

Research Article

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# The Relationship of Adolescent Knowledge to Efforts to Reduce Pain During Menstruation (Primary Dysmenorrhea) at MA Alhudaebiyah Cidahu Sukabumi

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**Abstract:** According to data from the World Health Organization, around 90% of women experience severe dysmenorrhea, and 10-15% experience mild dysmenorrhea. Research in various countries has also shown that more than 50% of women suffer from primary dysmenorrhea. This study aims to analyze the impact of health education on how adolescent girls cope with menstrual pain at MA Alhudaebiyah, Sukabumi, in 2024. The research method used is a descriptive quantitative approach with a sample of 50 female students from grades X, XI, and XII. The results show that 88% of the respondents experience primary dysmenorrhea, and most of them employ strategies that are not very effective. The Chi-Square statistical test yielded a p-value of 0.000 ( $\alpha < 0.05$ ), indicating a significant relationship between knowledge level and efforts to reduce pain. The Odds Ratio (OR) value of 215 indicates that good knowledge greatly increases the likelihood of taking more effective actions.

Keywords: Knowledge, Adolescents , Dysmenorrhea, Menstrual Pain.

## **1. INTRODUCTION**

Health plays a very vital role in life. Without a healthy body condition, a person cannot carry out activities optimally. One important aspect in health science is reproductive health, which is very relevant for adolescents, considering that they experience various physical and psychological changes (Hikma, 2021). Adolescence is a critical phase in human development that plays an important role in shaping an individual's life. In women, one of the main biological changes that marks this period is the onset of the menstrual cycle (Garnadi, Nugraha, Harun, & Ismail, 2023). One of the problems that often arise related to reproductive health in adolescents is menstrual disorders, which are an indication of changes related to sexual maturity during puberty (Hikma, 2021). Various cross-sectional studies in various countries have shown that menstrual pain can have a negative impact on personal life, such as family and friendship relationships (Fasya, Arjita, Pratiwi, & Andika, 2022).

Menarche occurs in individuals with normal sexual development, without any abnormalities in the reproductive organs, either structurally or functionally, as explained by (Garnadi et al., 2023). Menstruation is a natural process that occurs every month in women of childbearing age, namely 15 to 49 years old, which is caused by the shedding of tissue in the endometrium. However, although normal, this process is often accompanied by physical complaints such as pain in the lower abdomen known as dysmenorrhea. In terminology, dysmenorrhea comes from Greek, with "dys" meaning difficult or painful, "meno" meaning month, and "orhea" meaning flow. In a clinical context, dysmenorrhea refers to symptoms of pelvic pain associated with menstruation (Martinus, Gunawan, & Utari, 2020). In addition to pain, dysmenorrhea can also be accompanied by other symptoms such as nausea, vomiting, diarrhea, headaches, and dizziness (Martinus et al., 2020).

Menstrual problems, including dysmenorrhea, are common gynecological complaints in adolescent girls, with a reported prevalence of dysmenorrhea reaching 60%-90%.

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Copyright: © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (https://creativecommons.org/li censes/by-sa/4.0/) Dysmenorrhea is often the main cause of absenteeism from school and reduces daily activities (Saputra, Kurnia, & Aini, 2021). Studies in several countries have shown that the prevalence of dysmenorrhea is quite high. In the United States, dysmenorrhea was recorded at 62.3%, while in Sweden it was around 72% (Munir et al., 2024). In Indonesia, around 64.25% of women experience dysmenorrhea , with primary dysmenorrhea (PD) accounting for 54.89% of these cases (Munir et al., 2024). In adolescent girls, there is a problem that is often found, namely dysmenorrhea or menstrual pain. Dysmenorrhea is the most common problem complained of when women experience menstruation (Arianti, 2023).

If dysmenorrhea is not treated properly, it can affect the quality of life of adolescents, interfere with daily activities, and risk causing further health problems, such as retrograde menstruation, infertility, and ectopic pregnancy (Saputra et al., 2021). Some dysmenorrhea sufferers choose to take analgesic drugs without consulting a doctor, which can cause various side effects, such as liver damage, bleeding, and digestive disorders (Hayya, Wulandari, & Sugesti, 2023). Therefore, alternative non-pharmacological treatments are needed to relieve dysmenorrhea pain, such as classical music therapy and dysmenorrhea gymnastics which have been proven effective in increasing endorphin production and relieving pain (Desiani, Susanti, & Parwati, 2022).

Health education is one way to increase public knowledge and awareness about how to maintain health. The main goal of health education is to encourage individuals to understand the importance of healthy living and apply this knowledge in their daily lives (Taviyanda & Richard, 2022) . Health education on dysmenorrhea is expected to provide more accurate information on effective ways to reduce menstrual pain in adolescents.

