nyeri Dismenore pada Remaja Putri di Bergas Lor. 1(2), 932–938.
- Aritonang, R. A. (2019). Efektifitas Kapsul Ekstrak Kunyit Terhadap Penurunan Dismenore Pada Mahasiswa Di Asrama Putri Kebidanan Poltekkes Medan Tahun 2018. *Jurnal Ilmiah PANNMED (Pharmacist, Analyst, Nurse, Nutrition, Midwivery, Environment, Dentist)*, 13(1), 79–82. <https://doi.org/10.36911/pannmed.v13i1.187>
- Aryani, R. (2018). Kesehatan remaja problem dan solusinya (Salemba Medika (ed.); Salemba Me). Salemba Medika.
- Asmarani, A. (2020). Pengaruh Pemberian Kompres Air Hangat Terhadap Penurunan Intesitas Dismenore Primer Pada Mahasiswi AKBID Pondok Pesantren Assanadiyah Palembang. *Kampurui Jurnal Kesehatan Masyarakat (The Journal of Public Health)*, 2(2), 13–19. <https://doi.org/10.55340/kjkm.v2i2.225>
- Aulya, Y., Kundryanti, R., & Rena, A. (2021). Hubungan Usia Menarche dan Konsumsi Makanan Cepat Saji dengan Kejadian Dismenore Primer pada Siswi di Jakarta Tahun 2021. *Jurnal Menara Medika*, 4(1), 10–21.
- Ayu, N., Kurnaasih, E., & Afrianty Gobel, F. (2022). Pengaruh Pemberian Jus Alpukat dan Jus Wortel Terhadap Penurunan Tingkat Dismenorhea Pada Remaja di SMK Negeri 1 Kasimbar. *Journal of Muslim Community Health (JMCH)*, 3(2), 50–61.
- Baiti, C. N., Astriana, A., Evrianasari, N., & Yuliasari, D. (2021). Kunyit Asam Mengurangi Nyeri Haid Pada Remaja Putri. *Jurnal Kebidanan Malahayati*, 7(2), 222–228. <https://doi.org/10.33024/jkm.v7i2.1785>
- Betty. (2021). Pengaruh Pemberian Air Rebusan Jahe Merah Terhadap Penurunan Dismenorea Pada Mahasiswi Semester 8 Stikes Widya Dharma Husada Tangerang. *Edu Dharma Journal: Jurnal Penelitian Dan Pengabdian Masyarakat*, 5(2), 61. <https://doi.org/10.52031/edj.v5i2.177>
- Daulay, L. E. (2022). Gambaran Pengetahuan Dan Sikap Remaja Puteri Tentang Dismenorea Di Desa Nagasaribu Kecamatan Padangbolak Tenggara Tahun 2021. 17.
- Hastono. (2021). Analisis Data Kesehatan (F. U. Indonesia (ed.)). FK Universitas Indonesia.
- Hastuty, Y. D. (2019). Hubungan Status Gizi Dengan Kejadian Dismenorea Pada Remaja Putri Di SMPN 2 Tanjung Timur Kec. Stm Hulu Kabupaten Deli Serdang. *Jurnal Ilmiah PANNMED (Pharmacist, Analyst, Nurse, Nutrition, Midwivery, Environment, Dentist)*, 14(1), 48-53. *Phys. Rev. E*, 24.
- Hermayanti, H., Kostania, G., & Yulaikah, S. (2019). Penggunaan Ekstrak Buah Adas Dalam Mengurangi Dismenore Pada Remaja Putri. *Jurnal Kebidanan Dan Kesehatan Tradisional*, 4(2), 5. <https://doi.org/10.37341/jkkt.v4i2.124>
- Hikma, Y. A., Yunus, M., & Hapsari, A. (2021). Hubungan Siklus Menstruasi, Kualitas Tidur, dan Status Gizi, Terhadap Dismenore Primer pada Remaja Putri. *Sport Science and Health*, 3(8), 630–641. <https://doi.org/10.17977/um062v3i82021p630-641>
- Indrayani, T., Choirunnisa, R., Sari, Y. M., & Riviana, A. J. (2022). Pemberian Edukasi Senam Pilates Untuk Mengatasi Dismenorea Pada Remaja Di Sman 12 Bandar Lampung. *Jurnal Peduli Masyarakat*, 4(Desember), 693–696.
