

Factors Affecting the Incidence of Dysmenorrhea in Adolescent Girls at SMA Negeri Situraja in 2023

Dini Afriani^{*1}, Deprilla Fadhilah Rainidiya², Evi Sonjati³

¹ Students of Public Health Study Program, Faculty Health Science, Universitas Sebelas April

^{2,3} Public Health Study Program, Faculty Health Science, Universitas Sebelas April

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ABSTRACT

Dysmenorrhea is among the most common menstrual disorder syndromes and is one of the most common gynecological problems in women of all ages. The menstrual cycle can also involve many psychological aspects, such as irritability, mood swings, depression and anxiety. Another problem that can cause dysmenorrhea is nutritional status. Preliminary study of SMA Negeri Situraja students on March 29, 2023 found that 7 people (70%) of female students experienced dysmenorrhea and 3 people (30%) of female students did not experience dysmenorrhea. The purpose of this study was to determine the factors that influence the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023. The type of research used is quantitative which is descriptive cross sectional. The population in this study were female students at SMA Negeri Situraja totaling 786 students, with a sample size of 100 students determined by the Slovin formula. Based on data analysis, the results showed that the variable that was not associated with the incidence of dysmenorrhea was knowledge ($P=0.219$), while the variables associated were menstrual cycle variables ($P=0.003$), and nutritional status variables ($P=0.000$). Therefore, it is recommended to increase awareness of reproductive health, especially those related to dysmenorrhea management. By providing individual and group counseling activities in collaboration with local health agency personnel.



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Corresponding Author:

Dini Afriani,
Public health Study Program,
Faculty Health Science, Universitas Sebelas April,
Jalan Cipadung No. 54 Kotakaler Sumedang.
Email: diniafriani@unsap.ac.id

1. INTRODUCTION

Adolescence is one of the periods of human development, this period is a period of change or transition from childhood to adulthood which includes biological, psychological, and social changes. Adolescence usually begins at the age of 10-13 years and ends at the age of 18-22 years. Adolescence begins with rapid growth and is usually called puberty. With these rapid changes come observable physical changes such as height and weight gain commonly referred to as growth, and sexual maturity as a result of hormonal changes (Ministry of Health, 2022).

Dysmenorrhea is the most common menstrual disorder syndrome and is one of the most common gynecological problems in women of all ages. Dysmenorrhea can affect aspects of daily life including physical well-being, academic performance mood, interpersonal relationships, diet, exercise, and sleep patterns. The menstrual cycle can also involve many psychological aspects, such as irritability, mood swings, depression, and anxiety (Parveen, et al., 2020).

Based on data from the World Health Organization (WHO), the incidence of dysmenorrhea is 1,769,425 people (90%) of women who experience dysmenorrhea, 10-15% of whom experience severe dysmenorrhea. This is supported by research that has been conducted in various countries with astonishing results, where the incidence of primary dysmenorrhea in each country is reported to be more than 50% (Aksari, 2022).

In Indonesia, the incidence of dysmenorrhea is 107,673 people (64.25%) consisting of 59,671 people (54.89%) experiencing primary dysmenorrhea and 9,496 people (9.36%) experiencing secondary dysmenorrhea. Regarding this, the understanding of adolescent girls about dysmenorrhea is still not good, so many adolescent girls do not know how to deal with dysmenorrhea properly (Elsera, et al, 2022).

In West Java in 2018, it was reported that the number of reproductive adolescent girls aged 10-24 years was 56,598. While those who experienced dysmenorrhea and came to health facilities were 11,565 people or 1.31% (Ministry of Health, 2020). Dysmenorrhea greatly affects school-age adolescents because it causes disruption to daily activities. If a student experiences dysmenorrhea, their learning activities at school are disrupted and often this makes them miss school and the quality of life of adolescents decreases (Sari, 2022).

