

Overview of Adolescent Knowledge about Handling Dysmenorrhea

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ABSTRACT

Adolescent girls frequently experience dysmenorrhea, characterized by painful menstrual cramps that can disrupt daily routines, academic performance, and overall well-being. Limited awareness of effective prevention and self-care strategies often exacerbates the severity of symptoms, underscoring the need for comprehensive education on menstrual pain management. This study aims to determine the level of knowledge of adolescent girls about dysmenorrhea and its relationship with factors such as Body Mass Index (BMI), diet, menstrual duration, and menstrual cycle. Methods: This study used a quantitative descriptive design with a cross-sectional approach. A total of 85 female adolescent respondents were included in this study. Data were collected through questionnaires and analyzed in the form of frequency distribution. Results: The results showed that 67.1% of respondents had a sufficient level of knowledge about dysmenorrhea. A total of 25.9% of respondents experienced dysmenorrhea, and the majority of them had a sufficient level of knowledge. The majority of respondents had normal BMI (48.2%), a regular diet (71.8%), menstrual duration < 7 days (85.9%), and a regular menstrual cycle (70.6%), with most in each category showing a sufficient level of knowledge. Conclusion: Adolescent girls generally have a moderate level of knowledge about dysmenorrhea, which appears to be influenced by nutritional status, diet, and menstrual patterns. Improving reproductive health education can help enhance their ability to manage dysmenorrhea effectively.

Keywords: *Dismenore, Knowledge, Adolescent Girls, BMI, Diet, Menstrual Cycle*



INTRODUCTION

Adolescence refers to the transitional period between childhood and adulthood, typically ranging from ages 10 to 19, as defined by the World Health Organization (World Health Organization, 2020). During this time, young people undergo rapid physical, emotional, and social changes as they develop their identities and independence. For many adolescent girls, the onset of menstruation brings a new challenge: dysmenorrhea, or painful menstrual cramps. According to French (2005), dysmenorrhea affects between 50 % and 90 % of teenage girls, causing school absenteeism, reduced participation in sports and social activities, and heightened emotional distress. Iacovides, Avidon, and Baker (2015) note that despite its high prevalence, many adolescents lack adequate knowledge of effective self-care measures—such as heat therapy, exercise, and over-the-counter analgesics—and often delay seeking medical advice, which can exacerbate symptoms and negatively impact quality of life. Li et al., (2024) emphasize the importance of comprehensive education on menstrual pain management to address these gaps in understanding and support adolescent well-being.

Adolescence refers to the transitional period between childhood and adulthood, typically ranging from ages 10 to 19, as defined by the World Health Organization (WHO, 2020). During this time, young people undergo rapid physical, emotional, and social changes as they develop their identities and independence. For many adolescent girls, the onset of menstruation brings a new challenge: dysmenorrhea, or painful menstrual cramps. According to French (2005), dysmenorrhea affects between 50% and 90% of teenage girls globally, with an estimated 1.2 billion cases reported in 2020 (Population Reference Bureau, 2021). In Indonesia, the prevalence is reported to range from 75% to 85% among adolescent girls, equating to more than 30 million cases (Ministry of Health of Indonesia, 2019). Iacovides, Avidon, and Baker (2015) note that despite its high prevalence, many adolescents lack adequate knowledge of effective self-care measures—such as heat therapy, exercise, and over-the-counter pain relief—and often delay seeking medical advice, which can exacerbate symptoms and negatively impact quality of life. Li et al., (2024) emphasize the importance of comprehensive education on menstrual pain management to address these gaps in understanding and support adolescent well-being.

