



## THE INFLUENCE OF ACUPRESSURE ON MENSTRUAL PAIN IN FEMALE ADOLESCENT STUDENTS AT SMA NEGERI 5 BANDA ACEH

### PENGARUH AKUPRESUR TERHADAP NYERI HAID PADA SISWI REMAJA PUTRI DI SMA NEGERI 5 BANDA ACEH

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#### Abstract

Menstrual pain, or dysmenorrhea, is a common menstrual disorder experienced by teenage girls that can disrupt daily activities. Menstrual pain management includes, but is not limited to, pharmacological and non-pharmacological approaches. One of the non-pharmacological treatments is called acupressure. This study aims to determine the effect of acupressure therapy on the intensity of menstrual pain among female students at SMA Negeri 5 Banda Aceh. The research employed a quantitative design with a one-group pretest and posttest quasi-experimental design. The population consisted of 153 girls, and 20 of them were selected as the sample using a purposive sampling technique. The data were collected using a Numeric Rating Scale (NRS) questionnaire from May 7th to 17th, 2025. Then, the data was analyzed using the Wilcoxon Test, which obtained a p-value of 0.000 < 0.05. This result indicated there was an acupressure effect on menstrual pain. Therefore, this finding proved that the use of acupressure influenced menstrual pain among female students at SMA Negeri 5 Banda Aceh. This study recommends that female students familiarize themselves with and practice acupressure techniques as an effort to reduce menstrual pain without relying on medication. Furthermore, female students need to be more open to seeking information and natural solutions for controlling reproductive health at an early age.

**Keywords :** acupressure, menstrual pain, adolescent female students.



### Abstrak

Nyeri haid atau disminore menjadi salah satu gangguan menstruasi yang sering dialami remaja putri dan dapat mengganggu aktivitas sehari-hari. Penanganan nyeri haid terdiri dari farmakologi dan nonfarmakologi. Salah satu penganan nonfarmakologi adalah akupresur. Tujuan penelitian ini untuk mengetahui pengaruh terapi akupresur terhadap intensitas nyeri haid pada siswi remaja putri kelas di SMA Negeri 5 Banda Aceh. Metode penelitian yang digunakan adalah Kuantitatif dengan desain Quasi Eksperimen One Group Pretest And Posttest . Penelitian ini Memiliki 153 populasi dan sebanyak 20 diambil sebagai sampel dengan teknik purposive sampling Data dikumpulkan menggunakan kuesioner Numeric Rating Scale (NRS) yang dilakukan pada tanggal 07 s/d 17 Mei 2025. Hasil uji analisis data menggunakan uji wilcoxon didapatkan nilai p-value sebesar  $0.000 < 0,05$ , yang artinya ada pengaruh akupresur terhadap nyeri haid pada siswi remaja putri. Maka kesimpulan dari penelitian ini ada pengaruh akupresur terhadap nyeri haid pada siswi remaja putri di SMA Negeri 5 Banda Aceh. Diharapkan siswi remaja putri dapat mulai mengenali dan mempraktikkan teknik akupresur secara mandiri sebagai upaya mengurangi nyeri haid tanpa ketergantungan pada obat-obatan. Selain itu, penting bagi siswi untuk lebih terbuka dalam mencari informasi dan solusi alami dalam mengelola kesehatan reproduksi sejak dini.

**Kata Kunci :** Akupresur, Nyeri Haid, Remaja Putri

## 1. INTRODUCTION

Adolescence is a period marked not only by physical and mental changes but also by gradual alterations in the reproductive system. The onset of reproductive function in females is indicated by menstruation (Mahtiana et al., 2021). However, some adolescents experience menstrual disorders such as dysmenorrhea, which is characterized by painful uterine muscle spasms during menstruation. Dysmenorrhea is one of the most common menstrual problems and often interferes with daily activities, leading to decreased productivity (Husaidah et al., 2021). According to the World Health Organization (WHO) as cited in Astiza (2021), dysmenorrhea is highly prevalent worldwide. In Indonesia, the prevalence is also significant, with around 90% of women affected. The proportion includes 72.89% with primary dysmenorrhea, 21.11% with secondary dysmenorrhea, and overall prevalence among women of reproductive age ranging from 45% to 95% (Zahroh & Faiza, 2018). Data from the Central Bureau of Statistics (2020) also report that the prevalence of dysmenorrhea in Indonesia is 64.25%, with the highest incidence among adolescents aged 15–24 years.

