



The Efficacy of Health Insurance Agency (BPJS) Endorphin Pocket Book in Managing Primary Dysmenorrhea in Adolescents

Neny Yuli Susanti^{1*}, Herliana Riska², Lia Fitria¹, Nur Rahmawati Sholihah³, Miftakhur Rohmah⁴, Ika Wijayanti⁵

¹ Midwifery Professional Education Study Program, Faculty of Health Sciences, Ibrahimy University, Indonesia

² D3 Midwifery, Vocational School, Sebelas Maret University, Indonesia

³ Bachelor's Degree in Midwifery, Faculty of Health, Jenderal Achmad Yani University, Indonesia

⁴ Midwifery Professional Study Program, Faculty of Midwifery, Strada Indonesia University, Indonesia

⁵ Applied Bachelor of Midwifery Study Program, Department of Midwifery, Ministry of Health Polytechnic of Health Semarang, Indonesia

Email: nenyylisusanti@gmail.com

* Corresponding author

Article Info

Keywords:
Adolescent Girl;
Health;
Education;
Non-Pharmacological
Treatment;
Pocket Book;
Primary
Dysmenorrhea;

Abstract

Background: Primary dysmenorrhea significantly disrupts daily activities and diminishes the quality of life among adolescent females. **Objective:** This study aimed to assess the effectiveness of the '[Name]' Endorphin' pocketbook in enhancing adolescents' knowledge, attitudes, and skills in managing menstrual discomfort through non-pharmacological methods. **Method:** A quasi-experimental study with a pretest-posttest non-equivalent control group design was conducted. Sixty participants were divided equally into intervention and control groups. **Results:** The Wilcoxon test showed statistically significant improvements in knowledge and skills ($p < 0.05$), but no significant change in attitudes ($p > 0.05$). Furthermore, the Mann-Whitney test revealed significant differences between the two groups across all three variables ($p < 0.05$). **Conclusion:** The pocketbook effectively improves adolescents' knowledge and practical skills regarding primary dysmenorrhea, though it has not yet significantly altered attitudes. This educational tool holds substantial potential for integration into adolescent reproductive health programs.

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Received 18/01/2026

Revised 02/04/2026

Accepted 23/06/2026

How to Cite:

Susanti NY, Riska H, Fitria L, Sholihah NR, Rohmah M, Wijayanti I. The Efficacy of Health Insurance Agency (BPJS) Endorphin Pocket Book in Managing Primary Dysmenorrhea in Adolescents. J. Kesehat. Reproduksi [Internet]. 2026 Jun. 17(1):1-10. Available from: <https://doi.org/10.58185/jkr.v17i1.459>

INTRODUCTION

Adolescence is a multifaceted transitional stage from childhood to adulthood, marked by profound biological, emotional, and social transformations. The World Health Organization (WHO) defines adolescents as individuals aged 10 to 19 years who experience swift biological and psychosocial maturation.¹ This developmental phase poses significant health risks, notably including reproductive health complications such as dysmenorrhea. Dysmenorrhea is characterized by menstrual discomfort typically localized in the lower abdomen, lumbar region, thighs, and, in some instances, the breasts.²

Primary dysmenorrhea arises from elevated levels of prostaglandins, typically manifesting 2 to 3 years subsequent to menarche, with a peak prevalence observed between the ages of 15 and 25 years. The severity of pain generally diminishes with advancing age or after childbirth.² The high prevalence of dysmenorrhea among adolescents is exacerbated by limited knowledge, negative attitudes, and insufficient skills in managing menstrual discomfort. Research by Lutfatul, Nabila, and Aprilia (2021) indicated that while most adolescents possessed moderate knowledge about dysmenorrhea, they exhibited predominantly negative attitudes toward non-pharmacological management and lacked practical pain-relief skills. Such conditions increase the likelihood of inappropriate pain management strategies, including the unsupervised use of analgesics, which may elicit deleterious side effects.³

