

The Effect of Abdominal Stretching Exercises on the Intensity of Dysmenorrhea Pain Among Adolescent Girls in Nanggewer Hamlet, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency, in 2025

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ABSTRACT

According to the World Health Organization (WHO), adolescents are individuals aged between 10 and 19 years. One of the common health problems experienced by adolescent girls during menstruation is menstrual pain (dysmenorrhea), characterized by severe lower abdominal pain such as cramps, throbbing, or dull aches that last for a prolonged period. This condition can interfere with daily activities and lower the quality of life. One non-pharmacological method that can be used to reduce dysmenorrhea pain is abdominal stretching exercise, which is a form of abdominal muscle stretching that stimulates the release of endorphins, the body's natural pain relievers. This study aims to determine the implementation of abdominal stretching exercise on the intensity of dysmenorrhea pain in adolescent girls in Dusun Nanggewer, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency. This research used a descriptive quantitative method with purposive sampling technique. The sample consisted of 10 respondents who met the inclusion and exclusion criteria. The instruments used were the SOP for abdominal stretching exercise and a pain assessment sheet using the Numeric Rating Scale (NRS). The results showed that before the therapy, all respondents (100%) experienced dysmenorrhea. After the therapy, all respondents (100%) reported a decrease in pain intensity. Therefore, abdominal stretching exercise is effective in reducing dysmenorrhea pain in adolescent girls.

Keywords: Adolescent Girls, Dysmenorrhea, Abdominal Stretching Exercise

ABSTRAK

Remaja menurut World Health Organization (WHO) adalah individu berusia 10–19 tahun. Salah satu masalah kesehatan yang sering dialami remaja putri saat menstruasi adalah nyeri haid (dismenore), yang ditandai dengan nyeri hebat di perut bagian bawah, berupa kram, denyutan, atau nyeri tumpul yang berlangsung lama. Kondisi ini dapat mengganggu aktivitas dan menurunkan kualitas hidup. Salah satu metode non-farmakologis yang dapat digunakan untuk mengurangi nyeri dismenore adalah abdominal stretching exercise, yaitu latihan peregangan otot yang dapat merangsang pelepasan endorfin sebagai nyeri alami. Penelitian ini bertujuan untuk mengetahui implementasi abdominal stretching exercise terhadap intensitas nyeri dismenore pada remaja putri di Dusun Nanggewer, Desa Mekarsari, Kecamatan Cipaku, Kabupaten Ciamis. Penelitian ini menggunakan metode deskriptif kuantitatif dengan teknik purposive sampling. Sampel terdiri dari 10 responden yang memenuhi kriteria inklusi dan eksklusi. Instrumen yang digunakan adalah SOP abdominal stretching exercise dan lembar pengkajian nyeri menggunakan NRS (Numeric Rating Scale). Hasil penelitian menunjukkan bahwa sebelum dilakukan terapi, seluruh responden (100%) mengalami nyeri dismenore. Setelah terapi dilakukan, seluruh responden (100%) mengalami penurunan intensitas nyeri. Dengan demikian, abdominal stretching exercise efektif dalam mengurangi nyeri dismenore pada remaja putri.

Kata kunci: Remaja Putri, Dismenore, Abdominal Stretching Exercise

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1. INTRODUCTION

According to the World Health Organization (WHO), adolescents are individuals aged 10 to 19 years. Adolescence is a transitional phase from childhood to adulthood characterized by physical and sexual changes, as well as the formation of identity. In adolescent girls, these changes include the



development of primary and secondary sexual characteristics, marked by menarche or the first menstrual period. Menstruation is a biological process resulting from hormonal changes that trigger the shedding of the endometrium, marking reproductive readiness (Ummah & Utami, 2023). Dysmenorrhea is a common complaint experienced by adolescent girls during menstruation, characterized by menstrual cramps with varying severity from mild to severe (Casebella & Kusumadewi, 2024). Dysmenorrhea or menstrual cramps can disrupt daily activities. Etymologically, “dysmenorrhea” derives from Greek: dys (pain/severe), meno (month), and rhea (flow) (Khotimah & Lintang, 2022).

