

## THE RELATIONSHIP BETWEEN THE INCIDENCE OF DYSMENORRHEA AND THE QUALITY OF LIFE OF ADOLESCENT FEMALES IN STATE MIDDLE SCHOOL 3 PEKANBARU CITY

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### Abstract

Dysmenorrhea is a condition that causes pain in the lower abdomen. This is not only felt in the lower abdomen, sometimes in the lower back, waist muscles, pelvis, thighs or calves. This study aims to determine the relationship between the incidence of dysmenorrhea and the quality of life of adolescent girls in the SMP Negeri 3 Pekanbaru City area. This type of quantitative research uses a descriptive correlation design with a cross sectional approach. The sample for this research was 61 teenage girls in class VII at SMPN 3 Pekanbaru City. This research instrument uses the NRS (Numeric Rating Scale) scale and the pediatric quality of life 4.0 generic module pedsQL) teens report 13-18 age questionnaire. The analysis used is univariate analysis with respondent characteristics and bivariate analysis with chi-square test statistical analysis. The research results showed that 36 respondents (59%) had moderate dysmenorrhea among young women with 55 respondents (90.2%) with low quality of life. The relationship between the incidence of dysmenorrhea and the quality of life of adolescent girls at SMPN 3 Pekanbaru City is with  $p$  value =  $0.001 < 0.05$ , which means that  $H_0$  is rejected, so it can be concluded that there is a relationship between the incidence of dysmenorrhea and the quality of life of adolescent girls in the SMPN 3 Kota Pekanbaru area. Dysmenorrhea, Quality of Life, Young Women.

**Keyword:** Dysmenorrhea 1; Quality of life 2; Young Woman 3

### INTRODUCTION

Adolescence is the time when children become adults. According to the World Health Organization (WHO), adolescents are people between the ages of 10 and 19 (Juliana et al., 2019). The development of adolescent girls is marked by puberty. For adolescent girls, menstruation is usually a sign of puberty. However, it cannot be denied that some adolescent girls during puberty suffer from disorders such as dysmenorrhea. Dysmenorrhea is a condition that causes pain in the lower abdomen. This pain is not only felt in the lower abdomen but can also affect the lower back, waist muscles, pelvis, thighs, or calves. Dysmenorrhea is a well-known condition; this pain can be accompanied by nausea, vomiting, diarrhea, cold sweats, and dizziness. Dysmenorrhea also impacts physiological and mental changes that vary from person to person, disrupting their quality of life (Amalia et al., 2023). During menstruation, some adolescent girls experience excruciating pain that can be disabling. Additionally, the body releases hormones that cause the uterine muscles to contract more strongly, worsening the pain. These hormones also cause other symptoms that often accompany pain, such as headaches, nausea, diarrhea, and weakness. Hormone levels can increase in adolescents experiencing anxiety and restlessness, which can lead to even greater pain (Handra & Yeni, 2024). Adolescent girls who experience dysmenorrhea at school can impact their academic performance, such as reduced concentration, memory loss due to the pain they experience, difficulty completing assignments, lack of enthusiasm, permission to be absent from school or even asking to go home because of the pain they experience. Adolescents who suffer from dysmenorrhea also have an impact on their emotional dimension. This pain is believed to cause feelings of sadness and depression due to worry

about what is happening to them. Other disorders due to dysmenorrhea can also affect the dimension of social relationships, especially with family and friends, breaking off relationships due to more sensitive feelings at this time, enduring pain and limitations in participating in social activities with friends. So that pain due to dysmenorrhea with varying degrees of severity can reduce the quality of life of adolescent girls and cause the quality of education at school to be less than optimal (Amalia et al, 2023). Based on data obtained from the Pekanbaru City Education Office in 2023, approximately 49 adolescent girls experienced dysmenorrhea in junior high schools or public junior high schools in Pekanbaru City, the third highest being SMP Negeri 3 Pekanbaru City, with a percentage of 82% experiencing dysmenorrhea. This means that out of 290 adolescent girls, 260 experienced dysmenorrhea (82%), while only 20 did not experience dysmenorrhea (7.6%), and 10 did not menstruate (3%). A survey conducted at Pekanbaru City Public Junior High Schools on October 1, 2024, revealed that 61 seventh-grade adolescent girls experienced dysmenorrhea. A preliminary study conducted by researchers through brief interviews with 17 people experiencing dysmenorrhea on October 15 at SMP Negeri 3 Pekanbaru City, obtained results that 17 adolescent girls who experienced dysmenorrhea (100%) said that they experienced pain and discomfort during learning activities at school, experienced little body movement, and experienced anxiety on the first and second days of menstruation. From this, adolescent girls did not carry out activities optimally at school and at home which led to a low quality of life for adolescent girls. This study aims to determine the relationship between the incidence of dysmenorrhea and the quality of life of adolescent girls at SMPN 3 Pekanbaru City.

