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Factors causing dysmenorrhea in adolescents

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***Abstract*---**The purpose of this study is to analyze the factors that cause dysmenorrhea in adolescents. This research method uses a literature review method contained in the data base, namely PubMed and the Google Scholar Search Engine. The articles used are in accordance with the criteria, namely articles published from 2015-2025. Based on the results of the review that has been explained through the article above, it shows that there are factors that can cause dysmenorrhea, including internal factors including age of menarche, family history, menstrual duration, exercise habits and external factors including stress, nutritional status, and fast food. Based on the articles that have been reviewed, the results show that the incidence of dysmenorrhea in adolescents is influenced by 1). Internal factors, including: age of menarche, family history, menstrual duration, exercise habits and 2). External factors, including: stress, nutritional status, and fast food. Natural ways that adolescents can do to reduce pain during menstruation are as often as possible doing sports activities such as walking and avoiding stress.

***Keywords*---**Menstruation, Dysmenorrhea, Adolescence.

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Introduction

Adolescence is a transitional period from childhood to adulthood, during which both physiological and psychological changes occur. One of the physiological changes that occurs in adolescent girls is the development of reproductive organs, marked by the onset of menstruation (Triwahyuningsih et al., 2024). Puberty occurs between the ages of 10 and 19 and is the process of physical change or development from a person to sexual maturity. A significant event that occurs in adolescent girls is the arrival of their first period, called menarche (Saragih et al., 2024).

Menstruation (period) is a physiological phase often experienced by all women during adolescence. Menstruation can occur due to desquamation of the endometrium that cannot be fertilized by sperm cells. The normal age for adolescent girls to start their first menstruation (period) is between 12 and 13 years old. However, some adolescent girls experience menstruation early (period) after the age of 10 years or at the age of 17 years. Menstruation begins to end on its own at the age of 40-50 years, or what is known as menopause (Rizsya et al., 2024).

Women with healthy reproductive health are characterized by healthy menstruation. Some women experience menstrual problems, including dysmenorrhea, premenstrual syndrome (PMS), irregular cycles, and bleeding outside the cycle. According to the World Health Organization (WHO), in 2010, 75% of adolescents experienced menstrual disorders (Moltoni et al., 2024). Adolescent reproductive health is very important to understand because it can determine whether an adolescent is healthy and can become a reproductive human resource in the future. Menstrual problems often make adolescents anxious, worried, and lack self-confidence (Sepriani et al., 2024).

Dysmenorrhea is a medical condition that occurs during menstruation or menstruation that can interfere with activities, dysmenorrhea is usually characterized by pain or pain in the stomach or hip area, menstrual pain that is cramping and centered in the lower abdomen. Abdominal pain is felt before or during menstruation. Pain in the inner stomach, nausea, vomiting, diarrhea, dizziness, or even fainting (Mizgier et al., 2025). The condition of adolescents who have experienced menstruation is emotionally unstable, some can experience symptoms such as soreness in the thighs, pain in the breast area, fatigue, irritability, loss of balance, carelessness, sleep disorders, even in some women there are menstrual pain called dysmenorrhea (Itani et al., 2022). There are two factors that cause dysmenorrhea, namely internal factors and external factors. Internal factors such as age, family history, menstrual duration, and exercise or physical activity habits, while external factors include stress, nutritional status, and fast food (Francavilla et al., 2023). In addition to the internal factors above, there are also external factors that influence the occurrence of dysmenorrhea, including stress levels, nutritional status, and fast food. A stressed teenager has a 4,694 times greater chance of experiencing severe dysmenorrhea compared to a teenager who is not stressed because the body produces more adrenaline hormones, which trigger pain. Likewise with nutritional status, the more fat the more prostaglandin glands in the blood, as well as changes in the lifestyle of

teenagers in this digital era, almost they prefer to consume fast food, there are 63.3% and 75.6% experience pain (Dixon et al., 2024). Based on the above background, the purpose of this study is to determine the description of the Factors That Cause Dysmenorrhea in Adolescents: Literature Review.

Method

This research was conducted using a comprehensive review of the literature obtained from various sources with different research methods and still having a relationship to the subject matter in the research, it is called literature review research. The criteria for the articles used include inclusion criteria, namely adolescents who have started menstruating. By using literature review using several electronic media databases such as Pubmed and the Google Scholar search engine. The year of publication of each database and search engine is limited to the last 10 years, starting from 2015-2025. Articles obtained in the search, namely national and international articles, will then be reviewed or filtered.

