E-ISSN: 2987-209X
International Journal of Midwifery and Health Sciences
Vol. 4, Issue 1 (2026), March

The Effectiveness of Acupressure Therapy on Dysmenorrhea Among Female Adolescents at SMPN 5 Jagoi Babang West Kalimantan 2025

Lusiana[1], Putri Azzahroh [2], Bunga Tiara Carolin [3]

[1,2,3] Midwifery Study Program, Faculty of Health Sciences, Universitas Nasional, Indonesia, email: bunga.tiara@civitas.unas.ac.id

** Corresponding Author: Address; bunga.tiara@civitas.unas.ac.id, Universitas Nasional, Indonesia*

Submission date: 25/01/2026; Date of received: 01/02/2026

Abstract

Background: Adolescence is a transitional period from childhood to adulthood characterized by physical, psychological, and social changes, including the biological functioning of the reproductive organs. Menstrual pain that is not promptly managed can affect an individual's mental and physical functioning, thus requiring immediate intervention through pharmacological or non-pharmacological therapies. Acupressure therapy can be used as a treatment for dysmenorrhea by applying massage techniques to specific meridian points on the body. One of the points that can be used to relieve dysmenorrhea is the Hegu (LI4) point. **Purpose:** This study aimed to determine the effectiveness of acupressure therapy on dysmenorrhea among adolescent girls at SMPN 5 Jagoi Babang. **Methods:** This study employed a quasi-experimental design with a pretest-posttest two-group design approach. The sample consisted of adolescent girls selected using a total sampling technique. The participants were divided into two groups: the control group received no intervention, while the experimental group received acupressure therapy at the LI4 point. The paired t-test was used for within-group analysis, and the independent t-test was used for between-group analysis. **Results:** The results showed that acupressure therapy was effective in reducing dysmenorrhea among adolescent girls ($p < 0.000$). The administration of LI4 acupressure therapy was more effective than no intervention ($p = 0.000$). **Conclusion:** Acupressure therapy at the LI4 point is clinically effective and statistically significant in reducing dysmenorrhea compared to no intervention.

Keywords: Adolescents, LI4 (Hegu) Acupressure, Dysmenorrhea

Introduction

Adolescence is a transitional period from childhood to adulthood, marked by physical, psychological, and social changes, including the biological functioning of the reproductive organs [1]. The functioning of the reproductive organs is marked by menstruation in women. Some adolescents experience menstrual disorders, such as pain during menstruation (dysmenorrhea). Dysmenorrhea significantly disrupts women's daily activities and can impact work productivity [2]. Dysmenorrhea can arise due to the presence of prostaglandins, which cause uterine muscle contractions.

Dysmenorrhea has negative impacts on adolescent girls, including fatigue, lower back pain, anxiety and tension, dizziness, confusion, nausea, vomiting, diarrhea, abdominal cramps, and stomach aches, as well as impaired activity. Furthermore, dysmenorrhea in adolescent girls can disrupt learning activities, lead to difficulty concentrating, and a tendency to sleep in class during learning activities, thus impacting academic and non-academic achievement [3].

According to the 2018 Basic Health Research (Riskesdas), dysmenorrhea in Indonesia is quite high, reaching 64.25% in women, in the form of primary dysmenorrhea, incidents of 54.89%, while secondary dysmenorrhea is 9.36% [4]. Based on data from the West Kalimantan Provincial Health Office in 2023, the incidence of menstrual disorders in adolescents reached around 58%, with more than half of the cases caused by dysmenorrhea [5]. Reports from the Jagoi Babang Community Health Center indicate that adolescent girls often experience complaints of menstrual pain, but have not received education about non-pharmacological therapies that can be done to reduce pain during menstruation. This indicates a need for simple interventions that can be carried out independently and safely by adolescents at school.

One recommended treatment for dysmenorrhea is non-pharmacological therapy, including relaxation, yoga, aromatherapy, warm compresses, and acupressure therapy, which aims to reduce the intensity of menstrual pain without the side effects of medication [6]. Acupressure is known as a traditional Chinese therapy method that has been around for thousands of years and applies pressure or massage to and stimulates specific points in the body. Acupressure therapy is a development of acupuncture techniques, but the medium used is not needles, but fingers or a blunt object. The goal is to stimulate the body's natural self-healing ability by restoring the body's positive

energy balance. Acupressure therapy can be used to treat dysmenorrhea by using massage techniques on specific meridian points on the body.