The management of menstrual pain, or dysmenorrhea, involves both pharmacological and non-pharmacological approaches to alleviate discomfort and improve the quality of life for affected individuals. Pharmacological treatments typically include non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, to reduce inflammation and pain, as well as analgesics like acetaminophen for mild to moderate pain (Li et al., 2024). For more severe cases, oral contraceptives or progestin therapy may be used to regulate hormone levels and reduce pain (Iacovides, Avidon, & Baker, 2015). Non-pharmacological methods include the use of warm compresses or heating pads applied to the lower abdomen to relax muscles and reduce cramping, along with light exercises like walking or yoga that can help release endorphins and improve blood circulation (Cicciarelli et al., 2019). Dietary changes, such as consuming omega-3 fatty acids and vitamins, may also reduce inflammation and improve overall health (Lee, 2017), while relaxation techniques like deep breathing can help manage pain perception (Nguyen et al., 2020). Knowledge about dysmenorrhea



plays a significant role in the effective management of menstrual pain. Adolescents who are informed about the causes of dysmenorrhea and available treatment options are more likely to use appropriate methods for pain relief, such as warm compresses or medications like NSAIDs (Cholifah & Hadikasari, 2016). However, a lack of knowledge can lead to the use of ineffective or inappropriate treatments, which may worsen the condition and interfere with daily activities (Kurniati et al., 2019). Understanding the condition also empowers adolescents to seek medical advice when needed and to adopt preventive practices, such as maintaining a healthy diet, which can reduce the severity of symptoms (Amelia, 2023). Therefore, increasing adolescents' knowledge about dysmenorrhea is essential for improving self-care, minimizing the impact of menstrual pain, and enhancing their overall well-being.

This study aims to describe the level of knowledge about handling menstrual pain (dysmenorrhea) in adolescent girls and identify its relationship with several supporting factors such as nutritional status, diet, and menstrual characteristics. It is expected that the results of this study can contribute to the improvement of reproductive health education for adolescent girls in schools and communities.

METHODS

This study employs a quantitative research method with a descriptive design to assess the level of knowledge about dysmenorrhea management among adolescent girls in senior high schools (SMA). The study was conducted among grade X and XI students during the 2023/2024 academic year, with a total sample size of 85 respondents selected through a proportionate stratified random sampling technique. The inclusion criteria required students to voluntarily participate and provide consent, while exclusion criteria excluded those absent during data collection or who did not complete the questionnaire accurately. The study was conducted at selected senior high schools in [insert location if applicable], with data collection taking place between [insert start date] and [insert end date]. A closed-ended questionnaire, adapted from previous research by Tamiz Sarumaha, was used to collect primary data from respondents. The questionnaire focused on assessing their knowledge of dysmenorrhea management. Permission was obtained from the school authorities, and participants were informed about the study's objectives and benefits prior to participation. Data analysis was conducted using [insert type of statistical analysis, e.g., descriptive statistics, frequency analysis, etc.] to analyze the level of knowledge regarding dysmenorrhea management and to explore the relationship between knowledge and factors such as body mass index, diet, menstrual cycle, and length of menstruation.

RESULTS

A. Knowledge of Dysmenorrhea

The following is a frequency distribution table between knowledge and dysmenorrhea in adolescent girls:

Table 1. Knowledge of Dysmenorrhea

Dysmenorrhea	Knowledge Level				Total	
	Simply		Less			
	n	%	n	%	n	%
Yes	19	22.4%	3	3.5 %	22	25.9%
No	38	44.7 %	25	29.4 %	63	74.1 %
Total	57	67.1 %	28	32.9 %	85	100 %

Based on Table 1, it is known that out of 85 respondents, 67.1% have a sufficient level of knowledge and 32.9% have a poor level of knowledge about dysmenorrhea. Among the 22 respondents who experienced dysmenorrhea (25.9%), most had sufficient knowledge (22.4%), while a small proportion had poor knowledge (3.5%). Meanwhile, among those who did not experience dysmenorrhea (74.1%), 44.7% had sufficient knowledge and 29.4% had poor knowledge.