A preliminary study conducted at MA Alhudaebiyah, Sukabumi Regency, on October 8, 2024, showed that 15 out of 50 female students experienced dysmenorrhea which disrupted their concentration in attending lessons. The treatment methods applied at the school were limited to rest and taking medication, without knowledge of non-pharmacological alternatives such as warm compresses or relaxation techniques. The survey results also showed that most female students (10 out of 15) had basic knowledge of how to deal with menstrual pain, while the other 5 female students did not know more effective methods. Based on these findings, this study aims to analyze the effect of health education on adolescents' efforts to reduce menstrual pain ( primary dysmenorrhea ) at MA Alhudaebiyah, Sukabumi, with the hope of improving their knowledge and skills in dealing with the problem.

#### 2. THEORETICAL STUDY

School students are an age group that is vulnerable to the risk of PD, where PD is one of the most common reasons for student absence from the learning process at school (L. Wang et al., 2022). Women usually consider dysmenorrhea as an unavoidable side effect of menstruation because it is a taboo topic to discuss so that all women must go through it (Almanasef & Alqarni, 2023). According to Wahl et al. (2024), early education related to health literacy related to menstruation is one of the effective strategies to reduce the impact of dysmenorrhea. Increasing knowledge about PD can also increase self-medication in students.

Research by Mohammad Bakro et al (2023) shows that adolescents who have less knowledge are 1.28 times at risk of experiencing dysmenorrhea. This is related to good knowledge related to dysmenorrhea will be related to good pain management. Good menstrual hygiene management is a strong foundation for women in dealing with menstrual problems.

According to research from Marlia (2020), there is a significant relationship between the level of knowledge and attitudes towards handling dysmenorrhea. The better the level of knowledge of the respondents, the better the way the respondents handle dysmenorrhea, especially in a non-pharmacological way or without using drugs.

Based on the theoretical study above, it can be concluded that knowledge related to menstruation will influence women to seek self-medication efforts to overcome menstruation. Therefore, this study was conducted to see the relationship between knowledge and pain management efforts targeting high school students.

## **3. RESEARCH METHODS**

This study uses a quantitative research design with a cross-sectional approach which is an analytical study, namely examining the relationship between adolescent knowledge and efforts to reduce pain during menstruation. The study was conducted on 50 people, especially female adolescents who had experienced menstruation. The sampling method used was the accidental sampling method. The variables used in this study were respondents who experienced and did not experience pain during menstruation and adolescent knowledge of adolescent efforts to reduce pain during menstruation.

The instrument used in this study was a questionnaire consisting of variables that experienced and did not experience pain during menstruation, as well as 10 statements to determine adolescent knowledge of efforts to reduce pain during menstruation. Data analysis in this study used the Chi-Square statistical test.

#### 4. RESULTS AND DISCUSSION

Table 1. Respondents Experiencing Menstrual Pain			
Menstrual Pain	n	%	
Yes	25	50.0	
No	25	50.0	
Total	50	100.0	

## Table 2. Description of Adolescent Knowledge Regarding Efforts to Reduce

-		
Teenage Knowledge	n	%
Not good	44	88.0
Good	6	12.0
Total	50	100.0

Pain During Menstruation at MA Alhudaebiyah Sukabumi (N=50)

## Table 3. Overview of Efforts to Reduce Pain During Menstruation in MA

Alhudaebiyah Sukabumi Students (N=50)				
Efforts to Reduce Pain	n	%		
<b>During Menstruation</b>				
Not good	44	88.0		
Good	6	12.0		
Total	50	100.0		

Teenage	Menstruation		Total		Р	OP		
Knowledge	Go	od	Not	good			value	OK
-	n	%	n	%	n	%		
Good	40	80.0	10	20.0	50	100.0	0.000	215,000
Not good	4	8.0	8	16.0	12	100.0		
Total	44	88.0	18	12.0	50	100.0		

Table 4. Relationship between Adolescent Knowledge and Efforts to Reduc	e
Pain During Menstruation in MA Alhudaebiyah Sukabumi Students (N=50)	
Efforts to Reduce Pain During	

#### 1. Respondent Characteristics Overview

The description of the characteristics of the respondents in table 1, from a total of 50 respondents, there were 25 people (50.0%) who experienced pain during menstruation ( primary dysmenorrhea ), while 25 people (50.0%) did not experience pain during menstruation ( primary dysmenorrhea ).

Based on research conducted by Ramadani, respondents who experienced menstrual pain were around 92.59%, while around 7.41% of adolescent girls did not experience pain during menstruation. In his research, he also explained that around 55.6% of respondents did not have a history of menstrual pain in the family and with an average age of menarche of 11.74 (SD = 1.6) (Nur Ramadani, Khoiriyah Parinduri, Jayanti, Prisella, & Rahmawati, 2023).

