

ACUPRESSURE AND ZINGIBER OFFICINALE THERAPY ON THE INTENSITY OF MENSTRUAL PAIN IN ADOLESCENT GIRLS

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ABSTRACT

The onset of menstruation is one of the first real changes that teenagers experience. Even though menstruation is a normal, natural process, some women experience discomfort during menstruation, including dysmenorrhea (low back pain), irregular menstruation, or lower abdominal pain. To relieve dysmenorrhea, one of the options is to use methods other than drugs. To relieve the severity of menstrual pain or dysmenorrhea, this research will examine the efficacy of acupressure and ginger drinks, as well as variations in administration and the effects of ginger drinks. This research used a quasi-experimental design with a pretest-posttest strategy with two groups. Thirty women aged eighteen to twenty-one years participated in the study (15 in the acupressure group and 15 in the red ginger group). To select the sample, the researcher used a purposive sampling technique. The research results revealed that acupressure, ginger drink, and a combination of the two were effective in alleviating the symptoms of menstrual pain and dysmenorrhea in adolescent girls. However, the effects of ginger drinks and acupressure treatments are not additive. In the Adolescent Girls Age Group

INTRODUCTION

The experience of menstruation of women is very diverse (Febriyanti, Putri and Yanti, 2021). For some women, menstruation occurs without any complaints, but for many others, menstruation is a source of great suffering (Rejeki, 2019). According to Tyas, Ina, and Tjondronegoro (2018), several possible symptoms can occur, such as sore nipples, cramps, breast pain, and many more. Dysmenorrhea is one of the most common menstrual complaints in women (Marbun and Sari, 2022). When a woman experiences dysmenorrhea, she may feel pain in the lower abdomen, waist, lower back, and thighs. Two to three years after menarche



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(first period) is the window of opportunity for dysmenorrhea (Maulitanti et al., 2023). Some cases of dysmenorrhea are mild and almost unheard of, while other cases are so severe that the discomfort prevents some women from living their daily lives as normally as they would like (Rompas Sefty and Lenny, 2019). It turns out that almost 30% of women who suffer from dysmenorrhea are daughters of mothers who suffer from dysmenorrhea, and up to 7% of relatives of women who suffer from dysmenorrhea also complain of this, even though their mothers did not suffer from dysmenorrhea before (Loa, Nabuasa and Sir, 2022).

Dysmenorrhea is a relatively common medical condition. In most countries, dysmenorrhea affects more than half of the female population (Susanti and Madhav, 2022). About 62% in the US and 72% in Sweden fall into this category. On the other hand, it is believed that 55% of working women in Indonesia are affected by dysmenorrhoea (Susanti, 2018). Because of dysmenorrhea, many women miss their work or school; in fact, as many as 13-51% of women have missed their work or school once, and 5-14% have missed school multiple times. It is especially true for women of childbearing age. Thirty to fifty percent of women of reproductive age in the US suffer from dysmenorrhea, and ten to fifteen percent of these women lose their jobs as a result, which negatively impacts their ability to study, do homework, and take care of their household family. For menstrual cramps, some women can relieve them by applying a warm compress, soaking in warm water, sipping a warm drink rich in calcium, massaging the painful area while lying down with the uterus hanging, or simply taking deep breaths gradually to relieve fatigue. However, some people overcome this by sleeping, while others ignore it (Neny Yuli Susanti, 2022b).

