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**Original Articles**

**THE EFFECTIVENESS OF ACUPRESSURE THERAPY FOR DYSMENORRHEA IN ADOLESCENT GIRLS**

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**ABSTRACT**

**Background:** Dysmenorrhea is pain during menstruation. There are 2 types of dysmenorrhea, namely primary dysmenorrhea and secondary dysmenorrhea. Primary dysmenorrhea is dysmenorrhea without any abnormalities in the genital organs. Secondary dysmenorrhea is dysmenorrhea in the presence of abnormalities in the genital organs, such as tumors, inflammation, etc. Acupressure is a development of massage therapy pressing on acupuncture points which increases oxygen saturation and causes muscle relaxation effects.

**Objectives:** This study aims to determine the effectiveness of acupressure therapy for dysmenorrhea pain that occurs in adolescent girls.

**Design:** This research used a one group pretest-posttest design.

**Methods:** This research was conducted in June-October 2020 using primary and secondary data at Patriot Peterongan High School, Jombang Regency. The population of this study was all 60 young women attending Patriot Peterongan High School, Jombang Regency. The sampling technique used in this research was purposive sampling, so that the total research sample was 42 respondents. Data was collected using a pain intensity questionnaire in the form of a numerical VAS (Visual Analog Scale) with an intensity scale (0-10). Acupressure therapy is carried out at the bilateral LI 4 (hegu) and ST 36 pressure points 30 times for 3 consecutive days during menstruation. Data analysis used the Wilcoxon test.

**Results:** The results of the study showed a decrease in the quality of dysmenorrhea pain, namely before therapy, it was 2.67 and SD 0.687. Meanwhile, after acupressure therapy for 3 consecutive days, the average result of dysmenorrhea pain intensity was 1.19 and SD 0.552. The results of the Wilcoxon test showed a decrease in the average intensity of dysmenorrhea pain on day 1, namely 0.22, day 2, namely 0.43 and day 3, namely 0.83 with a P value = 0.00, which means acupressure therapy at point LI 4 (Hegu) and bilateral ST 36 are effective in reducing dysmenorrhea in adolescent girls.

**Conclusion:** Acupressure therapy at points LI4 and ST 36 is effective in reducing dysmenorrhea in adolescents. As for suggestions for future researchers, this research can be combined with other therapies so that it can be more effective in reducing pain.

**Keywords:** Acupressure, Pain Intensity, Dysmenorrhea, Adolescent Girls.

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## INTRODUCTION

Adolescence is a period where changes occur from childhood to adulthood (Bernardi et al., 2017). Reproductive health in adolescent girls still requires attention, especially when it comes to dealing with menstruation. Some teenagers experience menstrual disorders including oligomenorrhea, polymenorrhea, amenorrhea, early menarche, late menarche, dysmenorrhoea, pre-menstrual syndrome, bleeding outside menstruation and menorrhagia (Anisa, 2015). Symptoms of dysmenorrhea are different for every woman. However, the most typical signs and symptoms of dysmenorrhea are cramps in the lower abdomen, lower back and inner thighs. This complaint will have an impact on daily activities both at school and at work. Not a few sufferers experience severe pain so they are forced to leave their activities to rest for several hours or days. Often sufferers overcome dysmenorrhea by taking pain relievers that are sold freely on the market without knowing the side effects of these drugs.

The incidence of primary dysmenorrhea in the world on average is more than 50% in each country (Berkley, 2013). The percentage of dysmenorrhea incidence in America is around 85%, Italy around 84.1% and in Australia around 80% (Li Ping Wong, 2009). In Indonesia, the percentage of dysmenorrhea is 64.25%, consisting of 54.88% primary dysmenorrhea and 9.36% secondary dysmenorrhea. Research conducted by the Faculty of Medicine, Hasanuddin University (UNHAS) in 2008 in the city of Makassar of 997 young women, 935 (93.85%) experienced dysmenorrhea. The most complaints were felt by those aged 13-15 years and moderate levels of dysmenorrhea were 47.3% of cases. The results of interviews conducted by researchers in 2019 showed that out of 60 respondents, 42 respondents (70%) experienced dysmenorrhea, aged 16-17 years. Pain is felt from the stomach to the lower back, feels weak, lethargic and chooses to rest and take painkillers. Until now, the use of complementary acupuncture therapy is not widely known, so researchers are interested in researching the "Effectiveness of acupuncture therapy in adolescents with dysmenorrhea". The aim of the study was to identify differences in the average reduction in dysmenorrhea pain before and after acupuncture therapy and to determine the effectiveness of acupuncture therapy for dysmenorrhea.

