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ORIGINAL RESEARCH

DEEP BREATHING RELAXATION AND SANYINJIAO ACUPRESSURE THERAPY (SP6) AS A PAIN MANAGEMENT FOR PRIMARY DYSMENORRHEA IN ADOLESCENTS

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ABSTRACT

Dysmenorrhea, commonly known as menstrual pain, is a sensation of pain or abdominal cramps that occurs before and during the menstrual period. The use of drugs to reduce pain has negative side effects, so holistic care such as deep breathing relaxation techniques and acupressure therapy are one alternative to reduce dysmenorrhea pain. Deep breathing relaxation is a technique that involves slow and deep breathing to help reduce stress and anxiety (Trivia, 2021). While acupressure is a massage technique at certain points, proven to be effective in reducing menstrual pain. This type of research uses a quasy experiment design with a one group pretest and posttest design. The population in this study were all 2nd year female students of the Nursing Study Program at the Madura State Polytechnic. This study used purposive sampling, with the inclusion criteria of female adolescents aged 17-20 years, who had taken Holistic Care Medicine courses, experienced primary dysmenorrhea pain and did not use pharmacological therapy such as analgesics during the research data collection process. The exclusion criteria were having certain gynecological diseases or secondary dysmenorrhea and very severe pain levels. The sample in this study was 52 people. Data collection used a Visual Analog Scale measuring instrument with an intensity scale of 0-10 and a checklist of deep breathing relaxation therapy and SP6 acupressure techniques, data were processed using SPSS software version 26. Univariate analysis used frequency distribution and bivariate analysis used the Wilcoxon test with a p-value <0.05. The results of the data distribution test obtained an abnormal data distribution, so it was statistical test using the Wilcoxon test obtained a value of 0.000 (<0.05). Thus proving that the combination of deep breathing therapy and acupressure is effective in reducing primary dysmenorrhea pain in adolescents.

Keywords

Dysmenorrhea, Acupressure, Relaxation, Sanyinjiao

INTRODUCTION

Dysmenorrhea, or commonly called menstrual pain, is a sensation of pain or abdominal cramps that occurs before and during the menstrual period. Almost all teenagers who experience normal menstruation feel this menstrual pain. Pain is very disruptive to activities, especially for teenagers who have many activities. Improper handling of menstrual pain can risk disrupting reproductive health in teenagers. The use of drugs to reduce pain certainly also has negative side effects. So, currently, holistic care is one of the good sciences to be developed. One of the holistic healing methods is acupressure, or the action of pressing on certain points with the aim of reducing dysmenorrhea pain. In addition, the application of deep breathing relaxation techniques is also one of the effective ways to relax.

Deep breathing relaxation techniques are techniques that involve slow, deep breathing to help reduce stress and anxiety (Trivia, 2021). This technique has been shown to be effective in reducing menstrual pain by increasing relaxation and reducing muscle tension. This technique involves deep, slow breathing, which helps slow the heart rate and lower blood pressure, thereby reducing the body's response to stress. Research shows that deep breathing relaxation can significantly reduce menstrual pain in adolescent girls. One study found that the median menstrual pain intensity before deep breathing relaxation was 5, and after therapy decreased to 0.43 on the second day and 0.83 on the third day, with a statistically significant difference ($p < 0.05$) (Trivia, 2021).