Results and Discussion

Results

Table 1. Results of Literature Review Search on Factors Causing Dysmenorrhea in Adolescents

No	Author and Year	Country	Objective	Method	Results
1	(Al-Matouq et al., 2019)	Kuwait	This study aimed to estimate the prevalence of dysmenorrhea among female public high-school students in Kuwait and investigate factors associated with dysmenorrhea.	Cross-sectional study	The one-year prevalence of dysmenorrhea was found to be 85.6% (95%CI: 83.1–88.1%). Of the participants with dysmenorrhea, 26% visited a public or a private clinic for their pain and 4.1% were hospitalized for their menstrual pain. Furthermore, 58.2% of students with dysmenorrhea missed at least one school day and 13.9% missed at least one school day. Age of menarche (p-value = 0.005), regularity and flow of the menstrual period (p-value = 0.025, p-value = 0.009; respectively), and drinking coffee (p-value = 0.004) were significantly associated with dysmenorrhea in multivariable analysis.

No	Author and Year	Country	Objective	Method	Results
2	(Duman et al., 2022)	Turkey	In this study, the aim was to determine the risk factors for PD and the effect of CAM use on PD in female university students.	Cross-sectional study	The prevalence of PD was found to be high in students (83.3%). When the distribution of students was examined according to risk factors affecting dysmenorrhea, the relationships between the history of early menstruation, history of menorrhagia, family history of dysmenorrhea, and the occurrence of dysmenorrhea were found to be statistically significant (P < 0.05). In addition, the relationship between smoking, regular consumption of caffeinated beverages, regular physical activity, and emotional problems with the prevalence of dysmenorrhea were found to be statistically significant (P < 0.05). The mean VAS score of the students was 5.99 ± 2.06. When the distribution of VAS mean scores according to CAM used by the students was examined, the most effective CAM in reducing PD was mind–body techniques (4.20±1.56) (P < 0.05). According to the students' VAS score averages, the most effective mind–body techniques used to reduce PD were applying heat to the abdomen (4.33 ± 1.98) and taking a hot shower (4.61 ± 2.13); the most effective nutritional supplement and healthy lifestyle behavior was omega 3 supplementation (4.20 ± 1.56); and the most effective herbal drink was ginger (4.88 ± 1.61) (P < 0.05).

No	Author and Year	Country	Objective	Method	Results
3	(Mesele et al., 2022)	Ethiopia	The aim of this study was to assess the prevalence and associated factors of dysmenorrhea among Haramaya university undergraduate regular students in Eastern Ethiopia.	Cross-sectional study	The prevalence of dysmenorrhea in this study was 356 (64.7%) 95% CI [60.7%, 68.7%]. Premenstrual syndrome (AOR = 5.20:95% CI [2.82, 9.61]), early menarche (AOR = 4.67:95% CI [2.33, 9.37]), history of anxiety (AOR = 4.08:95% CI [2.31, 7.19]), taking of ≥4 glasses of tea per day (AOR = 5.69:95% CI [1.49, 21.77]), usually eating fat and oil (AOR = 2.03:95% CI [1.15, 3.59]) and usual use of meat food (AOR = 3.61:95% CI [2.03, 6.39]) were positively and independently associated with the occurrence of dysmenorrhea.
4	(Muluneh et al., 2018)	North-West Ethiopia	This study was aimed at determining the prevalence and associated factors of dysmenorrhea among secondary and preparatory school students in Debremarkos town, 2016.	Cross-sectional study	The prevalence of dysmenorrhea was 69.3%. Age, AOR (95% CI) =1.38(1.15, 1.65), family history of dysmenorrhea, AOR (95% CI)=9.79(4.99, 19.20), physical activity, AOR (95% CI) =0.39(0.13, 0.82), sugar intake, AOR (95% CI) =2.94 (1.54, 5.61), early menarche AOR (95% CI) =4.10(1.21,13.09), late menarche AOR (95% CI) =0.50 (0.27, 0.91), heavy menstrual periods AOR (95% CI) =2.91(1.59, 5.35) and sexual intercourse AOR (95% CI) =0.24 (0.10.0.55) had statistically significant association with the occurrence of dysmenorrhea.
5	(Assefa et al., 2016)	Ethiopia	To assess the prevalence and associated risk factors of PD among female	Cross-sectional study	A total of 440 students participated in this study. The prevalence of PD was 368 (85.4%). Of these, 123 (28.5%) had mild, 164

