THE EFFECTIVENESS OF *SELF-ACUPRESSURE* GUIDANCE ON THE REDUCTION OF *PRIMARY DYSMENORRHEA*

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Abstract
Background: Incidence rates of Dysmenorrhea is average over 50% worldwide, with Indonesia reporting 55% and East Java specifically showing a prevalence of 71.3%. Dysmenorrhea can reduce sleep quality and have an impact on changes in a person's mood which will cause stress, depression and anxiety. The aim of this study was to determine the effect of self-accupressure guidance on reducing primary dysmenorrhoea pain in adolescent girls. **Method:**. This was a quasi-experimental design with a one-group pretest-posttest approach. The study population comprised all 66 female students at Manbail Futuh Vocational School. A purposive sampling technique was utilized to select participants who met specific inclusion criteria. This selection process resulted in a sample of 18 adolescent girls. Participants received standardized self-acupressure guidance. The intervention involved a structured guidance session followed by a period where participants were encouraged to practice self-acupressure daily during their menstrual cycle. Pain intensity was measured using a validated numerical rating scale (NRS) before the intervention and after the intervention, specifically during their subsequent menstrual period. The effectiveness of the self-acupressure guidance was assessed by comparing the pretest and posttest pain scores. **Result:** The results of the Wilcoxon test using SPSS For Windows software with a level of significance obtained p-Value 0.001 < 0.05. Based on the above, it is proven that there was an influence of self-accupressure guidance on reducing primary dysmenorrhea pain experienced by young women. **Conclusion:** Self-acupressure guidance was effective in reducing the intensity of dysmenorrhea in adolescent girls. This research can be used as one of the interventions in treatment other than using drugs.

Keyword : *Reproductive Health, dysminorrhoea, self-acupressure*

INTRODUCTION

Primary dysmenorrhea, characterized by painful menstruation without underlying gynecological conditions, is a widespread issue among women globally. The World Health Organization (WHO) reports that approximately 90% of women experience dysmenorrhea, with 10-15% suffering from severe forms. Incidence rates average over 50% worldwide, with Indonesia reporting 55% and East Java specifically showing a prevalence of 71.3%. A preliminary study at SMK Manbail Futuh Jenu revealed that 7 out of 10 adolescent girls experienced

menstrual abdominal pain, 8 found it disruptive to their activities, and 9 resorted to rest alone for pain relief, indicating a lack of effective coping strategies (Marlinda *et al.*, 2022). *Primary dysmenorrhea* felt from the first time they got their period (1-2 days) and no problems were found from the reproductive organs. Event *Dysmenorrhea* Of course, it can interfere with all forms of daily life activities, reduce the quality of sleep and have an impact on changing a person's mood which will cause stress, depression and cause anxiety (Selvia and Amru, 2021).

The pain of primary dysmenorrhea stems from intense uterine muscle contractions, triggered by elevated levels of prostaglandins. These natural chemicals, produced by the uterine lining, are potent myometrial stimulants and vasoconstrictors. High prostaglandin levels lead to increased uterine tone and excessive contractions, causing pain. Additionally, dysmenorrhea can be influenced by progesterone levels; higher progesterone, typically observed after several menstrual cycles when the corpus luteum is well-developed, can also contribute to the pain.

Beyond physical discomfort, dysmenorrhea significantly impacts daily life, often disrupting activities, reducing sleep quality, and negatively affecting mood. These psychological burdens can manifest as stress, depression, and anxiety, as highlighted by Selvia and Amru (2021). (Sari and Listiarini, 2021).The reluctance of some adolescents to discuss dysmenorrhea with parents, teachers, or healthcare professionals (Indrayani, Astiza and Widowati, 2021) further exacerbates these issues, underscoring the need for accessible and effective self-management techniques.

