



# INTERNASIONAL CONFERENCE ON MULTIDISCIPLINARY APPROACHES IN HEALTH SCIENCE

VOLUME 1 TAHUN 2023, ISSN 3032-4408 (Online)  
<https://ejournal.poltekkes-denpasar.ac.id/index.php/icmahs>

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## Differences the Intensity of Primary Dysmenorrhea Before and After Pelvic Rocking Exercise in Adolescent Women of High School SMAN 2 Negara

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### Article history

Posted : 2024-01-18

Reviewed : 2023-10-31

Received : 2023-10-13

### ABSTRACT

**Background:** Data on the incidence of primary dysmenorrhea in Indonesia is 54.89%. The aim of the study was to determine differences in the intensity of primary dysmenorrhea before and after pelvic rocking exercise in female adolescents. **Method:** The study used a pre-experimental research design with One Group Pretest-Posttest, namely research without a comparison (control) group. Sampling used a purposive sampling type, the research was carried out on March 15, 2023 with primary data types with 31 respondents. The instruments in this study were video media and pain intensity NRS questionnaires. This analysis is used to prove that there are differences in the intensity of primary dysmenorrhea in adolescents before and after pelvic rocking exercise. The data normality test uses Shapiro Wilk. The data results are normally distributed. Subsequent analysis using the Paired T-Test. **Result and Conclusions:** The results of the analysis regarding the intensity of dysmenorrhea before giving pelvic rocking exercise intervention (mean = 5.07, SD = 1.359) and after giving pelvic rocking exercise intervention (mean = 3.11, SD = 1.315). The results of the Paired T-Test obtained a p-value of 0.000 ( $p < 0.05$ ) meaning that there was a significant difference in the intensity pelvic rocking exercise can be applied in schools for adolescents who experience dysmenorrhea at Senior High School Number 2 Negara.

**Keyword:** dysmenorrhea, Pelvic Rocking Exercise, adolescent



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## INTRODUCTION

Dysmenorrhea is a common problem among young women that can significantly disrupt their daily lives. This essay will delve into the impact of dysmenorrhea, the various methods to manage it, the importance of adolescent reproductive health, and the significance of non-pharmacological approaches, especially focusing on pelvic rocking exercise. Dysmenorrhea, characterized by painful menstrual cramps, is a prevalent issue among young women. Its high levels can lead to a substantial disruption of daily activities. For many teenage girls, dysmenorrhea during menstruation often interferes with their ability to carry out routine tasks and participate actively in school. These disruptions can impact their academic performance and overall quality of life (Bezuidenhout *et al.* 2018).

Dysmenorrhea is a term derived from the Greek words "dys," meaning painful, and "menorrhea," meaning menstruation. It encompasses two primary classifications. The first is primary dysmenorrhea. This type of dysmenorrhea occurs without any underlying pelvic pathology and is usually characterized by crampy lower abdominal pain that starts shortly before or at the onset of menstruation. The pain is often accompanied by other symptoms, such as nausea and vomiting. The second thing is secondary dysmenorrhea. Secondary dysmenorrhea is associated with an underlying medical condition that affects the reproductive organs. These conditions can include endometriosis, uterine fibroids, pelvic inflammatory disease, and adenomyosis. The pain in secondary dysmenorrhea is typically more severe and prolonged (Smith *et al.* 2018).

Understanding the causes of dysmenorrhea is essential for effective

management. Several factors are believed to contribute to the development of dysmenorrhea. Prostaglandins is hormone-like substances, play a central role in primary dysmenorrhea. Prostaglandins cause the uterine muscles to contract more forcefully, leading to pain and cramping. Hormonal Imbalances also as a factor. Imbalances in sex hormones, particularly an excess of prostaglandins and fluctuations in estrogen and progesterone, may contribute to primary dysmenorrhea. Besides that, in cases of secondary dysmenorrhea, the pain is often a consequence of underlying medical conditions, such as endometriosis, fibroids, adenomyosis, or pelvic inflammatory disease. These conditions lead to structural abnormalities and are often associated with more severe and persistent pain (Bernardi *et al.* 2017).