According to the results of a preliminary study conducted at SMA Negeri Situraja on March 29, 2023, 10 adolescent girls were obtained. When interviews were conducted with 10 young women, the results showed that 7 students (70%) experienced dysmenorrhea during menstruation and 3 students (30%) did not experience dysmenorrhea during menstruation. Because during menstruation some respondents experience irregular menstrual cycles and often consume fast food or junk food, such as instant noodles, meatballs, fried rice, batagor, and seblak. So that they often have difficulty doing daily activities during menstruation, such as headaches, nausea, abdominal pain and fainting. This causes the student to be silent in the UKS room and unable to participate in learning activities at the first time of menstruation. Based on the above background, researchers are interested in conducting research on the factors that influence the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja.

2. METHOD

The type of research used is quantitative which is descriptive cross sectional. The population in this study were female students in Situraja State High School totaling 786 students, with a sample size of 100 students determined by the Slovin formula. In this study researchers used stratified random sampling techniques. the instrument used was a questionnaire using google form. Data analysis includes univariate and bivariate analysis using the Chi-Square test.

3. RESULTS AND DISCUSSION

3.1. Results

A. Univariate Analysis

1) Overview of Dysmenorrhea Incidence

Table 1 Overview of Dysmenorrhea Incidence

Dysmenorrhea	Frequency	Percent (%)
Yes	81	81,0
No	19	19,0
Total	100	100,0

Source : Primary Data 2023

According to table 1, it can be seen that there are more respondents who experience dysmenorrhea, 81 female students (81,0%).

2) Knowledge Overview

Table 2 Overview Based on Knowledge

Level of Knowledge	Frequency	Percent (%)
Good	46	46,0
Fair	37	37,0
Poor	17	17,0
Total	100	100,0

Based on table 2, it can be seen that the majority of respondents have a good level of knowledge and the highest frequency is in the good category, namely 46 female students (46.0%)

3) Menstrual Cycle Overview

Table 3 Overview Based on Menstrual Cycle

Menstrual Cycle	Frequency	Percent (%)
Normal	66	66,0
Not Normal	34	34,0
Total	100	100,0

Source: Primary Data 2023

Based on table 3, it can be seen that the majority of respondents have a menstrual cycle and the highest frequency is in the normal category, namely 66 female students (66.0%).

4) Overview of Nutritional Status

Table 4 Overview Based on Nutritional Status

Nutritional Status	Frequency	Percent (%)
Good	36	36,0
Less Good	64	64,0
Total	100	100,0

Source: Primary Data 2023

Based on table 4, it can be seen that the majority of respondents have nutritional status and the highest frequency is in the unfavorable category, as many as 64 students (64.0%).

B. Bivariate Analysis

1) Relationship between Knowledge and Incidence of Dysmnorrhea

Table 5 Results of Correlation Test between Knowledge and the incidence of Dysmenorrhea in Adolescent Girls at SMA Negeri Situraja

Knowledge Level	Dysmenorrhea				Total		P Value*
	Yes		No		F	%	
	F	%	F	%			
Good	36	36.0	10	10.0	46	46.0	0.219
Fair	33	33.0	4	4.0	37	37.0	
Poor	12	12.0	5	5.0	17	17.0	
Total	81	81.0	19	19.0	100	100.0	

Source: Primary Data 2023

The table above explains the relationship between knowledge and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023, where 46 people have good knowledge (46.0%), 37 people have sufficient knowledge (37.0%), and 17 people have less knowledge (17.0%), with a total of 100 respondents (100.0%). From statistical calculations, it was found that the p value was 0.219 with a value of $\alpha = 0.05$, meaning that the p value had no relationship between knowledge and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.

2) Relationship between Menstrual Cycle and Incidence of Dysmenorrhea

Table 6 Results of Correlation Test between Knowledge and the incidence of Dysmenorrhea in Adolescent Girls at SMA Negeri Situraja

Menstrual Cycle	Dysmenorrhea				Total		P Value*
	Yes		No		F	%	
	F	%	F	%			
Normal	48	48.0	18	18.0	66	66.0	0.003
Not Normal	33	33.0	1	1.0	34	34.0	
Total	81	81.0	19	19.0	100	100.0	

Source: Primary Data 2023

The table above explains the relationship between the menstrual cycle and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023, where 66 people had normal menstrual cycles (66.0%) and 34 people had abnormal menstrual cycles (34.0%), with a total of 100 respondents (100.0%). From statistical calculations, it was found that the p value was 0.003 with a value of $\alpha = 0.05$, meaning that the p value had a relationship between the menstrual cycle and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.

