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Research Article

Effectiveness of Acupressure and William Flexion Exercise on Reducing the Intensity of Mental Pain in Adolescent Women at Guna Bangsa Vocational School, Banjarsari, Lebak, Banten

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Abstract

Aims: Dysmenorrhea is pain or cramps in the lower abdomen that appear before or during menstruation. The problem of menstrual pain in young women if not addressed immediately can have a bad impact on adolescent productivity including learning activities. Data from the Lebak Regency Health Office in 2021 reported dysmenorrhea cases in adolescents by 62.4% of the 5,000 adolescents surveyed and 35% of them complained that their activity was limited due to dysmenorrhea.

Purpose of Authorship: It is known the effectiveness of acupressure and William flexion exercise on reducing the intensity of menstrual pain in young women at SMK Guna Bangsa Banjarsari Lebak Banten.

Method: The research method uses quasi-experiments with a pre-posttest two group design. Sample of this study was 30 young women in grades X, XI, XII who experienced dysmenorrhea with sampling technique uses total sampling. Instruments use questionnaires. Bivariate analysis uses the paired t-test and independent t-test.

Results: The average dysmenorrhea intensity of young women in the intervention group before being given acupressure massage was 6.60 and after being given acupressure massage decreased to 2.80, while in the control group before being given physical movement william's flexion exercise was 6.53 and after being given acupressure massage decreased to 3.87. The results of statistical tests showed that there was an effectiveness of acupressure and william flexion exercise against reducing the intensity of dysmenorrhea in young women ($p = 0.000$).

Conclusion and Advice: Acupressure massage is more effective at reducing the intensity of dysmenorrhea compared to giving William's flexion exercise. It is hoped that young women will treat dysmenorrhea in a non-pharmacological way, namely by acupressure massage or doing physical movements in William's flexion exercise.

Keywords:

Acupressure, dysmenorrhea, william's flexion exercise

INTRODUCTION

The World Health Organization (WHO) in 2020 reports that women who experience mild - moderate dysmenorrhea in every country in the world are around 50% of the population and 10-15% of them experience

severe dysmenorrhea. The prevalence is generally greater in young women, with estimates ranging from 67% to 90% for women aged 17-24 years. On average in European countries dysmenorrhea cases occur in 45-97% of women, in American countries dysmenorrhea cases occur in 52-

90% of women, in the African region dysmenorrhea cases occur in 44-95% of women, and in the Asian region Cases of dysmenorrhea occur in 45-90% of women (1).

According to the Central Bureau of Statistics, the majority of instances of dysmenorrhea in Indonesia are discovered among adolescents between the ages of 15 and 24 (a prevalence of 64.25 percent). In Indonesia, 54.88 percent of women suffer from primary dysmenorrhea and 9.36 percent from secondary dysmenorrhea. Forty-nine percent of those suffering from dysmenorrhea report mild discomfort, 34 percent moderate, and 17 percent severe pain during their periods (2).

The Banten Provincial Health Office in collaboration with BPS in 2021 reported that the incidence of dysmenorrhea in Banten was recorded at 60.19% of the 10,000 adolescents surveyed. with the most cases found in adolescents aged 14-24 years, where the incidence of primary type dysmenorrhea was 52.61%, while the secondary type was 7.58% with mild dysmenorrhea pain levels of 47%, moderate 38% and severe 15% (3). The Lebak District Health Office in collaboration with the Lebak BPS in 2021 also reported cases of dysmenorrhea in adolescents, that the prevalence of cases was 62.4% of the 5,000 adolescents surveyed, where most cases were experienced by young women aged 14-24 years with 35% Some of them complained that their activities were limited due to dysmenorrhea (4).

Menstrual pain is a common issue among women; in extreme circumstances, a woman may need to visit a clinic or doctor for an examination, or she may need to cancel her normal daily activities and rest for several hours or days. The pressure on young women nowadays is so great that many of them simply can't handle staying in school or even going (5).

Breasts that feel heavy, full, enlarged, and tender; back pain; a sense that the pelvic cavity is filling up; headaches and acne;

increased irritability or sensitivity; a faster metabolism; fatigue; a rise of 0.2 to 0.4 degrees Celsius in basal body temperature; a cervix that is cloudy, sticky, impenetrable to sperm; a cervix that is dry in a granular pattern; a cervi (6).