Primary dysmenorrhea, commonly referred to as painful menstruation, is a widespread issue affecting a significant portion of adolescent women. The pain experienced during primary dysmenorrhea can be debilitating, impacting not only physical health but also emotional well-being. In recent years, there has been growing interest in non-pharmacological methods to alleviate the intensity of this pain, and pelvic rocking exercises have emerged as a potential solution. In this essay, we will explore the differences in the intensity of primary dysmenorrhea before and after adolescent women engage in pelvic rocking exercises (Itani *et al.* 2022).

Primary dysmenorrhea is the term used to describe painful menstrual cramps that occur in the absence of any underlying medical condition. These cramps usually start a day or two before menstruation and can last for the first few days of the menstrual period. The pain



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associated with primary dysmenorrhea may manifest as sharp, cramp-like sensations in the lower abdomen, radiating to the lower back. In some cases, it may be accompanied by other symptoms such as nausea, vomiting, diarrhea, and headaches (Shargi *et al.* 2019).

Primary dysmenorrhea can have a profound impact on the lives of young women. The symptoms can disrupt daily activities, including work, school, and social life. The pain can lead to increased stress and anxiety during the menstrual cycle, and it can negatively affect the emotional well-being of those affected. This condition can also lead to absenteeism from work or school, resulting in missed opportunities and productivity (Itani *et al.* 2022). Primary dysmenorrhea is a common and often underestimated condition that affects many young women. The pain and discomfort experienced during menstruation can have a significant impact on daily life and emotional well-being. It is essential for young women to seek proper medical guidance and explore the various management options available to improve their quality of life during their menstrual cycles.

Dysmenorrhea can bring a range of physical symptoms, including lower abdominal pain, lower back pain, nausea, vomiting, and headaches. These physical discomforts can take a significant toll on a woman's emotional well-being, leading to several mood-related challenges. The anticipation of monthly pain and discomfort can lead to increased stress and anxiety in women who suffer from dysmenorrhea. The fear of not being able to fulfill daily responsibilities and social commitments can exacerbate these feelings (Shargi *et al.* 2019).

The chronic nature of dysmenorrhea, which often lasts for years, can contribute to the development of depression in some women. The recurring pain and disruption to daily life can lead to feelings of hopelessness and sadness. The pain and discomfort associated with dysmenorrhea can cause irritability, making it challenging for women to maintain positive interactions with others. Dysmenorrhea can be exhausting, and the associated fatigue can make it difficult to concentrate, complete tasks, and engage in social activities, contributing to a low mood. Dysmenorrhea can limit a woman's ability to participate in activities she enjoys, leading to feelings of frustration and dissatisfaction, which can impact overall mood and happiness (Itani *et al.* 2022).

Dysmenorrhea is a painful reality for many women, and its impact extends beyond physical discomfort to affect mood and emotional well-being. The hormonal fluctuations and physical pain associated with dysmenorrhea can lead to stress, anxiety, depression, irritability, and fatigue. Recognizing the emotional toll of dysmenorrhea is crucial for developing effective strategies to mitigate its impact. By seeking medical advice, adopting lifestyle changes, and considering hormonal management, women can improve their quality of life and emotional well-being despite the challenges of dysmenorrhea (Bezuidenhout *et al.* 2018).

The symptoms of dysmenorrhea can vary among individuals but often include menstrual cramps, diarrhea, headaches and dizziness, also fatigue. The hallmark symptom is crampy lower abdominal pain that may radiate to the lower back and thighs. Some women experience nausea and, in severe cases, vomiting. Dysmenorrhea can sometimes be



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associated with gastrointestinal symptoms, including diarrhea. Headaches and feelings of light headedness are not uncommon during dysmenorrhea. The pain and discomfort can be physically and emotionally draining, leading to fatigue (Bernardi *et al.* 2017).