The condition, although not life-threatening, has substantial implications for adolescent girls, particularly students. Dysmenorrhea can cause decreased concentration, reduced enthusiasm for learning, emotional disturbances, sleep disorders, and in severe cases, school absenteeism. Reports indicate that 15% of sufferers experience restrictions in daily activities during menstruation, and 8–10% of female students miss school due to pain (Kemenkes RI, 2021). In Aceh Province, the prevalence ranges from 50% to 60%, with 54.89% categorized as primary dysmenorrhea and 45.11% as secondary (Profil Kesehatan Aceh, 2018). Dysmenorrhea is primarily caused by excessive prostaglandin production, which triggers intense uterine contractions and hormonal imbalance, especially of progesterone (Nurseptiana & Cane, 2023). If not properly managed, the pain may escalate, causing complications such as shock and loss of consciousness (Romlah et al., 2021). Therefore, appropriate management



strategies are essential to reduce its negative impact on students' academic performance and quality of life.

Treatment of dysmenorrhea can be either pharmacological or non-pharmacological. One of the effective non-pharmacological approaches is acupressure, a therapeutic technique involving firm and continuous pressure on specific body points to relieve pain, promote relaxation, and enhance well-being (Roza, 2019). Acupressure is considered safer, easier to learn and practice, and has been shown to reduce pain and increase endorphin release, thereby alleviating discomfort (Tyas et al., 2018). A preliminary survey conducted at SMA Negeri 5 Banda Aceh revealed that out of 153 female students in Grade XI, only 3 out of 8 interviewed had knowledge of and practiced acupressure to relieve menstrual pain, while the remaining 5 had no awareness of the therapy.

## 2. RESEARCH METHOD

This study employed a quantitative approach using a pre-experimental one-group pretest–posttest design. The population consisted of 153 female students in Grade XI at SMA Negeri 5 Banda Aceh. A sample of 20 respondents was selected through purposive sampling based on inclusion and exclusion criteria. The intervention involved administering acupressure therapy once daily for 15–20 minutes over three consecutive days during the first to third day of menstruation. Data on pain intensity were collected using the Numeric Rating Scale (NRS) and observation sheets. The study was conducted from May 7 to May 17, 2025. Data analysis was performed using the Wilcoxon test to determine the effect of acupressure therapy on reducing menstrual pain (dysmenorrhea).

## 3. RESULTS AND DISCUSSION

Berdasarkan Based on the results of research conducted from May 7 to May 17, 2025, on 20 female students of SMA Negeri 5 Banda Aceh with the administration of acupressure therapy, the research results can be seen as follows:

**Table 1. Frequency Distribution of Respondents' Demographic Data (n=20)**

No	Demographic Data	Frequency	Percentage (%)
1.	Age		
	16 years	4	20,0
	17 years	16	80,0
2	Address		
	Banda Aceh	5	25,0
	Aceh Besar	15	75,0

Source: Primary Data (processed, 2025)

Based on the table above, the majority of respondents in this study were aged 17 years (80%) and the majority of respondents' addresses were in Aceh Besar (75%).

**Table 2. Frequency Distribution of Menstrual Pain Before Acupressure Therapy in Female Adolescents at SMA Negeri 5 Banda Aceh (n=20)**

Menstrual Pain	Frequency	Percentage (%)
Moderate Pain (Scale 4-6)	3	15,0
Severe Pain (Scale 7-10)	17	85,0



Based on the pain scale before acupressure therapy in Table 2, the majority of respondents were in the severe pain category with a total of 17 respondents (85%).

**Table 3. Frequency Distribution of Menstrual Pain After Acupressure Therapy in Female Adolescents at SMA Negeri 5 Banda Aceh (n=20)**

Menstrual Pain	Frequency	Percentage (%)
No pain (Skala 0)	14	70,0
Mild pain (Skala 1-3)	4	20,0
Moderate Pain (Skala 4-6)	2	10,0

Based on the pain scale after acupressure therapy in Table 3, the results showed that the majority of respondents were in the no pain category with a total of 14 respondents (70%).

### Normality Test

**Table 4. Normality Test**

Group	Table 4. Uji Normalitas		p value
	<i>Shapiro-Wilk</i>		
	Statistik	Df	
Before	0,433	20	0,000
After	0,631	20	0,000

Based on the table above, it can be seen that the significance value from the Shapiro-Wilk test was  $< 0.05$ , with the pretest at 0.000 and the posttest at 0.000, indicating that the data were not normally distributed. Therefore, the Wilcoxon test was used.

### Testing Hypothesis

Table 5. Uji Wilcoxon Signed Rank		
Pain After –	Z	p Value
Pain After	-4,030	0,000

Based on the table above, the results show the pre- and post-intervention scores with a p value = 0.000, which means  $p < 0.05$ . It can be concluded that there is a significant difference in pain before and after the therapy, indicating that acupressure has an effect on menstrual pain in female students of SMA Negeri 5 Banda Aceh.

### Discussion

The results of the study show a negative Z score (-4.030), which indicates that the pain score after the treatment tended to be lower than before the treatment, meaning that there was a significant decrease. The p value = 0.000 indicates that acupressure had an effect on menstrual pain in female adolescents. This study is consistent with the research conducted by Ratna (2024) at UPTD SMP Negeri 2 Kecamatan Akabiluru, which also found a significant difference in average pain levels before and after acupressure therapy, with p value = 0.000. The study



concluded that acupressure is effective in reducing menstrual pain (dysmenorrhea) in adolescent girls and is recommended as an alternative treatment for menstrual pain.