## **RESEARCH METHOD**

This study used a quantitative descriptive correlational design with a cross-sectional approach. This study was conducted at SMP Negeri 3 Pekanbaru City based on data from the Pekanbaru City Education Office in 2024. The study was conducted from December to January 2024. The population was 61 seventh-grade female adolescents experiencing dysmenorrhea at SMP Negeri 3 Pekanbaru City in 2024. The population consisted of 61 students who were not using dysmenorrhea medication and served as the sample in this study. The respondents were female adolescents (11-14 years old), seventh-grade students at SMP Negeri 3 Pekanbaru City who experienced dysmenorrhea. The research instrument used in this study was a questionnaire. The questionnaire administered is standardized, ensuring its reliability. The instrument used in this study was the Pediatric Quality of Life 4.0 Generic Module (pedsQL) self-reported by adolescents aged 13-18 years. The Pediatric Quality of Life 4.0 Generic Module (pedsQL) self-reported by adolescents aged 13-18 years includes 23 questions across four subscales: physical function (8 items), emotional function (5 items), social function (5 items), and school function (5 items). The analysis used univariate and bivariate methods. Univariate analysis determined the distribution and frequency of each variable. Bivariate analysis used the chi-square test to determine the relationship between the independent and dependent variables. This research was declared ethical by the Ethics Committee of the Faculty of Nursing, Payung Negeri Institute of Health, Pekanbaru, with Decree Number: 029/IKES PN/KEPK/XII/2024.

## **RESEARCH RESULTS**

Variables	Characteristics	Frequency (n)	Percentage (%)
Age	11 Year	1	1.6
	12 Year	34	53.1
	13 Year	5	39.1
	14 Year	1	1.6
<b>Total</b>		<b>61</b>	<b>95.3</b>

**Figure 1 : Distribution of respondents based on age**

Variables	Characteristics	Frequency (n)	Percentage (%)
Menstrual Cycle	6 day	15	23.4
	7 day	38	59.4
	9 day	5	7.8
	10 day	3	4.7
<b>Total</b>		<b>61</b>	<b>95.3</b>

**Figure 2 : Frequency distribution of respondents based on menstrual cycle**

No	Characteristics	Frequency(n)	Percentage (%)
1.	<b>Dysmenorrhea</b>		
	Mild pain	6	9.8
	Moderate pain	32	52.5
	Severe pain	23	37.7
	<b>Total</b>	<b>61</b>	<b>100</b>
2.	<b>Quality of Life</b>		
	High	6	9.8
	Low	55	90.2
	<b>Total</b>	<b>61</b>	<b>100</b>

**Figure 3 : Frequency Distribution of Characteristics of Female Adolescents in Grade VII at SMPN 3 Pekanbaru City (N=61)**

Quality of Life						
	n	High		Low		P Value
		n	(%)	n	(%)	
<b>Dysmenorrhea</b>						
Light	5	0	9.8	0	0	0.001
Medium	0	0	0	32	52.5	
Heavy	0	0	0	23	37.7	
<b>Total</b>	<b>9</b>	<b>0</b>	<b>14.8</b>	<b>55</b>	<b>85.2</b>	

**Figure 4 : The Relationship Between Dysmenorrhea and the Quality of Life of Adolescent Girls at SMPN 3 Pekanbaru City**

The research results showed that of the 61 respondents, almost all (53.1%) were 12-year-old girls (34). Of the 61 respondents, almost all (59.4%) had a 7-day menstrual cycle (38). Furthermore, more than half (52.5%) of the respondents experienced moderate menstrual pain (dysmenorrhea), 32 girls, and almost all (90.2%) of the respondents had a low quality of life (55 girls).