B. Overview of Knowledge Based on Body Mass Index (BMI)

The frequency distribution of respondents based on Body Mass Index (BMI) is as follows:

Table 2. Overview of Knowledge Based on Body Mass Index (BMI)

IMT	Knowledge Level				Total	
	Simply		Less			
	n	%	n	%	n	%
Skinny	24	28.2 %	14	16.5 %	38	44.7 %
Normal	32	37.6 %	9	10.6 %	41	48.2%
Obesity	1	1.2 %	5	5.8 %	6	7.1 %
Total	57	67.1 %	28	32.9 %	85	100 %

Table 2 shows that most respondents had a normal BMI (48.2%), and among them, the majority (37.6%) had sufficient knowledge about dysmenorrhea. Respondents with a thin BMI (44.7%) also mostly had sufficient knowledge (28.2%). However, in the obese group (7.1%), most had poor knowledge (5.8%), with only 1.2% having sufficient knowledge. This suggests that better nutritional status tends to be associated with a higher level of knowledge.



C. Overview of Knowledge Based on Diet

The frequency distribution of respondents based on diet is as follows:

Table 3. Overview of Knowledge Based on Diet

Diet	Knowledge Level				Total	
	Simply		Less			
	n	%	n	%	n	%
Stay	41	48.2 %	20	23.5 %	61	71.8 %
Increase	9	10.6 %	7	8.2 %	16	18.8 %
Reduce	7	8.2 %	1	1.2 %	8	9.4 %
Total	57	67.1 %	28	32.9 %	85	100 %

Based on Table 3, indicates that the majority of respondents with a regular diet (71.8%) tended to have sufficient knowledge about dysmenorrhea (48.2%). Among those with increased dietary patterns, knowledge levels were more evenly split. Interestingly, respondents with reduced diets, although fewer in number, showed a higher proportion of sufficient knowledge (8.2%) compared to poor knowledge (1.2%), suggesting a possible link between controlled eating habits and better awareness.

D. Overview of Knowledge Based on Duration of Period

The frequency distribution of respondents based on the length of menstruation is as follows:

Table 4. Overview of Knowledge Based on Duration of Period

Duration of Period	Knowledge Level				Tiotal	
	Simply		Less			
	n	%	n	%	n	%
< 7 Days	50	58.8 %	23	27.1 %	73	85.9 %
> 7 Days	7	8.2 %	5	5.9 %	12	14.1 %
Total	57	67.1 %	28	32. 9 %	85	100 %

Based on Table 4, it can be explained that the majority of respondents had a menstrual duration of less than 7 days, as many as 73 people (85.9%). Of these, most had an adequate level of knowledge, namely 50 people (58.8%), while 23 people (27.1%) had insufficient knowledge. Meanwhile, respondents with a menstrual duration of more than 7 days numbered 12 people (14.1%). In this group, 7 people (8.2%) had a sufficient level of knowledge, and 5 people (5.9%) had insufficient knowledge.

E. Knowledge by Menstrual Cycle

The frequency distribution of respondents based on menstrual cycle is as follows:

Table 5. Knowledge by Menstrual Cycle

Menstrual Cycle	Knowledge Level				Tiototal	
	Simply		Less			
	n	%	n	%	n	%
Regular	42	49.4 %	18	21.2 %	60	70.6 %
	15	17.6 %	10	11.8 %	25	29.4 %
Total	57	67.1 %	28	32.9 %	85	100 %

Based on Table 5, it is known that the majority of respondents have a regular menstrual cycle, as many as 60 people (70.6%). Of these, 42 people (49.4%) had an adequate level of knowledge about menstruation, while 18 people (21.2%) had a poor level of knowledge. The respondents who experienced irregular menstrual cycles amounted to 25 people (29.4%), with details of 15 people (17.6%) having sufficient knowledge and 10 people (11.8%) having insufficient knowledge. Overall, out of a total of 85 respondents, 57 people (67.1%) had a sufficient level of knowledge, while 28 people (32.9%) had insufficient knowledge.