## METHODS

### *Study Design*

This research used a one group pretest-posttest design.

### *Setting*

This research was carried out on 18 June - 12 October 2020 at Patriot Peterongan High School, Jombang Regency.

### *Research Subject*

The target population in this study was all 60 young women attending Patriot Peterongan High School, Jombang Regency. The sampling technique used in this research is purposive sampling. Researchers set several criteria in determining research respondents, including 1) Adolescent girls aged 16-18 years, 2) Having primary dysmenorrhea, 3) Not using pharmacological therapy (such as analgesics) during the research, 4) Not having certain gynecological diseases or secondary dysmenorrhea, 5) Not experiencing very severe levels of pain, and 6) Willing to be a respondent in the research.

### ***Instrument***

The research instrument used was a VAS (Visual Analog Scale) numerical pain intensity scale questionnaire sheet with an intensity scale of 0-10.

### ***Intervention***

In carrying out this research, the researchers provided action in the form of acupressure therapy which refers to research conducted by Setyowati (2018). The acupressure therapy carried out by the researchers consisted of placing pressure on the LI 4 (Hegu) and ST 36 bilateral acupressure points 30 times for 3 consecutive days.

### ***Data Collection***

Data collection began by carrying out a pretest related to dysmenorrhea pain using the VAS numerical pain scale questionnaire before being given treatment in the form of acupressure therapy. After obtaining data related to dysmenorrhea pain before giving treatment, the researchers provided treatment in the form of acupressure therapy by placing emphasis on the LI 4 (Hequ) and ST 36 bilateral acupressure points 30 times. The treatment given by the researchers was carried out for 3 consecutive days. After each treatment, the researchers carried out another assessment of dysmenorrhea pain.

### ***Data Analysis***

The researchers carried out data analysis using the Shapiro Wilk test to determine the results of the Normality test. To determine the effectiveness of the treatment given, the researchers carried out the Wilcoxon test using the SPSS application.

### ***Ethical Consideration***

This research has received permission for its implementation from the College of Health Science Husada Jombang and the principal of Patriot Peterongan High School, Jombang Regency.

## **RESULTS**

### ***Cross Tabulation of Age and Dysmenorrhea Pain Before Treatment***

**Table 1.** Cross Tabulation of Age and Dysmenorrhea Pain in Adolescent Girls Before Being Given Acupressure Therapy Treatment at Patriot Peterongan High School, Jombang Regency on June 18 - October 12 2020 (n = 42).

Age	Dysmenorrhea Pain						Total	
	Mild Pain		Moderate Pain		Severe Pain		f	%
	f	%	f	%	f	%		
16 Years	7	16.67	13	30.95	4	9.52	24	57.14
17 Years	12	28.57	5	11.91	1	2.38	18	42.86
<b>Total</b>	<b>19</b>	<b>45.24</b>	<b>18</b>	<b>42.86</b>	<b>5</b>	<b>11.90</b>	<b>42</b>	<b>100.00</b>

Sources: Questionnaire Data, 2020.

Based on the research results in table 1, it was found that the majority of respondents were 16 years old, 24 respondents (57.14%). Apart from that, the majority of respondents experienced mild pain during dysmenorrhea, 19 respondents (45.24%). Based on the data in

table 1, the majority of respondents aged 16 years experienced moderate pain during dysmenorrhea as many as 13 respondents (30.95%).

### *Description of Differences in Dysmenorrhea Pain Levels Before and After Treatment*

**Table 2.** Description of the Difference in Dysmenorrhea Pain Levels in Adolescent Girls Before and After Being Given Acupressure Therapy Treatment at Patriot Peterongan High School, Jombang Regency on June 18 - October 12 2020 (n = 42).

Measurement		Dysmenorrhea Pain							
		No Pain		Mild Pain		Moderate Pain		Severe Pain	
		f	%	f	%	f	%	f	%
1st	Pre	0	0.00	19	45.24	18	42.86	5	11.90
Day	Post	0	0.00	28	66.67	9	21.43	5	11.90
2nd	Pre	0	0.00	28	66.67	9	21.43	5	11.90
Day	Post	7	16.67	30	71.43	2	4.76	3	7.14
3rd	Pre	7	16.67	30	71.43	2	4.76	3	7.14
Day	Post	37	88.10	2	4.76	3	7.14	0	0.0

Sources: Questionnaire Data, 2020.

Based on the research results in table 2 above, it was found that there was a change in the condition of dysmenorrhea pain in young women after being given treatment in the form of acupressure therapy for 3 consecutive days, namely that the majority of respondents no longer experienced dysmenorrhea pain, 37 respondents (88.10%).