Dysmenorrhea is one of the symptoms that may be experienced during menstruation. Discomfort in the stomach due to cramps in the uterus is known as dysmenorrhea or menstrual pain (Susanti and Putri, 2019). Primary and secondary dysmenorrhea are the two main types of dysmenorrhea. Menstrual problems affect up to 90% of adolescent girls worldwide, and primary dysmenorrhea affects more than 50% of adolescent girls who menstruate. Menstrual pain that has no medical basis is called primary dysmenorrhea, while menstrual pain that has a medical basis is called secondary dysmenorrhea (Neny Yuli Susanti and Isma Oktadiana, 2022). Currently, pharmaceutical therapy, including the administration of analgesics, is the mainstay of treatment for dysmenorrhea. Tolerance, dependence, and withdrawal symptoms may be side effects of analgesic drugs (Neny Yuli Susanti, 2022). In addition to pharmaceutical treatments, acupuncture, and aromatherapy can relieve dysmenorrhea symptoms (Susanti, 2021). Pressure or massage applied to specific areas of the body to stimulate them is known as acupuncture, a form of traditional Chinese medicine with a history dating back thousands of years. Restoring the body's positive energy balance is the main goal to support the natural healing process (Sabrima *et al.*, 2020). Traditional medicine made from plants can also be used in alternative medicine, such as herbal concoction therapy. Some people find that some plant-based substances reduce discomfort. Among these herbs, red ginger rhizome (*Zingiber Officinale*) has analgesic, antipyretic and anti-inflammatory properties. Since red ginger extract is an efficient non-pharmacological pain reliever for dysmenorrhea, it may be worth considering as an alternative to medications for this condition (Effectiveness *et al.*, 2022). Previous research found that almost all participants experienced high levels of pain before the intervention, and after the intervention, most participants reported moderate levels of pain (Susanti, 2021). Research shows that there is a significant difference (p -value 0.000) in the level of pain severity before and after intervention. School Health Clinic data reveals that every month, Adolescent Girls always visit the School Health Clinic to relieve menstrual pain, based on the first research conducted at Ibrahimy Private Vocational School on 15 November 2023. After that, they interviewed ten female students at Ibrahimy Vocational School and found seven of them



suffering from dysmenorrhea. To relieve discomfort associated with menstruation, some respondents used eucalyptus oil, while others drank warm water, used medication to reduce pain, or did nothing at all. It is especially true for Adolescent Girls who may not have access to pain medication or who are not allowed to take medication at school. The use of acupressure and herbal drinks to relieve dysmenorrhea pain has been the subject of several studies.

METHODS

This research is a type of quantitative research that uses an experimental design (quasy experiment) with a two group pretest-posttest approach. This design is used in accordance with the objectives to be achieved, namely the effect of acupressure therapy on the intensity of menstrual pain (dysminorrhoea). This research was conducted at the Salafiyah Syafiyah Islamic Boarding School, Situbondo Regency. The research was conducted in January 2023. The sample for this research was 30 young women aged 18 to 21 years (15 for the acupressure group and 15 for the red ginger group). Sampling used purposive sampling, which had the following criteria: Young women who live at the Salafiyah Syafiyah Islamic Boarding School, Situbondo Regency, Young women who experience menstrual pain, Not fasting during the research and Willing to be research respondents. The data collection technique uses a direct, structured questionnaire with closed questions according to the available answers, namely right and wrong. Questionnaires were distributed to the intervention group and control group before and after administering the intervention. This research used research instruments in the form of an observation sheet (Acupresseur Checklist) and a questionnaire for administering ginger drinks. Bivariate Analysis. used to determine the relationship between the independent (free) variable and the dependent (bound) variable. The statistical test used is the chi-square test, to see the difference in the proportion of independent variables and dependent variables on a categorical scale (ordinal and nominal). The basis of the chi-square test is to compare the observed frequency with the expected frequency at a certain level of significance according to the degrees of freedom. If the p value <0.05 then there is a significant or influential relationship between the independent variable and the dependent variable.

RESULTS

Previous research found that almost all participants experienced high levels of pain before the intervention, and after the intervention, most participants reported moderate levels of pain (Susanti, 2021). Research shows that there is a significant difference (p -value 0.000) in the level of pain severity before and after intervention. School Health Clinic data reveals that every month, Adolescent Girls always visit the School Health Clinic to relieve menstrual pain, based on the first research conducted at Ibrahimy Private Vocational School on 15 November 2023. After that, they interviewed ten female students at Ibrahimy Vocational School, and it was found that seven of them were suffering from dysmenorrhea. To relieve discomfort associated with menstruation, some respondents used eucalyptus oil, while others drank warm water, used medication to reduce pain, or did nothing at all. It is especially true for Adolescent Girls who may not have access to pain medication or who are not allowed to take medication at school. The use of acupressure and herbal drinks to relieve dysmenorrhea pain has been the subject of several studies.