Globally, dysmenorrhea affects up to 90% of women, with prevalence rates of 62.3% reported in the United States and 72% in Sweden. In Indonesia, the prevalence is estimated at 64.25%, with adolescents being particularly affected.⁴ In East Java Province, approximately 54.89% of adolescent females report experiencing primary dysmenorrhea.⁵ Furthermore, a study at SMA Ibrahimy 2 Sukorejo established that all participants experienced mild to moderate dysmenorrhea.⁶ A preliminary investigation conducted at Ibrahimy 3 Sukorejo Junior High School on December 25, 2024, revealed that among 30 female pupils, 5 endured severe menstrual pain, 10 suffered from moderate pain, and 15 reported mild pain, while only 10 students demonstrated comprehension regarding appropriate dysmenorrhea management strategies.

Dysmenorrhea can adversely impact daily functioning and academic achievement among adolescents.⁷ Inadequately addressed menstrual pain may hinder concentration, diminish motivation for learning, and increase school absenteeism. Consequently, implementing effective interventions is imperative.⁸ Management strategies for dysmenorrhea encompass both pharmacological and non-pharmacological modalities.⁹ Although pharmacological solutions, such as non-steroidal anti-inflammatory drugs (NSAIDs) like mefenamic acid and ibuprofen, effectively alleviate pain, prolonged unsupervised usage entails risks, including gastrointestinal disturbances and bleeding.¹⁰ Conversely, non-pharmacological strategies, including warm compresses, relaxation techniques, and

endorphin massage, are safer for extended use.¹¹ Investigations by research have substantiated the efficacy of endorphin massage in substantially reducing dysmenorrhea intensity without significant adverse effects.

Promotional and preventive initiatives through health education are vital to enhance adolescents' knowledge and skills regarding dysmenorrhea management.¹² Printed educational materials, such as pocketbooks, are effective tools for health education due to their practicality, clarity, and capacity to convey succinct and engaging information. As posited by Notoatmodjo (2012), educational media are instrumental in facilitating learning and fostering healthy behaviors.¹³ Integrating health education with practical guidance through the "BPJS Endorphin" pocketbook is expected to strengthen adolescents' ability to manage dysmenorrhea independently. Therefore, this study aims to assess the efficacy of the "BPJS Endorphin" pocketbook as a pedagogical resource to enhance knowledge, attitudes, and skills among adolescent females at Ibrahimy 3 Sukorejo Junior High School, Situbondo, in managing primary dysmenorrhea through non-pharmacological approaches.

Printed educational materials, such as pocketbooks, are highly effective for health education due to their portability, visual appeal, and capacity to facilitate independent learning.¹⁴ Furthermore, non-pharmacological approaches including endorphin massage, relaxation techniques, and physical exercise are widely recommended as safe, accessible strategies to reduce menstrual pain and improve quality of life.¹⁵ Integrating these practical guidelines into a structured educational tool is expected to strengthen adolescents' self-management abilities. Therefore, this study endeavors to assess the efficacy of the "BPJS Endorphin" pocketbook in enhancing the knowledge, attitudes, and skills regarding primary dysmenorrhea management among adolescent females at Ibrahimy 3 Sukorejo Junior High School, Situbondo.

METHODS

This study utilized a quasi-experimental framework employing a pretest-posttest non-equivalent control group design. The sample comprised 60 eighth-grade female students from Ibrahimy 3 Sukorejo Junior High School, selected through purposive sampling based on specific inclusion and exclusion criteria to mitigate potential bias. The subjects were assigned non-randomly into two cohorts: an intervention group and a control group, each consisting of 30 students.

Data collection involved questionnaires to evaluate knowledge and attitudes, alongside observational checklists to assess practical skills. The observational checklist was adapted from established protocols for non-pharmacological pain management, specifically drawing from methodologies used in studies on endorphin massage and health education. The intervention group received the "BPJS Endorphin" pocketbook as a pedagogical tool. The intervention mechanism

consisted of a structured educational session where participants were taught to use the pocketbook as a guide for performing endorphin massage a light-touch technique designed to stimulate the body's natural pain-relieving chemicals. The pocketbook provided step-by-step instructions and visual aids to facilitate understanding and practical application. Conversely, the control group received no intervention throughout the study.