According to the World Health Organization (WHO), the prevalence of dysmenorrhea worldwide is quite high. Among adolescent girls, the incidence of dysmenorrhea ranges from 16.8% to 81%. In European countries, the percentage of adolescent girls experiencing dysmenorrhea reaches 45–97%, with the lowest rate found in Bulgaria (8.8%) and the highest in Finland (94%). Meanwhile, in the United States, approximately 90% of women are reported to experience dysmenorrhea, and 10–15% of them experience severe dysmenorrhea that even hinders daily activities (Yulinawati et al., 2022). In Indonesia, the prevalence of dysmenorrhea reaches 64.25%, comprising 54.89% of primary dysmenorrhea cases and 9.36% of secondary cases (Amilisyah et al., 2023). In West Java, the prevalence of dysmenorrhea is also relatively high, with 24.5% of cases being mild dysmenorrhea and 21.28% being moderate dysmenorrhea (Marliany et al., 2023).

Pain during dysmenorrhea occurs due to an imbalance in progesterone levels, which triggers increased prostaglandin production. High prostaglandin levels cause excessive uterine contractions, leading to abdominal cramps and severe pain during menstruation (Triningsih & Mas’udah, 2023). The primary symptom of dysmenorrhea is menstrual pain in the lower abdomen, with intensity ranging from sharp, throbbing cramps to dull, prolonged pain. This condition often disrupts daily activities and reduces the quality of life for adolescent girls (Istiqomah & Noorratri, 2024).

Dysmenorrhea can be managed through both pharmacological and non-pharmacological approaches. Pharmacological therapy involves the use of analgesics such as mefenamic acid, ibuprofen, or naproxen; however, these carry a risk of side effects (Kirana et al., 2023). Non-pharmacological methods are safer, including relaxation, warm compresses, reflexology, aromatherapy, music, chocolate consumption, and abdominal stretching exercises (Putri et al., 2022). One non-pharmacological method for relieving dysmenorrhea is abdominal stretching exercise, which involves stretching the abdomen for 10–15 minutes on days 1 through 3 of the menstrual cycle (Puji Lestari et al., 2023). Abdominal stretching exercises not only aim to improve the strength, flexibility, and endurance of the abdominal muscles but also incorporate breathing relaxation techniques that promote calmness and improve lung ventilation. Additionally, this exercise is a relaxation technique that stimulates the release of endorphins—natural substances in the body that act as pain relievers (Silviani et al., 2020).

Based on a study conducted by (Istiqomah & Noorratri, 2024) among female students in the Associate Degree in Nursing program at ‘Aisyiyah University of Surakarta, titled “The Application of Abdominal Stretching Exercises to Reduce Dysmenorrhea,” it was found that prior to the intervention, respondent Ms. K experienced pain at a level of 5 (moderate) and respondent Ms. N at a pain level of 6 (moderate). After the intervention, both respondents experienced a reduction in pain to a level of 3 (mild). This intervention proved effective based on a comparison of pain levels before and after the exercises. As a safe and effective non-pharmacological therapy, these exercises can help reduce dysmenorrhea pain. To maximize results, it is recommended to perform them regularly, especially during the first three days of menstruation, for 10–15 minutes per session.

Based on the results of a preliminary study conducted by the researcher through interviews in Nanggawer Hamlet, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency, with 10 adolescent girls, it was found that they experienced dysmenorrhea with varying degrees of pain, generally in the lower abdomen accompanied by weakness and cramps, which interfered with their activities. These symptoms appeared from two days before to the third day of menstruation. To relieve the pain, some

use natural remedies such as young coconut water or warm compresses, as well as medications like Paracetamol. However, none had ever tried abdominal stretching exercises because they were unaware of their benefits.

These findings indicate that dysmenorrhea is a significant problem for adolescent girls in Mekarsari Village, Cipaku Subdistrict, Ciamis Regency, as it disrupts daily activities and reduces quality of life. An effective non-pharmacological intervention, such as abdominal stretching exercises, is needed to reduce menstrual pain. Based on this, this study is titled “The Implementation of Abdominal Stretching Exercises on the Intensity of Dysmenorrhea Pain Among Adolescent Girls in Nanggewer Hamlet, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency in 2025.”