One point that can help relieve dysmenorrhea is the Hegu or LI4 point, located on the back of the hand, right between the base of the thumb and index finger. Applying acupressure to the Hegu point (LI4) can increase endorphin levels. Endorphins are produced by the body in the blood and are endogenous opioid peptides in the nervous system. Endorphins themselves are useful for relieving pain. Nerve tissue stimulates the endocrine system to release responses to the body's needs and is expected to reduce the discomfort of menstrual pain [7]. This makes acupressure a potential method for application in school settings.

Previous research by Marbun & Purnamasari (2022) demonstrated that acupressure therapy effectively reduces menstrual pain. The effectiveness of acupressure therapy is seen in reducing dysmenorrhea. This reduction can be seen within 1 to 2 days of regular acupressure therapy [8]. Research by Sarmanah and Anggraeni (2023) also demonstrated the effect of acupressure massage therapy at the hegu point (LI4) on dysmenorrhea in adolescent girls at MA Mazafa Bantul, with an average menstrual pain score of 7.08 before and 4.08 after [9].

Based on the high incidence of dysmenorrhea, the limited availability of non-pharmacological treatments at the school level, and the potential of acupressure as a simple, effective, and safe method, this study aims to determine the effectiveness of acupressure therapy on dysmenorrhea in adolescent girls.

Method

1. Research design

This study used a quasi-experimental design with a pretest–posttest control group. This design was chosen to determine the effectiveness of acupressure therapy on dysmenorrhea in adolescent girls and to allow for comparison between the intervention and control groups.

2. Setting and samples

This study was conducted at a junior high school educational institution. The name of the institution is not included to maintain the generalizability of the research results. The sampling technique used was total sampling, namely, all adolescent girls

who met the inclusion criteria were included as study respondents. The inclusion criteria were adolescent girls who had menstruated, who experienced primary dysmenorrhea, and were willing to be respondents. The number of samples in this study was 32 respondents, who were divided into an intervention group (n = 16) and a control group (n = 16). The determination of the number of samples was based on the total number of respondents who met the criteria during the study period.

3. Intervention (applies to experimental studies)

In the intervention group, a dysmenorrhea scale was measured as a pretest, followed by acupressure therapy on the first day of menstruation, three times for 20 minutes with a 10-minute interval, and an evaluation was conducted after 30 minutes. The control group received no intervention, but only underwent a pretest and posttest on the dysmenorrhea scale.

4. Measurement and data collection

Dysmenorrhea was measured using the Numeric Rating Scale (NRS), a scale used to assess pain. The NRS assesses pain on a scale of 0-10, with 0 representing no pain and 10 representing severe pain. The NRS has been shown to have good validity and reliability. The instrument was used without modification. Data collection was conducted twice: before the intervention (pretest) and after the intervention (posttest). All data were collected directly by the researcher.

5. Data analysis;

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) software. Univariate analysis was used to analyze the distribution of the pretest and posttest dysmenorrhea scales. Bivariate analysis was performed using a paired t-test to analyze the effect of the pre- and post-intervention dysmenorrhea scales in each group, and an independent t-test to examine the differences in dysmenorrhea before and after the intervention between the intervention and control groups. The statistical significance level was set at $p < 0.05$.

Results

The results of dysmenorrhea measurements showed that the average before intervention was 5.00, SD 1.366, with the lowest score of 3 and the highest score of 7. The average after intervention was 1.06, SD 0.929, with the lowest score of 0 and the

highest score of 3. The average before control was 4.50, SD 1.033, with the lowest score of 3 and the highest score of 6. The average after control was 4.13, SD 1.195, with the lowest score of 2 and the highest score of 6. The results of the dysmenorrhea scale measurements can be seen in the table below.

Table 1
Mean Dysmenorrhea Scale Before and After Acupressure Therapy in the Intervention and Control Groups

Groups	n	Mean	Std. Deviation	Min	Max
Intervention					
Before	16	5,00	1,366	3	7
After	16	1,06	0,929	0	3
Control					
Before	16	4,50	1,033	3	6
After	16	4,31	1,195	2	6

The statistical results using the paired t-test p-value in the intervention group were 0.000 (<0.05), so it can be concluded that there was an effect of the dysmenorrhea scale before and after in the intervention group using acupressure therapy (LI4). The control group obtained a p-value of 0.188 (>0.05), so it can be concluded that there was no difference in the dysmenorrhea scale before and after in the control group that was not given anything. The statistical results can be seen in the table below.