Statistical tests showed a relationship between dysmenorrhea and quality of life in adolescent girls. Five respondents had mild dysmenorrhea (8.2%) and a high quality of life. 52.5% of moderate dysmenorrhea and a low quality of life (32 girls). Meanwhile, 23 respondents had severe dysmenorrhea (37.7%) and a low quality of life. The results of the chi-square statistical test obtained a p value =  $0.001 < 0.05$ , which means that  $H_0$  is rejected, so it can be concluded that there is a relationship between the incidence of dysmenorrhea and the quality of life of female adolescents at SMPN 3 Pekanbaru

## DISCUSSION

Based on the research results in Table 1, more than half (53.1%) of the 34 adolescent girls (58.1%) were 12 years old. Age is a factor influencing the incidence of dysmenorrhea in adolescent girls. It generally occurs in adolescents aged 13-14, but in some cases, it can occur before the age of 12 (8-11 years) (Horman et al., 2021). According to a study conducted by Indarna & Lediawati (2021), "Age of Menarche and Duration of Menstruation with the Incidence of Primary Dysmenorrhea in Grade 10 Female Students at the Bhakti Kencana Health Vocational School in Subang," more than half of the respondents (43) were 12 years old. Early menarche results in reproductive organs not yet functioning optimally and not being ready for the changes that occur, resulting in pain during menstruation. According to researchers' assumptions, menarche normally occurs at age 12. Early adolescence, between the ages of 12 and 14, is characterized by rapid bodily changes, accelerated growth, and changes. Body composition is related to the onset of secondary sexual development, menarche, and psychological changes. Puberty is marked by the onset of menstruation or the first menstrual period. The researchers' assumptions are supported by the theories of Farahdiba et al. (2023) and Pratiwi et al. (2024), who state that early adolescence experiences physical, psychological, mental, emotional, and social development. Adolescence is marked by the emergence of primary sexual characteristics influenced by the activity of the reproductive glands, for example, menstruation. Based on the research results in Table 2, almost all (59.4%) of the 38 adolescent girls had a 7-day menstrual cycle. Menstrual cycles occur periodically every month, with a normal 28-day interval, while menstrual periods typically last between 3 and 7 days (Saputra et al., 2021). According to research conducted by Kasumawati et al. (2021), entitled "Self-tapping for changes in dysmenorrhea pain intensity in adolescents," more than half (70%) of respondents experienced menstruation for 7 days, a small proportion (20%) of respondents experienced menstruation for 6 days, and a small proportion (10%) of respondents experienced menstruation for 3 days. A prolonged menstrual cycle causes more frequent uterine contractions, which causes pain. Continuous uterine contractions can cut off blood supply to the uterus, resulting in dysmenorrhea. According to the researchers' assumption, menstrual cycles lasting 3-7 days are more common in adolescent girls, resulting in continuous uterine contractions and resulting in dysmenorrhea. A regular menstrual cycle is influenced by hormones and is not affected by stress. Factors that influence the menstrual cycle include hormones and stress levels. The researchers' assumption is supported by the theory of Islamy & Farida (2020), who state that stress levels are related to the menstrual cycle because stress is related to a person's emotional level, thought processes, and mental state. Stress factors can affect the production of the hormone cortisol which affects the production of the female hormone estrogen. Based on the research results in Table 3, more than half (59%) of the 36 adolescent girls experienced moderate menstrual pain (dysmenorrhea). Dysmenorrhea is a condition characterized by painful abdominal cramps during menstruation, which can lead to school absences and limitations in social activities with friends, sports, and academic activities