DISCUSSION

A. Knowledge and Dysmenorrhea

The results showed that out of 85 respondents, 22 people (25.9%) experienced dysmenorrhea, with the majority (19 people or 22.4%) having a sufficient level of knowledge. Meanwhile, out of 63 respondents (74.1%) who did not experience dysmenorrhea, 38 people (44.7%) had sufficient knowledge. Overall, 57 respondents (67.1%) had sufficient knowledge about dysmenorrhea. This finding is in line with research by Wulandari and Ningrum (2018) at SMP Negeri 4 Sukoharjo, which shows that good knowledge about dysmenorrhea is significantly related to a positive attitude in dealing with dysmenorrhea ($p < 0.05$). Another study by Amelia (2023) at STIKes Al Ma'arif Baturaja also found a significant relationship between knowledge and dysmenorrhea pain management ($p = 0.000$).

However, there are studies that show different results. A study by Titik, Widyah, and Dwi (2020) in Pakintelan Village, Semarang, found that although most adolescent girls had sufficient knowledge about dysmenorrhea, there was no significant relationship between knowledge and dysmenorrhea management ($p = 0.884$). This suggests that other factors, such as attitude and access to information, may be more influential in the management of dysmenorrhea.

This difference in results indicates that while knowledge is an important factor, a holistic approach that includes continuous education and empowerment of adolescent girls in managing their reproductive health is also needed to reduce the impact of dysmenorrhea.



B. IMT

Body Mass Index (BMI) is a simple tool or way to monitor the nutritional status of adults, especially those related to underweight and overweight (MOH RI, 2013). Body Mass Index (BMI) shows the fulfillment of nutrition in adolescent girls. Optimal nutrition can help accelerate the growth and development of sexual organs. Inadequate nutrition can result in delayed sexual maturation and growth retardation. The amount of BMI is influenced by several things, including nutritional intake, diet, physical activity, lifestyle, socioeconomic status, education level, environmental conditions, exposure to chronic diseases, and fat percentage (B. Kurniati et al., 2019).

The results showed that the majority of respondents had normal nutritional status (48.2%), with most (37.6%) having a sufficient level of knowledge about dysmenorrhea. Respondents with a lean nutritional status (44.7%) showed a sufficient knowledge level of 28.2%, while the obese group (7.1%) had the lowest level of sufficient knowledge (1.2%). Overall, 67.1% of respondents had sufficient knowledge about dysmenorrhea.

This finding is in line with research by Cholifah and Hadikasari (2016), which found that normal nutritional status in adolescent girls correlated with a better level of knowledge about dysmenorrhea. The study showed that adolescents with normal nutritional status tend to experience mild dysmenorrhea and have adequate knowledge about the condition. However, research by Rakhma (2023) in SMP 2 Playen Gunung Kidul showed that there was no significant relationship between nutritional status and the incidence of dysmenorrhea in adolescent girls. Although most respondents experienced dysmenorrhea, nutritional status was not the main determining factor in its occurrence.

This difference in results suggests that although nutritional status may influence the level of knowledge and incidence of dysmenorrhea, other factors such as physical activity, diet, and access to information also play an important role. Therefore, a holistic approach that includes nutrition education, reproductive health promotion, and improved access to information is needed to improve knowledge and reduce the incidence of dysmenorrhea in adolescent girls.

C. Diet

Diet is a variety of information that describes the amount and type of food eaten by a person every day and is characteristic of a particular community. Optimal nutrition is essential for normal growth as well as physical development and intelligence of all age groups. Healthy food will have an impact if a person's diet is wrong. A person's body needs nutrients consisting of carbohydrates, proteins, fats, vitamins, and minerals (Dhea Azani Br Ginting, 2019).