3) Relationship between Nutritional Status and the Incidence of Dysmenorrhea

Table 7 Results of Correlation Test between Knowledge and the incidence of Dysmenorrhea in Adolescent Girls at SMA Negeri Situraja

Nutritional Status	Dysmenorrhea				Total		P Value*
	Ya		Tidak		F	%	
	F	%	F	%			
Good	18	18.0	18	18.0	36	36.0	0.000
Less Good	63	63.0	1	1.0	64	64.0	
Total	81	81.0	19	19.0	100	100.0	

Source: Primary Data 2023

The table above explains the relationship between nutritional status and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023, where 36 people had good nutritional status (36.0%), and 64 people had poor nutritional status (64.0%), with a total of 100 respondents (100.0%). From statistical calculations, it was found that the p value was 0.000 with $\alpha = 0.05$, meaning that there was a relationship between nutritional status and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.

3.2. Discussion

A. Overview of the Incidence of Dysmenorrhea

Based on the results of the statistical test of the incidence of dysmenorrhea, it can be seen that the percentage of respondents in adolescent girls at SMA Negeri Situraja in 2023, most of them have experienced the incidence of dysmenorrhea during menstruation, namely 81 students (81.0%), and respondents who have never experienced dysmenorrhea during menstruation as many as 19 students (19.0%). Dysmenorrhea or better known as menstrual pain is a complaint that is often experienced by adolescent girls right in the lower abdomen. Dysmenorrhea is a disease that has been known for along time, the pain can be accompanied by nausea, vomiting, diarrhea, cold sweats and dizziness. But lately it is known that menstrual pain is not only felt in the lower abdomen. Some teenagers sometimes feel in the lower back, waist, pelvis, thigh muscles to calves (Mouliza, 2020). This is in line with research entitled The Relationship between Depression and Dysmenorrhea in Patients conducted by Gagah, et al., (2021) on 60 respondents, it was found that 34 (56.7%) respondents experienced dysmenorrhea and 26 (43.3%) respondents did not experience dysmenorrhea.

Researchers assume that the incidence of dysmenorrhea has a negative impact on adolescent girls, namely at the first time of menstruation, students are silent in the UKS room and do not participate in learning activities, causing interference in teaching and learning activities. This affects achievement in the academic and non-academic fields. And also many female students complain and even do not go to school at the first time of menstruation.

B. Overview of Knowledge

Based on the results of the statistical test of knowledge level, it can be seen that the percentage of respondents in adolescent girls at SMA Negeri Situraja in 2023, most of them with good knowledge, namely 46 students (46.0%), sufficient knowledge, namely 37 students (37.0%), and lack of knowledge, namely 17 students (17.0%). In accordance with the theory according to Notoatmodjo (2017), that knowledge is the result of knowing, and this occurs after people perceive a certain object. Sensing occurs through the human five senses, namely the senses of sight, hearing, smell, taste, and touch. although here the student's source of information is quite good, namely most of the electronic media (internet), but few get information about dysmenorrhea and how to handle it from friends, books, or healthworkers.

The results of research conducted by Kristin Febriani Br Gtg (2021) entitled Overview of Knowledge and Attitudes of Adolescent Girls in Handling Dysmenorrhea at Airlangga Namu Ukur High School in 2021, show that the knowledge of adolescent girls regarding dysmenorrhea who have good knowledge is 40 people (90.9%) and sufficient knowledge is 4 people (9.1%). Because it is seen from the answers they gave when filling out the questionnaire and the high desire to find out information about dysmenorrhea through the internet, health workers, parents, friends, teachers.

The researcher assumed that the level of knowledge of adolescent girls at SMAN Situraja was good, because the knowledge of adolescent girls was based on the amount of information obtained through social media or from people around them, especially parents. Although not all have good knowledge, there are also those who have sufficient knowledge, this is due to the lack of awareness or lack of care about dysmenorrhea. In addition, the lack of health education or counseling related to adolescent health and reproductive health issues, especially about dysmenorrhea.