### *Analysis of the Effectiveness of Acupressure Therapy for Dysmenorrhea in Teenage Girls using Wilcoxon*

**Table 3.** Analysis of the Effectiveness of Acupressure Therapy for Dysmenorrhea in Teenage Girls at Patriot Peterongan High School, Jombang Regency using Wilcoxon on June 18 until October 12, 2020 (n = 42).

Pengukuran		Mean	Mean Different	SD	p-value
Hari ke-1	Pre	2.67	0.22	0.687	0.003
	Post	2.45		0.705	
Hari ke-2	Pre	2.45	0.43	0.705	0.000
	Post	2.02		0.715	
Hari ke-3	Pre	2.02	0.83	0.715	0.000
	Post	1.19		0.552	

Sources: Questionnaire Data, 2020.

Based on the research results above, it was found that providing acupressure therapy treatment was effective in reducing dysmenorrhea pain felt by young women (p-value .000; Mean = 1.19; Mean Different = .83; SD = .552).

## DISCUSSION

Based on research we conducted, it was found that the average age of respondents was around 16-17 years. According to Julianti (2014), 16-18 years old is the age range for experiencing dysmenorrhea and the ability to handle pain has increased (Julianti & Erwin, 2014).

The research results showed that of the 42 respondents who experienced dysmenorrhea before the intervention, there were 19 respondents (45.2%) who experienced mild pain, there were 18 (42.9%) who experienced moderate pain and there were 5 respondents (11.9%) Those who experienced severe pain and after the intervention experienced a decrease were 2 respondents (4.8%) who experienced mild pain, 3 respondents (7.1%) who experienced moderate pain and those who did not experience pain were 37 respondents (88.1%) .

Research conducted by Widia et al (2020) with the final results showing a significant change, namely before therapy was 5.73 and after therapy was 2.73. The reduction in dysmenorrhea pain occurs as a result of pressing the acupressure meridian points which produce endorphins in the body (Natalia, et al., 2020). Research by Yuniati & Mareta (2019), namely that there was a decrease in dysmenorrhea pain in the intervention group after emphasizing the Hequ LI4 meridian. After the massage is done, it immediately increases endorphins so that it will speed up healing of pain.

Endorphins are hormones that can reduce pain and also act as a sedative (Anurogo & Wulandari, 2011). When the body feels pain, then acupressure therapy is performed at a certain point, the body will release endorphins which make the body feel calmer. Apart from that, other research explains that the uterus is a body organ that is connected to the heart, kidneys and liver. The liver is one of the blood suppliers to the uterus. One of the causes of dysmenorrhea pain occurs when only a little blood is supplied to the liver and uterus.

The results of research that has been carried out show that there is a decrease in the average intensity of dysmenorrhea pain on day 1, namely 0.22, on day 2, namely 0.43 and on day 3, namely 0.83 with a p value = 0.00 after carrying out the acupressure technique at the point acupoint LI 4 (Hegu) and acupoint ST 36 bilaterally, so it was concluded that acupressure therapy was effective in reducing the intensity of dysmenorrhea pain.

This is in line with research conducted by Yuniati (2019), as many as 26 respondents who underwent acupressure therapy at the Hequ meridian point showed an average reduction in pain intensity of 2.77 points, to 0.845 with a difference in pre and post points of 2.31 points. According to Julianti (2014), focusing on the LR3 meridian and PC6 meridian for 3 days resulted in a significant reduction in dysmenorrhea pain with a value of 1.76 points.

The findings of other researchers conducted by Heni Setyowati (2018) found that after being given lavender aromatherapy and acupressure therapy at acupoint LI 4 and acupoint ST 36, p value = 0.002 (p value < 0.05), there was a significant difference after being given aromatherapy lavender and acupressure therapy with a decrease in pain intensity of 1.95 is greater than the average decrease in pain intensity in lavender aroma therapy of 1.46.

Researchers assume that acupressure therapy is effective in reducing dysmenorrhea pain in adolescent girls. Acupressure therapy is more effective in reducing pain because acupressure therapy at the LI 4 (Hegu) and ST 36 meridian points bilaterally can stimulate the release of endorphins so that it reduces pain more quickly, the body feels calmer and responds to the body's immunity.

Acupressure therapy is a complementary therapy that is not widely known, the methods and benefits provided so that socialization and training is needed before carrying out acupressure therapy. Determining the right meridian points is also needed so that therapy is more effective.

## CONCLUSION

Acupressure therapy at points LI4 and ST 36 is effective in reducing dysmenorrhea in adolescents. As for suggestions for future researchers, this research can be combined with other therapies so that it can be more effective in reducing pain.

## LIMITATION

There are no limitations in carrying out this research.

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