No	Author and Year	Country	Objective	Method	Results
			university students and understand its effects on students' academic performance.		(38.1%) moderate, and 81 (18.8%) severe primary dysmenorrhea. Among students with PD, 88.3% reported that PD had a negative effect on their academic performance. Of these, 80% reported school absence, 66.8% reported loss of class concentration, 56.3% reported class absence, 47.4% reported loss of class participation, 37.8% reported limited sport participation, 31.7% reported limitation in going out with friends, and 21% reported inability to do homework. Based on the multivariate logistic regression, PD was statistically significant with those who had lower monthly stipends, a history of attempts to lose weight, a history of depression or anxiety, disruption of social network of family, friends or people they love, who consumed more than four glasses of tea per day, who drank one or more Coca-Cola or Pepsi per day, in nullipara, and students with a family history of dysmenorrhea.
6	(Sembiring et al., 2025)	Indonesia	This study aimed to observe and analyze the factors associated with the practice of self-medication for primary dysmenorrhea among	Cross-sectional study	The prevalence of self-medication was reported at 36.7%. Several factors were found to be associated with self-medication for primary dysmenorrhea among college students, including menstrual cycle ($p<0.001$, OR: 3.27, 95% CI 1.75-6.10), duration of menstrual pain ($p<0.001$, OR: 3.85, 95% CI 2.10-7.07), and pain

No	Author and Year	Country	Objective	Method	Results
			university students.T		severity (p=0.009, OR: 2.21, 95% CI 1.24-3.93). Conversely, age (p=0.316), academic year (p=0.889), family history (p=0.470), age at menarche (p=0.223), and menstrual duration (p=0.552) did not show a statistically significant association with self-medication for primary dysmenorrhea. The dominant factor influencing self-medication for primary dysmenorrhea was pain duration.
7	(Yeh et al., 2022)	Taiwan	This study aimed to observe and analyze theRisk of Ischemic Heart Disease Associated with Primary Dysmenorrhea: A Population-Based Retrospective Cohort Study	Retrospective cohort study	Based on claims data, we created a cohort of women aged 15–50 years with primary dysmenorrhea diagnosed between 2000 and 2008 (n = 18,455) and a comparison cohort (n = 36,910) without dysmenorrhea, frequency-adjusted for age and date of diagnosis. Both cohorts were followed until the end of 2013 to assess the incidence of CHD. With 75% of the study population aged 15–29 years, the incidence of CHD was higher in the dysmenorrhea cohort than in the comparison cohort (1.93 versus 1.18 per 10,000 person-years), with an adjusted hazard ratio of 1.60 (95% confidence interval [CI] = 1.38–1.85). Incidence increased with age, and the rate of increase was higher in the dysmenorrhea group than in the comparison group. A nested case-control analysis in the dysmenorrhea group showed that the risk of IHD was also

No	Author and Year	Country	Objective	Method	Results
					associated with hypertension and arrhythmia, with adjusted odds ratios of 2.50 (95% CI = 1.64–3.81) and 3.30 (95% CI = 2.25–4.86), respectively. Women with dysmenorrhea have a higher risk of IHD, especially older patients and those with comorbidities.

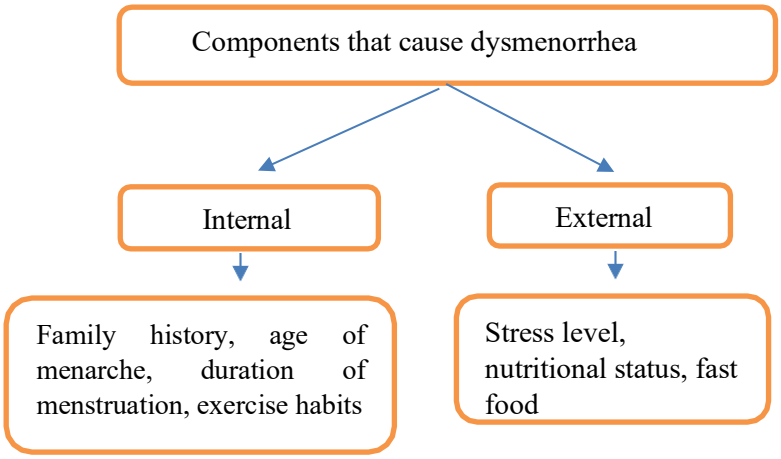

Figure 1. Components of Dysmenorrhea

Discussion

Based on the results of the literature review, factors that can cause dysmenorrhea can be grouped into two groups, namely internal factors and external factors.