Among non-pharmacological interventions, acupressure stands out as a promising solution. Derived from traditional Chinese medicine, acupressure involves applying pressure to specific acupuncture points often referred to as "needleless acupuncture." Rooted in Meridian theory, this manipulative and body-based modality offers numerous benefits, including pain relief, relaxation, and overall wellness. Self-acupressure, in particular, empowers individuals to manage their symptoms independently using fingers or blunt objects, making it a highly practical approach (Walidaini, 2022). Empowering young women with knowledge

and skills in self-handling dysmenorrhea is crucial for promoting better health behaviors and preventing long-term negative health impacts (Indrayani, Astiza and Widowati, 2021). Therefore, this study aims to analyze the effectiveness of self-acupressure guidance in reducing primary dysmenorrhea pain among young women.

METHOD

This study was a Pre-Experimental design, specifically a one-group pretest-posttest design. The target population for this study comprised all 66 female students of SMK Manbail Futuh Tuban in 2024. The researcher determined samples based on the following inclusion and exclusion criteria: Inclusion Criteria: Students that willing to participate as respondents, students experiencing dysmenorrhea, able to communicate well and cooperatively, students not using pain relievers for dysmenorrhea and students not residing in Islamic boarding schools. Exclusion Criteria: students with physical mobility barriers (e.g., injuries), students experiencing reproductive diseases (e.g., cysts), and students with congenital/chronic diseases. Sample of 18 subjects was determined through simple random sampling from the eligible students who met the inclusion criteria. This approach aimed to ensure a sufficient number of participants for the within-group analysis.

The independent variables in this study were *self-acupressure guidance and* dysminorea pain intensity as bound variables. The researcher directly guided the intervention carried out in accordance with the guidance of acupressure therapy, namely by pressing on the acupressure points of the SP-6, LI-4 and LR-3 meridian pathways to relieve menstrual pain carried out by the respondent directly with pressure guidance carried out for 5 minutes each at each point (1 minute consists of 5 cycles, one cycle is carried out with pressure at the acupressure point for 10 seconds and rest for 2 seconds. Measurement of pain picture on days 1-3 of menstruation was measured before and after *self-acupressure* 1 time a day with a duration of 15 minutes with a *Numeric Rating Scale* (NRS) Questionnaire. The researcher collected the measurement sheets that had been filled out by the respondents and checked their completeness on the first day, then the researcher

monitored the implementation of *self-acupressure* and pain measurement during the research period on the second and third days using Whatsapp *Video Call communication media.*

The independent variable in this study was self-acupressure guidance, with dysmenorrhea pain intensity as the dependent variable. The intervention involved direct, systematic guidance from the researcher on self-acupressure therapy. The precise steps were as follows: Acupressure Points: Respondents were instructed to apply pressure to specific acupressure points on the SP-6, LI-4, and LR-3 meridian pathways, known for relieving menstrual pain. Pressure Technique and Duration: For each designated acupressure point, pressure was applied for 5 minutes. This 5-minute period consisted of 5 cycles, where each cycle involved 10 seconds of pressure followed by 2 seconds of rest. Frequency and Overall Duration: The self-acupressure intervention was performed once daily during days 1-3 of menstruation, with each daily session lasting a total of 15 minutes (5 minutes per point x 3 points). Supervision and Monitoring: The researcher directly guided the initial intervention and collected completed pain measurement sheets on the first day. For subsequent days (days 2 and 3) of the research period, the researcher monitored the implementation of self-acupressure and pain measurements remotely using WhatsApp Video Call communication. Dysmenorrhea pain intensity was measured using a Numeric Rating Scale (NRS) Questionnaire both before (pretest) and after (posttest) the self-acupressure intervention on days 1-3 of menstruation.

Data analysis was performed using SPSS 20 software. Univariate Analysis used Wilcoxon Signed-Rank Test.

