

# When menstruation is no longer fearsome: transforming adolescent dysmenorrhea management through a non-pharmacological holistic approach

Elika Puspitasari\*, Menik Sri Daryanti, Nurul Mahmudah

Department of Midwifery Study Program, Bachelor Program and Midwifery Professional Education, Universitas Aisyiyah Yogyakarta, Indonesia

\*Email: [elikapuspita@unisayogya.ac.id](mailto:elikapuspita@unisayogya.ac.id)

## Abstract

Dysmenorrhea is frequent in teenage girls and can hinder daily life and academic performance. 54% of Indonesian teen females experience dysmenorrhea. This condition impairs concentration and causes school absences. Cultural taboos and a lack of information make menstruation difficult for youth to comprehend and manage. These variables may lead to inadequate coping techniques, including drug abuse. This study examines how health education affects adolescent girls' dysmenorrhea management knowledge. A one-group pre- and post-test design was used with 49 female SMP Muhammadiyah 9 Yogyakarta students. We used a questionnaire before and after the PowerPoint presentation. Results were analyzed using a paired t-test. Average knowledge score increased from 12.61 to 13.71 ( $p=0.003$ ) after intervention. This suggests the health education program increased knowledge and awareness. The intervention helped teen girls comprehend dysmenorrhea. This suggests that youth require coordinated and imaginative educational programs to learn non-drug approaches to improve their quality of life and academic performance, such as yoga, massage, and herbal remedies.

**Keywords:** dysmenorehea; non-pharmacological approach; menstruation

## 1. Introduction

The menstrual cycle is a normal and natural part of a woman's life. Adolescent females often have dysmenorrhea or menstrual pain, which can substantially impact daily activities, including academic performance. This is often a big problem when it comes to reproductive health. Around the world, dysmenorrhea is very common. The World Health Organization (WHO) reports that 90% of women experience monthly menstrual discomfort, with 10% to 15% reporting extreme pain. In Sweden, 90% of girls under the age of 19 suffer from it, compared to 45–90% of young women in the US. Similar high rates are found in Asia, especially in Malaysia (74.5%), Singapore (10–15%), and Thailand (65%) (Unnisa et al., 2022). Data shows that 55% of Indonesian women of reproductive age and 54% of teenage girls have dysmenorrhea. A research in Jakarta found that 86% of female students felt pain during their periods (Rahmawati & Lia 2023). Dysmenorrhea also affects 81.3% of teenage girls in Jayapura Regency, and 13.1% of them claim it makes it hard for them to learn in class. This high number means that dysmenorrhea is a severe problem that needs special treatment, especially for teenage girls who are still in school (Djailani et al., 2023).

Dysmenorrhea impacts adolescents' physical and emotional health while also disrupting their daily activities (Bahrami et al., 2025). Several studies suggest that dysmenorrhea may contribute to school absenteeism, diminished academic performance, reduced productivity, and potential mental health challenges such as social withdrawal and loneliness (Zulimartin et al., 2020). Even though primary dysmenorrhea isn't very dangerous, it's crucial to get the right therapy because it has a big impact on a person's health and quality of life (Li et al. 2024). A study in Kediri found that more than 48% of the people who took part did not know about the gymnastics that can make dysmenorrhea worse (Rahmawati & Lia 2023; Mayasari Putri Ardela et al., 2024). Most teenagers in Jayapura Regency don't know how to treat dysmenorrhea since they can't get the information they need.

This is even worse because many cultures see menstruation as something humiliating and taboo. Because of this, some young girls may not want to ask for help or the right information because they are afraid of showing how bad they feel (Ayu Lestari & Rokhanawati, 2024; Bahrami et al., 2025). These limits may lead people to employ the wrong kinds of treatment, including taking too many

opioids, which could lead to addiction. Thus, measurable interventions are necessary to enhance perceptions and increase awareness (Angelhoff & Grundström, 2023).

Policies and guidelines for managing adolescent health issues, including reproductive health, have been established by the government and the Ministry of Health. Nonetheless, it appears from the research that is currently available that there is still a disconnect between the field's implementation and policy. Nurses in Sweden reported that there were no clear and consistent written guidelines at the school level; this may be the case in other countries, such as Indonesia. Young women receive unequal information and care as a result of this disparity. To guarantee that the information taught covers crucial topics like how to differentiate between normal and abnormal pain and how to manage it safely and effectively, government initiatives to increase knowledge, such as through school curricula, need to be improved (Esan et al. 2024; Angelhoff & Grundström, 2023).

