

## FACTORS RELATED TO PRIMARY DYSMENORRHOEA IN STUDENTS OF MESUJI JUNIOR HIGH SCHOOL 2, MESUJI DISTRICT OGAN KOMERING ILIR 2023

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### Abstract

*The physiological process of menstruation, which happens periodically in women, has been impacted by reproductive hormones, specifically progesterone and estrogen. Dysmenorrhea, or pain during menstruation, is one of the issues with teenage reproductive health during that time. The purpose of the research was to identify the variables associated with primary dysmenorrhea. This type of study was quantitative, with an analytic survey method and a cross-sectional approach in which the research data used primary data. This study used 72 samples to represent the population of female junior high school students. The chi-square test was the data source. The study's findings a correlation between primary dysmenorrhea and physical activity (p value 0.005), menarche age (p value 0.033), and nutritional status (p value 0.044). The incidence of primary dysmenorrhea among female students at SMP Negeri 2 Mesuji in 2023 was shown to be correlated with physical activity, age at menarche, and dietary status. Adolescents should take responsibility for the key modifiable dysmenorrhea causes, like exercise routines and nutritional status, by learning more and adopting a healthy lifestyle.*

**Keywords:** Physical Activity, Menarche Age, Nutritional Status, Primary Dysmenorrhea

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## 1. Introduction

Dysmenorrhea is the pain felt by a woman when she experiences menstruation. It is called dysmenorrhea if the pain has a higher intensity than the discomfort of menstruation.<sup>[1]</sup>

According to data from the WHO it was found that that 90 percent of the 1,769,425 women had dysmenorrhea, with 10-15% reporting severe dysmenorrhea (Rakhmawati, D. 2022). Numerous earlier research have indicated that dysmenorrhea occurs very frequently in Asian nations, with an incidence of 84.2%. However, in Southeast Asia, the frequency varies, with Malaysia

reporting 69.4% and Thailand reporting 84.5%<sup>[2]</sup>

The prevalence of dysmenorrhea in Indonesia is 107,673 (64.25%), with 9,496 (9.36%) and 59,671 (54.89%) experiencing secondary dysmenorrhea. Primary dysmenorrhea typically affects women of reproductive age and those who are not pregnant.<sup>[3]</sup>

According to data obtained from the Central Statistics Agency of South Sumatra Province in 2021, the number of young women in Palembang in 2021 was 62,379; the number of teenagers aged 10–14 years was 62,379; teenagers aged 15–19 years were 61,178; and teenagers aged

20–24 years were 68,082 souls. With a prevalence rate of dysmenorrhea of 61.30%, consisting of 42.90% primary dysmenorrhea and 9.50% secondary dysmenorrhea.<sup>[2]</sup>

According to preliminary study findings from 2022, there were 67 female students at SMP Negeri 2 Mesuji, with 38 of them reporting symptoms of dysmenorrhea. Dysmenorrhea can cause disruptions to educational activity. According to information collected from the student affairs department, the primary cause of the female students' absences during school hours was that they were menstruating, which naturally interfered with their ability to concentrate while studying.

The literature has extensively discussed the risk factors associated with dysmenorrhea. Based on earlier research, it is evident that the rising incidence of dysmenorrhea is associated with the following factors: psychological factors, body mass index (BMI), family history, exercise, age at menarche, menstrual cycle, alcohol consumption, physical activity, and prostaglandin influence, as indicated by body malondialdehyde levels.<sup>[4]</sup>

Physical activity can help reduce the pain that young women experience during dysmenorrhea. Because it increases the production of endorphin hormones, which are non-specific analgesic chemicals in dysmenorrhea, physical activity helps in preventing pain, a non-communicable disease.<sup>[5]</sup>

Menarche age is the age at which an adolescent female experiences her first menstrual cycle during puberty. Menarche normally happens between the ages of 12 and 14, which is accepted as normal. Pain will be experienced during menstruation since the reproductive organs are still developing at menarche, or younger than 12 years old, and the cervix is still shrinking.<sup>[6]</sup> An early menarche increases the chance of myoma by 1.24 times, and an early menarche can raise the risk of dysmenorrhea.<sup>[7]</sup>

According to Rahmawati's (2022) study's findings, "The relationship between iron intake and age of menarche with the incidence of dysmenorrhea in adolescent girls," there were 123 adolescent female respondents, where the age of menarche had a significant relationship with the incidence of dysmenorrhea in adolescent girls with a significant value of 0.03 ( $p$  value  $< \alpha$  0.05).<sup>[8]</sup>