The diagnosis of dysmenorrhea is typically based on a woman's medical history and the characteristic symptoms. However, in cases of severe or persistent pain, further diagnostic tests may be necessary, including pelvic examination, ultrasound, MRI, and laparoscopy. A pelvic exam may reveal structural abnormalities, such as fibroids, or signs of infection. Ultrasound imaging can provide a detailed view of the reproductive organs and is valuable in diagnosing conditions like fibroids or ovarian cysts (Proctor and Farquhar 2006). In certain cases, an MRI may be recommended for a more comprehensive evaluation, particularly for suspected conditions like endometriosis. In instances where the cause of pain is unclear or endometriosis is suspected, laparoscopy, a minimally invasive surgical procedure, may be performed to directly visualize and diagnose conditions within the pelvis.

Managing dysmenorrhea is essential for improving the well-being of young women. There are two primary approaches: pharmacological and non-pharmacological therapy. Pharmacological therapy using medications are often prescribed to alleviate menstrual pain. However, it is crucial to use them under medical supervision due to potential side effects and contraindications. Government regulations and guidelines play a vital role in ensuring the safe use of pharmacological options for dysmenorrhea (Proctor and Farquhar 2006).

In recent years, the importance of non-pharmacological approaches in managing

dysmenorrhea has gained recognition. One effective non-pharmacological method is exercise. Exercise can help reduce the severity of dysmenorrhea, making it a valuable option for young women looking to minimize discomfort during their menstrual cycle (Proctor and Farquhar 2006).

The human body is a complex and wondrous system, composed of various intricate parts that work in harmony to maintain health and vitality. One essential component of this system is the pelvis, a sturdy basin of bones that plays a crucial role in our daily movements and overall well-being. The pelvic rocking exercise is a simple yet highly effective practice that can bring numerous benefits to individuals of all ages and fitness levels. In this essay, we will explore the significance of pelvic rocking exercise, its benefits, and how it can contribute to overall health and well-being.

Pelvic rocking exercise, often referred to as pelvic tilts, is a straightforward yet powerful movement that involves tilting the pelvis forward and backward. It is typically performed while lying on your back with your knees bent and feet flat on the floor, although there are variations for standing and seated positions. The motion involves tilting the pelvis upward and downward, effectively alternating between arching and flattening the lower back (Supriatiningsih *et al.* 2019).

There are some benefits of pelvic rocking exercise. The first one is improved posture. Posture is essential for maintaining the alignment of the spine and preventing strain on various muscle groups. Regularly practicing pelvic rocking exercises can help individuals develop a stronger awareness of their pelvic position and promote better posture, reducing



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the risk of developing chronic back pain (Navelia *et al.* 2022)

The second one is core strength. A strong core is essential for stability and preventing lower back pain. Pelvic rocking engages the muscles of the abdomen, lower back, and pelvic floor, helping to build a stronger and more stable core. This can be particularly beneficial for individuals with weak abdominal muscles or those recovering from childbirth. The next benefit is pain management. Pelvic rocking exercises can be an effective way to manage and alleviate lower back pain. By gently stretching and strengthening the lower back muscles, this exercise can provide relief for individuals suffering from chronic back pain or those who sit for extended periods during the day (Navelia *et al.* 2022).

The pelvic floor is a group of muscles that support the organs in the pelvic region, and it is crucial for bladder and bowel control. Pelvic rocking exercises can aid in maintaining the strength and flexibility of these muscles, which is especially important for women during and after pregnancy, as well as for individuals with pelvic floor issues. Regularly performing pelvic rocking exercises can improve the flexibility of the hip flexors, which can be especially beneficial for those with a sedentary lifestyle. Increased hip flexibility can enhance overall mobility and reduce the risk of hip and lower back injuries (Supriatiningsih *et al.* 2019).