Similar findings were also reported by Wulandari (2024), who studied the effect of acupressure at the Hegu (LI4) point on menstrual pain intensity in adolescent girls aged 13–15 years at MTs Al-Khalifah Kepanjen. The average pain score before the intervention was 5.58 and decreased to 4.08 after the intervention, with  $p$  value  $< 0.05$ . This study confirmed that acupressure at specific points can significantly reduce menstrual pain scales. In addition, Widia (2020) also reinforced these findings, showing that acupressure therapy at the Sanyinjiao point was more effective in reducing primary dysmenorrhea in adolescent girls compared to deep breathing relaxation techniques, with  $p = 0.000$ . These studies indicate that acupressure consistently and significantly reduces pain across various groups of adolescent girls.

Physiologically, the analgesic effect of acupressure is thought to be related to stimulation of specific points on the body that trigger the release of endorphins and serotonin. Endorphins act as natural analgesics produced by the body, providing comfort, reducing pain sensation, and promoting muscle relaxation (Wulandari, 2024). Furthermore, pressure on acupressure points can stimulate the nervous and endocrine systems to release hormones that reduce pain perception and improve comfort during menstruation (Dewi, 2024). In addition to endorphins, acupressure is also believed to stimulate serotonin release, which plays a role in pain modulation and uterine muscle relaxation (Kamelia & Ariyani, 2021). This mechanism is consistent with Wulandari's (2024) findings, which emphasized that stimulation of certain points can increase neurotransmitter balance, inhibiting pain signal transmission to the brain, thereby significantly reducing menstrual pain.

Research by Saputra et al. (2020) further supports that acupressure improves blood circulation and stimulates a relaxation response, which reduces muscle tension and psychological stress that often exacerbate menstrual pain. Holistically, acupressure therapy has potential as an effective, safe, low-cost, and easily self-applied non-pharmacological method for adolescent girls as a solution for menstrual pain management. Acupressure is often applied at the Sanyinjiao (SP6) point, where the spleen, liver, and kidney meridians meet, helping to relieve menstrual pain (Handayani, 2020). Stimulation at this point is believed to increase endorphin production, acting as a natural pain reliever similar to endogenous opioids in the central nervous system (Sarmana, 2023).

When acupressure points are massaged correctly, the nervous system sends signals to the endocrine system to release endorphins, thereby reducing menstrual pain. The massage is usually performed in a clockwise circular motion about 30 times for several minutes, but pressure should not be too strong to avoid excessive discomfort (Erlinawati, 2023). The significant reduction in pain after acupressure can be explained by the endorphin release mechanism, which inhibits the transmission of pain signals to the brain. Additionally, the relaxation effect helps reduce uterine muscle tension, a major cause of menstrual pain in adolescent girls (Husaidah, 2021).



Based on the results showing a significant reduction in menstrual pain after acupressure, the author concludes that acupressure is an effective and safe method for relieving menstrual pain in adolescent girls. This technique not only provides an analgesic effect but also improves physical and psychological well-being without the side effects of medication. The author assumes that the reduction in pain intensity is due to the integration of neurophysiological and psychological mechanisms, where acupressure stimulation triggers the release of natural analgesic hormones such as endorphins and serotonin, while improving blood flow, reducing uterine tension, and alleviating stress.

This assumption is supported by Maulida (2022), who highlighted the positive effects of endorphins and serotonin in reducing pain perception through neuroendocrine mechanisms. The significant reduction from 85% in the severe pain category before therapy to 70% in the no pain category after therapy confirms the effectiveness of these biochemical processes. Furthermore, the improvement in psychological well-being indicated by relaxation and reduced tension supports the role of acupressure as a holistic, non-pharmacological solution to free adolescents from reliance on medication and its potential side effects.

The researcher concludes that acupressure therapy is an effective method that significantly reduces menstrual pain in adolescent girls by stimulating neuroendocrine mechanisms, endorphin and serotonin release, and improved blood circulation, which reduces uterine muscle tension and psychological stress. Therefore, acupressure is not only safe and easy to apply but is also recommended as a potential self-care intervention to improve the quality of life of adolescent girls with dysmenorrhea. It is further recommended that acupressure be taught and widely practiced in schools and families as a self-management strategy for menstrual pain.

#### 4. CONCLUSION

The results of the Wilcoxon test showed a significance value of  $p = 0.000 < 0.05$ , which means that there was a significant difference in pain levels before and after the acupressure therapy. Thus, it can be concluded that acupressure therapy is effective in reducing the intensity of menstrual pain among female adolescents at SMA Negeri 5 Banda Aceh. It is expected that the respondents can apply the acupressure technique independently when experiencing menstrual pain and share this information with their peers so that more adolescent girls can benefit from this technique.

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