Statistical analysis was performed utilizing the Wilcoxon signed-rank test to examine intra-group variations and the Mann-Whitney U test to compare outcomes between the intervention and control groups. The statistical significance threshold was set at $p < 0.05$. This research was approved by the Health Research Ethics Committee of the Institute of Health Sciences Banyuwangi, with ethical clearance number 193/03/KEPK-STIKESBWI/V/2024-2025.

RESULTS

The results of this study present the differences in adolescents' knowledge, attitudes, and skills regarding the management of primary dysmenorrhea before and after the intervention using the "BPJS Endorphin" pocketbook. Data analysis was conducted to evaluate the effectiveness of the educational intervention among respondents at Ibrahimy 3 Sukorejo Junior High School. The findings are presented in the following tables.

Table 1. Differences in knowledge, attitude, and skills of adolescent at Ibrahimy 3 Junior High School in dealing with primary dysmenorrhea before and after the intervention

Knowledge	Before		After		P-value
	Frequency	Percentage	Frequency	Percentage	
Good	1	3,3%	26	86,7%	<0,01
Sufficient	12	40,0%	4	13,3%	
Poor	17	56,7%	0	0%	
Total	30	100%	30	100%	
Attitude					
Good	0	0%	0	0%	0,25
Sufficient	0	0%	5	16,7%	
Poor	30	100%	25	83,3%	
Total	30	100%	30	100%	
Skills					
Skilled	0	0%	27	90%	<0,01
Unskilled	30	100%	3	10%	
Total	30	100%	30	100%	

Table 1 illustrates the differences in knowledges attitudes, and skills among adolescents at Ibrahimy 3 Junior High School regarding the management of primary dysmenorrhea before and after the intervention using the "BPJS Endorphin" pocket book. The results demonstrated a substantial improvement in the respondents' knowledge after the intervention. Prior to the intervention, the majority of respondents were categorized as having poor knowledge, accounting for 56.7% (17 respondents), while only 3.3% (1 respondent) had good knowledge. Following the intervention, the proportion of respondents with good knowledge increased markedly to 86.7% (26 respondents), and

no respondents remained in the poor category. Statistical analysis showed a p-value of <0.01 , indicating a significant difference in knowledge before and after the intervention.

Regarding attitudes, all respondents (100%) initially demonstrated poor attitudes toward the management of primary dysmenorrhea. After the intervention, 16.7% (5 respondents) achieved a sufficient attitude category, while 83.3% (25 respondents) remained in the poor category. However, the statistical test yielded a p-value of 0.25, indicating that the intervention did not produce a statistically significant improvement in adolescents' attitudes. This finding suggests that changes in attitude may require a longer intervention period or additional supportive educational strategies to achieve significant behavioral transformation.

Furthermore, the intervention showed a significant effect on respondents' skills in managing primary dysmenorrhea. Prior to the intervention, all respondents in the intervention group (100%) were categorized as unskilled. After receiving the educational intervention, 90% (27 respondents) became skilled, while only 10% (3 respondents) remained unskilled. The Wilcoxon signed-rank test revealed a p-value < 0.01 , confirming a significant improvement in adolescents' practical skills after exposure to the "BPJS Endorphin" pocketbook. Overall, these findings indicate that the pocketbook intervention was highly effective in enhancing both knowledge and practical skills related to the non-pharmacological management of primary dysmenorrhea among adolescents.

Table 2. Differences in knowledge, attitude, and skills among adolescents at Ibrahimy 3 Junior High School in managing primary dysmenorrhea before and after intervention in the control group

Knowledge	Before		After		P-value
	Frequency	Percentage	Frequency	Percentage	Frequency
Good	0	0%	0	0%	1,000
Sufficient	9	30,0%	9	30,0%	
Poor	21	70.0%	21	70.0%	
Total	30	100%	30	100%	
Attitude					
Good	0	0%	0	0%	1,000
Sufficient	0	0%	0	0%	
Poor	30	100%	30	100%	
Total	30	100%	30	100%	
Skills					
Skilled	0	0%	0	0%	1,000
Unskilled	30	100%	30	100%	
Skills	30	100%	30	100%	