Non-pharmacological management is a reliable and proven approach for treating dysmenorrhea (Mayasari Putri Ardela et al., 2024). Many studies have shown that this method can help with menstruation discomfort with very little side effects. Yoga, acupressure, massage, warm compresses, dysmenorrhea exercises, and herbal medicines like avocado juice, dark chocolate, and green coconut water have all been shown to work (Firnandani & Achyar, 2025; Ummah & Ismarwati, 2024; Rahmani et al. 2024). Video media is a creative and successful technique to get teens interested in health information and get them involved. Research has shown that teenagers had better attitudes and more knowledge regarding dysmenorrhea. An effective and significant approach to address dysmenorrhea among Indonesian adolescent girls is the implementation of community service projects that prioritize non-pharmacological education using video media (Pranoto, Eny Ruth Sinaga, & Ari Andayani, 2023).

## 2. Methods

49 female students from SMP Muhammadiyah 9 Yogyakarta participated in this study. Teaching young women coping mechanisms for period pain was the aim of this activity. To determine their level of comprehension, participants were given pre-test and post-test questions both before and after health education. A PowerPoint presentation was used to present the content to the participants, and a questionnaire was used to administer the test. The instrument of collecting data on knowledge uses a questionnaire with a total of 20 items of questions that have gone through the expert judgment process. The questionnaire grid includes the definition of dysmenorrhea, types, symptom signs, and management of dysmenorrhea from a non-pharmacological perspective. Bivariate data analysis was conducted using a paired t-test statistical test.

## 3. Results and Discussion

This section presents findings from pre-test and post-test students' knowledge about dysmenorrhea management. The data were divided into univariate and bivariate analyses to show the characteristics of participants and the effects of the intervention.

### 3.1. Respondent Characteristic

Table 1. Respondent Characteristics

Characteristics	Category	Frequency (N)	Percentage (%)
Class	A	19	38.8
	B	10	20.4
	C	9	18.4
	D	11	22.4
Student Age	12 Years	20	40.8
	13 Years	29	59.2
Body Mass Index (BMI)	Less	23	46.9
	More	4	8.2
	Normal	22	44.9
Menarche	Not yet	8	16.3
	9 years	2	4.1

Characteristics	Category	Frequency (N)	Percentage (%)
	10 years	7	14.3
	11 years	17	34.7
	12 years	14	28.6
	13 years	1	2
Total		49	100

According to the data processed, 49 respondents were included in this study and were split up into four classes; the majority of respondents (59.2%) were between the ages of 13 and 18. Despite being relatively low (46.9%), the majority of respondents (44.9%) had normal nutritional status based on Body Mass Index (BMI), which was also highly significant. Menarche age is another significant factor; the majority of respondents (34.7%) had their first period at age 11, and 16.3% had never even gone through menarche. The target population—school-age adolescent girls who are still in the early stages of reproductive development—is clearly depicted by this demographic composition.

### 3.2. Participants Knowledge Levels Before and After the Intervention

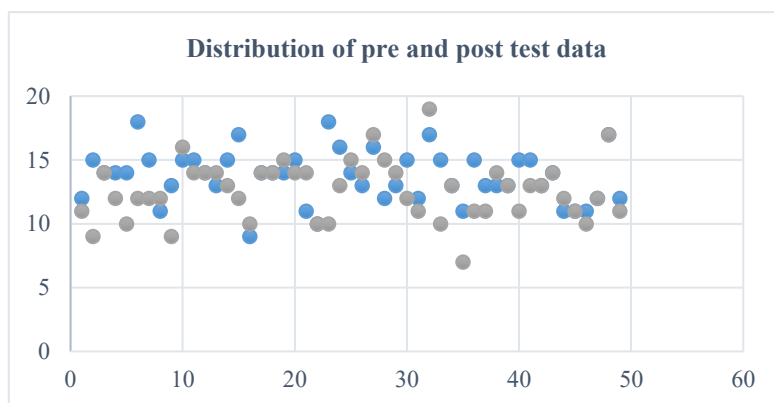


Figure 1. Diagram X Y (Scatter) Distribution of pre and post test data

Table 2. Bivariate Analysis

		Average	N	Standard Deviation	t	Sig. (2-tailed)
Paired Sample Statistics	Pre-test	12.6122	49	2.28962		
	Post-test	13.7143	49	2.03101		
Paired Sample Test	Average Difference	-				
	Difference	1.10204		2.45157	-3.147	0.003

After receiving education through powerpoint slides and leaflets, the respondents' knowledge significantly increased, according to the statistical test results. With Asymp values, the pre-test and post-test data have a normal distribution. Sig. were 0.475 and 0.385, respectively ( $p > 0.05$ ). This makes it possible to use paired t-tests. The knowledge scores prior to and following the intervention differed significantly, according to the paired t-test results. 0.003 was the obtained significance value (sig. 2-tailed), which is significantly less than 0.05 ( $p < 0.05$ ).

