

ARTICLE INFORMATION

Received: August 05, 2026

Revised: August 15, 2026

Available online: August 18, 2026

at: <https://e-jurnal.iphorr.com/index.php/mchc>

LI4 and SP6 acupressure with dhikr for menstrual pain among adolescent girls

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Abstract

Background: Menstrual pain is a common complaint among adolescent girls and may interfere with daily activities, concentration, and well-being. Non-pharmacological approaches such as acupressure and dhikr may provide simple and accessible options for pain management.

Purpose: To determine the effect of acupressure massage at LI4 and SP6 combined with dhikr on menstrual pain intensity among adolescent girls.

Method: This quantitative study used a pre-experimental one-group pretest-posttest design. The study involved 25 adolescent girls who experienced menstrual pain at SMP Muhammadiyah 5 Surakarta. Participants received acupressure at LI4 and SP6 combined with dhikr when menstrual pain occurred. Pain intensity was measured using a 0–10 Numeric Rating Scale (NRS) before and after the intervention. Data normality was assessed using the Shapiro-Wilk test, and the Wilcoxon Signed-Rank Test was used for non-normally distributed paired data.

Results: The mean menstrual pain score decreased from 4.92 ± 1.412 before the intervention to 3.12 ± 1.364 after the intervention. The Wilcoxon Signed-Rank Test showed a statistically significant difference between pre-intervention and post-intervention pain scores ($Z = -4.168$; $p < 0.001$).

Conclusion: Acupressure at LI4 and SP6 combined with dhikr was associated with a significant reduction in menstrual pain intensity among adolescent girls. This combination may be considered a simple non-pharmacological approach for menstrual pain management.

Keywords: Acupressure; Adolescent Girls; Dhikr; Menstrual Pain.

INTRODUCTION

Adolescence is a phase of growth and development characterized by various physical, psychological, and intellectual changes. According to the WHO, the adolescent age range is 10 to 19 years. During this period, adolescent girls undergo puberty, marked by the onset of menarche the first occurrence of menstruation. Menstruation is the monthly discharge of blood from the uterine lining (Hartinah et al., 2023). During menstruation, some adolescents experience menstrual pain discomfort in the lower abdomen that can occur either before or during the menstrual period (Munir et al., 2024).

Data from the 2023 Central Java Provincial Health Office profile indicates that the prevalence of menstrual pain in the province reached 56%

(Puspitasari et al., 2024). Consistent with these figures, the Surakarta City Health Office recorded 138 cases of menstrual pain among adolescent girls in 2024, with 14.49% of these cases occurring within the service area of the Pajang Community Health Center (Surakarta Health Office, 2025). The Pajang Community Health Center's service area encompasses several educational institutions, including SMP Muhammadiyah 5 Surakarta. Preliminary data from the school show a menstrual pain prevalence of 59.4% among female students, indicating that menstrual pain remains a significant reproductive health issue requiring serious attention. This condition can reduce the efficiency of adolescents' daily activities particularly their

academic performance impair concentration and affect their overall well-being.

Menstrual pain is also associated with the hypersecretion of prostaglandins from the inner uterine wall. Prostaglandin F2 α (PGF-2 α) and prostaglandin F2 increase tension in the uterine wall and induce contractions of very high amplitude (Jatnika et al., 2022). Symptoms associated with menstrual pain include abdominal pain or cramps, irritability, nausea and vomiting, weight gain, back pain, headaches, acne, lethargy, and even depression (Putri & Utama, 2024).

Menstrual pain can be managed through either pharmacological or non-pharmacological approaches. Pharmacological methods typically involve the use of analgesics proven effective in alleviating menstrual pain; however, their use requires prudence and individual tailoring to ensure safety. Given this context, there is a need for simple, safe, and easily applicable non-pharmacological alternatives for adolescents, such as the use of acupressure and *dhikr* (remembrance of God). Acupressure is a therapeutic method that employs finger pressure on specific points to activate natural healing processes (Dewi et al., 2025).

Stimulating the LI4 (Hegu) and SP6 (Sanyinjiao) points helps improve blood flow and reduce uterine muscle tension. This response can trigger the release of endorphins which act as natural analgesics hereby suppressing dysmenorrhea (Muawanah et al., 2025). Dhikr also holds the potential to alleviate menstrual pain through relaxation effects that calm the mind and suppress stress hormones; this stimulates the release of endorphins as natural pain relievers and enhances comfort during menstruation (Oktaviani et al., 2023).

To relieve menstrual pain, apply pressure to acupressure points with light to moderate massage. The massage can be performed for three to five minutes using circular motions, which aims to provide a relaxing effect on the body (Afifah et al., 2023). In addition to its relaxing effects, this massage stimulates meridian points, sending signals via large nerve fibers to the brain that trigger the hypothalamus to release endorphins. Endorphins act as natural analgesics by blocking pain receptors in the brain and inducing a sense of well-being, thereby naturally alleviating menstrual pain (Walidaini, 2022).