RESULT AND DISCUSSION

The general data in this study contains the characteristics of the respondents including age, menstrual cycle, menstrual pain begins to be felt, pain is presented in full in the form of the following table:

Table 1. Distribution of Respondent Characteristics

No.	Age	Frequency	Percentage(%)
1	17 Years	6	33.3
2	18 Years	10	55.6
3	19 Years	2	11.1

It	Menstrual Cycle	Frequency	Percentage(%)
	Total	18	100
1	Orderly	13	72.2
2	Irregular	5	27.8
	Total	18	100
It	Age	Frequency	Percentage(%)
1	Day 1	11	61.1
2	Day 2	7	38.9
	Total	18	100

General data that of the 18 female respondents at SMK Manbail Futuh with age characteristics, most of them were 18 years old, as many as 10 respondents (55.6%), the menstrual cycle was mostly regular, as many as 13 respondents (72.2%), that of the 18 female respondents at SMK Manbail Futuh Jenu with the characteristics of pain starting to be felt, most of them were obtained on the 1st day as many as 11 respondents (61.1%).

Table 2. Effectiveness of *self-acupressure* guidance on the reduction of *primary dysmenorrhea pain*

It	Age	Pretest		Posttest	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	No Pain	0	0	0	0
2.	Light	2	11.1	9	50.0
3.	Keep	11	61.1	9	50.0
4.	Heavy	5	27.1	0	0
5.	Very Heavy	0	0	0	0
	Total	18	100	18	100
Wilcoxon sign rank test p-Value= 0.001					

Before the self-acupressure guidance, the majority of respondents (61.1%, n=11) reported moderate pain, while 27.8% (n=5) experienced severe pain and 11.1% (n=2) mild pain. Following the intervention, a significant shift in pain intensity was observed, with 50.0% (n=9) reporting mild pain and 50.0% (n=9) reporting moderate pain. Notably, no respondents reported severe pain post-intervention. The numerical mean NRS score before the intervention was 5.94 ± 1.15 (mean ± SD), indicating moderate-to-severe pain. After the self-acupressure guidance, the mean NRS score significantly decreased to 3.44 ± 0.69 (mean ± SD), representing mild-to-moderate pain. A Wilcoxon signed-rank test confirmed

a statistically significant reduction in menstrual pain intensity ($p < 0.001$), indicating that self-acupressure guidance had a positive effect on reducing primary dysmenorrhea pain in adolescent girls at SMK Manbail Futuh Jenu. Specifically, 4 respondents moved from severe to moderate pain, 1 from severe to mild, and 6 from moderate to mild pain. 5 respondents continued to experience moderate pain, and 2 continued to experience mild pain.

Self-acupressure, involving the application of pressure to specific acupoints such as SP-6, LI-4, and LR-3 for 5 minutes each (1 minute consisting of 5 cycles of 10 seconds pressure followed by 2 seconds rest), is a non-invasive, cost-effective, and safe intervention for various health concerns, including dysmenorrhea (Fibrila, Ridwan and Widiyanti, 2023). The significant reduction in both categorical pain levels and mean NRS scores observed in this study supports the efficacy of self-acupressure in alleviating primary dysmenorrhea. This effect is largely attributed to the modulation of prostaglandin levels and the release of endorphins, which act as natural pain relievers. High concentrations of prostaglandins, particularly PGF2α, in the endometrium and menstrual blood are known to cause uterine contractions and ischemia, leading to dysmenorrhea (Selvia and Amru, 2021). By conducting self-acupressure on Day 1 and Day 2 of menstruation, when prostaglandin levels are highest, the intervention aims to counteract these physiological mechanisms and accelerate pain reduction.

Despite the overall positive outcome, some respondents did not achieve a complete resolution of pain, remaining in the moderate or mild categories post-intervention. Several factors could contribute to this variation. The researchers hypothesize an association with menarche age and irregular menstrual cycles. Early menarche (e.g., < 12 years) has been linked to increased severity of primary dysmenorrhea due to the immaturity of reproductive organs and hormonal fluctuations (Hurin'in, Putri and Puspitasari, 2021). Irregular menstrual cycles, common in adolescents (Rosyita *et al.*, 2024), can also complicate dysmenorrhea management, potentially indicating underlying hormonal imbalances or differing prostaglandin responses that may not be fully addressed by acupressure alone.