Like other forms of exercise, pelvic rocking promotes the release of endorphins, which can reduce stress and improve mood. It can be incorporated into a daily routine as a simple way to relax and unwind. Improved balance and stability are essential for preventing falls, especially in older adults. Pelvic rocking exercise helps individuals develop better balance

and proprioception, which is the body's ability to sense its position in space. Strengthening the pelvic floor through exercises like pelvic rocking can lead to improved sexual function for both men and women. It can contribute to better sexual satisfaction and help address issues such as erectile dysfunction or stress incontinence. Consistent practice of pelvic rocking exercises can serve as a preventative measure against various musculoskeletal problems, such as herniated discs and sacroiliac joint dysfunction. By promoting the health of the spine and pelvis, individuals can reduce the risk of developing these issues.

One of the significant advantages of pelvic rocking exercise is its accessibility. It can be performed by individuals of all ages and fitness levels without the need for special equipment or a gym membership. This simplicity makes it an excellent choice for those seeking to improve their health and well-being at home. The simple yet effective pelvic rocking exercise is a valuable addition to any daily routine. It offers a wide range of physical and mental benefits, from improved posture and core strength to pain management and enhanced sexual health. Whether you're looking to prevent musculoskeletal issues, relieve lower back pain, or simply enhance your overall well-being, pelvic rocking exercises are a practical and accessible solution for people of all ages and fitness levels. So, consider incorporating this beneficial exercise into your daily routine to experience its transformative effects on your health and quality of life.

Pelvic rocking exercise is one such non-pharmacological method. This exercise involves gentle movements designed to alleviate pelvic pain during menstrual contractions. It is a safe and accessible option for young women, and its



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effectiveness has been demonstrated in studies (Fitri and Ariesthi, 2020).

The government has a significant role in shaping policies and regulations related to adolescent reproductive health. In Law number 36 of 2009 concerning reproductive health, Article 71, Paragraph 3, addresses the specific needs of adolescents. It emphasizes a threefold approach: prevention, treatment, and recovery. This multifaceted approach is crucial for ensuring that young women have access to the necessary services and information for managing their reproductive health.

Over the last few decades, various services have been developed to address the unique health challenges faced by adolescents. The Adolescent Care Health Service (PKPR) method is an example of a comprehensive approach that aligns with the needs of adolescents. PKPR services are available in health center, hospitals, and locations where young people often gather. These services offer a holistic approach to adolescent health and can play a crucial role in addressing dysmenorrhea and related issues (Fredelika 2020).

To highlight the significance of addressing dysmenorrhea among adolescents, we can examine a case study of SMAN 2 Negara. Initial surveys and interviews conducted at this educational institution revealed that dysmenorrhea was a common complaint among young female students. Many of these students faced difficulties attending school and participating in regular activities during their menstrual periods.

Given the high prevalence of dysmenorrhea at SMAN 2 Negara, researchers recognized the need for intervention. They embarked on a study to explore the Differences in Intensity of Primary Dysmenorrhea Before and

After Pelvic Rocking Exercise in Adolescents. The aim was to provide a solution that would empower young women to manage dysmenorrhea effectively. Pelvic rocking exercise was chosen as the intervention method due to its accessibility and non-pharmacological nature.

The advantages of pelvic rocking exercise are noteworthy. This exercise can be performed anywhere, making it a practical solution for young women experiencing dysmenorrhea. It offers an alternative to the consumption of pharmacological drugs, promoting a more natural approach to pain management. Moreover, it encourages physical activity, which can have numerous positive effects on overall health.

One key issue identified in the case study was the lack of awareness among young female students about non-pharmacological methods for managing dysmenorrhea. Many relied on over-the-counter medications and rest at home as their primary coping mechanisms. Enhancing education and awareness about non-pharmacological approaches, such as pelvic rocking exercise, is crucial to improving the quality of life for young women experiencing dysmenorrhea.