C. Overview of Menstrual Cycle

Based on the results of statistical tests, it can be seen that respondents with abnormal menstrual cycles were 66 female students (66.0%), while for normal menstrual cycles were 34 female students (34.0%). The menstrual cycle is calculated from the first day of menstruation until the next period of menstruation comes, while the length of menstruation is the distance between the start date of menstruation until menstruation stops. The menstrual cycle is said to be normal if it is not less than 21 days and not more than 35 days, while the length of menstruation is said to be normal if it is not less than 3 days and not more than 7 days (Qoriaty et al, 2015).

The results of this study are in accordance with research conducted by Indah et al (2019) entitled The Relationship Between Dysmenorrhea and Menstrual Cycle Disorders in Adolescents at Sma N 1 showed that of the 92 respondents, 35 experienced a normal menstrual cycle with a percentage of 38.0%. that is, 35 respondents had menstrual cycles ranging from 21-35 days. This figure is in the minority category considering that of the total number of respondents, only 35 people experienced a normal menstrual cycle, this shows that the majority of respondents studied experienced menstrual cycle disorders, namely 57 people (62.0%) who were divided into both polymenorrhea and oligomenorrhea menstrual cycles.

Researchers assume that irregular menstrual cycles if not treated quickly and appropriately can cause fertility disorders. Irregular menstruation also causes disturbances in the reproductive system that are at risk of increasing the risk of various diseases such as uterine cancer and infertility. So that changes that occur in the menstrual cycle are feared to affect the quality of life of adolescents in the future.

D. Overview of Nutritional Status

Based on the results of statistical tests, it can be seen that respondents whose nutritional status is not good are 64 students (64.0%) with a frequency of undernutrition as many as 39 students and overnutrition as many as 24 students, while for good nutritional status as many as 36 students (36.0%).

Adolescent girls with good nutritional status and maintaining ideal weight will reach puberty normally, experience menstruation normally and without interruption. The existence of such conditions will support adolescent girls in relation to reproduction in the future. The function of the reproductive system can be improved by maintaining nutritional status. Improving nutritional status can be done by improving the quality of food consumed. Types of foods that affect reproductive

function include foods containing folic acid, iron, vitamin C, vitamin E, vitamin B6, zinc, aluminum and calcium. These nutrients are widely contained in nuts, green vegetables, fruits, meat and also sea fish (Fitriani, 2020).

In the research of Rosmauli Jerimia Fitriani (2020) entitled *The Relationship between Nutritional Status and Menarche with Adolescent Dysmenorrhea in Magelang City* conducted on 40 respondents, it can be seen that as many as 23 respondents (57.5%) have normal nutritional status, and 17 respondents (42.5%) have abnormal status (thin and fat).

The researcher assumes that poor nutritional status will affect growth, organ function, and will also cause disruption of reproductive function. This will have an impact on menstrual disorders. Adolescent girls really need good nutritional intake so that their nutritional status is also good, because women experience menstruation every month. During menstruation there is a luteal phase which will increase nutritional needs, so it requires good nutritional intake. So if the nutritional status is not good then during menstruation there will be complaints that cause discomfort, such as dysmenorrhea.

E. Relationship between Knowledge and Incidence of Dysmenorrhea

From the results of statistical tests obtained a value of $p = 0.219$ ($p < 0.05$), it can be concluded that there is no relationship between knowledge and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023. This shows that both variables have a negative relationship, meaning that the higher the knowledge, the lower the possibility of experiencing dysmenorrhea.

Similar research was conducted by Riyanti, et al., (2020) entitled *The Relationship between Adolescent Girls' Knowledge About Dysmenorrhea Management With the Incidence of Dysmenorrhea* found that of the 16 respondents with good knowledge who experienced dysmenorrhea were 15 (93.8%) and did not experience dysmenorrhea as much as 1 (6.3%) while of the 44 respondents with poor knowledge who experienced dysmenorrhea were 37 (84.1%) and did not experience dysmenorrhea as much as 7 (15.9%). Based on the results of this study, more adolescent girls have good knowledge. The results of statistical tests using chi-square obtained a p -value of 0.669 because the p -value is greater than α (0.05) so the statistics can be stated that there is no relationship between knowledge and the incidence of dysmenorrhea at SMK 'Aisyiyah Palembang 2019.