To be more specific, the average knowledge score rose from 12.6122 in the pre-test to 13.7143 in the post-test. The intervention was successful in raising respondents' awareness of dysmenorrhea, as evidenced by the mean difference of -1.10204 and standard deviation of 2.45157. These findings support the study's goal of assessing how counselling affects adolescents' understanding of dysmenorrhea.

A significant positive correlation between the two measurements is indicated by the correlation between the pre-test and post-test of 0.361 with a Sig. value of 0.011. This suggests that respondents who performed better on the pre-test also typically performed better on the post-test. The primary inference that can be made from the data processing results is that the counselling interventions provided have been demonstrated to be effective in raising teenage girls' awareness of dysmenorrhea, demonstrating the efficacy of the educational program that was created.



Figure 2. Documentation of activities

### 3.3. Discussion

The study's findings revealed that the participants' demographics were comparable to those of school-aged females. Thirteen is a pivotal age for adolescent physical and psychological development, including sexual maturation and menstruation experiences (59.2% of respondents were 13 years old). About one-third to one-quarter of girls reach menarche, or their first menstrual cycle, between the ages of 11 and 12. The majority of respondents have undoubtedly dealt with dysmenorrhea and menstruation, as this study indicates. Due to the potential negative effects of dietary variables on reproductive health, the percentage of respondents with either an inadequate (44.9%) or adequate (46.0%) nutritional status is cause for concern (Azahra 2025).

The statistical testing results, especially the paired t-test, provided significant evidence that the counseling sessions were effective. After the session, the average knowledge score increased from 12.61 to 13.71. The p-value of 0.003, which is significantly lower than the threshold of 0.05, provides further evidence of this increase. This conclusion disproves the null hypothesis and shows that dysmenorrhea education management is effective in educating patients. Consistent with other studies, this one finds that little is known about dysmenorrhea in teenage girls. Over half of the teenagers surveyed in Jayapura Regency had no idea how to properly treat dysmenorrhea, according to a recent study. Nearly half of the people surveyed in a Kediri study said they didn't know enough about using gymnastics to alleviate dysmenorrhea pain. Many believe that a lack of sufficient information is the primary cause of this illness (Rahmawati & Lia, 2023; Djailani et al., 2023).

This study's beneficial intervention is consistent with previous research that has used the same methods. With a p-value of 0.000, a study carried out at SMA Negeri 15 Batam shows that health promotion using video media significantly improves the knowledge and attitudes of teenage girls about dysmenorrhea. The fact that the majority of the knowledgeable group (66.7%) was able to transition into the well-informed group (65.6%) lends credence to this claim (Ummah & Ismarwati, 2024).

Moreover, supporting evidence suggests that non-pharmacological treatment is a safe and effective way to reduce dysmenorrhea. When stressed, teenagers typically turn to a variety of techniques, including breathing exercises, massages of the back and abdomen, acupressure, warm water bottles, and distraction treatment. Several studies have shown that herbal beverages containing ginger, turmeric, coconut water, avocado juice, carrot juice, dark chocolate and warm water compresses are more effective and safer alternatives to conventional pain relievers (Rahmani et al., 2024; Sartina, Wahyuni, & Anisya, 2024; Latifah, Dwi, & Mutiarawati 2020; Unnisa et al., 2022; Pebrianti, Yanti, & Putri 2025; Ilmiah, Abdullah, & Koesrini 2023).

Social and cultural factors exacerbate the fact that many adolescents suffer from dysmenorrhea and have limited knowledge about the condition and its treatment options. Many young women avoid discussing menstruation-related issues, including discomfort, and do not receive adequate treatment because of this, according to some research (Aboualsoltani et al., 2020). The need for well-structured educational programs that cover both medical and psychosocial topics is highlighted here. The study's findings demonstrate the effectiveness of therapies in educating teenage girls about dysmenorrhea. As a result, there is strong evidence that suggests non-pharmacological therapies, such as an organized health education program, could help alleviate dysmenorrhea in teenagers (Husna & Silaen 2025; Susanti, Apriyanti, & Marliana 2020).