Table 2. Internal Factors and External Factors

No	Internal	External
1.	Family History	Stress Level
2.	Age of Menarche	Nutritional status
3.	Menstrual Period	Fast Food
4.	Exercise Habits	

Internal Factors

Age of Menarche

A quantitative approach using a cross-sectional method suggests a relationship between age at menarche and the occurrence of dysmenorrhea, with a value of ρ = 0.018 < 0.05. Early menstruation likely indicates that the reproductive organs are not yet functioning optimally and are not yet ready for the changes that occur, resulting in pain during menstruation. This is consistent with research. Using descriptive analytical research, adolescents who menstruate too early can experience menstrual pain, as their reproductive organs are not yet able to accommodate the changes that occur, and there is also narrowing of the cervix (Azizah & Jeniawaty, 2022). This can be proven through the results of the p-value 0.001 < α = 0.05, which means there is a relationship between the age of menarche and dysmenorrhea.

The research results found that there was a relationship between the age of menarche and dysmenorrhea, when menarche occurs earlier than normal, where the reproductive organs have not developed optimally and are not ready to experience changes and there is still narrowing of the cervix, pain occurs during menstruation (Assefa et al., 2016).

Family History

Based on research (Nuzula &Oktaviana, 2019), a cross-sectional study found a hereditary link between dysmenorrhea and the occurrence of dysmenorrhea. Family members with a history of dysmenorrhea are more likely to experience it. This is demonstrated by the result ρ = 0.001 < 0.05. This means there is a hereditary link between dysmenorrhea and the occurrence of dysmenorrhea. Furthermore, according to the study, (Zaharani, 2021), using a cross-sectional method, states that family history greatly influences the occurrence of dysmenorrhea, because family heredity cannot be changed, so that one family member who has a history of dysmenorrhea can influence their children and grandchildren later. This can be proven by the results of the p-value = 0.001 < α 0.05, meaning there is a relationship between family heredity and the occurrence of dysmenorrhea.

The results of this study are in accordance with research conducted by Sri Hayati, Selpy Agustin, 2020) where the results of the study showed that the majority of 78 respondents (66.7%) experienced dysmenorrhea with a family history. Wiknjosastro in Sri Hayati et.al (2020) stated that a history of dysmenorrhea in the family and genetics is related to the occurrence of severe primary dysmenorrhea. Based on the findings above, it can be seen that there are several young women who have a family history and experience dysmenorrhea because family health history greatly influences the health conditions of family members themselves and is a risk factor that strongly supports the occurrence of the same disease in the family environment (Awaliyah & Yuriah, 2025), while those who do not have a family history but experience dysmenorrhea due to unhealthy lifestyles in young women who have a family history but do not experience dysmenorrhea because they have a healthy lifestyle while those who

do not have a family history and do not experience dysmenorrhea because there is no family health history that can affect the occurrence of pain during menstruation (Haryanti & Yuriah, 2025).

Menstrual Period

Based on research (Amrina,(2011), using a cross-sectional design, found a relationship between menstrual duration and dysmenorrhea. The slower the menstruation and the more frequent uterine contractions, the more the prostate gland releases. Pain occurs during menstruation due to excessive prostate gland production. This can be proven by the result of $\rho = 0.003 < 0.05$. This means there is a relationship between menstrual duration and dysmenorrhea. Furthermore, according to research (Mau et al., 2020) Using a cross-sectional method, the length of menstruation can be caused by several factors, including psychological and physiological factors. Psychological factors are usually related to a teenager's emotional state, which is still very volatile when menstruation first begins. Furthermore, it can be said that excessive contractions of the uterine muscles are very sensitive to this hormone, and prostaglandin hormones can be produced in the endometrium during the secretory phase. This can cause smooth muscle contractions, which ultimately can trigger pain during menstruation. This is proven by the p-value of $0.001 < \alpha = 0.05$, indicating a relationship between menstrual length and the occurrence of dysmenorrhea.

Based on the findings above, it can be seen that some young women who have normal menstrual periods but experience dysmenorrhea due to unhealthy lifestyles, eating fast food, which can increase pain during menstruation, while those who have abnormal menstruation and experience dysmenorrhea because if menstruation occurs longer, it causes the uterus to contract more often and the more excessive prostaglandins will cause pain, while continuous uterine contractions cause the blood supply to the uterus to stop and dysmenorrhea occurs, and young women who have normal menstrual periods and do not experience dysmenorrhea because menstrual periods lasting >7 days do not cause the uterus to contract frequently so there is no pain during menstruation, while those who have abnormal menstrual periods but do not experience dysmenorrhea because they have a healthy lifestyle such as not eating fast food, which can reduce pain during menstruation (Aisyaroh et al., 2022)..

