

## The effect of the effectiveness of red ginger and L14 acupressure on (Primary Dysmenorrhoea) in fourth semester students of DIII Midwifery Study Program STIKES Maranatha Kupang

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### ABSTRACT

**Background:** Menstrual pain is commonly felt by women on the first day of menstruation. Based on the results of an initial survey conducted at STIKes Maranatha Kupang D-III Midwifery Study Program 1 (10%) people who experience mild dysmenorrhoea, 7 (70%) people experience moderate dysmenorrhoea, 2 (20%) people who experience severe dysmenorrhoea, 2 (20%) people who experience very severe dysmenorrhoea every month.

**Objectives :** The purpose of this study was to determine the difference in effectiveness between red ginger and L14 acupressure on menstrual pain (primary dysmenorrhoea) in students at STIKes Maranatha Kupang D III Midwifery Study Program.

**Methods:** The design used in this study was comparative analytics with an observational approach. The study population was all adolescent girls who had primary dysmenorrhoea and were not taking painkillers. A sample of 32 respondents was taken by accidental sampling. The instrument used is the NRS Bourbonis pain scale assessment sheet. This research was conducted at STIKes Maranatha Kupang Midwifery Study Program D-III.

**Results :** The pretest results of the red ginger group showed that most respondents (56%) 9 respondents experienced mild. pain, while the post test results showed almost all respondents (81%) 13 respondents experienced mild pain. The pretest results of the L14 Acupressure group showed that most respondents (75%) 12 respondents experienced moderate pain, while the post test results showed almost all respondents (81%) 13 respondents experienced mild pain. With the statistical test Mann-Whitney Test the results show  $P\_value = 0.030 < (\alpha) 0.05$ .

**Conclusions:** That there is a significant difference in effectiveness between after consumption of red ginger and L14 on the intensity of menstrual pain in adolescent girls at STIKes Maranatha Kupang Study Program D-III Midwifery. It is hoped that the results of this study can be used as an alternative option to overcome / reduce the intensity of menstrual pain (primary dysmenorrhoea) in adolescent girls without having to use chemical drugs.

**KEYWORD :** adolescence; primary dysmenorrhea; red ginger; acupressure L14;

Article Info :

Article submitted on April 30, 2024

Article revised on May 29, 2024

Article received on June 29, 2024

## INTRODUCTION

Dysmenorrhea is one of the most common gynecological complaints in women and almost all women experience uncomfortable sensations during menstruation, discomfort in the lower abdomen, lower back and even to the thighs. This condition affects 60-70% of women who menstruate. Dysmenorrhea experienced by adolescents is stiffness or spasms in the lower abdomen. It feels very unpleasant such as irritability, irritability, nausea, vomiting, weight gain, flatulence, back pain, headaches, acne, tension, lethargy, and depression. Usually this symptom comes the day before menstruation and lasts for 2 days until the end of the menstrual period (1,2). The incidence of menstrual pain in the world is very large. On average more than 50% of women in each country experience menstrual pain. The percentage rate in America is around 60% and in Sweden around 72%. While in Indonesia the figure is estimated at 55% of women of productive age who are tormented by pain during menstruation. The incidence (prevalence) of menstrual pain ranges from 45 – 95% among women of productive age (3,4).

Dysmenorrhoea can be treated with pharmacological and non-pharmacological therapies. Pharmacological therapies include the administration of analgetic drugs, hormonal therapy, prostaglandin nonsteroidal drugs, and cervical canal dilatation (5,6). While non-pharmacological therapies that can be done to treat menstrual pain are herbal

treatment, the use of supplements, medical treatments, relaxation, hypnotherapy and acupuncture. Herbal therapy can be done by using traditional medicine derived from plant ingredients. Some plant ingredients are believed to reduce pain, namely, cinnamon, soybeans, cloves, turmeric, ginger, oregano, Chinese herbs(6,8).

Ginger is as effective as mefenamic acid and ibuprofen for reducing pain in women with menstrual pain or primary dysmenorrhoea. Ginger contains substances that are efficacious in relieving pain and nausea during menstruation (9). Red ginger is a variant of ginger that is very suitable for herbs with a higher content of essential oils and oleoresins than other ginger variants, therefore usually red ginger can be used for traditional medicine and the most widely given is in the form of ginger drinks. Red ginger or the Latin name (*Zingiber officinale* Roscoe) has a red and smaller rhizome, red ginger has a fairly high essential oil content. The chemical content of gingerol in red ginger is able to block prostaglandins so that it can reduce pain during menstruation (7,10).