Furthermore, individual differences in pain perception, adherence to the self-acupressure protocol, and physiological responses to the intervention could

play a role. The precision of point location and the amount of pressure applied during self-acupressure, which can vary between individuals, are critical for optimal effectiveness. It is also possible that a subset of respondents might have higher baseline prostaglandin levels or a greater sensitivity to their effects, requiring more intensive or prolonged intervention. This study's findings are consistent with a growing body of evidence supporting acupressure for dysmenorrhea. For instance, a systematic review and meta-analysis of RCTs by Chen et al. (2018) found that acupressure significantly reduced pain intensity in women with primary dysmenorrhea. Similarly, studies in East Asian populations, such as research on acupressure at SP6 and LI4 in adolescents from China (Wang et al., 2017) and Korea (Kim et al., 2011), have demonstrated comparable pain-reducing effects. A review by Cho and Kim (2014) also highlighted the effectiveness of various acupressure points, including SP6, in managing menstrual pain. While our study utilized the same principles, direct comparison with specific RCTs from different cultural contexts (e.g., Iran) could offer insights into generalizability and population-specific efficacy, suggesting a need for more diverse comparative studies in the future.

Several limitations in this study warrant consideration. The reliance on questionnaires for data collection introduces the possibility of response bias, where respondents might not fully understand the questions or provide dishonest answers, potentially affecting the representativeness of the results. Specifically, subjective pain measurement using the NRS questionnaire, while widely accepted, can be influenced by individual interpretation. Moreover, the self-administered nature of acupressure means that the consistency and precision of pressure application at the acupoints may vary between respondents, potentially differing from researcher-administered acupressure and impacting treatment efficacy.

Crucially, the one-group pretest-posttest design inherently possesses low internal validity due to the absence of a control or comparison group. This limitation means that observed changes in dysmenorrhea pain intensity cannot be definitively attributed solely to the self-acupressure intervention, as other confounding factors (e.g., natural fluctuations in pain, placebo effect, or concurrent activities) might influence the outcome. This should be considered a

significant limitation of the study, necessitating future research with robust designs, such as randomized controlled trials, to establish causality more definitively.

CONCLUSION AND SUGGESTION

Self-acupressure guidance has been shown to be an effective intervention for reducing the intensity of menstrual pain in adolescent girls at SMK Manbail Futuh Jenu. This research highlights the importance of exploring non-medical therapies alongside conventional treatments like analgesic drugs. Beyond medication, various methods such as acupressure, yoga, herbal therapy, relaxation techniques, and adequate sleep can significantly contribute to pain reduction during menstruation. Therefore, self-acupressure can be considered a valuable and accessible intervention to manage menstrual pain. To further strengthen the evidence and broaden the applicability of self-acupressure, future studies should adopt more rigorous methodologies. Specifically, implementing a Randomized Controlled Trial (RCT) design is recommended to establish a clearer cause-and-effect relationship. Furthermore, increasing the sample size would enhance the statistical power and generalizability of the findings to a wider population. Exploring the effectiveness of self-acupressure in different settings, beyond the current school environment (e.g., in various community health centers or other educational institutions), would also provide valuable insights into its adaptability and effectiveness across diverse contexts.

DECLARATION

This section contains important declarations regarding the research, including conflicts of interest, author contributions, ethical approvals, funding sources, data availability, and acknowledgments.

Conflict of Interest

There is no conflict of interest in this research

Authors' Contribution

The first author is in charge of conducting a research plan, coordinating with the research site, providing guidance for treatment interventions, processing and analyzing research results. The second author is in charge of providing guidance on treatment interventions as well as editing the results and discussing the research.

Ethical Approval

Funding Source

Data Availability

The research findings are available upon reasonable request.

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