Table 2
Differences in Dysmenorrhea Scale Before and After Treatment in the Intervention and Control Groups

Groups		n	Mean	*p-value*
Intervention	Before	16	5,00	0,000
	After		1,06	
Control	Before	16	4,50	0,188
	After		4,31	

Statistical results using the independent t-test showed that before the intervention, the p-value was 0.252 (>0.05), indicating no significant difference between the intervention and control groups. However, after the intervention, the p-value was 0.000 (<0.05), indicating a significant difference between the intervention and control groups. The statistical results table can be seen below.

Table 3
Table of Differences in Dysmenorrhea Scale in the intervention and control groups

Groups		Mean	Std. Deviation	*p-value*
Before	Intervention	5,00	1,366	0,252
	Control	4,50	1,032	
After	Intervention	1,06	0,928	0,000
	Control	4,31	1,195	

Discussion

Based on the average results of dysmenorrhea scale measurements, it shows that after being given acupressure therapy, female adolescents in the intervention group experienced a decrease in the intensity of menstrual pain, while in the control group that did not receive special treatment, the changes in pain that occurred were relatively small and not significant, then the results of the paired t test showed that the intervention group that was given acupressure therapy experienced a decrease in the intensity of dysmenorrhea after treatment, while the control group that was not given intervention did not show a significant change. Meanwhile, the results of the independent t-test showed that before the intervention, there was no significant difference between the intervention group and the control group in dysmenorrhea. After the intervention, there was a significant difference between the intervention group and the control group in dysmenorrhea. This shows that acupressure therapy has better effectiveness in reducing dysmenorrhea compared to no intervention.

The effectiveness of acupressure in reducing dysmenorrhea can be explained through neuroendocrine regulatory mechanisms and the body's homeostatic balance. Stimulation of the Hegu point (LI4) can influence the hypothalamic–pituitary–adrenal system (HPA axis), which plays a role in regulating stress and pain responses. Activation of this pathway helps reduce the inflammatory response and suppresses excessive prostaglandin production, which is the main mediator causing uterine contractions and menstrual pain [10]. In addition, acupressure also increases local and systemic blood flow, thus improving oxygen supply to the uterine tissue and reducing hypoxic conditions that trigger pain. Through this mechanism, the body is able to achieve a more stable physiological balance compared to without intervention [11].

The results of this study align with previous research conducted by Walidaini (2020), which stated that acupressure therapy can significantly reduce the intensity of

menstrual pain in adolescents [12]. Furthermore, research by Witt et al. (2012) explains that self-care acupressure can provide a natural analgesic effect that helps women independently control menstrual pain [13].

These results are also in line with research by Marbun and Purnamasari (2022), which stated that acupressure therapy can significantly reduce dysmenorrhea pain in adolescent girls [14]. Another study by Sarmanah and Anggraeni (2023) also showed that acupressure therapy at the LI4 point is effective in reducing the intensity of menstrual pain in school adolescents [15]. In addition, research by Witt et al. (2012) showed that acupressure provides a sustainable therapeutic effect in reducing dysmenorrhea complaints compared to the group that did not receive treatment [13].

According to the researchers' assumptions, the difference in effectiveness between the intervention and control groups was influenced by the presence of active physiological stimulation in the intervention group, which improved hormonal regulation and blood circulation during menstruation. Furthermore, the body's adaptive response to complementary therapies also played a role in increasing pain tolerance. Meanwhile, in the control group, the absence of intervention allowed the physiological mechanisms of pain to proceed naturally without therapeutic modification, resulting in relatively unchanged pain intensity.

Limitation

Several limitations need to be considered when interpreting the results of this study. This study was limited by the subjective scale used to measure dysmenorrhea pain, which is highly dependent on individual perception. Researchers were unable to control for other confounding factors such as stress levels, fatigue, physical activity, and individual pain thresholds. Therapy was administered for a limited time and frequency, so long-term effects cannot be evaluated.

Conclusion

This study showed that the average dysmenorrhea scale between before and after in the intervention group was 5.00 to 1.06, and in the control group was 4.50 to 4.31. There was a significant effect of acupressure therapy on dysmenorrhea in adolescent girls at SMPN 5 Jagoi Babang with a p-value of 0.000. There was also a difference in the effectiveness of acupressure therapy on dysmenorrhea between the intervention and control groups in adolescent girls at SMPN 5 Jagoi Babang, with a p-value of 0.000.