Nonpharmacological therapy is recommended with supplement therapy, herbal therapy, traditional Chinese medicine therapy, one of which can use acupuncture therapy. The lack of research that examines the effectiveness of acupuncture therapy and the lack of application of research-based scientific methodology are reasons for researchers to examine more deeply the effectiveness of acupuncture therapy in

dealing with dysmenorrhoea pain. Several previous studies have stated that acupuncture therapy at LI 4 and ST 36 points can reduce the intensity of dysmenorrhoea pain. Furthermore, research on acupressure therapy given at the sanyinjiao point for 20 minutes can reduce the intensity of dysmenorrhoea pain of VIII semester nursing students of Udayana University (11,14). Dysmenorrhea needs to be overcome so that young women who are experiencing dysmenorrhea can move like young women who are not menstruating. To overcome dysmenorrhea can be done non-pharmacologically or naturally. One of them is acupressure Acupressure uses the hands to massage certain parts of the body. Points associated with menstrual pain, Because acupressure can improve blood circulation, so that prostaglandins flow in the blood circulation and do not accumulate in the uterus and can eventually reduce menstrual pain / dysmenorrhea. Acupressure is also easy to apply without spending a considerable amount of money.(13,15).

## MATERIALS AND METHODS

The research method uses experimental research design techniques, based on the place of research including the type of field research design, data collection methods including the type of observational research design, based on the presence or absence of treatment including the type of experimental quasi research design two group comparison pre test post test design,

based on research objectives including comparative analytical research design, Based on data sources including primary research design. The population in this study was Semester IV Students of D III Midwifery Study Program who experienced Primary Dysmenorrhoea and were not using painkillers as many as 32 respondents divided into N1: 16 respondents, N2: 16 respondents. The sampling technique used in this study was accidental sampling. The research material used in this study was primary data of students who experienced primary dysmenorrhoea and were given red ginger. The instruments used in this researcher were observation sheets and NRS Bourbanis pain scale assessment sheets(16,18).

## RESULTS DISCUSSION

### RESULTS

Characteristics of respondents based on the intensity of menstrual pain (primary dysmenorrhoea) before consumption of Red Ginger in Semester IV Students of D III Midwifery Study Program at STIKes Maranatha Kupang.

**Table 1. frequency distribution of menstrual pain intensity before consumption of red ginger in Semester IV Students of DIII Midwifery Study Program STIKes Maranatha Kupang**

Pain Intensity	Frequency	Percentage (%)
No Pain	0	0%
Mild pain	9	56%
Moderate pain	6	38%
Severe Controlled Pain	1	6%
Uncontrolled severe pain	0	0%
Total	16	100%

Based on **Table 1** above, it can be interpreted that most respondents before consumption of red ginger had mild pain intensity, namely 9 respondents (56%). Based on **Table 2** below, it can be interpreted that

almost all respondents after being given of L14 Acupressure therapy in students who experienced mild pain intensity as many as 13 respondents (81%).

**Table 2. Frequency distribution of menstrual pain intensity after being given of L14 acupressure therapy in Semester IV Students of D III Midwifery Study Program Midwifery STIKes Maranatha Kupang**

Pain Intensity	Frequency	Percentage(%)
No pain	0	0%
Mild pain	13	81%
Moderate pain	3	19%
Severe controlled pain	0	0%
Uncontrolled severe pain	0	0%
Total	16	100%

**Table 3. Cross-tabulation of menstrual pain intensity before and after consumption of red ginger in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Pain Intensity	Before treatment		After treatment	
	Frequency	Percentage (%)	Frequency	Percentage (%)
No Pain	0	0%	0	0%
Mild pain	9	56%	13	81%
Moderate pain	6	38%	3	19%
Severe Controlled Pain	1	6%	0	0%
Uncontrolled severe pain	0	0%	0	0%
Total	16	100%	16	100%
p- value = 0.000				α =0,005

**Table 4. Cross-tabulation of menstrual pain intensity before and after being given of L14 Acupressure therapy in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Pain Intensity	Before treatment		After treatment	
	Frequency	Percentage (%)	Frequency	Percentage (%)
No Pain	0	0%	1	6%
Mild pain	4	25%	13	81%
Moderate pain	12	75%	2	13%
Severe Controlled Pain	0	0%	0	0%
Uncontrolled severe pain	0	0%	0	0%
Total	16	100%	16	100%
p- value = 0,001				α =0,005

Based on **Table 3** above, it can be interpreted that the difference in the intensity of menstrual pain before and after consumption of Red Ginger in Semester IV Students of D III Midwifery Study Program almost all respondents experienced a decrease in pain, namely mild pain as many as 13 respondents (81%).

Based on the results of statistical tests using the Wilcoxon Signed Ranks Test, it is known that almost all respondents experienced a decrease in pain intensity, only one respondent had a fixed pain intensity. The magnitude of the significant value is 0.000 with  $\alpha$  0.05. Because of the significance value of  $< \alpha$ ,  $H_0$  was rejected and  $H_1$  was accepted, which means that there is a difference in the intensity of menstrual pain in students before and after consumption of red ginger in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang.