Dhikr therapy can reduce pain through the mechanism of dhikr recitation, which produces sound

waves. Several studies have shown that these sound waves can influence the dynamics of body fluids and electromagnetic fields, thus providing a calming, relaxing effect and reducing pain (Paradella, 2025). Dhikr therapy is a form of spiritual therapy that involves repeatedly reciting words at a regular rhythm, accompanied by an attitude of surrender to God as the object of transcendence. The words used include the names of God or phrases with calming meaning, thus creating a sense of calm and helping to reduce pain intensity (Pertiwi et al., 2024).

Another research conducted indicates that administering acupressure at points LI4 and SP6 influences the reduction of dysmenorrhea (Soleha et al., 2025). Another study demonstrates that dhikr prayer relaxation therapy has a significant effect on reducing dysmenorrhea pain among midwifery students. However, most of these studies have tested the two interventions separately. Research combining acupressure massage at LI4 and SP6 with dhikr in adolescent girls is still limited (Susilawati et al., 2024).

RESEARCH METHOD

This study is a quantitative study employing a pre-experimental design. Specifically, it utilizes a one-group pretest-posttest design, which is conducted on a single group without a control group. The research was conducted at SMP Muhammadiyah 5 Surakarta, Central Java, from April 20 to May 27, 2026.

The study population consisted of 138 female students at SMP Muhammadiyah 5 Surakarta who were menstruating. A sample size of 20 respondents was determined for the study. The sampling technique employed was simple random sampling, in accordance with the inclusion and exclusion criteria. The independent variables in this study are acupressure massage at points LI4 and SP6, and dhikr. The dependent variable in this study is menstrual pain.

The instrument used for data collection in this study was an observation sheet designed to record the administration of acupressure (targeting points LI4 and SP6) and dhikr, covering details such as the participant's name and pain levels measured before and after the intervention. The Numeric Rating Scale (NRS) ranging from 0 to 10—was employed within this instrument to assess menstrual pain.

The intervention was carried out by administering acupressure at points LI4 and SP6 and reciting dhikr

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DOI: <https://doi.org/10.56922/mchc.v5i5.4208>

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in accordance with standard operating procedures: massaging point LI4 for 30 rotations while reciting dhikr for 3-5 minutes, followed by massaging point SP6 for 30 rotations while reciting dhikr for 3-5 minutes.

Following the intervention, measurements were taken using the same instrument. The data were analyzed using univariate analysis to describe the characteristics of each variable, and bivariate analysis to compare initial menstrual pain levels (pre-intervention) with final levels (post-intervention) within the same sample group.

This study began with a normality test to determine whether the data followed a normal distribution. The Shapiro-Wilk test was employed because the sample size was less than 50. As the data were not normally distributed, the Wilcoxon Signed-Rank Test was used. The results of the Wilcoxon test yielded a p-value of less than 0.05; therefore, it can be concluded that there was a reduction in menstrual pain levels among adolescent girls following the intervention.

RESEARCH RESULTS

Table 1. Mean Menstrual Pain Scores Before and After the Intervention

Variable	Mean $\pm$ SD
Pre-intervention	4.92 $\pm$ 1.412
Post-intervention	3.12 $\pm$ 1.364

Table 1. shows that the mean menstrual pain intensity prior to the intervention was 4.92 (SD = 1.412), whereas following the administration of acupressure at points LI4 and SP6 combined with dhikr, it decreased to 3.12 (SD = 1.364). These results indicate a reduction in menstrual pain intensity among respondents following the intervention shifting from the moderate pain category toward mild pain although variations in pain perception among individuals persisted, potentially influenced by physiological or psychological factors.

Table 2. Wilcoxon Signed-Rank Test Results

Variable	Z	p-value
Pre-test vs Post-test	-4.168	<0.001

Table 2. The Wilcoxon Signed-Rank Test results yielded a p-value of < 0.001. Since the p-value was less than 0.05, the null hypothesis (H0) was rejected and the alternative hypothesis (H1) was accepted; thus, it can be concluded that acupressure at points LI4 and SP6 combined with dhikr influences the reduction of menstrual pain in adolescent girls. The obtained Z-value of -4.168 indicates a decrease in menstrual pain intensity following the intervention. These results demonstrate that the administration of acupressure at points LI4 and SP6 and the practice

of dhikr have an effect on reducing menstrual pain intensity among adolescent girls.

DISCUSSION

The study results indicate that the majority of respondents experienced a reduction in menstrual pain after receiving acupressure massage at points LI4 and SP6 combined with dhikr. Wilcoxon test results showed a decrease in menstrual pain levels among the 25 respondents following the intervention. A p-value of <0.001 was obtained, which is less than 0.05. The Z-value was -4.168, indicating a reduction

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in menstrual pain intensity after the intervention. These findings demonstrate that acupressure massage at points LI4 and SP6 combined with dhikr has a significant effect on reducing menstrual pain in adolescent girls suffering from menstrual pain.

