

Acupressure And Progressive Muscle Exercise Therapy Reduced Dysmenorrhea Of Late Adolescent In Tasikmalaya, Indonesia

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Abstract: *Dysmenorrhea or menstrual pain is a complaint that is often experienced by late adolescents. Many ways can be done to reduce dysmenorrhea, such as using pharmacological and non-pharmacological therapies. This study aims to determine the effect of acupressure and progressive muscle exercise therapy on dysmenorrhea in late adolescents in Tasikmalaya. The research design was a quasi-experiment, pre, and post-test without a control group. The sampling technique was simple random sampling, with as many as 28 respondents. Univariate and bivariate data analysis. The results showed that the mean age of the respondents was 19.68. Menarche 13.07. The average Sundanese tribe is 85.7%. Get family support in overcoming dysmenor by 78.6%. The results of the bivariate analysis showed significant differences in pain intensity before and after acupressure + Progressive muscle exercise (p-value 0.0001). There was a significant difference in the quality of pain before and after acupressure + progressive muscle exercise (p-value 0.0001). The results of this study are expected to be used as a reference for further research in dealing with dysmenorrhea.*

Keywords: *Acupressure, Dysmenorrhea, Progressive Muscle Exercise*

1. INTRODUCTION:

Dysmenorrhea is the most common complaint in women, which is frequently reported. Dysmenorrhea is the medical term for menstrual cramps, which are caused by uterine contractions or pain associated with menstruation [1]. The incidence of primary dysmenorrhea peaks in late adolescence and early 20s, and decreases with age and with increasing parity [2][3]. Dysmenorrhea can affect more than 50% of menstruating women, and the reported prevalence varies widely (for example, 45-95%) [4][5].

Dysmenorrhea is not a disease but is a problem that periodically makes women uncomfortable during the menstrual cycle. Absence from work greatly affects the productivity of the company if women experience dysmenorrhea. Dysmenorrhea is considered to have a direct negative impact on their quality of life [6]. It is often reported to occur in one-third of dysmenorrhea sufferers. Therefore, dysmenorrhea is considered an economic, health, and social burden for a country [7]. There are many ways to reduce the symptoms caused by dysmenorrhea, namely by pharmacological and non-pharmacological or a combination of non-pharmacological pharmacology. The provision of non-pharmacological therapy is currently widely used.

Acupressure is another non-pharmacological method to reduce dysmenorrhea. Acupressure has been proven to be beneficial and has no side effects in dealing with menstrual pain/dysmenorrhea [8]. Meanwhile, the results of the research show that *exercise* has a greater effect on reducing menstrual pain compared to acupressure and heat therapy, although both therapies have the effect of reducing dysmenorrhea [9]. Dysmenorrhea can also be reduced using hypnotherapy and muscle relaxation therapy. The results showed that hypnosis was significantly effective in treating dysmenorrhea compared to muscle relaxation therapy. However, both of them can reduce dysmenorrhea [10].

The purpose of this study was to determine the effect of acupressure and progressive muscle training in reducing menstrual pain in late adolescents in Tasikmalaya, Indonesia.

2. RESEARCH ELABORATIONS

The research design used in this study was a quasi-experimental study with pre and post-test, without a control group. The sampling technique used was simple random sampling, as many as 28 people. The study was conducted by randomly selecting respondents, then when the respondent experienced menstrual pain on the first day, the respondents have measured the intensity of pain and quality of pain than did acupressure then 5 minutes after that did progressive muscle training independently through video tutorials for 2 times per day for 2 days during dysmenorrhea in the first month and repeated in the second month. In the second month, respondents did acupressure on the first and second day of menstruation. then on the second day, the respondents measured pain intensity and quality. The research instrument used a questionnaire of demographic data and menstrual characteristics, pain intensity used a numeric visual analogue scale (VAS), while pain quality used an instrument modified from the *Adolescent Pediatric Pain Tool (APPT)*.

3. RESULT AND DISCUSSION

The results of the analysis of the characteristics of the respondents included the age of the respondent, the age of menarche, menstrual cycle, and age when experiencing dysmenorrhea.

Table 1. Respondent characteristics Distribution of (n = 28)

| Group | Mean | SD | Min - Max | 95% CI |
|-----------------------|-------|-------|-----------|----------------|
| Age of respondents | 19.68 | 0.819 | 18 -22 | 19,36 - 20,00 |
| Menarche | 13,07 | 1,999 | 10-17 | 12,3 - 13,85 |
| Menstrual cycle | 28 | 2,234 | 20-30 | 26,35 - 28,08 |
| Age starting dysmenor | 14,29 | 1,802 | 11-17 | 13, 59 - 14.98 |

Table 2. Distribution of respondents based on dysmenorrhea treatment (n = 28)

| Variable | n | % |
|------------------------|----|-------|
| Treatment of dysmenor: | | |
| Pharmacology | 1 | 3,6 |
| Nonpharmacology | 26 | 92,9 |
| Combination | 1 | 3,6 |
| Family support: | | |
| There is support | 22 | 78, 6 |
| No support | 6 | 21.4 |
| Ethnic: | | |

| | | |
|-----------|----|------|
| Sundanese | 24 | 85.7 |
| Javanese | 4 | 14.0 |