Ethical Considerations

This study was conducted in accordance with ethical principles of health research, including respect for individual rights, benefit, and fairness. All respondents received a clear explanation of the study's purpose, procedures, potential benefits, and possible risks before participating. Written informed consent was obtained from all respondents, and participation was voluntary, with the right to withdraw at any time without consequence. Respondents' confidentiality and anonymity were maintained by using data codes and by not including personal identification. This study has received approval from the Health Research Ethics Committee of the Faculty of Health Sciences, Universitas Nasional of Indonesia.

Acknowledgment

The authors express their deepest gratitude to the staff of the junior high school and all the young women who participated in this research. They also express their gratitude to the Faculty of Health Sciences, Universitas Nasional, for their academic support and guidance throughout the research process. They also appreciate the contributions of their supervisors and colleagues who provided valuable input during data collection and manuscript preparation.

Conflict of Interest

The author declares that there is no conflict of interest in the implementation or publication of this research.

Author contribution

Lusiana played a role in the formulation of the research concept and design, data collection, data analysis, and manuscript preparation. Putri Azzahroh and Bunga Tiara Carolin contributed to data interpretation, critical revision of the manuscript, and final approval of the published version. All authors have read and approved the final manuscript and are responsible for all aspects of the research.

References

1. Kementerian Kesehatan Republik Indonesia. (2022). Profil Kesehatan Indonesia.
2. Villasari, A. (2021). Fisiologi Menstruasi. Kediri: Strada Press.
3. Wulandari, S. (2020). Efektivitas Akupresur terhadap Nyeri Menstruasi pada Remaja Putri. *Jurnal Kesehatan Reproduksi*, 11(1).
4. Kementerian Kesehatan Republik Indonesia. (2020). Laporan Kinerja Direktorat Jenderal Kesehatan Masyarakat Tahun 2020.
5. Dinas Kesehatan Provinsi Kalimantan Barat. (2023). *Profil Kesehatan Provinsi Kalimantan Barat Tahun 2023* [Laporan kesehatan provinsi]. Pontianak: Dinas Kesehatan Provinsi Kalimantan Barat.
6. Carolin, B. T., et al. (2023). Pengaruh ekstrak kayu manis (Cinnamomum Lauraceae) terhadap dismenore pada siswi kelas IX. Jurnal Menara Medika, 6(1), 70–76.
7. Revianti,I.D., Kasus,S., & Yanto, A. (2021). Teknik Akupresur Titik Hegu (LI4) Menurunkan Intensitas Nyeri Dismenore Pada Remaja. Holistic Nursing Care Approach, 1(1).
8. Marbun, U., & Purnamasari, L. (2022). Efektivitas Terapi Akupresur Terhadap Pengurangan Dismenore Pada Mahasiswa DIII Kebidanan. Jurnal Ilmiah Kesehatan Sandi Husada, 11(1), 64–69.
9. N. Sarmanah, N. A. (2023). Pengaruh Akupresur Terhadap Penurunan Intensitas Dismenore Pada Remaja Putri Di Smp Negeri 6 Banjarsari Kabupaten Lebak. Jurnal Ilmiah Keperawatan, 9(102–104).
10. Sukarni, I., Wahyuni, S., & Nugroho, T. (2013). Kesehatan Reproduksi Wanita. Yogyakarta: Nuha Medika.

11. Revianti, R., Lestari, R., & Fitriani, A. (2021). Terapi komplementer akupresur terhadap nyeri dismenore pada remaja putri. Jurnal Kesehatan Holistik, 5(2), 78–85.
12. Walidaini, R. (2020). Pengaruh akupresur terhadap nyeri haid pada remaja di SMA 08 Pekanbaru. Jurnal Kesehatan Ilmiah Indonesia, 7(1).
13. Witt, C. M., Reinhold, T., Jena, S., Brinkhaus, B., Willich, S. N. (2012). Effectiveness of self-acupressure for women with menstrual pain. American Journal of Obstetrics and Gynecology, 206(6).
14. N. Sarmanah, N. A. (2023). Pengaruh Akupresur Terhadap Penurunan Intensitas Dismenore Pada Remaja Putri Di Smp Negeri 6 Banjarsari Kabupaten Lebak. Jurnal Ilmiah Keperawatan, 9(102–104).
15. Marbun, U., & Purnamasari, L. (2022). Efektifitas Terapy Akupresur Terhadap Pengurangan Dismenore Pada Mahasiswa DIII Kebidanan. Jurnal Ilmiah Kesehatan Sandi Husada, 11(1).