Menstrual pain is influenced by elevated prostaglandin levels in the endometrium, which cause stronger uterine contractions, thereby inducing menstrual pain. Excessive uterine contractions result in reduced blood flow to the tissues, leading to ischemia that triggers pain. The intensity of menstrual pain can also be influenced by other factors such as nutritional status (BMI), depression, dietary habits, stress, and a lack of physical exercise (Jatnika et al., 2022; Ar-rakhimi et al., 2025; Maftuchah et al., 2026).

Variations in pain levels are represented on a scale of 0 to 10, where 0 indicates a pain-free state, while 10 represents the most severe pain an individual can experience or imagine. The NRS score serves as the basis for pain evaluation, with follow-up measurements conducted within 24 hours of the initial assessment. NRS score classifications are: no pain (0), mild pain (1–3), moderate pain (4–6), and severe pain (7–10) (Pinzon-Arenas et al., 2025).

The results of this study align with another research which showed that prior to the intervention, respondents experienced moderate menstrual pain (40%) and controlled severe menstrual pain (60%). These findings indicate that higher levels of pain lead to greater disruption of daily activities among adolescents, potentially resulting in reduced academic concentration and affecting the emotional state of adolescent girls during menstruation. Given these issues, appropriate management is required to help reduce the intensity of menstrual pain so that the daily activities of adolescent girls remain uninterrupted during menstruation (Maftuchah et al., 2026).

Acupressure is a non-pharmacological therapy administered by applying pressure or massage to specific points on the body to help alleviate pain and improve organ function through neural and hormonal mechanisms. It also serves as a distraction technique that shifts focus away from pain, thereby reducing pain intensity, and is considered safe for self-administration provided the correct procedures are followed (Latifah et al., 2024; Dewi & Noorratri, 2023).

This mechanism is supported by the Gate Control Theory proposed by Melzack and Patrick Wall in

1965, which explains that pain is influenced not only by physical stimuli but also by psychological and social factors. According to this theory, there is a mechanism within the spinal cord capable of opening or closing the transmission pathways for pain signals to the brain. Consequently, stimulation via acupressure can serve to close these gates, thereby reducing the intensity of perceived pain (Cascella et al., 2023).

The LI4 (Hegu) point can induce relaxation by helping to alleviate the tension and anxiety that may exacerbate menstrual pain. Stimulating the SP6 (Sanyinjiao) point can also improve blood circulation to the uterine area, thereby reducing excessive uterine contractions and helping to relieve menstrual pain. Stimulating both points activates meridian pathways, sending signals via large nerve fibers to the brain that trigger the hypothalamus to release endorphins. Endorphins act as natural analgesics by blocking pain receptors in the brain and promoting a sense of well-being, thereby naturally reducing the pain associated with menstruation (Soleha & Zelharsandy, 2025; Walidaini et al., 2022).

Dhikr can enhance feelings of comfort and relaxation through the release of neuropeptides, thereby helping to reduce the anxiety levels experienced by adolescent girls. This state of calmness leads to reduced activity in the sympathetic nervous system the system responsible for stress and pain responses. With decreased sympathetic nervous system activity, the body's response to pain becomes more controlled, potentially reducing the intensity of the pain experienced (Paradella, 2025; Melanda et al., 2023).

The results of this study align with another research which indicates that acupressure at the LI4 and SP6 points is effective in reducing the intensity of menstrual pain experienced by adolescent girls. That study explains that stimulating these two points can help promote relaxation, improve blood circulation, and diminish pain perception, thereby alleviating the menstrual pain experienced (Maftuchah et al., 2026).

Acupressure massage targeting points LI4 and SP6, combined with the practice of dhikr (remembrance of God), is administered when menstrual pain arises; each point is massaged for 3–5 minutes while reciting dhikr to alleviate the pain. The acupressure technique employs a circular motion to induce relaxation and relieve muscle tension, thereby

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helping to reduce uterine contractions (Rahayu et al., 2025). Dhikr therapy involving the recitation of tasbih, tahmid, and takbir (Subhanallah, Alhamdulillah, Allahu Akbar) promotes a sense of calm and relaxation. Regular repetition of dhikr helps regulate breathing, reduce muscle tension, and activate the parasympathetic nervous system. These effects can help lower pain perception and stimulate the release of endorphins, the body's natural painkillers.

CONCLUSION

Acupressure at LI4 and SP6 combined with dhikr was associated with a significant reduction in menstrual pain intensity among adolescent girls. The mean pain score decreased from 4.92 ± 1.412 before the intervention to 3.12 ± 1.364 after the intervention, with a significant Wilcoxon Signed-Rank Test result ($Z = -4.168$; $p < 0.001$). Although the findings support the potential use of this combination as a non-pharmacological approach, the absence of a control group limits causal interpretation.

SUGGESTION

Adolescent girls may consider LI4 and SP6 acupressure combined with dhikr as a complementary approach to menstrual pain management when performed according to appropriate procedures. Health professionals can provide education and supervised practice on the technique. Future research should involve larger samples, control or comparison groups, standardized intervention duration, and longer follow-up to strengthen the evidence.

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