Table 1. Distribution of Respondents Before Being Given Acupressure



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No.	Pain Range	F	%
1.	No Pain	0	0
2.	Mild Pain	12	80
2.	Moderate Pain	3	20
Total		15	100

Considering the data in Table 1, according to the measurement data, 0% of participants reported no pain, 80% reported mild pain, and 20% reported moderate pain before receiving acupressure.

Table 2. Distribution of Respondents After Being Given Acupressure

No.	Pain Range	F	%
1.	No Pain	10	66.7
2.	Mild Pain	2	13.3
3.	Moderate Pain	3	20
Total		15	100

Table 2 shows that 66.7 percent of people who received acupressure felt no pain, 13.1 percent felt moderate pain, and 20.0 percent felt very strong pain.

Table 3. Distribution of Respondents Before Being Given Ginger Drinks

No.	Pain Range	F	%
1.	No Pain	0	0
2.	Mild Pain	12	80
3.	Moderate Pain	3	20
Total		15	100

Table 3 shows measurement findings. 0% of participants reported no pain, 80% reported mild pain, and 20% reported moderate pain before they were given the ginger drink.

Table 4. Distribution of Respondents After Being Given Ginger Drinks

No.	Pain Range	F	%
1.	No Pain	9	60
2.	Mild Pain	3	20
3.	Moderate Pain	3	20
Total		15	100

Table 4 highlights a significant outcome: After consuming the ginger drink, a substantial 60% of participants reported no pain, while 20% reported mild pain, and another 20% reported moderate pain.

Table 5. Frequency distribution of the effectiveness of giving acupressure to reduce the intensity of menstrual pain/dysmenorrhea in Adolescents

Test Statistics ^b	
After giving - Before giving Acupressure Intervention	
Z	-3.035a
Asymp. Sig. (2-tailed)	,002



- a. Based on positive ranks.
- b. Wilcoxon Signed Ranks Test.

Table 5 with the Wilcoxon test shows that the table above obtained a p-value of 0.002, so it can be said that acupressure helps Adolescent girls at the Salafiyah Syafiiyah Situbondo Islamic Boarding School who experience menstrual pain and dysmenorrhea.

Table 6. Frequency distribution of the effectiveness of giving ginger drinks to reduce the intensity of menstrual pain/dysmenorrhea in adolescents
Test Statistics b

After being given - Before being given the Ginger Drink Intervention	
Z	-3.397a
Asymp. Sig. (2-tailed)	,001

- a. Based on positive ranks.
- b. Wilcoxon Signed Ranks Test.

Adolescent girls at the Salafiyah Syafiiyah Situbondo Islamic Boarding School reported lighter menstrual pain and dysmenorrhea after drinking ginger-flavored drinks, according to Table 6 Wilcoxon Test (p = 0.001).

Table 7. Frequency Distribution of Differences in the Effectiveness of Acupressure and Ginger Drinks in Reducing the Intensity of Menstrual Pain/Dysmenorrhea in Adolescents
Test Statistics b

After being given ginger - After being given acupressure	
Z	-2.121a
Asymp. Sig. (2-tailed)	,034

- a. Based on positive ranks.
- b. Wilcoxon Signed Ranks Test.

This study found that acupressure had a different effect in reducing the intensity of menstrual pain/dysmenorrhea compared to ginger drink in Adolescent girls at the Salafiyah Syafiiyah Situbondo Islamic Boarding School. This finding is supported by Table 7 Wilcoxon Test, which shows that the table above obtains a p-value = 0.034.

DISCUSSION

Frequency Distribution of the Effectiveness of Giving Acupressure in Reducing the Intensity of Menstrual Pain/ Dysmenorrhoea in Adolescent Girls.