- Intiyaswati. (2022). Pengaruh Pemberian Jahe Merah Terhadap Penurunan Nyeri Menstruasi Pada Remaja Putri. *Jurnal Kebidanan*, 11(2), 1–7. <https://doi.org/10.47560/keb.v11i2.375>
- Juda, M. (2020). Teori Pengukuran Nyeri (Nuha Medika (ed.); Nuha Medik).
- Karomah, P. I. (2022). Efektivitas Pemberian Air Jahe Merah Terhadap Penurunan Intensitas Nyeri Dismenorea Pada Remaja Putri. *Jurnal Ilmiah Kesehatan Sandi Husada*, 11, 360–366. <https://doi.org/10.35816/jiskh.v11i2.779>
- Kusmiran, E. (2019). Kesehatan reproduksi remaja dan wanita (Salemba Medika (ed.)). Salemba Medika,.
- Lestari, M., Rustandi, H., Studi Ilmu Keperawatan s-, P., & Ilmu Kesehatan universitas Dehasen Bengkulu, F. (2023). The Effect of Ginger Drink on the Menstrual Pain Scale (Dysmenorrhea) in Students at Senior High School 2 Bengkulu City in 2022 Pengaruh Minuman Jahe Terhadap Skala Nyeri Haid (Dismenore) Pada Siswi Di Sman 2 Kota Bengkulu Tahun 2022. *Student Scientific Journal*, 1(1), 87–94.

- Manuaba, I. B. G. (2016). Memahami Kesehatan Reproduksi Wanita (EGC (ed.)). EGC.
- Mariza, A., Susilawati, & Yuviska, I. A. (2020). Penyuluhan Tentang Flour Albus (Keputihan) Pada Remaja Putri Di SMPN Bandar Lampung. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 3(2), 244–249.
- Maulida, Saputra, M., & Ayuni, R. (2023). Pengaruh Pemberian Jahe Merah Terhadap Penurunan Nyeri Dismenore Pada Remaja. *Jurnal Asuhan Ibu Dan Anak*, 8(2), 73–80.
- Muflihah, I. S. (2018). Senam Dismenorea Mengurangi Nyeri Haid. In *Prosiding University Research Colloquium*. 160–165.
- Nainggolan, N., Saragih, N. P., Girsang, G. B., & Nugraeny, L. (2022). Perilaku Remaja Putri Tentang Dismenore Di SMP Negeri 3 Singkohor Kecamatan Singkohor Aceh Singkil. *Jurnal Teknologi, Kesehatan & Ilmu Sosial*, 4(2), 446–453.
- Notoatmodjo. (2014). Ilmu Perilaku Kesehatan. (Rineka Cipta (ed.)). Rineka Cipta.
- Notoatmodjo, S. (2018). Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta.
- Nurdyansyah, F. (2020). Jahe Merah Senyawa Bioaktif, Manfaat, dan Metode Analisisnya. *Suparyanto Dan Rosad*, 5(3), 248–253.
- Perry, P., & Potter, P. A. (2018). Buku Ajar Fundamental Keperawatan: Konsep, Proses, dan Praktik, Edisi, 4.
- Prawiharodjo, S. (2020). Ilmu kebidanan (Bina Pustaka (ed.); 4th ed.). Bina Pustaka.
- Prawirohardjo. (2020). Ilmu Kebidanan (Yayasan Bina pustaka (ed.)). Yayasan Bina Pustaka Sarwono Prawirohardjo.
- Proverawati. (2020). Menarcarche Menstruasi Pertama Penuh Makna (N. Medika (ed.)). Nuha Medika.
- Pujiana, D., Haryani, D., Rini, P. S., Tinggi, S., Kesehatan, I., Palembang, M., & Primer, D. (2019). Efektifitas Konsumsi Air Rebusan Jahe Merah Terhadap Intensitas Dismenore. *Jurnal Keperawatan*, 7, 296–300.
- Puterida. (2020). Hubungan pengetahuan, tingkat stres dan riwayat keluarga dengan kejadian dismenore pada mahasiswa fkip prodi bimbingan dan konseling (bk) uniska mab banjarmasin tahun 2020. Hubungan Pengetahuan, Tingkat Stress Dan Riwayat Keluarga Dengan Kejadian Dismenore Pada Mahasiswa FKIP Prodi Bimbingan Dan Konseling (BK) UNISKA MAB Banjarmasin Tahun 2020, 1–11.