2. METHOD

This study employed a quantitative descriptive method using a case study approach. The researcher described the implementation of Abdominal Stretching Exercises on the intensity of dysmenorrhea pain among adolescent girls in Nanggewer Hamlet, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency. Dysmenorrhea pain intensity was measured using an observation sheet with the Numeric Rating Scale (NRS). The Abdominal Stretching Exercise was performed on the first day of menstruation for three consecutive days, with each session lasting 10–15 minutes. Respondents were selected using purposive sampling, with a sample size of two respondents who met the inclusion and exclusion criteria. This study was conducted in Nanggewer Hamlet, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency, from April 3, 2025, to April 11, 2025.

Table 1. Pain Intensity Associated with Dysmenorrhea in Adolescent Girls Prior to The Implementation of Abdominal Stretching Exercises

No	Respondent	Scale	Intensity
1	R1	7	Severe
2	R2	5	Moderate
3	R3	4	Moderate
4	R4	4	Moderate
5	R5	8	Severe
6	R6	7	Severe
7	R7	8	Severe
8	R8	6	Moderate
9	R9	6	Moderate
10	R10	8	Severe

Table 1 shows that, prior to the implementation of abdominal stretching exercises, 5 respondents (100%) experienced moderate pain and 5 respondents (50%) experienced severe pain

Table 2. Intensity of Dysmenorrhea Pain in Adolescent Girls Following The Implementation of Abdominal Stretching Exercises

No	Responden	Skala	Intensitas
1	R1	4	Light
2	R2	3	Light
3	R3	3	Light
4	R4	3	Light
5	R5	7	Moderate
6	R6	4	Light

7	R7	6	Moderate
8	R8	2	Light
9	R9	2	Light
10	R10	7	Moderate

Table 2 shows that, following the implementation of abdominal stretching exercises, the results for 10 respondents (100%) indicated that 7 respondents (70%) reported mild pain, and 3 respondents (30%) reported moderate pain.

Table 3. Comparison of dysmenorrhea pain intensity in adolescent girls before and after the implementation of abdominal stretching exercises

No	Respondens	Pre	Intensity	Post	Intensity	Notes
1	R1	7	Severe	4	Light	Decreasing
2	R2	5	Moderate	3	Light	Decreasing
3	R3	4	Moderate	3	Light	Decreasing
4	R4	4	Moderate	3	Light	Decreasing
5	R5	8	Severe	7	Moderate	Decreasing
6	R6	7	Severe	4	Light	Decreasing
7	R7	8	Severe	6	Moderate	Decreasing
8	R8	6	Moderate	2	Light	Decreasing
9	R9	6	Moderate	2	Light	Decreasing
10	R10	8	Severe	7	Moderate	Decreasing

Table 3 shows that a comparison of pain scale scores before and after the implementation of abdominal stretching exercises in 10 respondents (100%) revealed a decrease in pain intensity.

3. RESULTS AND DISCUSSION

3.1 Intensity of Dysmenorrhea Pain in Adolescent Girls Before the Implementation of Abdominal Stretching Exercises

Based on the results of the study conducted prior to the implementation of abdominal stretching exercises regarding the intensity of dysmenorrhea pain in adolescent girls, 10 respondents (100%) experienced dysmenorrhea pain.

The researcher assumed that a lack of exercise and poor dietary habits were the main factors triggering dysmenorrhea in the respondents. These habits can lead to increased levels of prostaglandins in the body, which are the primary trigger of menstrual pain.

According to Tismardi et al. (2024), fast food is high in calories, fat, and sugar but low in fiber, which can disrupt progesterone metabolism and increase prostaglandin production. Consuming spicy, fatty, or fried foods, as well as those containing preservatives or artificial sweeteners, can also worsen dysmenorrhea by triggering excessive uterine contractions, impeding blood flow, and causing pain and cramps during menstruation.