Based on **Table 4** above, it can be interpreted that the difference in the intensity of menstrual pain before and after giving L14

acupressure therapy for fourth semester students of D III Midwifery Study Program STIKes Maranatha Kupang. Almost all respondents experienced a decrease in pain, namely mild pain as many as 13 respondents (81%) and a small number of respondents did not experience pain, namely 1 respondent (6%).

Based on the results of statistical tests using the Wilcoxon Signed Ranks Test, it is known that almost all respondents experienced a decrease in pain intensity, only one respondent had a fixed pain intensity. Besarnya nilai signifikan 0,001 dengan  $\alpha$  0,05. The magnitude of the significant value is 0.001 with  $\alpha$  0.05. Because of the significance value of  $< \alpha$ ,  $H_0$  is rejected and  $H_1$  is accepted, which means that there is a difference in the intensity of menstrual pain in students before and after consumption of Acupressure L14 Students of Semester IV D III Midwifery Study Program Midwifery STIKes Maranatha Kupang.

**Table 5. Cross-tabulation of menstrual pain intensity after consumption of Red Ginger and L14 Acupressure in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Pain Intensity	After Red Ginger treatment		After L14 Acupressure treatment	
	Frequency	Percentage (%)	Frequency	Percentage (%)
No Pain	0	0%	1	6%
Mild pain	13	81%	13	81%
Moderate pain	3	19%	2	13%
Severe Controlled Pain	0	0%	0	0%
Uncontrolled severe pain	0	0%	0	0%
Total	16	100%	16	100%
<i>p-value</i> = 0,030				$\alpha$ =0,005

Based on **Table 5** the results of statistical tests using the Mann-Whitney Test statistical test, it is known that the magnitude of the significant value is 0.030 with ( $\alpha$ ) 0.05. Because of the significance value of  $< \alpha$ ,  $H_0$  was rejected and  $H_1$  was accepted, which means that there is a difference in the effectiveness of reducing menstrual pain intensity in students after consumption of red ginger and Acupressure therapy in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang.

Reducing the intensity of menstrual pain using L14 Acupressure therapy is more effective than consuming red ginger in research in the fourth semester of D III Midwifery Study Program Students of STIKes Maranatha Kupang.

## **DISCUSSION**

### **Intensity of menstrual pain (primary dysmenorrhoea) before and after consumption of Red Ginger in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Based on the **Table 1** results of the study, it showed that 16 respondents in the fourth semester of D III Midwifery Study Program of STIKes Maranatha Kupang had experienced pain during menstruation. With the intensity of most 56% mild pain, 38% moderate pain and 6% severe pain.

A number of these respondents will be given red ginger. With reference to the NRS Bourbanis pain scale, the average result of menstrual pain intensity before consumption of red ginger is 3.6875. And Based on the

results of the study, it was shown that of the 16 respondents of the fourth semester of the D-III Midwifery Study Program of STIKes Maranatha Kupang who experienced pain during menstruation, after being given red ginger, there was a change. The intensity of pain that almost all respondents (81%) had was mild pain, 19% moderate pain and none were severe pain. After being given this red ginger, the average result of menstrual pain intensity was 2.3125.

After consuming red ginger, the intensity of the respondents decreased. Almost all respondents had mild pain intensity. It is possible that it can be affected by the red ginger. The management of menstrual pain can be done by providing pharmacological therapy or with non-pharmacological therapy. The administration of pharmacological therapy can be carried out with patented drugs circulating in the market / pharmacies or drug stores, all of which aim to inhibit the production of prostaglandins (1,5).

Therapy with non-pharmacological is one by consuming red ginger. Where red ginger is one of the types of ginger that has the highest medicinal content (essential oil) among its types. Red ginger can be used as a natural anti-inflammatory or painkiller during menstruation. In his statement, ginger extract can suppress the production of prostaglandins and leucotrin in the endometrium. So that it will reduce pain due to contractions. However, the use of ginger.

### **Intensity of menstrual pain (primary dysmenorrhea) before and after being given L14 Acupressure therapy to Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Based on the **Table 2** results of the study, it shows that 16 respondents in Semester IV Students of the D-III Midwifery Study Program at STIKes Maranatha Kupang experienced menstrual pain with the intensity of most of them being 75% moderate pain, 25% mild pain. The average intensity of menstrual pain before Acupressure Therapy was 3.625. After being given L14 Acupressure there was a change. The pain intensity of the respondents became almost completely 81% mild pain, 13% moderate pain and 6% no pain. After being given L14 acupressure, the average result of menstrual pain intensity is 1,500.