Table 2 demonstrates that there were no differences in the levels of knowledge, attitudes, and skills among adolescents in the control group before and after the intervention. Regarding knowledge, the majority of respondents were categorized as having poor knowledge both before and after the observation period, accounting for 70.0% (21 respondents), while 30.0% (9 respondents) had sufficient knowledge. No respondents were classified as having good knowledge. The statistical analysis revealed a p-value of 1.000, indicating that there was no significant change in adolescents' knowledge regarding the management of primary dysmenorrhea in the control group.

Similarly, the findings related to attitudes showed that all respondents (100%) remained in the poor attitude category both before and after the intervention period. No improvement was observed among participants, as reflected by the p-value of 1.000, which indicates the absence of a statistically significant difference in attitudes toward non-pharmacological management of primary dysmenorrhea. These findings suggest that without educational intervention, adolescents' attitudes toward dysmenorrhea management tend to remain unchanged.

The skills variable also demonstrated no improvement in the control group. All respondents (100%) were categorized as unskilled both before and after observation, and none achieved the skilled category. The statistical test yielded a p-value of 1.000, confirming that there was no significant difference in adolescents' practical skills in managing primary dysmenorrhea. Overall, these findings indicate that the absence of educational media or intervention in the control group did not contribute to improvements in knowledge, attitudes, or skills related to dysmenorrhea management among adolescents at Ibrahimy 3 Junior High School.

DISCUSSION

The participant demographic in this study, where 86.7% of respondents were 13 years of age, is highly representative of the early adolescent population most affected by primary dysmenorrhea. This finding is consistent with recent research, who identified the age range of 12 to 15 years as a critical period for the onset of menstrual-related dilemmas in Indonesian junior high school students. According to WHO, early adolescence (10–14 years) is characterized by rapid physiological changes, including menarche, which often leads to the first experiences of primary dysmenorrhea. Furthermore, emphasize that 13-year-old adolescents are a primary demographic for health interventions because they are in the early stages of managing their reproductive health and often lack established non-pharmacological coping mechanisms.¹⁰ The preponderance of 13-year-olds in both the intervention (90%) and control (83.3%) cohorts of this study ensures that the findings are pertinent to the developmental attributes and health challenges faced by early adolescents in Indonesia.

Post-intervention assessments indicated a pronounced enhancement in both knowledge and skill proficiencies in adolescents for the management of primary dysmenorrhea. The proportion of individuals exhibiting proficient knowledge escalated dramatically from 3.3% to 86.7%, alongside a rise in adept respondents from 0% to 90% ($p < 0.01$). Despite an observable transition in attitude classifications from 'poor' to 'moderate', this shift did not achieve statistical significance ($p = 0.25$). Such outcomes imply that the utilizations of the pocket book were efficacious in augmenting cognitive comprehension and practical competencies; however, the intervention exhibited diminished efficacy in facilitating immediate alterations in attitude.

The post-intervention result of this study demonstrate a significant enhancement in knowledge and skill proficiencies among adolescents, which is consistent with recent research on health education interventions. For instance, found that the use of structured educational media, such as pocketbooks and digital guides, led to substantial improvements in the cognitive and psychomotor domains of Indonesian adolescents regarding dysmenorrhea management.⁹ The dramatic increase in proficient knowledge (from 3.3% to 86.7%) and adept skills (from 0% to 90%) in this study mirrors the findings of Neny (2026), who reported that portable educational tools are highly effective for teaching practical techniques like endorphin massage.¹⁶

However, the non-significant shift in attitude ($p = 0.25$) observed in this study is also corroborated by previous research. Hurip (2025) and Zahrotun (2025) noted that while knowledge and skills can be rapidly acquired through educational interventions, attitudes are often more resistant to immediate change as they are deeply influenced by personal beliefs and social norms. This suggests that while the "BPJS Endorphin" pocketbook was efficacious in augmenting cognitive comprehension and practical competencies, a more intensive or longer-term intervention may be required to facilitate significant alterations in attitude among early adolescents.