Quality of life, work productivity, absenteeism, social interactions, and economic losses owing to medical bills and medical care are all significantly impacted by dysmenorrhea. Tiredness, lower back pain, anxiety, stress, headache, confusion, vomiting, diarrhea, stomach cramps, abdominal discomfort, and activity disruptions are all side effects of dysmenorrhea in young women. Also, young women with dysmenorrhea may have trouble focusing in class or may even fall asleep during lectures, which can have a negative impact on their performance in both academic and extracurricular areas (7).

Treatment options for dysmenorrhea include both pharmaceutical and nonpharmaceutical approaches. Aspirin, mefenamic acid, paracetamol, and feminax are all members of the analgesic class of medications used to treat pain complaints, and can be used to treat the pain associated with dysmenorrhea. Dysmenorrhea can be treated without drugs in many different methods, including drinking betel leaf water, eating ginger, papaya leaves, or turmeric rhizome, applying warm water compresses, receiving acupuncture, or engaging in physical activity like walking and stretching (8).

By massaging specific meridian points of the body, acupuncture therapy helps alleviate dysmenorrhea symptoms. The sanyinjiao point is effective in treating dysmenorrhea. One of the spleen's roles is to alleviate menstrual discomfort, and one of the spleen's points is sanyinjiao, also known as spleen 6. When you push on specific acupoints, you may stimulate the release of natural painkillers called endorphins and other endogenous peptide opioids in your brain and bloodstream. It is believed that menstrual pain can be alleviated by

stimulating the endocrine system through the nervous system (9).

Previous research by (10) showed results that effective acupressure therapy can reduce pain during menstruation. The effectiveness of acupressure therapy is a reduction in dysmenorrhea, a reduction in dysmenorrhea can be seen within 1 to 2 days after regular acupressure therapy. Another study by (11) also showed the result that acupressure is effective for reducing dysmenorrhea. The acupressure given will make the respondent relax and increase immunity. Research (12) also showed results that acupressure therapy at point LI 4 was effective in reducing pain intensity during dysmenorrhea in adolescents.

The second method of handling dysmenorrhea in this study is by stretching the muscles which can be done using the William's flexion exercise technique. Some of William's flexion exercise movements aim to strengthen the abdominal muscles and mobilize the lower lumbar. Contraction of the lower abdominal and lumbar muscles will put pressure on the large blood vessels in the abdomen which in turn will increase the volume of blood flowing throughout the body including the reproductive organs. This can facilitate the supply of oxygen to blood vessels that experience vasoconstriction, so that menstrual pain can be reduced (13).

Research conducted by (14) showed that there was an effect of the William Flexion exercise technique on the level of menstrual pain (dysmenorrhea). Female students before doing the william flexion exercise technique experienced dysmenorrhea on a scale of 6 and after doing the william flexion exercise technique the pain due to dysmenorrhea decreased to scale 2. Another study conducted by (15) also showed similar results that there was an effect of william flexion exercise on reducing the intensity of menstrual pain (dysmenorrhea). Student before being given the william flexion exercise technique experienced menstrual pain on a scale of 6 and after being given

therapy with the william flexion exercise technique, the pain scale decreased to a scale of 3.

Preliminary research at Guna Bangsa Vocational School Banjarsari found that 8 of 10 students with dysmenorrhea experienced moderate symptoms, while the remaining 2 suffered mild symptoms. When asked about how their dysmenorrhea affected their daily lives, all of the respondents reported feeling pain, discomfort, and an overall decrease in quality of life. Three respondents said they used warm compresses, two said they took pain medicines, one said they ate turmeric tamarind, and four stated they did nothing to alleviate their dysmenorrhea. No one had ever tried a treatment for dysmenorrhea that involved either acupressure massage or the William flexion exercise method of stretching the muscles.

Based on the background description above, researchers feel it is important to conduct research on "The effectiveness of acupressure and william flexion exercise on reducing the intensity of menstrual pain in young women at SMK Guna Bangsa Banjarsari Lebak Banten.