Based on Table 5 of the test, it can be concluded that acupressure is useful in reducing the intensity of menstrual pain/dysmenorrhoea in Adolescent Girls because the Wilcoxon test produces a p-value of 0.002. Some people find relief from pain and even disease prevention benefits from acupressure, a type of physiotherapy that involves massaging and stimulating specific places on the body along energy flow lines or meridians. At the Salafiyah Syafiiyah Islamic Boarding School, Adolescent Girls suffering from primary dysmenorrhea experienced a decrease in pain intensity of 0.615 points and an increase in pain quality of 0.577 points after receiving acupressure therapy, with a p-value of less than 0.05. According to other research, acupressure



therapy can reduce the severity of dysmenorrhea pain by 2.73 points, compared to a reduction of 0.07 points in respondents who did not undergo acupressure therapy.

Pressure or massage applied to specific areas of the body to stimulate them is known as acupressure, a form of traditional Chinese medicine with a history dating back thousands of years. The basic idea behind acupressure therapy is a variation of acupuncture that uses fingers or blunt instruments instead of needles. The goal is for the body's positive energy balance to return to normal so that it can repair itself. The calculated t-value of 19.138 resulted from the analysis of changes in the menstrual pain scale in the treatment group and control group using the Independent Sample T-test. This value shows that there is a change between the control and treatment groups regarding dysmenorrhea pain. Additional analysis produces a Sig-value. There was a striking difference in changes in the dysmenorrhea pain scale between the treatment group and the control group, as shown by the 2-tailed value of 0.000 ($p < 0.05$). Study participants reported less menstrual discomfort after

Acupressure uses the Tuina technique, with statistically significant results (p -value = 0.000) indicating this. Physiotherapy, known as acupressure, involves massaging and stimulating specific places on the body called acupuncture points along energy flow lines, or meridians, in an effort to relieve menstrual discomfort. As part of complementary midwifery services, this method can relieve dysmenorrhea or menstrual pain in adolescent girls. When studying the effects of acupressure on adolescent girls, researchers found that pressing a four-finger point above the inside of the ankle for a count of 30 was the most effective technique. For a count of 30, press the point on the back of your hand where the bulge is largest with your thumb and forefinger. At the same time, press the point on the outside of the shin, four fingers below the kneecap. For two days, we applied acupressure points and waited up to thirty minutes for the pain level to subside. As a result, respondents reported a reduction in cramps and general abdominal pain associated with menstruation, and some respondents who were bedridden due to cramps were able to continue their normal activities.

Frequency Distribution of the Effectiveness of Giving Ginger Drinks in Reducing the Intensity of Menstrual Pain/ Dysmenorrhoea in Adolescent Girls.

Table 6 of the Wilcoxon test shows a p -value of 0.001, which means ginger drink is useful in reducing the intensity of menstrual pain/dysmenorrhea in adolescent girls. The ginger rhizome plant is well known for its culinary and medicinal uses. You can avoid anemia during menstruation by consuming ginger, which is rich in iron. Nervous tension and pain relief can be helped by consuming calcium and vitamin C. You can calm your body and clear your mind with this ginger drink. The chemical component gingerol in red ginger can inhibit prostaglandins, thereby reducing menstrual cramps. The concentration of red ginger essential oil is relatively high. From various studies assessing the effect of ginger on menstruation, it was determined that ginger affects the amount of pain during menstruation because ginger is as effective as mefenamic acid and ibuprofen in reducing pain in women who experience menstrual discomfort. Dysmenorrhea can be reduced efficiently by using red ginger extract. Dysmenorrhea pain does not always require treatment, and red ginger extract could be an option. Nearly all participants reported severe pain before the intervention, and almost all reported moderate discomfort after the intervention, according to the study results. Research shows that there is a significant difference (p -value 0.000) in the level of pain experienced before and after intervention.