Conversely, the control group exhibited no statistically significant transformations in knowledge, attitudes, or skills throughout the observational interval ($p = 1.000$ across all parameters), thereby indicating a lack of progress in the absence of intervention. Utilizing the Mann–Whitney U test illustrated significant disparities between the intervention and control cohorts across all examined variables. The intervention group manifested considerably elevated mean ranks in knowledge (45.17 vs. 15.83), attitudes (41.30 vs. 19.70), and skills (45.50 vs. 15.50), with $p < 0.01$ for all comparative analyses. These findings suggest that the 'BPJS Endorphin' pocket book intervention markedly augmented adolescents' knowledge, attitudes, and skills in the non-pharmacological management of primary dysmenorrhea.

The stability of the control group observed in this study, where no statistically significant transformations were recorded across all parameters ($p = 1.000$), is consistent with recent quasi-experimental research. Studies by research have similarly reported that in the absence of a structured intervention, participants' knowledge, attitudes, and skills regarding health management remain unchanged over the observational period. This lack of progress in the control cohort underscores the critical role of active educational interventions in facilitating health literacy and competency gains among adolescents.

Furthermore, the significant disparities between the intervention and control cohorts identified through the Mann-Whitney U test ($p < 0.01$) align with the findings of Calderón-Cruz who demonstrated that structured educational programs lead to markedly superior outcomes compared to standard care or no intervention. The substantially higher mean ranks in the intervention group for

knowledge (45.17 vs. 15.83), attitudes (41.30 vs. 19.70), and skills (45.50 vs. 15.50) in this study are corroborated by research who observed similar patterns when evaluating the effectiveness of health pocketbooks in Indonesian adolescents. Collectively, these results reinforce the conclusion that the "BPJS Endorphin" pocketbook is a highly effective tool for augmenting adolescents' capabilities in the non-pharmacological management of primary dysmenorrhea.

The efficacy of the pocket book as an educational instrument is substantiated by its succinct, systematic, and accessible presentation. It adeptly encompasses both affective and psychomotor dimensions through transparent and practical step-by-step guidance. This observation is consistent with the findings of previous research who reported significant knowledge gains post-pocket book educational interventions. Furthermore, illustrated enhancements in student competencies related to healthy behavior adoption following analogous interventions. Nonetheless, previous research emphasized, the formation of attitudes necessitates prolonged exposure, reinforcement from a conducive environment, and habitual practice, rendering short-term interventions less effective in engendering significant attitude modifications^{17,18}.

From the investigational perspective, the efficacy of this pocket book transcends mere statistical outputs and aligns with the characteristics of the participants involved. The 'BPJS Endorphin' pocket book employs straightforward language, captivating illustrations, and practical methods readily applicable by the users¹⁹. Its portable design renders it particularly fitting for boarding school contexts with constrained access to digital resources^{17,20}. Thus, recurrent engagement or synchronization with social support frameworks is advocated to fortify and maintain attitude changes.²¹ This pocket book emerges as a robust educational instrument for adolescent health, particularly within communities with limited access to digital technologies.¹⁹

Despite the significant findings, this study has several limitations. First, the sample size was relatively small and restricted to a single institution, which may limit the generalizability of the results. Second, the reliance on self-reported questionnaires for measuring knowledge and attitudes may introduce response bias. Future studies with larger, more diverse samples and more objective measurement tools are recommended to validate these findings.