The results of the study were not in line with those conducted by Lamdayani, et al, (2022) entitled *The Relationship Between Knowledge and Level of Anxiety with the Incidence of Primary Dysmenorrhea in Junior High School students*, it is known that of the 74 respondents, the level of knowledge who had good knowledge was 12 respondents with a percentage (16.2%) smaller than the level of knowledge with sufficient knowledge as many as 55 respondents with a percentage (74, 3%) this shows that the majority of female students' knowledge about dysmenorrhea is sufficient this is also in line with the pain scale data which shows that the majority of female students at SMP Negeri 19 Palembang experience dysmenorrhea due to lack of knowledge about dysmenorrhea, factors and also how to handle it and as many as 7 respondents with a percentage (9.5%) have less knowledge about dysmenorrhea. The statistical results showed that the p value of $0.016 < 0.05$ indicated that H_1 was accepted that there was a relationship between the level of knowledge and the incidence of primary dysmenorrhea in female students of SMP Negeri 19 Palembang in 2022.

Researchers assume that good knowledge of respondents does not fully affect significantly on dysmenorrhea, because there are still many students who experience dysmenorrhea. This means that the handling of dysmenorrhea owned by respondents is still lacking.

The lack of action in handling dysmenorrhea during menstruation occurs due to the lack of awareness of students to know the causes, symptoms, and treatments, so that students never check with health workers.

The role of health workers is also needed to reduce the risk of dysmenorrhea in adolescents. Health workers play a role in carrying out health education or counseling, education to clients, families, communities related to reproductive health, especially those related to adolescent dysmenorrhea. The existence of health education has a long-term effect starting from changes in knowledge and awareness on reproductive health, especially regarding dysmenorrhea so as to achieve an optimal level of reproductive health.

F. Relationship between the Menstrual Cycle and the Incidence of Dysmenorrhea

From the results of statistical tests, a value of $p = 0.003$ ($p < 0.05$) was obtained, it can be concluded that there is a relationship between the menstrual cycle and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.

A parallel study conducted by Wardani et al (2021) entitled *The Relationship between Menstrual Cycle and Menarche Age with Primary Dysmenorrhea in Class X Girls* showed that of the 72 respondents whose menstruation was irregular, 62 respondents (86.1%) experienced primary

dysmenorrhea and 10 respondents (13.9%) did not experience primary dysmenorrhea. Meanwhile, of the 34 respondents whose periods were regular, 24 respondents (70.6%) did not experience primary dysmenorrhea and 10 respondents (29.4%) experienced primary dysmenorrhea. The results of the chi square statistical test obtained a p-value value $< \alpha$ ($0.000 < 0.05$) which means H_0 is rejected, so it is concluded that there is a meaningful (significant) relationship between the Menstrual Cycle and the Incidence of Primary Dysmenorrhea in female students at SMA Negeri 15 Bandar Lampung in 2020.

The results of the study are not in line with those conducted by Wulandari et al., (2019) entitled Factors Associated with the Incidence of Dysmenorrhea in Adolescent Girls in Prodi Ners Stikes Widya Husada Semarang that adolescent girls with regular menstrual cycles experience more dysmenorrhea as many as 80 adolescent girls (53.4%) compared to adolescent girls who have irregular menstrual cycles as many as 23 adolescent girls (15.3%). Based on the results of statistical tests using chi-square for the relationship between the menstrual cycle and the incidence of dysmenorrhea in adolescent girls in the Ners Study Program of Widya Husada STIKES Semarang, the χ^2 value = 1.115 and the p value = $0.291 > H_0$ is accepted while H_a is rejected, thus it can be concluded that there is no relationship between the menstrual cycle and the incidence of dysmenorrhea in adolescent girls in the Ners Study Program of Widya Husada STIKES Semarang.