Exercise Habits

Based on research Triswanti, (2015), using a cross-sectional design, said there is a relationship between exercise habits and dysmenorrhea. The incidence of dysmenorrhea can increase if someone lacks exercise. So it can cause oxygen and blood flow to decrease, resulting in pain during menstruation with the results of the value of $\rho = 0.011 < 0.05$, meaning there is a relationship between exercise habits and dysmenorrhea. In addition, according to research, using a cross-sectional method, it says that teenagers who exercise regularly can reduce the occurrence of pain during menstruation. This can be proven by the results of the p value = 0.000 which is smaller than $\alpha = 0.05$, meaning there is a relationship between exercise habits and the occurrence of dysmenorrhea.

Isnaeni, (2022) based on the results of the study, it was found that 3 respondents (20%) of female students who regularly exercised were found while 28 respondents (80%) did not exercise regularly. From the results of the study with a p value = 0.000 (p≤0.05), it was concluded that there was a relationship between regular exercise and the incidence of dysmenorrhea, exercise therapy is useful for managing dysmenorrhea. Regular exercise such as walking, jogging, running, cycling, swimming and aerobics can improve general health and help maintain a regular menstrual cycle (Rina Afrina, 2022). Based on the findings above, it can be seen that women who do not exercise enough will experience dysmenorrhea because exercising regularly can increase blood supply to the reproductive organs thereby improving blood circulation, exercise is a relaxation technique that can be used to reduce dysmenorrhea (Yuriah et al., 2024).

External Factors

Stress Level

Based on research (Saud, 2022) Using a cross-sectional method, it was found that there was a relationship between stress levels and the occurrence of dysmenorrhea, with a p-value of 0.003. The OR was 4.694, meaning that a stressed adolescent was 4.694 times more likely to experience severe dysmenorrhea than a non-stressed adolescent. Furthermore, based on research(Setiyani, 2021) Quantitative research suggests that stress in adolescents can cause the body to produce more adrenaline, which can trigger menstrual pain. This is supported by the results (p-value = 0.012), indicating a link between stress and dysmenorrhea.

Researcher Rejeki, (2019) from 61 respondents found mild 20 respondents (32.8%) Moderate 41 respondents (67.2%) from the results of the study found a significant relationship between stress factors and dysmenorrhea. There is a time of stress the body will produce excessive adrenaline, estrogen, progesterone and prostaglandin hormones. Estrogen can increase uterine contractions, increased adrenaline hormones also cause tense body muscles including uterine muscles which results in decreased perfusion to the endometrial tissue so that blood vessels are squeezed by the uterine muscles which causes reduced oxygen supply and becomes ischemic. Putri, (2021) in the study found a significant relationship between stress levels and the incidence of dysmenorrhea, with a p value of 0.014 When stressed the body will produce excessive estrogen and prostaglandin hormones, estrogen and prostaglandin can cause an increase in excessive uterine contractions resulting in pain during menstruation. Based on the findings above, it can be seen that adolescent girls who experience dysmenorrhea due to stress factors are caused by the adolescents experiencing fatigue in carrying out activities, as a student who has to take part in various activities both at school and in the dormitory, and other causes are due to facing various rules both at school and in the dormitory and also adapting to the environment and friends around them (Juniarti et al., 2024).

Nutritional status

Based on research (Lail, 2019), using a cross-sectional design, found a link between nutritional status and dysmenorrhea. The higher the fat intake, the more prostate glands are formed, and increased levels of prostate glands in the bloodstream are a trigger for dysmenorrhea. This is demonstrated by a p-value of $0.01 < \alpha = 0.05$, indicating a link between nutritional status and dysmenorrhea.

Fast Food

Based on research conducted by (Hu et al., 2020) The study found that 38 adolescents (63.3%) consumed fast food, and 34 of them (75.6%) experienced pain. Frequent fast food consumption in adolescents can lead to an enlarged prostate gland, which can trigger menstrual pain. This is evidenced by the p-value of 0.001, which is smaller than $\alpha = 0.05$, indicating a link between fast food and dysmenorrhea.

Conclusion

From the literature review, which yielded seven articles, it can be concluded that the factors contributing to dysmenorrhea can be grouped into two groups: internal and external. The most dominant internal factors include age at menarche, family history, menstrual duration, and exercise habits. External factors include stress levels, nutritional status, and fast food. Efforts to prevent dysmenorrhea include avoiding stress and engaging in light exercise.