Primary dysmenorrhea can have a profound impact on the lives of adolescent women, causing discomfort and pain during menstruation. Pelvic rocking exercises offer a non-pharmacological, accessible approach to potentially reduce the intensity of these symptoms. While further research is needed to establish the effectiveness of pelvic rocking exercises definitively, their benefits for pelvic health and overall well-being are well-documented. Encouraging young women to explore this non-invasive method may empower



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them to find relief and improve their menstrual experience.

In conclusion, dysmenorrhea is a significant issue that affects many young women and can disrupt their daily lives, including their education and overall well-being. While pharmacological treatments are available, non-pharmacological methods, such as pelvic rocking exercise, offer a safe and accessible alternative. Government regulations, including the Adolescent Care Health Service (PKPR), play a vital role in addressing adolescent reproductive health. Addressing dysmenorrhea in educational settings, as demonstrated in the case study at SMAN 2 Negara, can provide valuable insights and solutions for young women. Increasing education and awareness about non-pharmacological approaches is essential to empower young women in managing dysmenorrhea effectively.

## METHOD

### Research Methods

This research uses a pre-experimental research design with One Group Pretest-Posttest, namely a research design without a comparison group (control), but measurements are taken before and after a treatment is given (Ibrahim, 2017). In this study, the pretest carried out was to measure the dysmenorrhea scale in young women. Respondents were then given treatment (X), namely in the form of pelvic rocking exercise. Adolescents were then asked to complete the posttest again to measure the intensity of the dysmenorrhea scale in female adolescents after being given treatment. Pelvic rocking exercise (independent variable) on the intensity of dysmenorrhea in adolescent girls (dependent variable).

pretest	perlakuan	posttest
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O1	X	O2
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**Picture 1.** Research design differences in the intensity of dysmenorrhea before and after pelvic rocking exercise

### Place and Time of the Research

This research was carried out at Senior High School Number 2 Negara which is located at Merak Street, Civic Center Complex, Dauhwaru Negara, Bali. The location of this research is in accordance with the problems that occur, especially among the young female. The research was conducted on March 15<sup>th</sup> 2023.

### Research Participants

Population is the entire collection of elements that have a number of general characteristics, which consist of the areas to be studied. Population is also defined as the entire group of people, events or items of interest to researchers who are interested in conducting research (Amirullah, 2015). The population in this study were class X female students at SMAN 2 Negara. The population of class X female students at SMAN 2 Negara is 80 people.

The considerations used by researchers in determining the sample are as follows:

#### a. Inclusion criteria

Inclusion criteria are the general characteristics of research subjects from a target population that is reached and will be studied (Amirullah, 2015). The inclusion criteria in this study are:

- 1) Teenagers who are willing to become respondents
- 2) Adolescents who are menstruating and experience primary dysmenorrhoea on days 1 to 3
- 3) Adolescents who experience dysmenorrhoea without other reproductive health problems



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## b. Exclusion criteria

Exclusion criteria are the disappearance of subjects who do not meet the inclusion criteria and cannot be taken as samples (Amirullah, 2015). The inclusion criteria in this study are:

- 1) Adolescents who were not attending school when the research was conducted
- 2) Adolescents who refuse to participate in research

Based on these calculations, the sample size in this study was 31 people.

## Data Collection Techniques

The type of data collected in this research includes primary data where primary data is data obtained by the researcher himself from the results of measurements, observations and surveys (Amirullah, 2015). In this study, data was obtained from the sample studied using a data collection instrument through a Numeric Rating Scale (NRS) sheet questionnaire to determine the dysmenorrhoea score by asking respondents to choose a number (1-10) as a description of the pain before treatment and fill in the number again (1-10) as an illustration of pain after treatment. The description of pain on the Numeric Rating Scale (NRS) questionnaire is categorized into: 1-3 Mild pain, 4-6 Moderate pain, 7-10 Severe pain.