Abnormal nutritional status, such as low nutritional status (underweight), can be caused by insufficient food intake, while overweight nutritional status can also cause dysmenorrhea because there is excessive fat tissue, which can cause blood vessel hyperplasia or pressure on the blood vessels. fatty tissue in the female reproductive organs, so that the blood that should flow during the menstrual process is disrupted and causes pain during menstruation.<sup>[1]</sup>

Based on the research results of Aprilia et al. (2022) with the title "The relationship between physical activity, nutritional status, and stress levels with the incidence of dysmenorrhea in students in the city of Bogor," in this study, the number of respondents was 178, with a  $p$  value of 0.038, meaning nutritional status is significantly associated with the incidence of dysmenorrhea. 1

Based on the background above, researchers are interested in "Factors Associated with Primary Dysmenorrhea in Female Students at SMP Negeri 2 Mesuji, Mesuji District, Ogan Komering Ilir Regency in 2023."

## 2. Method

The researchers utilized a quantitative design with a cross-sectional approach to examine the impact of physical activity, age at menarche, and nutritional status as independent variables on the incidence of primary dysmenorrhea, which was observed only once in the research subjects. Furthermore, the subject's character status or variables are measured during the examination.<sup>[8]</sup>

The population in this study were all students of SMP Negeri 2 Mesuji classes

(VII, VIII, and IX), with a total of 72 female students.

The sample collection method uses total sampling. Total sampling is a sampling technique where the number of samples is the same as the population. (9) We used a total of 72 samples for the study.

For this research, we collected primary data using a questionnaire to measure the variables. The questionnaire included a list of questions and statements covering physical activity, age at menarche, nutritional status, and dysmenorrhea.

### 3. Results and Discussion

#### Univariate Analysis

The researcher examined the data after gathering information from 72 respondents. The results of the univariate analysis to determine the characteristics of respondents in this study can be seen in the following table

**Table 1.** Frequency Distribution

		F	%
Primary Dysmenorrhea	No Primary Dysmenorrhea	27	37,5
	Primary Dysmenorrhea	45	62,5
	Total	72	100
Physical Activity	Light	34	47,2
	Heavy	38	52,8
	Total	72	100
Age of Menarche	Abnormal	37	51,4
	Normal	35	48,6
	Total	72	100
Nutritional Status	Abnormal	39	54,2
	Normal	33	45,8
	Total	72	100

Table 1 displays the following data: of the 72 respondents, 45 (62.5%) had primary dysmenorrhea, 27 (37.5%) did not have primary dysmenorrhea, 38 (52.8%) had heavy physical activity, and as many as 34 (47.2%) had light physical activity; 37 (51.4%) had abnormal menarche age, as many as 35 (48.6%) had normal menarche age, 39 (54.2%) had abnormal nutritional status, and 33 (45.8%) had normal nutritional status..

#### Bivariate Analysis

The dependent variable, primary dysmenorrhea, was examined using the chi square test, and bivariate analysis was used to ascertain the link between the independent variables—physical activity, age of menarche, and nutritional status—and the dependent variable. The following table displays the bivariate analysis's findings:

**Table 2.** Relationship between physical activity and primary dysmenorrhea

No	Physical Activity	Primary Dysmenorrhea		Amount		p value
		Of n	No n	N	%	
1	Light	19	15	34	100	0,002
2	Heavy	8	30	38	100	
Total				72	100	

Table 2 above shows that out of 72 respondents, 34 engaged in mild physical activity, 19 respondents (55.9%) did not have primary dysmenorrhea, and 15 respondents (44.1%) did. Thirty-eight respondents (78.9%) reported having primary dysmenorrhea, while eight respondents (21.1%) did not. Teenagers who engaged in heavy physical activity were among the 38 respondents. The p value was  $0.002 < 0.05$ , which indicates that there is a significant correlation between physical activity and primary dysmenorrhea based on the chi-square test and significance limit of 0.05.

This research is in line with the research of Dwiasrini et. al. (2023), where the statistical test results obtained a p-value of  $0.001 \leq 0.05$ . It can be concluded that there is a significant relationship between physical activity and dysmenorrhea in class XII female students at SMA Muhammadiyah 18 Jakarta. From the results of the analysis, the odds ratio (OR) = 10,000 (2,380–42,014) was obtained, which means that female students with heavy physical activity had a 10,000 chance of experiencing dysmenorrhea compared to female students who had light activity.<sup>[10]</sup>

Primary dysmenorrhea is associated with a risk factor of inadequate physical

exercise. Menstrual discomfort is caused by a blockage in the flow of oxygen to the blood vessels of the reproductive organs. Primary dysmenorrhea is less likely to result from physical activities such as gymnastics, walking, workouts, aerobics, jogging, and other sports when they are done three to four times a week.<sup>[11]</sup> Because dysmenorrhea is more common in women who do not exercise, which might lower blood and oxygen circulation, researchers surmise that there is a causal association between the two conditions.