CONCLUSION

This study evaluated the effect of the "BPJS Endorphin" pocketbook intervention on adolescent females' knowledge, skills, and attitudes regarding the non-pharmacological management of primary dysmenorrhea while comparing these outcomes between the intervention and control groups. The findings demonstrate that the "BPJS Endorphin" pocketbook intervention significantly enhanced adolescents' knowledge ($p < 0.05$) and skills ($p < 0.05$) in managing primary dysmenorrhea. However, it did not exert a statistically significant impact on attitudinal shifts ($p \geq 0.05$), suggesting

that attitude development requires prolonged strategies and consistent environmental reinforcement. Furthermore, significant disparities were identified between the intervention and control groups across all examined variables (knowledge, attitudes, and skills ($p < 0.05$)) underscoring the pocketbook's considerable potential as an educational resource to augment the cognitive, affective, and psychomotor dimensions of menstrual pain management among adolescents. Based on the conclusions, it is recommended that the "BPJS Endorphin" pocketbook be integrated into the school's routine health education programs. Future research should consider employing a true experimental design with a larger and more diverse sample across multiple institutions to enhance the findings' generalizability. Additionally, longitudinal studies are suggested to evaluate the long-term retention of knowledge and the sustained impact on attitudes and practices regarding the non-pharmacological management of primary dysmenorrhea.

ACKNOWLEDGEMENT

The authors wish to convey their gratitude to Ibrahimy 3 Sukorejo Junior High School, Situbondo, for their substantial support and permissions granted throughout the research endeavor. Appreciation is also extended to all participants for their active engagement in the study, as well as to supervisors and colleagues for their invaluable scientific contributions and support in the composition of this manuscript.

REFERENCES

1. Somoyani NK. Literature review: terapi komplementer untuk mengurangi mual muntah pada masa kehamilan. *J Ilm Kebidanan*. 2018;8(1):10–7. Available from: <https://ejournal.poltekkes-denpasar.ac.id/index.php/JIK/article/view/1193/405>
2. Febriyanti V, Putri VS, Yanti RD. Pengaruh aromaterapi lemon (Citrus) terhadap skala nyeri dismenorea pada mahasiswi Program Studi Ilmu Keperawatan STIKES Baiturrahim Jambi. 2021;10(1). Available from: <https://doi.org/10.36565/jab.v10i1.277>
3. Hermawati B, Handayani OWK, Mahendrasari DS, Mukti FA, Wijayanti A. Edukasi kesehatan mengenai praktik cuci tangan pada guru sebagai upaya pencegahan COVID-19. *J Obs J Pendidik Anak Usia Dini*. 2021;6(2):894–902. Available from: <https://doi.org/10.31004/obsesi.v6i2.1060>
4. Auliyah A, Winarti Y. Hubungan sikap dengan perilaku seks pranikah berisiko kehamilan tidak diinginkan (KTD) pada mahasiswa Prodi S1 Kesehatan Masyarakat Universitas Muhammadiyah Kalimantan Timur. *Borneo Student Res*. 2020;2(3):387. Available from: <https://journals.umkt.ac.id/index.php/bsr/article/view/1681/696>
5. Rustini A, Nafisah F, Anjani J, Patmawati N, Salifiyah S, Jahronah S, et al. Pemberdayaan perempuan untuk mengatasi nyeri haid dengan jamu kunyit asam. *J Pengabd Kpd Masy Nusant*. 2024;5(2):2064–8. Available from: <https://doi.org/10.55338/jpkmn.v5i2.3178>
6. Susanti NY. Terapi akupresur untuk penurunan nyeri haid (Acupressure therapy for menstrual pain reduction). *Nyeri haid atau dismenore biasa dengan kondisi yang besar Chinese Indonesian Occupational*. 2021;8(2):145–50. Available from: <https://doi.org/10.35316/oksitosin.v8i2.1376>
7. Susanti NY. [Artikel pada PHJ]. 2022;4(1):162–71. Available from: <https://www.ojsstikesbanyuwangi.com/index.php/PHJ>.
8. Susanti NY. [Artikel pada OBJ]. 2022;71–6. Available from: <https://stikes-nhm.e-journal.id/OBJ/index>.
9. Susanti NY. The effect of giving milk chocolate and pumpkin (*Curcubita moschata* Duch) on reducing primary menstrual pain (dysmenorrhea) in X–XI grades adolescent girls at SMA