The pattern of self-medication in dysmenorrhea varies across communities. This is influenced by several factors, such as age, gender, income, expenditure, self-care orientation, education level, and medical knowledge. Attitudes towards treatment are also influenced by cultural, ethnic, and religious factors (de Sanctis et al., 2020).

The results of Mohamad Bakro's research on dysmenorrhea were that the average age (SD) of respondents was 22.33 (1.91) years. Most respondents (65.2%) were students. It was also found that 45.3% of respondents had a family history of dysmenorrhea . Of the 362 respondents, around 51.4% showed a normal menstrual cycle between 21 and 35 days, while 43.4% of respondents had a menstrual cycle of less than 21 days and only 5.2% of respondents had a menstrual cycle of more than 35 days (Mohamad Bakro et al., 2023).

Yi Ling Wang's research results showed that 86.4% of women experienced dysmenorrhea. Significant factors associated with dysmenorrhea were age of menarche (p<0.001), Body Mass Index (p=0.023), smoking (p<0.001), frequent consumption of sweet foods (p=0.043). The results of the Chi-Square test also found a statistically significant correlation between BMI (p=0.032), alcohol consumption (p=0.046), sleep duration (p=0.006) and severity of dysmenorrhea. (YL Wang & Zhu, 2025).

## 2. Overview of Adolescent Knowledge

Based on the data in table 2 related to adolescent knowledge, out of 50 respondents, 44 people (88.0%) had poor knowledge, while 6 people (12.0%) had good knowledge regarding efforts to reduce pain during menstruation.

Only a small number of adolescent girls know about self-treatment for dysmenorrhea. Some of them know about dysmenorrhea from family and friends, and most may not seek information from health workers. Dysmenorrhea is a common problem for adolescents, so it is important for adolescent girls to know the symptoms of normal and abnormal menstruation. Sanctis' research also explains that one-third to one-half of girls with primary dysmenorrhea miss school at least once per menstrual cycle, and it occurs more frequently in 5% to 14% of them. (de Sanctis et al., 2020).

The prevalence of primary dysmenorrhea was 73.2%, where it was found that the majority of respondents had poor knowledge (60%) and poor practices (61.88%) about dysmenorrhea . Dysmenorrhea has a high prevalence among women in Malaysia in Kuala Lumpur which is caused by low knowledge and lack of evidence-based practices among these women. More than two-thirds of respondents did not have accurate information about the exact age of the menstrual cycle, and only one-third knew about the menstrual period (Mohamad Bakro et al., 2023).

The results of Hilinti's study showed that 54 (84.3%) students who experienced dysmenorrhea had insufficient knowledge about the use of acupressure, while 12 (80%) students who did not experience dysmenorrhea had sufficient knowledge (Hilinti & Sulastri, 2023). Maharani's study explained that the respondents' knowledge was in the poor category before being given counseling about yoga to reduce menstrual pain, namely 31 respondents (62%), while after counseling the results decreased to 3 respondents (66%). In the sufficient category, the results before counseling were 16 respondents (32%), and 5 respondents (10%) after counseling. In the good category, the results before counseling were 3 respondents (66%), after counseling there were 42 respondents (84%) (Maharani, Hayati, & Fahkrunisa, 2023).

#### 3. Overview of Teenagers' Efforts to Reduce Menstrual Pain

In table 3, based on adolescents' efforts to reduce pain during menstruation, out of a total of 50 respondents, 44 people (88.0%) had poor efforts and 6 people (12.0%) had good efforts to reduce pain during menstruation.

Among those who practice self-medication for dysmenorrhea, adolescents are at higher risk for inappropriate use, especially antibiotic use. Misuse and overuse of antibiotics lead to many individual and societal problems, one of which is antimicrobial resistance (AMR) which is currently a major concern worldwide. In a study among US adolescents, most girls used one analgesic or anti-inflammatory drug, while one-third reported using two to three analgesics for dysmenorrhea (not concomitantly) (de Sanctis et al., 2020).

Mohamad Bakro's research on dysmenorrhea explains that the most common preventive practices among respondents are using food and herbal supplements, resting and exercising. The findings also showed that dysmenorrhea among respondents was significantly associated with family history of dysmenorrhea (p=0.002), monthly income (p=0.001), and level of knowledge (p=0.001) (Mohamad Bakro et al., 2023).