The independent T-test was used to test the results of previous research, which attempted to relieve dysmenorrhea by boiling tamarind fruit and ginger. It was determined that boiled ginger was preferable because although 60% of participants in the tamarind group reported moderate pain before the intervention, 87% reported mild pain after, 67% reported moderate pain before



the intervention, 73% reported mild pain after the intervention better in alleviating dysmenorrhea than tamarind decoction. According to research, if you experience menstrual discomfort on the first and second days of menstruation, you should drink a mixture of 15 grams of red ginger, 10 grams of brown sugar, and 400 milliliters of water. Boil the mixture until 200 milliliters remain, then drink it twice a day. Respondents not only reported reduced menstrual pain, but they also reported feeling more relaxed and able to resume their normal activities. One component of ginger, namely gingerol, can inhibit prostaglandin production. Additionally, ginger does not have any negative side effects. When it comes to pain relief, ginger is on par with ibuprofen. It is known that ibuprofen is absorbed quickly and efficiently after being taken orally. Plasma concentrations are very temporary, lasting around 15 minutes to 1 hour at most. Ibuprofen and ginger work by blocking prostaglandin production. Herbs and medicines comparable to ibuprofen are absorbed quickly by the intestines.

Frequency Distribution of Differences in the Effectiveness of Acupressure and Ginger Drinks in Reducing the Intensity of Menstrual Pain/Dysmenorrhea in Adolescent Girls

This study found that acupressure had a different effect in reducing the intensity of menstrual pain/dysmenorrhea compared to ginger drink in adolescent girls at the Salafiyah Syafiyah Islamic Boarding School in Situbondo. This finding is supported by Table 7 Wilcoxon Test, which shows that the table above obtains a p-value = 0.034. The studies above show that ginger is more effective than acupressure. Efficacy: 13% felt moderate pain, 66.7% moderate pain, and 3% severe pain before drinking ginger; 46% felt no pain, 46% mild, and 6.7% moderate after drinking ginger. In contrast, 3% reported no discomfort, 60% mild pain, and 3% significant pain after acupressure, compared with 20% mild pain, 60% moderate pain, and 20% severe pain before the procedure. The concentration level in plasma is quite short, lasting only fifteen minutes to an hour. As a result, giving ginger a drink was more effective than acupressure. Menstrual cramps disappear more quickly because the patient feels his stomach warm. One of the components of ginger, gingerol, can inhibit prostaglandins. Additionally, ginger does not have any negative side effects. When it comes to pain relief, ginger is on par with ibuprofen. When used orally, ibuprofen is known to have a fast and efficient absorption rate. Ibuprofen and ginger work by blocking prostaglandin production. Herbs and medicines comparable to ibuprofen are absorbed quickly by the intestines.

Discomfort during menstruation, cramps, and back pain are some of the symptoms that adolescent girls may experience, ranging from mild to severe symptoms. Some people can relieve menstrual cramps by using warm compresses on the lower abdomen and back, taking a warm bath, or getting a massage. The use of acupressure therapy at SMK Muhammadiyah 02 Pekanbaru reduced pain intensity in adolescent girls suffering from primary dysmenorrhea by 0.615 points and pain quality by 0.577 points, with a p-value of less than 0.05. Another study found that compared with participants who did not undergo acupressure therapy, participants who underwent acupressure therapy reported a reduction in the severity of dysmenorrhea pain by 2.73 points. The effect of giving red ginger extract on reducing dysmenorrhea in adolescents in orphanages in Surakarta turned out to have a significant impact, and the treatment group experienced a decrease in pain scale scores on days 1 to 3 after receiving red ginger extract ($p=0.0000$ 0, 05). The dysmenorrhea pain scale in adolescents at the Surakarta Women's Orphanage was successfully reduced after 5 days of administering red ginger extract.

CONCLUSION



This research concludes that there is the effectiveness of acupressure in reducing the intensity of menstrual pain/dysmenorrhea in adolescent girls, there is the effectiveness of ginger drinks in reducing the intensity of menstrual pain/dysmenorrhea in adolescent girls, and there is a difference in the effectiveness of giving acupressure and ginger drinks in reducing the intensity of menstrual pain/dysmenorrhea in Adolescent girls at the Salafiyah Syafiiyah Islamic Boarding School in Situbondo.

As input, the school provides non-pharmacological medicines, one of which is ginger drink, and it can carry out acupressure massages to help students who experience menstrual pain participate in learning activities at school.

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