Table 3. Distribution of average pain intensity and pain quality before and after the intervention (n = 28)

| Variable | Mean | SD | Min - Max | 95% CI |
|------------------|-------|-------|-----------|-----------------|
| Pain intensity: | | | | |
| Before | 5.64 | 2.022 | 2-10 | 4.86 - 6.43 |
| After | 2.54 | 1.290 | 1-6 | 2.04 - 3.04 |
| Quality of pain: | | | | |
| before | 12.36 | 3,263 | 8-20 | 10 , 95 - 13.76 |
| After | 3.86 | 3,124 | 0- 10 | 2.65 - 5.07 |

Table 4. Test of difference in the mean score of pain intensity between before and after acupressure + progressive muscle exercise therapy (n = 28)

| Variable Pain Intensity | Average | SD | Difference of Mean | Z | <i>p</i> -value |
|----------------------------|---------|-------|-----------------------|-------|-----------------|
| Before Intervention | 5,50 | 2,022 | 3,00 | 4,650 | 0,0001 |
| After Intervention | 2,50 | 1,290 | | | |

Table 4. Difference test of mean pain quality score between before and after acupressure + progressive muscle exercise therapy (n = 28)

| Variable Quality of Pain | Average | SD | Difference of Mean | Z | <i>p</i> -value |
|-----------------------------|---------|-------|-----------------------|-------|-----------------|
| Before Intervention | 10.00 | 3,623 | 7,00 | 4,630 | 0,0001 |
| After Intervention | 3,00 | 3,124 | | | |

Dysmenorrhea is a problem that is often experienced by women every time they menstruate. Generally, a lot occurs in late adolescence [5]. The exact cause of the premenstrual syndrome is unknown, but it is thought to result from fluctuations in progesterone and estrogen levels, hypoglycemia, hyperprolactinemia, psychogenic factors, altered carbohydrate metabolism, excessive aldosterone, and progesterone allergy and water retention by the kidneys. The interaction between changes in sex hormone levels during the luteal phase of the menstrual cycle and neurotransmitters in the brain, especially the neurotransmitter serotonin, in susceptible women. During the luteal phase, hormones from the ovaries cause the lining of the uterus to become thick and spongy. At the same time, an egg is released from the ovary. At this time, the level of a hormone called progesterone increases in the body, while the level of another hormone, estrogen, starts to decrease. The shift from estrogen to progesterone causes premenstrual syndrome [11]. The hormone cycle affects levels of serotonin, a brain chemical that regulates many functions, including mood and sensitivity to pain. Compared with women who do not have premenstrual syndrome, some women who experience premenstrual syndrome have lower levels of serotonin in their brains before menstruation (Low serotonin levels are usually associated with depression) [11].

Performing a simple acupressure protocol is an effective method to reduce the intensity and duration of dysmenorrhea, and improve quality of life [12]. Auricular acupressure therapy is an effective intervention to relieve abdominal pain, back pain, and primary dysmenorrhea in high school students in South Korea [13]. The findings suggest that the SP6 acupressure administered by the researchers is effective in immediate pain relief among women with Primary Dysmenorrhea and that pain relief can continue for up to 3 hours after the intervention [14].

Acupressure is a massage technique applied with the fingers and palms based on traditional Chinese medicine that provides health, vitality, and first aid, and is a healing art that is applied using the fingers to key points on the skin to trigger the body's natural self-healing process [15].

The theory of acupressure's mechanism of action, also known as needleless acupuncture, emerged after the 1960s. According to this theory, acupressure has analgesic, homeostatic, autoimmune, sedative, psychological effects, and healing effects on motor function. Acupressure is most commonly used for pain relief and pain prevention by stimulating endogenous opioids to release from the central nervous system depots and modulate the limbic-hypothalamic system. Acupressure stimulation is a systemic response on a very large scale including increased secretion of neurohormones and neurotransmitters (beta-endorphins, enkephalins, and serotonin) as well as central and peripheral changes in blood flow regulation.

Apart from acupressure, progressive muscle stretching (PMR) is a non-pharmacological action to reduce menstrual pain/dysmenorrhea. PMR has been widely used in various patients to reduce symptoms/complaints experienced by patients such as increasing oxygen saturation in coronary heart disease [16], and reducing back pain in pregnant women [17]. Another study found that stretching exercises were effective in reducing pain intensity, pain duration, and the amount of pain medication used by girls with primary dysmenorrhea. Apart from that, exercising can also cause the release of endorphins, relaxation, stress relief, and improved blood flow can reduce the severity and duration of dysmenorrhea. This improvement may be due to increased blood flow and uterine metabolism during exercise which may be effective in reducing dysmenorrhea symptoms [18].

4. CONCLUSIONS

There was a significant difference in the quality of pain before and after acupressure + Progressive Muscle Exercise therapy for reducing dysmenorrhea (p-value 0.0001).

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