The results of Nurmala Djimbula's research show that from the Wilcoxon test results obtained an average before and after being given dysmenorrhea gymnastics, the results were p-value 0.000 < 0.05, and classical music p-value 0.000 < 0.05. From the results of the Mann-Whitney test obtained an average after being given dysmenorrhea gymnastics and classical music showed a p-value (0.313 > 0.05), meaning that there was no significant difference in reducing dysmenorrhea between classical music and gymnastics (Djimbula, Kristiarini, & Ananti, 2022).

The results of Maharianingsih's study showed that before being given cinnamon aromatherapy (pretest), respondents experienced mild pain intensity (10%), moderate (73%), and severe (17%). After the posttest, the results were that respondents experienced a decrease in menstrual pain intensity with mild (83%) and moderate (17%) pain levels with a p value = 0.000. The results of her study have a significant effect on the administration of cinnamon aromatherapy on reducing pain intensity in adolescents experiencing primary dysmenorrhea. (Maharianingsih & Poruwati, 2021).

Handayani's research shows that 45.0% of adolescent girls do not experience menstrual pain, 41.7% experience mild pain, and 13.3% experience moderate pain. The results of the Wilcoxon Signed Rank Test, p-value = 0.000 < 0.05. The results of the statistical data explain that there is an effect of deep breathing relaxation techniques on reducing dysmenorrhea pain in adolescent girls (Handayani, Putri, & Nurita, 2022).

## 4. The Relationship between Adolescent Knowledge and Efforts to Reduce Pain During Menstruation

Of the total 50 respondents, there were 40 people (80%) with good knowledge who were able to make effective efforts to reduce dysmenorrhea pain, while only 4 people (8%) from the group with good knowledge did not make efforts to reduce pain. Conversely, of the 18 respondents who had poor knowledge, 10 people (20%) still tried to reduce pain but 8 people (16%) did not make any efforts. The results of this study indicate that a good level of knowledge encourages female students to be more active in seeking solutions or efforts to overcome menstrual pain such as using non-pharmacological methods.

This study supports the theory that health education plays an important role in shaping a person's health behavior. Health education aims to increase individual awareness of how to maintain their health and avoid things that are detrimental to health. In this case, good knowledge allows respondents to understand the importance of managing dysmenorrhea pain with the right methods to relieve it (Taviyanda & Richard, 2022).

This is also in line with previous studies showing that dysmenorrhea is often the main cause of impaired activity and absenteeism from school, especially in adolescent girls (Saputra et al., 2021). Efforts to reduce dysmenorrhea pain, such as relaxation techniques, compressing the lower abdomen with warm water, light exercise, have been shown to increase relaxation and reduce pain through physiological mechanisms such as the release of endorphins (Khotimah & Lintang, 2022).

The results of Mohamad Bakro's research are that there is a significant relationship between dysmenorrhea and the level of knowledge and practice (p = .001 \* .007 \*), where the majority of respondents with dysmenorrhea have low knowledge and poor practice. The results of his research also show that respondents who have a family history of dysmenorrhea have a 21.6% greater chance of experiencing dysmenorrhea (Mohamad Bakro et al., 2023).

Hilinti's research explains that from the Chi-Square analysis The Likelihood Ratio test that examines the relationship between adolescent girls' knowledge about acupressure and the incidence of dysmenorrhea, obtained a significance value of p-value = 0.000 or p value <0.05. The statistical results show that there is a relationship between adolescent girls' knowledge about the incidence of dysmenorrhea and acupressure (Hilinti & Sulastri, 2023).

## 4. CONCLUSION AND SUGGESTIONS

#### Conclusion

This study revealed that there is a significant relationship between understanding of health education and adolescent efforts in reducing dysmenorrhea pain. Adolescents with good knowledge tend to make more effective efforts in managing pain than those with poor understanding. This shows that health education and counseling play a crucial role in forming positive behaviors related to menstrual pain management among adolescents.

This study also highlights that the impact of dysmenorrhea not only affects physical aspects but also interferes with daily activities, such as concentration in learning and social interaction. Therefore, providing appropriate information about non-pharmacological management methods, such as compressing the lower abdomen with warm water and light exercise, can help reduce pain without having to rely solely on drug treatment.

#### Suggestion

To overcome the problem of dysmenorrhea in the school environment, it is recommended that health education programs that focus on reproductive knowledge be included as part of students' daily activities. This aims to provide them with adequate insight into how to deal with menstrual pain with simple and effective methods.

In addition, non-drug approaches such as compressing the lower abdomen with warm water and light exercise can be considered as additional methods to reduce dysmenorrhea

pain. With support from schools and stakeholders, these methods are expected to become practical advice that is already accessible to students.

For further research, it is necessary to conduct studies with a wider scope and use multivariate methods to identify other factors that influence menstrual pain management. With this approach, the results provide a more complete picture and can be used as a basis for formulating more effective policies or interventions.

## 5. THANK-YOU NOTE

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