#### 4. Conclusion

This study demonstrates that health education intervention could strengthen the knowledge of teenage girls about dysmenorrhea. After the intervention, participants' knowledge scores significantly improved, going from 12.61 to 13.71, with a significance value of  $p = 0.003$  ( $p < 0.05$ ). PowerPoints slide and leaflet as media health promotion improves teenage girls' knowledge of dysmenorrhea, according to other studies. Considering the respondents' initial lack of comprehension, this finding is pertinent. According to respondent characteristics, the study's target population consisted of adolescents aged 12 to 13 who were at risk for primary dysmenorrhea. Despite lacking knowledge about therapy, most respondents had begun menstruating by the ages of 11 or 12. Therefore, to close this knowledge gap, we urgently need innovative and structured educational programs. Yoga, massage, herbal drinks, and dysmenorrhea exercises can safely, economically, and effectively reduce period discomfort. According to this study, teens can improve their quality of life and academic performance by learning how to effectively and independently manage their dysmenorrhea with the right therapies.

#### 5. Acknowledgements

The authors would like to express their sincere gratitude to LPPM Universitas Aisyiyah Yogyakarta for facilitating the smooth conduction of this study.

#### References

- Aboualsoltani, Farkhondeh, Parvin Bastani, Laleh Khodaie, Seyyed Mohammad, and Bagher Fazljou. 2020. "Non-Pharmacological Treatments of Primary Dysmenorrhea: A Systematic Review." *Archives of Pharmacy Practice* 11(S1):136–42.
- Angelhoff, Charlotte, and Hanna Grundström. 2023. "Supporting Girls with Painful Menstruation - A Qualitative Study with School Nurses in Sweden." *Journal of Pediatric Nursing* 68:e109–15. doi:10.1016/j.pedn.2022.11.022.
- Ayu Lestari, and Dewi Rokhanawati. 2024. "Health Education Affects Knowledge in the Management of Dysmenorrhea in Adolescent Girls." *International Journal of Health Science and Technology* 6(1):17–25. doi:10.31101/ijhst.v6i1.3437.
- Azahra, Sabrina. 2025. "Gambaran Umum Asupan Gizi Remaja Perempuan Terhadap Peningkatan Fenomena Terjadinya Dismenore Primer General Description of Nutritional Intake of Adolescent Girls on Increasing the Phenomenon of Primary Dysmenorrhea." *Jurnal Surya Medika* 11(2):278–87.
- Bahrami, Nasim, Somayeh Asgari, Mohammad Ali Soleimani, Mark D. Griffiths, and Zainab Alimoardi. 2025. "Application of Psycho-Educational Intervention to Reduce Menstrual-Related Distress among Adolescent Girls: A Randomized Controlled Trial." *International Journal of Adolescent Medicine and Health* 37(2):85–96. doi:10.1515/ijamh-2024-0136.