Researchers assume that an irregular menstrual cycle with the incidence of dysmenorrhea can have adverse effects on the life of a teenager. For example, when a teenager experiences dysmenorrhea with a severe pain scale, it will hinder daily activities including learning activities and will ultimately affect teenage learning achievement. In fact, some adolescents who experience menstrual cycle disorders are anxious about future reproductive problems.

G. Relationship between Nutritional Status and the Incidence of Dysmenorrhea

From the results of statistical tests obtained a value of $p = 0.000$ ($p < 0.05$), it can be concluded that there is a relationship between nutritional status and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023. Respondents whose nutritional status is not good, on average, respondents experience a lack of weight or excess weight due to the respondent's irregular diet.

In line with research conducted by Syafriani, et al., (2021) The Relationship between Nutritional Status and Age of Menarche with the Incidence of Dysmenorrhea in Adolescent Girls at Sman 2 Bangkinang Kota that of 52 students (65%) with abnormal nutritional status, 14 students (42.4%) did not experience dysmenorrhea while 28 students (35%) had normal nutritional status, then 9 students (19.1) with dysmenorrhea. Based on statistical tests, the value of $p = 0.001$ was obtained. This means that there is a relationship between nutritional status and the incidence of dysmenorrhea at SMAN 2 Bangkinang Kota in 2021.

The results of inconsistent research conducted by Jayanti (2021) entitled The relationship between nutritional status and age of menarche with the incidence of dysmenorrhea in Level 1 Semester 2 Akbid RSPAD Gatot Soebroto students, it is known that those who have normal nutritional status with frequent dysmenorrhea are 17 respondents. From the results of the chi-square statistical test, the p value = $0.202 > 0.05$ indicates that there is no significant relationship between knowledge of nutritional status of weight or height with the occurrence of dysmenorrhea in Level I Semester II students.

Researchers assume that nutritional status that is less or more is related to changes in food variations that can affect eating patterns so that it can affect the growth and development of adolescents. Nutritional status refers to the nutritional intake that the body has received. Nutritional deficiencies in adolescent girls can cause hormonal disorders in the form of ovulation cycle disorders, this can interfere with the occurrence of fertility disorders. In addition, lack of nutrition can also affect sexual maturation, growth, organ function and will cause disruption of reproductive function. Disruption of reproductive function will be evident in the presence of menstrual disorders that occur. Inadequate or excessive nutritional intake will lead to poor nutritional adequacy that can cause disturbances during the menstrual cycle.

4. CONCLUSION

Based on this study, a conclusion was obtained regarding the factors that influence the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023, namely :

1. Overview of the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2022. From the results of the study that the percentage of respondents most of whom had experienced dysmenorrhea was 81 respondents (81%).

2. Overview of knowledge in adolescent girls at SMA Negeri Situraja in 2022. From the results of the study that the percentage of respondents mostly had good knowledge, namely 46 respondents (46%).
3. Overview of the menstrual cycle in adolescent girls at SMA Negeri Situraja in 2022. From the results of the study, the percentage of respondents mostly in the normal menstrual cycle category was 66 respondents (66%).
4. An overview of nutritional status in adolescent girls at SMA Negeri Situraja in 2022. From the results of the study that the percentage of respondents mostly in the unfavorable category was 64 respondents (64%).
5. The relationship between knowledge and the incidence of dysmenorrhea. From the results of statistical tests obtained a value of $p = 0.219$ ($p < 0.05$), it can be concluded that there is no significant relationship between knowledge and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.
6. The relationship between menstrual cycle and the incidence of dysmenorrhea. From the results of statistical tests obtained a value of $p = 0.003$ ($p < 0.05$), it can be concluded that there is a significant relationship between the menstrual cycle and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.
7. The relationship between nutritional status and the incidence of dysmenorrhea. From the results of statistical tests obtained a value of $p = 0.000$ ($p < 0.05$), it can be concluded that there is a significant relationship between nutritional status and the incidence of dysmenorrhea in adolescent girls at SMA Negeri Situraja in 2023.

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