Acupressure is a traditional Chinese technique, proven effective in reducing menstrual pain, also known as dysmenorrhea, in adolescent girls. This technique involves applying pressure to certain points on the body, such as the Sanyinjiao point (SP6), which is believed to stimulate the release of endorphins, the body's natural painkillers. Endorphins are hormones that can induce feelings of relaxation and block pain receptors in the brain. Research shows that acupressure therapy can significantly reduce the intensity of menstrual pain in adolescent girls. For example, a study found that the median intensity of menstrual pain before acupressure therapy at the Sanyinjiao point was 5, and after therapy it decreased to 0.43 on the second day and 0.83 on the third day, with a statistically significant difference ($p < 0.05$) (Sari, 2021). Another study compared the effectiveness of Sanyinjiao acupressure therapy with deep breathing relaxation techniques and found that acupressure therapy was 15 times more effective in reducing primary menstrual pain (dysmenorrhea) than deep breathing relaxation techniques ($p = 0.000$, $p < 0.05$) (Natalia, 2020). The effectiveness of acupressure therapy in reducing menstrual pain is due to its ability to stimulate the release of endorphins, which can block pain receptors in the brain and create a feeling of relaxation. In addition, acupressure therapy can also improve blood circulation, which can help reduce menstrual pain by increasing blood flow to the uterus and other organs.

Based on a preliminary study conducted with 30 adolescents, it was found that all adolescents felt pain during menstruation. 19 adolescents admitted that they did not know non-pharmacological methods to relieve menstrual pain. In addition, 6 female adolescents consumed analgesics or labor pain relievers. Based on the preliminary study conducted, it can be seen that most adolescents do not know effective non-pharmacological techniques to reduce primary dysmenorrhea pain.

The combination of deep breathing relaxation and acupressure therapy is expected to be a safe and effective non-

pharmacological method to reduce menstrual pain in adolescent girls. This is a simple and non-invasive technique that is easy to learn and practice, making it an effective way to treat menstrual pain. This is a novelty in this study.

METHOD

This type of research uses a quasy experiment design with a one group pretest and posttest design. The population in this study were all female students in the nursing study program at the Madura State Polytechnic. This study used purposive sampling, with inclusion criteria of female adolescents aged 19-22 years (late adolescents), 2nd and 3rd-year students who had taken Holistic Nursing courses, experienced primary dysmenorrhea pain during the study and did not use pharmacological therapy such as analgesics during the research data collection process. The exclusion criteria were having certain gynecological diseases or secondary dysmenorrhea and students who felt very severe pain levels. The number of samples in this study was 52 people. This study was conducted from August to November 2024.

The level of dysmenorrhea pain was measured using a standard instrument with a Visual Analog Scale measuring instrument with an intensity scale of 0 - 10 (starting from no pain to, moderate pain to the worst possible pain). Acupressure therapy was performed 30 times with a duration of 5-10 seconds of pressure on the sanyinjiao point (SP6). Respondents were asked to perform deep breathing relaxation techniques during the acupressure process.

Data analysis using SPSS software version 26. Data normality test using Kolmogorov Smirnov and obtained data not normally distributed (sig <0.05), so bivariate analysis using Wilcoxon Test with p-value <0.05.

RESULTS

Table 1. Frequency Distribution Based on Age of Adolescent Girls

Age	N	%
19	0	0
20	4	7.7
21	27	51.9
22	21	40.3
Total	**52**	**100**

The results of the study from 52 respondents were that, there were no respondents aged 19 years, there were 4 respondents or 4% who were 20 years old, 27 or 51.9% were 21 years old, and 21 or 40.3% were 22 years old.

Table 2. Frequency Distribution Based on Age of Adolescent Girls Experiencing Dysmenorrhea Pre-Intervention

Dismenore	Frekuensi					
	Nyeri Ringan		Nyeri Sedang		Nyeri Berat	
	N	%	N	%	N	%
Usia						
20	4	23.53	0	0	0	0
21	8	47.06	16	53.33	3	60
22	5	29.41	14	46.67	2	40
Total	17	100	30	100	5	100

Based on table 2 above, out of 52 respondents, there were 23 people who experienced mild dysmenorrhea pain with respondents aged 20 years, as many as 4 respondents (17.39%), 8 people aged 21 years and 11 respondents aged 22 years. There were 24 respondents who experienced moderate dysmenorrhea pain with a distribution of 16 respondents aged 21 years and 8 respondents aged 22 years. While there were 5 respondents who experienced severe dysmenorrhea pain with a distribution of 3 respondents aged 21 years, and 2 respondents aged 22 years