- Djailani, Yuliyanti Asda, Nasrianti, Hasnia, and Makmum Rosyidi. 2023. "Overview of Adolescent Girls' Knowledge About Efforts to Handle Dysmenorrhea at Insan Cendekia Doyo Baru IT Middle School, Jayapura Regency." *Health Journal* 11(1):140–49.
- Esan, Deborah Tolulope, Sharon Ayobami Ariyo, Elizabeth Folabomi Akinlolu, Oluwadamilare Akingbade, Oluwaseyi Isaiyah Olabisi, David Bamidele Olawade, Theresa Olaitan Bamigboye, and Adesola Adenike Ogunfowokan. 2024. "Prevalence of Dysmenorrhea and Its Effect on the Quality of Life of Female Undergraduate Students in Nigeria." *Journal of Endometriosis and Uterine Disorders* 5(January):100059. doi:10.1016/j.jeud.2024.100059.
- Firmandani, Sherly, and Khamidah Achyar. 2025. "Effectiveness of Dark Chocolate in Reducing Dysmenorrhea Pain Intensity in Adolescent Girls: A Systematic Literature Review." *JNKI (Jurnal Ners Dan Kebidanan Indonesia) (Indonesian Journal of Nursing and Midwifery)* 13(1):48. doi:10.21927/jnki.2025.13(1).48-59.
- Husna, Asy Syfah, and Harsudianto Silaen. 2025. "Pengaruh Edukasi Kesehatan Menggunakan Leaflet Terhadap Penurunan Dismenore Di SMPS Al-Manar Medan." *Indonesian Trust Nursing Journal (ITNJ)* 3(1):26–34.
- Ilmiah, Widia, Ikhwan Abdullah, and Juliati Koesrini. 2023. "Non-pharmacological That Most Effective to Reduce of Primary Dysmenorrhea Intensity in Women Childbearing Age: A Literature Review." *Journal of Public Health in Africa* 14(12):12. doi:10.4081/jphia.2023.2349.
- Latifah, Ulfatul, Istiqomah Dwi, and Mutiarawati Mutiarawati. 2020. "Peningkatan Pengetahuan Tentang Akupressur Untuk Mengurangi Nyeri Haid Pada Remaja Putri." *Jurnal Pengabdian Masyarakat Progresif Humanis Brainstorming* 3(2):52–60. doi:10.30591/japhb.v3i2.1836.
- Li, Xinglin, Xinyu Hao, Jian Hua Liu, and Jian Peng Huang. 2024. "Efficacy of Non-Pharmacological Interventions for Primary Dysmenorrhoea: A Systematic Review and Bayesian Network Meta-Analysis." *BMJ Evidence-Based Medicine* 29(3):162–70. doi:10.1136/bmjebm-2023-112434.
- Mayasari Putri Ardela, Anis Nikmatul Nikmah, Nara Lintan Mega Puspita, Meirna Eka Fitriyani, Rahma Kusuma Dewi, Alfika Awatiszahro, Khofidhotur Rofi'ah, and Siti Aminah. 2024. "Health Education for Adolescent Girls in Overcoming Dismenore without Medication." *Journal of Community Engagement in Health* 7(2):268–71. doi:10.30994/jceh.v7i2.630.
- Pebrianti, Dwi Kartika, Rahmi Dwi Yanti, and Vevi Suryenti Putri. 2025. "Penerapan Senam Dismenorea Pada Siswi SMP Negeri 11 Kota Jambi." *Jurnal Abdimas Kesehatan (JAK)* 7(1):44–50. doi:10.36565/jak.v7i1.771.
- Pranoto, Heni Hirawati, Eny Ruth Sinaga, and Ari Andayani. 2023. "Pemberdayaan Remaja Dalam Penanganan Dismenore Melalui Upaya Peningkatan Pengetahuan Remaja." *Indonesian Journal of Community Empowerment (Ijce)* 5(1):52–56. doi:10.35473/ijce.v5i1.2322.
- Rahmani, Shofiatunisa Firdhausy, Ruswana Anwar, Elsa Pudji Setiawati, Mulyanus Amarullah Ritonga, and Insi Farisa Desy Arya. 2024. "Overview of Non-Pharmacological Treatment Option for Adolescent Girls with Dysmenorrhea in Cimahi, West Java, Indonesia." *Althea Medical Journal* 11(1):50–56. doi:10.15850/amj.v11n1.3064.
- Rahmawati, Dian, and Agustin Lia. 2023. "Pengetahuan Remaja Putri Tentang Senam Dismenore Sebagai Manajemen Nyeri Dismenore Di Kediri (Knowledge of Young Women about Dysmenorrhea Exercise as Dysmenorrhea Pain Management in Kediri)." *Jurnal Kesehatan* 12(2):214–18.
- Sartina, Aprilina, Aria Wahyuni, and Anisya. 2024. "Penatalaksanaan Terapi Komplementer Pada Remaja Putri Dengan Dismenorea Di SMP Mekarmurni Sukakarya Bekasi." *Jurnal Salingka Abdimas* 4(2):106–10.
- Susanti, Sri, Ika Apriyanti, and Lina Marlina. 2020. "Analysis of Knowledge and Management of Dysmenorrhea in Students Before and After the Application of Leaflets and Flipcharts." *Proceedings of the 1st International Conference on Science, Health, Economics, Education and Technology (ICoSHEET 2019)* 27(ICoSHEET 2019):389–91. doi:10.2991/ahsr.k.200723.098.
- Ummah, Tammimin, and Ismarwati. 2024. "The Impact of Complementary Therapies on Dysmenorrhea in Young Women." *Majalah Obstetri & Ginekologi* 32(1):29–38. doi:10.20473/mog.v32i12024.29-38.
- Unnisa, Habeeb, Prathiba Annam, Naga Chandrika Gubba, Anees Begum, and Keerthi Thatikonda. 2022. "Assessment of Quality of Life and Effect of Non-Pharmacological Management in

Dysmenorrhea.” *Annals of Medicine and Surgery* 81(June):104407.  
doi:10.1016/j.amsu.2022.104407.

Zulimartin, Handika, Achmad Kemal Harzif, Amalia Shadrina, Juliana Sari Harahap, and Anton Tanjung. 2020. “Prevalence , Severity , and Self-Medication for Dysmenorrhea among Female Adolescents in Indonesia.” *Bandung Medical Journal* 57(2):104–10.