One non-pharmacological approach to managing dysmenorrhea pain in adolescent girls involves performing abdominal stretching exercises for three consecutive days (Triningsih & Mas'udah, 2023).

3.2 Intensity of Dysmenorrhea Pain in Adolescent Girls Following the Implementation of Abdominal Stretching Exercises

Based on the results of a study conducted on 10 participants over a 3-day period, the intensity of dysmenorrhea pain (100%) decreased following the implementation of abdominal stretching exercises.

The researcher hypothesizes that the administration of non-pharmacological abdominal

stretching exercise therapy can reduce dysmenorrhea pain because it improves blood flow, relaxes the uterine muscles, and stimulates the release of endorphins as natural pain relievers.

According to Sunaryanti & Sary (2021), abdominal stretching exercises are a relaxation technique that stimulates the release of endorphins, which are natural substances in the body that act as pain relievers. Additionally, regular stretching exercises can improve blood and oxygen circulation, including to the reproductive organs, thereby helping to reduce vasoconstriction in blood vessels and effectively alleviate dysmenorrhea symptoms

A study conducted by Istiqomah & Noorratri (2024) and published in the *Journal of Anesthesia: Journal of Health Sciences and Medicine* found that after three consecutive days of performing abdominal stretching exercises on two participants, there was a reduction in the intensity of dysmenorrhea pain, whereas prior to the implementation of the abdominal stretching exercises, both participants experienced moderate pain intensity (scale 6–5), and following the exercises, there was a reduction in pain intensity for both participants to the mild category (scale 3).

Abdominal stretching exercises are a safe and easy way to manage dysmenorrhea. These exercises relax the abdominal muscles, improve blood flow, and stimulate the release of endorphins—natural pain relievers—thereby reducing pain intensity without the need for medication (Istiqomah & Noorratri, 2024).

3.3 Comparison of Dysmenorrhea Pain Intensity in Adolescent Girls Following the Implementation of Abdominal Stretching Exercises

Based on the results of the study on the implementation of abdominal stretching exercises on the intensity of dysmenorrhea pain in adolescent girls, it was found that, prior to implementation, all 10 respondents (100%) experienced dysmenorrhea pain, and after implementation, all 10 respondents (100%) experienced a reduction in the intensity of dysmenorrhea pain.

Based on these findings, the researcher concludes that the implementation of abdominal stretching exercises has a positive effect in reducing dysmenorrhea pain.

Physiologically, abdominal stretching exercises can alleviate dysmenorrhea by increasing blood flow and oxygen supply to the abdominal muscles and reproductive organs, thereby reducing vasoconstriction and ischemia—the causes of pain. These exercises also stimulate the release of endorphins as natural pain relievers, improve muscle elasticity, reduce cramps, and enhance lymphatic drainage to eliminate inflammatory substances. The combination of these effects makes abdominal stretching exercises effective in reducing the intensity of menstrual pain in adolescent girls (Triningsih & Mas'udah, 2023).

A previous study conducted by Wulandari T. W. & Riyani, W. (2023) and published in the *Mandira Cendikia Scientific Research Journal* found that the implementation of abdominal stretching exercises is effective in reducing the intensity of dysmenorrhea pain.

Thus, it can be concluded that the implementation of abdominal stretching exercises is effective in reducing the intensity of dysmenorrhea pain.

4. CONCLUSION

Based on the research data obtained and the discussion regarding the implementation of abdominal stretching exercises on the intensity of dysmenorrhea pain among adolescent girls in Nanggawer Hamlet, Mekarsari Village, Cipaku Subdistrict, Ciamis Regency, the researcher draws the following conclusions:

1. Before the implementation of abdominal stretching exercises, it was found that 100% of the respondents experienced dysmenorrhea pain.
2. After the implementation of abdominal stretching exercises, it was found that 70% of the respondents experienced mild pain and 30% experienced moderate pain.
3. After the implementation of abdominal stretching exercises, all respondents (100%) experienced a reduction in the intensity of dysmenorrhea pain.

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