Table 3. Frequency Distribution of Pain Levels Before and After Intervention

Measurement	Frequency							
	Mild Pain		Moderate Pain		Severe Pain		No Pain	
	N	%	N	%	N	%	N	%
Pre-intervention	17	32.69	30	57.69	5	9.62	0	0
Post-intervention	37	71.15	11	21.15	0	0	4	7.69

The results of the study showed that of the 52 respondents who experienced dysmenorrhea, after the intervention, 37 respondents (71.15%) experienced mild pain, 11 respondents stated moderate pain (21.15%), no respondents experienced severe pain, and 4 respondents (7.69%) no longer felt pain.

Table 4. Analysis of the Effectiveness of SP6 Breath Relaxation Therapy and Acupressure in Adolescent Girls with Dysmenorrhea

Measurement	Mean	Mean Different	SD	P Value
Pre-Intervention	4.81	2.29	1,910	0.000
Post-Intervention	2.52		1,565	

Table 4 shows that after intervention with deep breathing therapy and SP6 acupressure, the average intensity of dysmenorrhea pain was 2.52. The difference in the average intensity of dysmenorrhea pain before and after the intervention was 2.29 with the results of statistical tests using the Wilcoxon Test 0.000. Thus proving that deep breathing therapy and acupressure are effective in reducing dysmenorrhea pain in adolescents.

DISCUSSION

Dysmenorrhea Occurrence in Adolescents

According to WHO, the age limit for adolescents is 18 to 24 years and not yet married (WHO, 2022). Adolescence is a transition period from childhood to adulthood. There are several growth and development processes, including the occurrence of menarche in adolescent girls. Based on Mulyani's research in 2022, it was stated that the incidence of dysmenorrhea is influenced by the age of menarche or the first time menstruation occurs. Early menarche before the age of 12 years, has a greater risk of experiencing dysmenorrhea because the development of the reproductive system at that age is not yet perfect, such as the number of primary ovarian follicles is still small, resulting in low estrogen hormones which result in dysmenorrhea (Nuzula, 2019). Primary dysmenorrhea is a condition of menstrual pain that is often experienced by adolescents, usually without a clear cause in the reproductive organs. This pain often affects daily activities, concentration in learning, and the quality of life of adolescents. Dysmenorrhea is influenced by several factors such as the age of menarche and the menstrual cycle (Apsara, 2022).

Based on the research results, it was found that there were 5 respondents who experienced severe dysmenorrhea pain. Poor eating and exercise habits have a significant influence on the incidence and level of primary dysmenorrhea pain in adolescents (Taqiyah, 2022). Consumption patterns and healthy lifestyles that are carried out routinely help maintain health and immunity in the body, so that the body's metabolism is better. Of the 52 respondents in this study,

the average age was 21-22 years. Vitra, 2016 stated that the age of 21-22 years is classified as late adolescence. Marlia (2019) stated that there is a relationship between age and the treatment of dysmenorrhea in adolescents. Late-stage adolescents are better able to understand themselves well and can clearly relate abstract information to their lives, including finding effective ways to overcome the dysmenorrhea pain they experience (Marlia, 2019).

The Effect of Deep Breathing Therapy on Reducing the Degree of Dysmenorrhea Pain

Breathing relaxation is one of the effective methods to reduce muscle tension and reduce the perception of pain. This technique works by reducing the body's physiological response to pain, namely by increasing oxygenation and stimulating the production of endorphins which function as natural pain relievers. Through deep breathing exercises, the parasympathetic nervous system is activated, thus triggering a more relaxed and comfortable body response.

Research by Smith (2018) found that deep breathing exercises have a significant effect in reducing the intensity of menstrual pain in adolescents suffering from primary dysmenorrhea. Brahim (2020) with a pre-experimental method on 60 samples found research results that were in line that deep breathing relaxation can effectively reduce menstrual pain.