Based on Table 3, the results showed that the majority of respondents had a fixed diet, as many as 61 people (71.8%). This indicates that the respondents' eating habits tend to be stable and are not affected by significant changes in their activities or lifestyle. This was reflected in the high percentage of respondents who had sufficient knowledge (48.2%) and insufficient knowledge (23.5%). Sufficient knowledge among respondents with a regular diet indicates that they have a good understanding of the importance of a regular diet. This knowledge is very important to support a

healthy diet, as individuals who have good knowledge about nutrition tend to be better able to manage their diet better (Alvarez et al., 2020).

In the group of respondents who experienced an increase in diet (e.g. increased frequency or portion size), there were 16 people (18.8%). Among them, the majority had sufficient knowledge (10.6%), although some also had insufficient knowledge (8.2%). Increases in meal portions or meal frequency are often related to psychosocial or emotional factors, such as stress or the tendency to overeat in response to pressure (Papageorgiou et al., 2019). Sufficient knowledge may give them an understanding of the importance of eating appropriate portions, but habits or feelings that are difficult to control may affect their eating patterns.

In contrast, in the group of respondents with a reduced diet, there were only 8 people (9.4%), with most of them having sufficient knowledge (8.2%) and only one person (1.2%) having insufficient knowledge. A reduced diet is often associated with health problems, such as eating disorders or decreased appetite caused by physical or psychological conditions. This may also reflect a good knowledge of the importance of dietary control for specific purposes, such as weight loss or disease management (Van Strien, 2018). Good knowledge about diet is very important to maintain a healthy body. Based on the results of the study, respondents with a fixed diet tended to have a better level of knowledge compared to those who experienced changes in diet, both increased and decreased.

This is in line with research showing that knowledge about nutrition can positively influence a person's eating behavior (Gibson, 2016). A decrease in diet or an increase in eating frequency often reflects external or internal factors, such as stress, emotional changes, or eating disorders. Therefore, special attention needs to be to the management of eating patterns based on sufficient knowledge to prevent the occurrence of eating disorders that can result in long-term health.

Based on the analysis of Table 3, it can be concluded that the majority of respondents have a fixed diet, and respondents with sufficient knowledge are more likely to maintain a healthy diet. However, psychosocial or emotional factors also influence eating patterns, so knowledge alone is not enough to control unhealthy dietary changes. Education on healthy eating and stress management are essential to maintain a stable and healthy diet.

D. Duration of Period

The length of menstruation is the duration of menstruation calculated from the first menstrual period to its completion. Usually experienced between 3-7 days, there are also women who experience 1-2 days of menstruation, then the bleeding gradually disappears. Some women experience longer menstruation, which is 7-10 days. The amount of blood released during menstruation is around 20-40 ml (Sadiman, 2017).

Based on Table 4 regarding the description of knowledge based on the length of menstruation, it is known that most respondents experience menstruation with a duration of less than 7 days, as many as 73 people (85.9%). Of these, the majority had an adequate level of knowledge, namely 50 people (58.8%), while 23 people (27.1%) had insufficient knowledge. Respondents who experienced menstruation for more than 7 days were fewer in number, namely



12 people (14.1%), with details of 7 people (8.2%) having sufficient knowledge and 5 people (5.9%) having insufficient knowledge. Overall, out of 85 respondents, 57 people (67.1%) had an adequate level of knowledge, while 28 people (32.9%) were classified as having insufficient knowledge.

These results indicate that the majority of respondents had a fair level of knowledge regarding the duration of menstruation, especially those who experienced menstruation with a normal duration (<7 days). Better knowledge in this group could be due to more common menstrual experiences that are considered normal, so they are more accustomed and get more information from the surrounding environment, either through formal education, media, or social discussions. Good knowledge of menstrual duration is important as it can help individuals distinguish between physiological and pathological conditions. Periods that last more than 7 days may indicate a disorder such as menorrhagia, which needs medical attention ((Reproductive Health, 2024).

Previous research by Touitou et al. (2019) also showed that women with a good understanding of the menstrual cycle tended to notice irregularities in their menstrual patterns sooner and were more proactive in seeking medical attention. Thus, these findings emphasize the importance of reproductive health education, especially regarding the normality of menstrual duration, to increase awareness and appropriate responses to menstrual problems.