- Putri, N. W. S. (2020). Gambaran Asuhan Keperawatan Dengan Pemberian Terapi Akupresure Untuk Mengatasi Gangguan Rasa Nyaman Pada Pasien Dismenore Di Wilayah Kerja Puskesmas I Denpasar Utara TAHUN 2020 (Doctoral dissertation, Poltekkes Denpasar Jurusan Keperawatan). *Angewandte Chemie International Edition*, 6(11), 951–952., 2.
- Rachmawati, A., Esty Safriana, R., Sari, D. L., Aisyiyah, F., Fakultas, P. K., Universitas, K., Gresik, M., & Fakultas, M. K. (2020). Open Access Efektivitas Endorphin Massage dan Senam Dismenore dalam Menurunkan Dismenore Primer The Effectiveness of Endorphin Massage and Dysmenorrhea Exercise in Reducing Primary Dysmenorrhea. *Mppki*, 3(3), 192–196.
- Rahayu, R., Patimah, S., Rohmatin, E., Kunci, K., & Penelitian, B. (2019). Pengaruh Minuman Jahe Merah Terhadap Penurunan Skala Nyeri Dismenore Primer Pada Siswi Kelas VIII di SMP 10 Tasikmalaya Tahun 2018. *5(02)*, 26–35.
- Ramadhani, R. D. P. (2023). Hubungan Regulasi Emosi Dengan Perubahan Suasana Hati Pada Wanita Yang Mengalami Menstruasi. *44(2)*, 8–10.
- Sabaruddin, H. F. (2017). Hubungan Pengetahuan Tentang Dysmenorhea Dengan Perilaku Penanganan Dysmenorhea Di Pesantren As-Syalafiah Mlangi Yogyakarta. *Fkm Universitas 'Aisyiyah Yogyakarta*, 9.
- Siagian, N. (2019). Pijat Punggung Terhadap Nyeri Haid Pada Mahasiswi Di Asrama Putri Universitas Advent Indonesia Kabupaten Bandung Barat. *Jurnal Skolastik Keperawatan*, 5(1), 95–106. <https://doi.org/10.35974/jsk.v5i1.778>
- Soesilowati, R., & Annisa, Y. (2018). Pengaruh Usia Menarche Terhadap Terjadinya Dismenore Primer Pada Siswi MTS Maarif Nu Al Hidayah Banyumas. *Jurnal Ilmiah Ilmu-Ilmu Kesehatan*, 14(8), 8–14.
- Sparringa, R. A., Sampurno, O. D., Purba, M., & Efizal. (2016). Jahe Zingiber Officinale Roscoe. *Badan Pengawasan Obat dan Makanan*.
- Sugiono. (2018). Metode Penelitian Kuantitatif Kualitatif dan R & D (Bandung:Alfabeta (ed.)). Bandung:Alfabeta.
- Sulistiyowati, U., Arum, D. N. S., & Atik Ismiyati, Y. (2018). Faktor Yang Berhubungan Dengan Kejadian Dismenore Primer Pada Remaja Putri di Desa Tamansari Kecamatan Butuh Kabupaten Purworejo. *Jurnal Kesehatan*, 2, 1–8.

- Sulung, N. (2022). Metode Besar Sampel Dan Teknik Pengambilan Sampling Untuk Penelitian Kesehatan. CV Budi Utama.
- Wahyuni, R., Ermiza, & Safitri, Y. (2020). Air Hangat Mempengaruhi Penurunan Intensitas Dismenorea Pada Mahasiswi Program Studi D-III Kebidanan Universitas Pasir Pengaraian. *Jurnal Marternity and Neonatal*, 8(1), 23.
- Wardani, P. K., Fitriana, F., & Casmi, S. C. (2021). Hubungan Siklus Menstruasi dan Usia Menarche dengan Dismenor Primer pada Siswi Kelas X. *Jurnal Ilmu Kesehatan Indonesia (JIKSI)*, 2(1), 1–10. <https://doi.org/10.57084/jiksi.v2i1.414>
- Widyastuti, Y. (2018). Kesehatan Reproduksi. (Fitramaya (ed.)). Fitramaya.