If done correctly, Deep Breathing Relaxation Technique is effective in reducing dysmenorrhea pain. The relaxation steps carried out in this study were adjusted to the SOP for Deep Breathing Relaxation Technique, several stages of Deep Breathing Relaxation Technique include, closing the eyes, taking a deep breath through the nose in 3 counts, holding the breath for 5 to 10 seconds, and finally exhaling through the mouth slowly. Deep breathing relaxation technique can relax muscles that experience spasms, improve blood flow, and stimulate the body to release hormones that have analgesic effects, such as endorphins and encephalins. These conditions can reduce pain, especially dysmenorrhea pain.

The Effect of Acupressure Therapy on Reducing Dysmenorrhea Pain

With the increasing choice of pharmacological treatments such as nonsteroidal anti-inflammatory drugs (NSAIDs) commonly used to treat dysmenorrhea pain, non-pharmacological approaches are starting to be in high demand due to their minimal side effects and potentially high effectiveness. One of the most widely studied non-pharmacological approaches is relaxation techniques and acupressure at certain points to reduce pain intensity. Based on Table 3, the frequency distribution of pain levels before and after the intervention, it is known that there were 4 respondents who no longer felt pain.

In addition, acupressure therapy at the Sanyinjiao point (SP6) is effective in relieving menstrual pain. This is proven by Jatnika's research (2022) which states that acupressure therapy performed at the SP6 point is proven to be effective, especially if done routinely and in the long term. The SP 6 acupressure point is located about three fingers above the inner ankle, known in traditional Chinese medicine for its effects on the reproductive system and blood circulation.

According to research by Chen et al. (2019), stimulation of the SP6 point has been shown to be effective in reducing the duration and intensity of primary dysmenorrhea pain in adolescents. The effect occurs because stimulation of the SP6 point stimulates the release of endorphins, which function as natural analgesics in the body.

The Effect of Deep Breathing Therapy and SP 6 Acupressure on Reducing the Degree of Dysmenorrhea Pain

The combination of deep breathing relaxation and Sanyinjiao acupressure provides significant results in reducing the intensity and frequency of primary dysmenorrhea pain in adolescents. A study by Zhang et al. (2020) showed that the group of adolescents who underwent this combined therapy felt a more significant reduction in pain compared to the control group who only used relaxation or acupressure methods. The use of this combined method can be a safe, practical, and affordable option, so it has the potential to be developed as a standard intervention in primary dysmenorrhea pain management. Table 3 also shows that the intervention carried out in this study by combining deep breathing relaxation techniques with SP6 acupressure therapy can reduce the scale of dysmenorrhea pain from before the intervention with a scale of mild, moderate and severe pain, to having a scale of mild pain and no pain at all.

The combination of deep breathing techniques and SP 6 acupressure can reduce the intensity of dysmenorrhea pain through the following mechanisms:

1. Increased prostaglandins will trigger uterine muscle contractions which cause pain during menstruation.
2. Relaxation of skeletal muscles experiencing spasms by performing deep breathing relaxation and pressing the SP 6 point will cause vasodilation of blood vessels, resulting in increased blood flow in areas experiencing spasms and/or ischemia.
3. Stimulates the body to activate opioid receptors which provide a strong analgesic effect on the pain experienced in the form of endorphins and enkephalins.
4. Endorphin hormones will bind to opioid receptors in the nervous system and inhibit proteins that act as pain signals.
5. The enkephalin hormone, which is an endogenous pentapeptide substance, will inhibit the process of transmitting pain signals.
6. So by doing deep breathing relaxation accompanied by massaging the SP 6 acupressure point, it can effectively reduce the pain of primary dysmenorrhea.

CONCLUSIONS

Breath relaxation techniques and sanyinjiao acupressure therapy (sp6) can be effectively used as non-pharmacological alternatives in the treatment of primary dysmenorrhea pain in adolescents.

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