METHODS

This study used a quasi-experimental method with a two-group pretest and posttest design approach. This research design has two groups, namely the intervention group and the control group. This research was conducted in December 2023 at Guna Bangsa Vocational School Banjarsari Lebak Banten. The population in this study were 30 young women in grades X, XI and XII at Guna Bangsa Vocational School who experienced dysmenorrhea. The sampling method in this study used a total sampling technique. Each group, namely 15 people, was given acupressure massage therapy treatment and 15 people were given muscle stretching therapy using the William Flexion Exercise technique.

RESULTS

Table 1. Average Intensity of Menstrual Pain in Young Women Before and After Given Acupressure Massage at SMK Guna Bangsa Banjarsari Lebak Banten

Menstrual Pain Intensity	n	M	SD	Min	Max
Pre-test	15	6,60	1,24	5	9
Post-test		2,80	0,94	2	5

Based on Table 1. shows that, the average intensity of menstrual pain in young women in the intervention group before being given acupressure massage was 6.60 and after being given massage which was carried out at certain points of the body in accordance with the SOP which was carried out 1 time for 60 minutes in 1 day, the average menstrual pain intensity decreased to 2.80.

Table 2. Average Intensity of Menstrual Pain in Young Women Before and After Given William's Flexion Exercise Physical Movement at Guna Bangsa Vocational School Banjarsari Lebak Banten

Menstrual Pain Intensity	n	M	SD	Min	Max
Pre-test	15	6,53	1,12	5	9
Post-test		3,87	0,64	3	5

Based on Table 2, it shows that the average intensity of menstrual pain in female adolescents in the control group before being given the physical movement of William's flexion exercise was 6.53 and after being given the physical movement of William's flexion exercise which was carried out for \pm 7-10 minutes according to the SOP in 1 days, the average menstrual pain intensity decreased to 3.87.

Table 3. The Effectiveness of Acupressure and William Flexion Exercise on Reducing the Intensity of Menstrual Pain in Young Women at SMK Guna Bangsa Banjarsari Lebak Banten

Dysmenorrhea Intensity	n	Intervention		n	Control		p-value
		M	M-diff		M	M-diff	
Pre-test	15	6,60	3,80	15	6,53	2,66	0,000
Post-test		2,80			3,87		

Based on the data from Table 3 above, it shows that the average decrease in the intensity of menstrual pain in female adolescents in the intervention group before and after being given acupressure massage is 3.80, while the average decrease in the intensity of dysmenorrhea in the control group before and after being given physical movement william's flexion exercise is equal to 2.66. The statistical test results obtained a p-value = 0.000 ($< \alpha$ 0.05), meaning that there is effectiveness of acupressure and william flexion exercise in reducing the

intensity of menstrual pain in young women at SMK Guna Bangsa Banjarsari Lebak Banten.

DISCUSSION

Pain Intensity Before and After Administration of Acupressure Techniques

Based on Table 1. shows that, the teenage girls in the intervention group before being given acupressure massage the average menstrual pain intensity was 6.60 and after

being given acupressure massage it decreased to 2.80. The results of the statistical test obtained a t-test value of 26.25 and a p-value = 0.000 ($< \alpha$ 0.05), meaning that there is a difference in the mean pretest and posttest menstrual pain intensity in the intervention group. Adolescent girls in the control group before being given the physical movement of William's flexion exercise had an average menstrual pain intensity of 6.53 and after being given the physical movement of William's flexion exercise the intensity of menstrual pain decreased to 3.87. The results of the statistical test obtained a t-test value of 14.27 and a p-value = 0.000 ($< \alpha$ 0.05), meaning that there is a difference in the mean pretest and posttest menstrual pain intensity in the control group.

Pain Intensity Before and After Giving William's Flexion Exercise Technique

Based on Table 2. shows that, the female adolescents in the intervention group before being given the acupressure massage the average menstrual pain intensity was 6.60, while the female adolescents in the control group before being given the physical movement of William's flexion exercise had an average menstrual pain intensity of 6.53. The results of the statistical test obtained a t-test value of 0.154 and a p-value = 0.879 ($> \alpha$ 0.05), meaning that there was no difference in the average value of menstrual pain intensity in the pretest between the intervention group and the control group. Teenage girls in the intervention group after being given acupressure massage had an average menstrual pain intensity of 2.80, while girls in the control group after being given the physical movement of William's flexion exercise had an average menstrual pain intensity of 3.87. The results of the statistical test obtained the t-test -3.630 and the p-value = 0.001 ($< \alpha$ 0.05), meaning that there is a difference in the average value of menstrual pain intensity in the posttest between the intervention group and the control group.