## Data Analysis

Data analysis is a process of analyzing data that has been obtained through data collection instruments which are carried out systematically to obtain meaning or meaning from the data (Nursalam, 2015). Data analysis consists of the following:

### a. Univariate Analysis

Univariate analysis is carried out on each table of research results and in general this analysis can produce a frequency distribution of each variable (Notoadmojo, 2012). This analysis is intended to describe the characteristics of respondents, namely age, menstrual cycle, menarche in female students at SMAN 2 Negara. This data is used to report respondent characteristics

### b. Bivariate Analysis

Bivariate analysis was carried out on variables consisting of two types, namely dependent and independent. This analysis aims to test the research hypothesis proposed by the researcher (Nursalam, 2015). During the bivariate analysis, a data normality test was carried out using Shapiro Wilk because the number of samples used in this study was less than 50.

The data that had been entered was then carried out with a Paired T-Test because the data was normally distributed or ( $p > 0.05$ ). The results of this research data are that  $H_0$  is rejected because the p-value is smaller than alpha 0.05. The data analyzed in this study were differences in the intensity of dysmenorrhoea in class X female students at SMAN 2 Negara before and after the intervention given pelvic rocking exercise. The paired data in this study were the intensity level of dysmenorrhoea for class X female students at SMAN 2 Negara before and after treatment with a confidence or significance level of 95% ( $\alpha = 0.05$ ).





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**RESULTS**

**Table 1.** Frequency distribution of characteristic of research subjects based on age, menstrual cycle, and menarch of young women class X at SMAN 2 Negara

Respondent characteristic	Frequency (f)	Percentage (%)
<i>Age</i>		
15	1	3,2
16	22	71,0
17	8	25,8
<b>Amount</b>	<b>31</b>	<b>100</b>
<i>Menstrual cycle</i>		
28	11	35,5
29	12	38,7
30	8	25,8
<b>Amount</b>	<b>31</b>	<b>100</b>
<i>Menarch</i>		
12	9	29,0
13	12	38,7
14	10	32,3
<b>Amount</b>	<b>31</b>	<b>100</b>

**Table 2.** Intensity dysmenorrhea primary young women before and after given intervention pelvic rocking exercise

Intensity dysmenorrhea	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>Median</i>	<i>Standard Deviation</i>
	<b>Pretest</b>	5.07	3	8	5.00
<b>Intervention</b>					



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<b><i>Pelvic Rocking Exercise</i></b>	<b><i>Posttest</i></b>	3.11	1	6	3.00	1.315
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**Table 3.** Data normality test results

<b>Intervention</b>	<b>Before after</b>	<b>p-value</b>
<b><i>Pelvic Rocking Exercise</i></b>	<b><i>Pretest</i></b>	0,100
	<b><i>Posttest</i></b>	0,109

\*Shapiro Wilk Test

**Table 4.** Test results paired T-Test

<b>Intensity dysmenorrhea</b>	<b>Mean</b>	<b>SD</b>	<b>t</b>	<b>p- value</b>
<b><i>Pre test</i></b>	5.07	1.359	12,402	0,000
<b><i>Post test</i></b>	3.11	1.315		

The research subjects in this study were female adolescents in class X at SMAN 2 Negara who were experiencing depression primary dysmenorrhea 31 people who met the inclusion criteria. Based on Table 1, it is known that of the 31 adolescent respondents who have the characteristics of 16 years of age, the number is the most, namely 22 people with a presentation (71%). The characteristic category of the menstrual cycle in class X girls at SMAN 2 Negara experiences the most menstrual cycles, namely 29 days with 12 female students with a percentage of (39%), while in the age category monarch of the 31 female respondents the most

menarch at the age of 13 years with a total of 12 female students from 31 respondents the percentage (39%).

Based on Table 1, it is known that of the 31 adolescent respondents who have the characteristics of 16 years of age, the number is the most, namely 22 people with a presentation (71%). The characteristic category of the menstrual cycle in class X girls at SMAN 2 Negara experiences the most menstrual cycles, namely 29 days with 12 female students with a percentage of (39%), while in the age category monarch of the 31 female respondents the mostmenarch at the age of 13 years with a total



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of 12 female students from 31 respondents the percentage (39%).