E. Menstrual Cycle

The menstrual cycle is a continuous process of hormonal changes that leads to the formation of the endometrium, ovulation, and the shedding of the entire wall if pregnancy does not occur. Menstrual bleeding indicates that the woman experiencing it is not pregnant. However, this bleeding cannot be used as a definite benchmark that pregnancy does not occur, because there are some women who experience bleeding early in their pregnancy (Verawaty and Rahayu, 2011).

Based on Table 5, it can be seen that most respondents have a regular menstrual cycle, as many as 60 people (70.6%). Of this group, 42 people (49.4%) had an adequate level of knowledge about menstruation, while 18 people (21.2%) had insufficient knowledge. Meanwhile, respondents with irregular menstrual cycles amounted to 25 people (29.4%), with 15 people (17.6%) having sufficient knowledge and 10 people (11.8%) having insufficient knowledge. Overall, out of a total of 85 respondents, 57 people (67.1%) had sufficient knowledge, while 28 people (32.9%) had insufficient knowledge.

This finding shows that respondents with regular menstrual cycles tend to have better knowledge than those who experience irregular menstrual cycles. This could be due to a more consistent menstrual experience, making it easier for individuals to recognize normal patterns and learn more about the reproductive cycle as a whole. Individuals with regular menstrual cycles are also likely to be more concerned about their health conditions and actively seek related information, either through formal education, media, or health services.

Adequate knowledge of the menstrual cycle is essential in supporting reproductive health. This knowledge helps women recognize signs of cycle disorders, such as oligomenorrhea, amenorrhea, or menorrhagia, which can be early indicators of hormonal disorders or other gynecological diseases. A study by Sharma and Gupta (2019) stated that the level of knowledge



about menstruation has a significant relationship with menstrual cycle regularity. Those who have a good understanding tend to lead a healthier lifestyle, such as maintaining a diet, physical activity, and managing stress-factors that greatly affect hormonal balance.

In addition, research conducted by Mohamed et al. (2020) also highlighted that education about menstruation provided since adolescence can increase awareness of the importance of monitoring the menstrual cycle as a health indicator. A comprehensive reproductive health education program not only has an impact on increasing knowledge but also on changing the attitudes and behaviors of adolescents towards menstrual hygiene and reproductive health maintenance.

Thus, this result confirms the importance of continuous counseling and education about the menstrual cycle in order to improve adolescent health literacy and encourage the creation of a generation that is more aware of the importance of maintaining reproductive health from an early age.

CONCLUSIONS

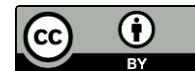
This study shows that most adolescent girls have a sufficient level of knowledge regarding the management of menstrual pain (dysmenorrhea). This knowledge was higher among respondents with normal nutritional status, a regular diet, and regular menstrual cycle and duration. However, there were still some respondents who had insufficient knowledge, especially in the group with a changed diet and irregular menstrual cycle. This difference shows that factors such as nutritional status, diet, menstrual experience, and access to information affect the level of knowledge of adolescents about dysmenorrhea. Therefore, it is important to understand that knowledge alone is not enough to effectively manage dysmenorrhea; a holistic approach needs to be implemented to support healthy behaviors and proper menstrual pain management.

Comprehensive and sustainable reproductive health education efforts are needed to improve adolescent girls' understanding of menstrual pain management (dysmenorrhea). This education should be provided early through formal channels such as schools, and supported by the role of families and health workers. Educational materials should include information on the importance of maintaining nutritional status, managing diet, and understanding the menstrual cycle as an indicator of health. In addition, experience-based approaches and open discussions can help adolescents manage menstrual pain with more confidence. With sufficient knowledge and adequate environmental support, adolescent girls are expected to be able to manage dysmenorrhea independently and appropriately, so that their quality of life and reproductive health can be well maintained.



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