- Ibrahmy 2 of Salafiyah Syafi'iyah Sukorejo Situbondo Islamic Boarding School. 2026;7(2):563–73. Available from: <https://doi.org/10.54832/phj.v7i2.1124>
10. Kesehatan D, Kebidanan J, Vol K, Akupreseur T, Kunyit D, Terhadap A, et al. Quasi eksperimental. 2025;16(1):20–9. Available from: <https://doi.org/10.33859/dksm.v16i1.991>
 11. Sabrima EJ, Sanjaya R, Surmiasih, Sagita YD. Effect of lavender oil aromaterapy on menstrual pain in students at SMPN 18 Pesawaran in 2020. Biomed J Indones. 2020;6(3):96–103. Available from: <https://doi.org/10.32539/bji.v6i3.239>
 12. Romlah SN. Ajaku (asam Jawa, jahe, kunyit) dalam meredakan dismenorea pada remaja. Semlitmas. 2024;1(1):158–63. Available from: <https://openjournal.wdh.ac.id/index.php/PROSIDINGSEMLITMAS/article/view/835>
 13. Notoatmodjo. Pendidikan dan perilaku kesehatan. Jakarta: Renneka Cipta; 2003.
 14. Khotimah H, Subagio SU. Aplikasi fitofarmaka akupresur menggunakan aromaterapi essential oil lemon untuk mengatasi dismenore pada remaja. Faletahan Health Journal. 2021;8(03):187–93. Available from: <https://doi.org/10.33746/fhj.v8i03.304>
 15. Susanti NY, Oktadiana I. Penyuluhan meningkatkan pengetahuan wanita usia subur tentang penanganan dismenorea menggunakan teknik akupreseur. Madago Community Empower Health J. 2022;1(2):52–7. Available from: <https://doi.org/10.33860/mce.v1i2.1168>
 16. Susanti NY. Pelatihan akupreseur dan pembuatan kunyit asam untuk mengurangi nyeri haid pada santri remaja. 2026;5(2):611–7. Available from: <https://doi.org/10.56742/jpm.v5i2.300>
 17. Wahyuni RS, Oktaviani W. Hubungan indeks massa tubuh dengan dismenore pada remaja putri SMP PGRI Pekanbaru. J Endur. 2018;3(3):618. Available from: <https://doi.org/10.22216/jen.v3i3.2723>
 18. Zhafirah I, Andrifanie F. Kajian literatur: hubungan pengetahuan dan sikap terhadap penanganan nyeri haid (dismenore) di kalangan remaja putri. 2026. Available from: <https://ejurnal.politeknikpratama.ac.id/index.php/Detector/article/view/5911/5267>
 19. Lamadah SM, Ahmed AH, Abo El maged MH, Shamekh AH. Effect of progressive muscle relaxation exercises during pregnancy on low back pain and quality of woman's life. Tanta Sci Nurs J. 2021;23(4):193–213. doi:10.21608/tsnj.2021.210727. Available from: <https://nur.tanta.edu.eg/files/magazine/nov-sup2021.pdf?>
 20. Kasali AT, Ishaleku D, Idoko B, Aremu SO. Reproductive health article in press: WASH facility adequacy and school attendance during menstruation among secondary school girls in Nasarawa West, Nigeria: a cross-sectional study. 2026. Available from: <https://doi.org/10.1186/s12978-026-02374-1>
 21. Sulistyawati S, Pere MRHM. Pengetahuan berhubungan dengan sikap ibu dalam kemampuan menstimulasi pertumbuhan dan perkembangan anak balita dengan gizi kurang. J Ners Kebidanan Indones. 2016;4(2):63–9. doi:10.21927/jnki.2016.4(2).63-69.

Declarations

- Author contribution : Author contribution in this article are Neny Yuli Susanti was responsible for the entire research project. She also led the writing of the manuscript and collaborated with the second author. Herliana Riska participated in the translation of the article. Lia Fitria and Ika Wijayanti participated in data collection. Nur Rachmawati Sholihah and Miftakhur Rohmah participated in transcription and analysis. They also revised the manuscript. All six authors approved the final manuscript
- Funding statement : This research did not receive any funding.
- Conflict of interest : Both authors declare that they have no competing interests.
- Additional information : No additional information is available for this paper.