From the Table 2 we know that the intensity results primary dysmenorrhea in adolescents before being given the intervention, namely a minimum score of 3, a maximum score of 8, an average skill of 5.07, a median of 5.00 and a standard deviation of 1.359. In this study shows that the respondents experienced dysmenorrhea during menstruation. Respondents to young women are different for each individual.

Table 3 inform that the results of the data normality test use Shapiro Wilk obtained p-value  $> 0.05$  can be seen at pretest mark p-value is 0.100 and then the value p-value on posttest is 0.109. These data indicate that the data is normally distributed, so that the next test can use the test Paired T-Test to see the difference in intensity dysmenorrhea primary school in young women before and after the intervention pelvic rocking exercise.

Based on table 4, it is known that the value of  $t = 12,402$  which shows that intensity dysmenorrhea decreased after the intervention pelvic rocking exercise compared to intensity dysmenorrhea before intervention. In addition, the results obtained value p-value 0.000 ( $p < 0.05$ ) which means that there is a significant difference regarding the intensity dysmenorrhea before being given the intervention pelvic rocking exercise (mean = 5,07, SD = 1.359) and after being given the intervention pelvic rocking exercise (mean = 3,11, SD = 1.315). From the results uji paired t test it can be concluded that  $H_0$  was rejected because p-value 0.000 or ( $p < 0.05$ ) which means there is a significant difference to the decrease in intensity primary dysmenorrhea female adolescents at SMAN 2

Negara before and after being given the intervention pelvic rocking exercise.

## DISCUSSION

Intensity Primary dysmenorrhea in young women who experience dysmenorrhea feel various intensities before being given the intervention pelvic rocking exercise from the research results shown in table 1 regarding intensity dysmenorrhea felt at the time pretest intensity dysmenorrhea the highest is at the maximum value of 8, while the minimum value is 3 before it is carried out pelvic rocking exercise. Opinion from (Larasati, 2016) regarding risk factors dysmenorrhea including age at menarche, family history, body mass index (BMI), bad habits, and duration of menstruation.

The data in Table 1 regarding the characteristics of the respondents are mostly teenagers experiencing their first menstruation (menarch) at the age of 13 years as many as 12 people (39%). Research from (Widyanti, 2021) states that there are several factors that affect dysmenorrhea, one of which is: Agemenarch determine the risk dysmenorrhea because it is related to the reproductive system that has not matured optimally so that various reproductive complaints arise. Adolescents with menarche age range below 12- 14 years have the potential to be exposed hormone prostaglandin which is longer and higher during menstruation, causing cramps and pain in the stomach and causing dysmenorrhea.

Intensity Dysmenorrhea primary on 31 female young respondents who experience dysmenorrhea experienced a decrease in intensity after being given the intervention pelvic rocking exercise. The result is a decrease in intensity dysmenorrhea in this study can be seen in table 2, namely when posttest intensity



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dysmenorrhea the highest is at the maximum value of 6, while the minimum value is 1 after it is done pelvic rocking exercise. Research from (Utami, 2019) regarding Influence Pelvic Rocking Exercise Against Pain Levels Primary Dysmenorrhea That there is a decrease in the level of pain after being given exercise.

Other research that is in line with this research is in line with research from Diana Rhismawati (2022) with the title The Effect of Pelvic Rocking Exercise and Buteyko Exercise on Reducing Primary Dysmenorrhea Pain Levels which states that movement pelvic rocking exercise this can reduce the level dysmenorrhea primary, from the study shows that pelvic rocking exercise can reduce intensity dysmenorrhea in teenagers. Pelvic rocking exercise useful as an easy way to reduce or reduce menstrual pain dysmenorrhea.