**Table 3.** Age Relationship *Menarche* with Primary Dysmenorrhea

No	Menarche Age	Primary Dysmenorrhea				Amount		p-value
		Of		No		N	%	
		n	%	N	%			
1	Abnormal	9	24,3	28	77,7	37	100	0,018
2	Normal	18	51,4	17	48,6	35	100	
	Total					72	100	

Table 3 above shows that there were 72 respondents, of whom 37 were of abnormal menarche age; 9 respondents did not experience primary dysmenorrhea (24.3%); and 28 respondents experienced primary dysmenorrhea (75.7%). Meanwhile, of the 35 respondents, there were teenagers who were of normal menarche age; 18 respondents (51.4%) did not experience primary dysmenorrhea, and 17 respondents (48.6%) experienced primary dysmenorrhea. The chi-square test and significance limit of 0.05 yielded a p value of  $0.018 < 0.05$ , indicating a significant relationship between age at menarche and primary dysmenorrhea.

This study is consistent with that of Rakhmawati, D. (2022), where the analysis's findings indicate that H1 is accepted and H0 is rejected, indicating that there is a strong correlation— $r = 0.294$ —between the age at menarche and the incidence of dysmenorrhea in teenage girls attending the Nurul Ulum Jember Islamic Boarding School in 2022. The association is "high" and positive in

direction, indicating that a teen's chance of experiencing dysmenorrhea increases with the time until menarche. With an OR value of 4.714, it can be concluded that there is a strong correlation between the age at menarche and the prevalence of dysmenorrhea in teenage girls.<sup>[12]</sup>

The mechanism of the relationship between the age of menarche and the occurrence of dysmenorrhea is that if the age of menarche occurs earlier (early), then the reproductive organs are not fully mature. Maturation of the reproductive organs, namely the hypothalamus, pituitary, and ovarian axes. The hormone RH influences the secretion of LH and FSH by the pituitary gland.<sup>[13]</sup>

Researchers assume that the sooner a teenager experiences menarche, the higher the factors that can cause dysmenorrhea. The age of menarche is influenced by several factors, such as environment, nutritional status, nutrition, exposure to mass media, or heredity.<sup>[14]</sup>

**Table 4.** Relationship between nutritional status and primary dysmenorrhea

No	Nutritional status	Primary Dysmenorrhea				Amount		P Value
		Of		No		N	%	
		n	%	N	%			
1	Abnormal	10	25,6	29	74,4	39	100	0,024
2	Normal	17	51,5	16	48,5	33	100	
	Total					72	100	

In Table 4 above, there were 72 respondents, of whom 39 had abnormal nutritional status, 10 (25.6%) did not experience primary dysmenorrhea, and 29 (74.4%) experienced primary dysmenorrhea. Meanwhile, of the 33 respondents, there were teenagers who had normal nutritional status; 17 respondents (51.5%) did not experience primary dysmenorrhea, and 16 respondents (48.5%) experienced primary dysmenorrhea. Based on the chi-square test and significance limit of 0.05, the p value was  $0.024 < 0.05$ , so it can be concluded that there is a significant

relationship between nutritional status and primary dysmenorrhea.

This research was in line with research by Liska, C. (2022), where it is known that the p value is  $0.015 < 0.05$ , so it is stated that nutritional status and the incidence of dysmenorrhea are significantly related. Also in line with.<sup>[7]</sup>

Researchers assume that the intake of nutrients from food and drink causes the body to establish balance, resulting in nutritional status. Nutritional status is obtained from various factors that are different from each other, causing differences in reactions, so that there are various categories of nutritional status in a person.<sup>[15]</sup>

#### 4. Conclusion

The conclusion was that there is a relationship between physical activity, age at menarche, and nutritional status simultaneously with primary dysmenorrhea at SMP Negeri 2 Mesuji, OKI Regency, in 2023. There is a significant relationship between partial physical activity and primary dysmenorrhea at SMP Negeri 2 Mesuji, OKI Regency, in 2023. There is a significant relationship between partial menarche age and primary dysmenorrhea at SMP Negeri 2 Mesuji, OKI Regency, in 2023. There is a significant relationship between partial nutritional status and primary dysmenorrhea at SMP Negeri 2 Mesuji, OKI Regency, in 2023.

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