Effect of Acupressure Technique and William's Flexion Technique on menstrual pain

Based on the data from Table 3 above, it shows that the average decrease in the intensity of menstrual pain in female adolescents in the intervention group before and after being given acupressure massage is 3.80, while the average decrease in the intensity of dysmenorrhea in the control group before and after being given physical movement william's flexion exercise that is equal to 2.66. The statistical test results obtained a p-value = 0.000 ($< \alpha$ 0.05), meaning that there is effectiveness of acupressure and william flexion exercise in reducing the intensity of menstrual pain in young women at SMK Guna Bangsa Banjarsari Lebak Banten. The results of this study are in line with the research of Marbun & Purnamasari (2022) which showed that acupressure therapy was effective in reducing pain during menstruation ($p=0.000$). Reduction of dysmenorrhea can be seen within 1 to 2 days after regular acupressure therapy. It is supported by Khotimah's research (2021) which showed similar results that acupressure is effective for reducing dysmenorrhea ($p=0.000$). The acupressure given will make the respondent relax and increase immunity. Reinforced by research Hasanah et al. (2021) which also showed results that acupressure therapy was effective in reducing pain intensity during dysmenorrhea in young women ($p=0.000$).

The intensity of dysmenorrhea was found to be affected by the William's flexion exercise method ($p=0.000$) in a study conducted by Anggreini et al. Female students reported a pain level of 6 due to dysmenorrhea before using the William's flexion exercise technique, and a pain level of 2 as a result of the exercise. Abidin et al.'s (2020) study confirmed these findings, demonstrating that William's Flexion Exercise significantly mitigated menstruation discomfort ($p0.0001$). Menstrual discomfort was rated as a 6 on a 10-point scale before students received therapy using William's flexion

exercise approach, and it was rated as a 3 following therapy.

Both acupressure massage and the physical movement of William's flexion exercise were tested as non-pharmacological treatments for menstrual pain, with the researcher presuming that both would be beneficial. However, the results of this study showed that acupressure massage was more effective in reducing the intensity of menstrual pain. This is possible because the acupressure massage technique has a greater potential to calm the nerve tissue than the purely mechanical motion of William's flexion exercise.

All participants in both groups attended and intervened according to the SOP, but some women in the study still experienced moderate menstrual pain after treatment, which limited their ability to participate in study-related activities. It's also possible that medical factors like Polycystic Ovary Syndrome, endometriosis, and fibroids (noncancerous growths) play a role in this. Other possible causes include advancing age, high stress levels, poor dietary and nutritional habits, and lack of regular physical activity.

CONCLUSION

The study analyzed the effects of acupressure and William's flexion exercise on menstrual pain in teenage girls at SMK Guna Bangsa Banjarsari Lebak Banten. The intervention group experienced an average menstrual pain intensity of 6.60 before the massage, which decreased to 2.80 after the massage. The control group had an average menstrual pain intensity of 6.53 before the massage, and 3.87 after the exercise. The study found that the average decrease in menstrual pain intensity in the intervention group was 3.80, while the average decrease in dysmenorrhea intensity was 2.66 in the control group. The results align with previous research showing that acupressure therapy is effective in reducing pain during menstruation, with a reduction in dysmenorrhea occurring within 1 to 2 days

after regular therapy. The study also found that the intensity of dysmenorrhea was affected by the William's flexion exercise method, with female students reporting a pain level of 6 due to dysmenorrhea before the exercise and a pain level of 2 as a result. Both acupressure massage and William's flexion exercise were tested as non-pharmacological treatments for menstrual pain, but the results showed that acupressure massage was more effective in reducing the intensity of menstrual pain. Some women still experienced moderate menstrual pain after treatment, which may be due to medical factors, advancing age, high stress levels, poor dietary and nutritional habits, and lack of regular physical activity. Statistical tests revealed that acupressure and william flexion exercise were beneficial in lowering the intensity of menstruation discomfort in young women at SMK Guna Bangsa Banjarsari Lebak Banten (p value = 0.000).

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