Factors that influence the occurrence dysmenorrhea in adolescents one of which is age menarche and menstrual cycle in the opinion (Larasati, 2016) that menarche at the age of less than 13-14 years is exposed hormone prostaglandin more and longer during menstruation so that teenagers experience dysmenorrhea. The menstrual cycle also affects what happens dysmenorrhea because the longer the menstrual cycle this results in an imbalance hormone progesterone and prostaglandin hormones so that teenagers who experience long menstrual cycles experience it easily dysmenorrhea during menstruation.

Based on the results of research on 31 female respondents in class X at SMAN 2 Negara that influence pelvic rocking exercise to intensity primary dysmenorrhea in young women can be proven through data analysis tests using Paired T-Test results obtained through pretest and posttest so that the final value of  $t = 12,402$  and

value  $p$ -value 0.000 or ( $p < 0.05$ ) so there is a significant difference before and after the intervention is given pelvic rocking exercise to intensity primary dysmenorrhea in young women. Proof of the hypothesis in this study is the value  $p$ -value 0.000 or ( $p < 0.05$ ) which means that the hypothesis is accepted so that in this study there are differences in intensity dysmenorrhea decreased after the intervention pelvic rocking exercise on pain intensity dysmenorrhea.

The results of this study are supported by other research, namely from (Apriyanti, 2022) that after carrying out the technique pelvic rocking exercise this is a decrease in pain from respondents when experiencing dysmenorrhea after doing this technique at the time dysmenorrhea Respondents said that the pain decreased and disappeared. Respondents felt a reduction in pain and felt comfortable after doing the technique pelvic rocking this is because when doing this technique will produce a hormone called hormone endorphin, This hormone can suppress or limit the prostaglandin hormone so that it is not released and increases the estrone-estradiol ratio which acts to reduce endometrial proliferation and improve blood flow to the uterus. Giving motion pelvic rocking exercise this can reduce the intensity of menstrual pain of dysmenorrhea in adolescents, according to research conducted by (Fahri, 2021) said that pelvic rocking exercise This is one of the exercises to increase muscle strength, endurance and flexibility muscles, especially the pelvic area muscles. Exercise pelvic rocking This is useful in reducing pelvic area muscle tension during menstruation so that it can improve blood circulation.

Movement effect pelvic rocking exercise can reduce memory loss in young women



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according to (Andriani, 2021) states that pelvic rocking exercise is one of the physical exercises used to reduce dysmenorrhea by shaking the pelvis to the front, back, left and right sides, this rotation or pelvic movement is carried out during contractions or menstrual pain lasts a minimum of for 15 minutes until the pain subsides. Pelvic rocking exercise has several advantages so that it can reduce dysmenorrhea in young women by reducing pressure on the pelvic muscles, helping to relax the muscles around the pelvis, reducing production hormone prostaglandin so that pain can be reduced after doing pelvic rocking exercise.

## CONCLUSION

Based on research conducted by researchers it can be concluded that there is a difference in intensity primary dysmenorrhea before and after pelvic rocking exercise for young women in SMAN 2 Negara we know that the intensity dysmenorrhea in young women before administration intervention pelvic rocking exercise found that all respondents experienced dysmenorrhea. Intensity dysmenorrhea in young women after being given the intervention pelvic rocking exercise there is a decrease in dysmenorrhea that is felt so that adolescents feel the intensity of pain is reduced. Test Paired T-Test earned value ( $p$ -value  $< 0.05$ ) so that the conclusion of this study shows that there is a difference in intensity primary dysmenorrhea before and after pelvic rocking exercise in teenagers at SMAN 2 Negara.

## Conflict of Interest

The authors certify that we have no conflicts of interest to declare. We certify that the submission is an original work and is not under review at any other publication.

## Acknowledgment

The authors would like to express their sincere thanks and appreciation to all parties who have contributed and provided valuable assessments, comments, and suggestions during the completion of this research article. We hope that this article can give a positive contribution for the development of education and further research.

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