(Permata et al., 2023). According to a study conducted by Wahyuni & Zulfahmi (2021) entitled "Prevalence and Characteristics of Dysmenorrhea in Adolescents in 2021," 148 respondents experienced moderate pain (79.1%), 2 respondents experienced mild pain (1.1%), and 37 respondents experienced severe pain (19.8%). This indicates that many adolescent girls experience moderate and severe dysmenorrhea during menstruation. According to the researchers' assumptions, adolescent girls experiencing moderate to severe dysmenorrhea significantly disrupt their daily activities compared to those experiencing mild or no dysmenorrhea. Dysmenorrhea is also influenced by several factors, including physical activity. This assumption is supported by the theory of Kristianti et al. (2024), who stated that physical activity improves blood circulation, including blood flow to the reproductive organs. This smooth blood flow can help reduce fluid buildup and inflammation that often occurs during menstruation. The results of the study, as shown in Table 3, show that almost all (85.2%) of the 52 adolescent girls had a low quality of life. Quality of life for adolescent girls is an assessment of a positive life cycle, feeling satisfied with themselves in terms of physical and psychosocial health, including a positive self-image, having good relationships with friends and family, and being able to participate in calming activities, for example, at school (Dewi et al., 2019). According to research conducted by Amalia (2023), entitled "The Relationship Between Dysmenorrhea and Quality of Life in Grade X and XI Female Students in 2022," it was found that out of 64 respondents, many female students (36 respondents) had a poor quality of life. Adolescent girls who experience dysmenorrhea have limitations in walking 100 meters, running, exercising, lifting heavy weights, doing housework, experiencing pain, and feeling weak when experiencing dysmenorrhea. According to the researcher's assumption, adolescent girls who experience dysmenorrhea have difficulty performing daily tasks, difficulty participating in school activities, or do not attend school at all, and experience emotional ups and downs that interfere with their ability to socialize with their peers. The researcher's assumption is supported by the theory of Amalia et al. (2023), who stated that dysmenorrhea can interfere with concentration and motivation to learn, thereby affecting the quality of life of adolescent girls

Bivariate analysis was used to analyze the relationship between the independent variable, dysmenorrhea, and the dependent variable, with the quality of life of adolescent girls. Based on the results in Table 4.4, the p-value was  $0.000 < 0.05$ , indicating that  $H_0$  was rejected. Therefore, it can be concluded that there is a relationship between dysmenorrhea and the quality of life of adolescent girls. Dysmenorrhea is a complaint experienced in the lower abdomen, but recently it has been discovered that the pain is not only felt in the lower abdomen but can also affect the lower back, waist, pelvis, thigh muscles, or calves. Dysmenorrhea also affects various physiological and mental changes in adolescent girls, which impair their quality of life (Amalia et al., 2023). This study is consistent with the results of Handra Raisa and Yeni's (2024) study on the relationship between dysmenorrhea and quality of life in adolescent girls at SMA Negeri 1 Indralaya, Ogan Ilir Regency. The chi-square analysis yielded a p-value of  $<0.0001$ , less than alpha 0.05, indicating a significant relationship between dysmenorrhea and quality of life. Furthermore, a study by Hilinti Yatri (2024) on the relationship between physical activity and dysmenorrhea in adolescent girls at SMKN 3 Lubuk Linggau in 2024 showed a p-value of  $<0.05$ , indicating a significant relationship between physical activity and dysmenorrhea in adolescent girls. Based on the research conducted by Saputra et al. (2021) on the relationship between dysmenorrhea and learning activities in female students in grades X and XI at SMAN Rancakalong in 2021, the results of the study showed a relationship between learning activities and primary dysmenorrhea with a p value  $(0.006) < 0.05$ . Most female

students' learning activities were disrupted, which could result in learning goals not being achieved properly, which is one of the factors that disrupts the quality of life of female adolescents who experience dysmenorrhea. According to researchers, dysmenorrhea has a significant impact on daily activities, negatively impacting the quality of life of adolescent girls, leading to school absences, reduced physical activity at school and at home, loss of concentration while studying at school and at home, and poor social relationships with friends and family. This assumption is supported by the theory of Amalia et al. (2023), who stated that adolescent girls experiencing moderate and severe dysmenorrhea experience more disruption to their activities at school and at home, including physical, emotional, social, and school functions, resulting in a lower quality of life.

### CONCLUSION

Based on the results of the study, it shows that an average of (52.5%) female adolescents experience menstrual pain (dysmenorrhea) at SMPN 3 Pekanbaru City. Then the results of the study show that almost all (90.2%) female adolescents who experience dysmenorrhea have a low quality of life at SMPN 3 Pekanbaru City. The results of the study obtained a p value = 0.001 < 0.05 which means H<sub>0</sub> is rejected, so it can be concluded that there is a relationship between the incidence of dysmenorrhea and the quality of life of female adolescents in the SMPN 3 Pekanbaru City area. This research can be developed into further sources or reference materials and can serve as inspiration for further research. It is hoped that future researchers will expand the number of respondents for their research.

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