Acupressure is a form of physiotherapy that provides massage and stimulation at specific points on the body (energy flow lines or meridians) to lower pain and has proven beneficial for disease prevention(11,15) Acupressure is a Chinese medicine that has been known since thousands of years ago and by applying pressure or massage and stimulating certain points in the body.

Basically, acupressure therapy is a development of acupuncture techniques, but the medium used is not needles, but fingers or blunt objects. The goal is to stimulate the natural ability to heal oneself by restoring the body's positive energy balance(19).

### **Differences in menstrual pain intensity Before and after consumption of red**

### **ginger in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Based on the **Table 3** results of statistical tests using the Wilcoxon Signed Ranks Test statistical test, it is known that almost all respondents, namely 16 respondents, experienced a decrease in pain intensity, only one respondent had a fixed pain intensity and none of them experienced an increase in pain intensity. It is obtained that the significant value  $p$ - value of 0.000 is  $< \alpha$  (0.05) which shows that the difference is significant. So from the comparison of the two events before and after consuming red ginger is that there is a difference in the intensity of menstrual pain.

It can be concluded temporarily that there is a significant or noticeable difference in the intensity of menstrual pain (primary dysmenorrhoea) in students before and after consumption of red ginger in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang. By consuming red ginger will affect the intensity of menstrual pain can be reduced mildly.

### **Analysis of differences in intensity before and after being given of L14 Acupressure therapy in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Based on the **Table 4** average value after giving L14 Acupressure is 1,500 which is less than the average value before before being given L14 Acupressure therapy is 3,625. The difference in pain intensity was 2.125. This shows that after giving L14

Acupressure therapy is better when compared to before before being given L14 Acupressure therapy because the level of menstrual pain intensity after giving L14 Acupressure is lighter (reduced) even becomes painless when compared to the level of menstrual pain intensity before being given L14 Acupressure therapy.

According to researchers during research with Acupressure to students by pressing the massage location at a location located 4 fingers above the inner ankle, the massage location was pressed for 30 counts Location located on the back of the hand on the highest protrusion, thumb and forefinger closed, massage location pressed for 30 counts and Location located 4 fingers under the kneecap on the outer edge of the shin, The massage location is pressed for 30 counts.

Acupressure is done for 2 days and waits for the results of pain intensity for up to 30 minutes, respondents feel relaxed and reduce menstrual pain in the abdomen originating from uterine cramps that occur during menstruation and some respondents who cannot do activities can return to activities (13,19).

#### **Analysis of the difference in menstrual pain intensity after consumption of Red Ginger and L14 Acupressure in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang**

Based on the **Table 5** results of statistical tests using the Mann-Whitney Test, it is known that the magnitude of the significant value  $p$ -value 0.030 is  $< (\alpha) 0.05$ ,

indicating that the difference in effectiveness is significant or real, so from the comparison of the two events of effectiveness of reducing the intensity of menstrual pain after consuming red ginger and L14 acupressure there is a difference. In this study it can be stated that there is a significant difference in effectiveness. After acupressure therapy, L14 is more effective when compared to after consumption of red ginger against reducing the intensity of menstrual pain (primary dysmenorrhoea) in Semester IV Students of D III Midwifery Study Program STIKes Maranatha Kupang.

The importance of dysmenorrhea needs to be overcome so that young women who are experiencing dysmenorrhea can move like students who are not menstruating. To overcome dysmenorrhea can be done non-pharmacologically or naturally. One of them is with acupressure and ginger drink. Because acupressure can improve blood circulation, so that prostaglandins flow in the blood circulation and do not accumulate in the uterus and can eventually reduce menstrual pain / dysmenorrhea.

Acupressure is also easy to apply without spending a considerable amount of money (15,19) Red Ginger drink can also overcome dysmenorrhea because ginger contains essential oils that are high enough and the chemical content of gingerol in ginger is able to block prostaglandins so that it can reduce pain during menstruation. Ginger is also easy to find and without spending a considerable amount of money (10,20)



## CONCLUSIONS AND RECOMMENDATION

Based on the results of statistical tests using the Mann-Whitney Test, it is known that the magnitude of the significant p-value 0.030 is  $< (\alpha) 0.05$ , indicating that the difference in effectiveness is significant or real, so from the comparison of the two effective events of decreasing the intensity of menstrual pain after consuming red ginger and the LI4 Acupressure there is a difference.

In this study, it can be stated that there is a significant difference in the intensity of menstrual pain between before and after the consumption of red ginger and LI4 acupressure therapy and it can be concluded that LI4 acupressure therapy is more effective when compared to the consumption of red ginger on the reduction of the intensity of menstrual pain (primary dysmenorrhea) in adolescents in Semester IV Students of the Obstetrics Study Program D III STIKes Maranatha Kupang.

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