Conflict of interest statement
The authors declared that they had no competing interests.

Statement of authorship
The authors have responsibility for the conception and design of the study. The authors have approved the final article.

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References

Aisyaroh, N., Hudaya, I., & Safitri, S. (2022). Faktor Yang Menyebabkan Dismenorea Pada Remaja. *Jurnal Health Sains*, *3*(11), 1699–1707. https://doi.org/10.46799/jhs.v3i11.677

Al-Matouq, S., Al-Mutairi, H., Al-Mutairi, O., Abdulaziz, F., Al-Basri, D., Al-Enzi, M., & Al-Taiar, A. (2019). Dysmenorrhea among high-school students and its associated factors in Kuwait. *BMC Pediatrics*, *19*(1). https://doi.org/10.1186/s12887-019-1442-6

Assefa, N., Demissie, A., & Hailemeskel, S. (2016). Primary dysmenorrhea magnitude, associated risk factors, and its effect on academic performance:

Evidence from female university students in Ethiopia. *International Journal of Women's Health*, *Volume 8*, 489–496. https://doi.org/10.2147/ijwh.s112768

Awaliyah, H. F., & Yuriah, S. (2025). Empowering families to support pregnant women to routinely consume iron-enriching tablets: Scoping review. *International Journal of Health Sciences*, *9*(S1), 312–325. https://doi.org/10.53730/ijhs.v9ns1.15719

Azizah, A. N., & Jeniawaty, S. (2022). *Factors Affecting Dymenorrhea in Adolescents*. *6*(5).

Dixon, S., Hirst, J., Taghinejadi, N., Duddy, C., Vincent, K., & Ziebland, S. (2024). What is known about adolescent dysmenorrhoea in (and for) community health settings? *Frontiers in Reproductive Health*, *6*. https://doi.org/10.3389/frph.2024.1394978

Duman, N. B., Yildirim, F., & Vural, G. (2022). Risk factors for primary dysmenorrhea and the effect of complementary and alternative treatment methods: Sample from Corum, Turkey. *International Journal of Health Sciences*, *16*(3).

Francavilla, R., Petraroli, M., Messina, G., Stanyevic, B., Bellani, A. M., Esposito, S. M., & Street, M. E. (2023). Dysmenorrhea: Epidemiology, Causes and Current State of the Art for Treatment. *Clinical and Experimental Obstetrics & Gynecology*, *50*(12). https://doi.org/10.31083/j.ceog5012274

Haryanti, I., & Yuriah, S. (2025). *Socio-Economic Analysis of Parents on the Practice of Providing Early Complementary Feeding to Infants Aged 6-12 Months in Tanjung Baru Village: A Cross-sectional Study Analisis Sosial Ekonomi Orang Tua Terhadap Praktik Pemberian Makanan Pendamping ASI Dini pada Bayi Usia 6-12 Bulan di Desa Tanjung Baru: Studi Cross Sectional*. *6*(2).

Itani, R., Soubra, L., Karout, S., Rahme, D., Karout, L., & Khojah, H. M. J. (2022). Primary Dysmenorrhea: Pathophysiology, Diagnosis, and Treatment Updates. *Korean Journal of Family Medicine*, *43*(2), 101–108. https://doi.org/10.4082/kjfm.21.0103

Juniarti, S., Yuriah, S., & Sepriani, P. (2024). Women's empowerment model in treatment of pregnant women at risk of anemia in Indonesia: Literature review. *International Journal of Health Sciences*, *8*(S1), 1680–1689. https://doi.org/10.53730/ijhs.v8ns1.15357

Mesele, T. T., Dheresa, M., Oljira, L., Wakwoya, E. B., & Gemeda, G. M. (2022). Prevalence of Dysmenorrhea and Associated Factors Among Haramaya University Students, Eastern Ethiopia. *International Journal of Women's Health*, *Volume 14*, 517–527. https://doi.org/10.2147/ijwh.s333447

Mizgier, M., Więckowska, B., Sansoni, V., Malvandi, A., Jarząbek-Bielecka, G., Drejza, M., Mruczyk, K., Cisek-Woźniak, A., & Lombardi, G. (2025). Risk Factors of Primary Dysmenorrhea in Female Adolescent Basketball Players Related to Dietary, Hormonal, and Immuno-Metabolic Factors and Disordered Eating Attitudes. *Nutrients*, *17*(7), 1190. https://doi.org/10.3390/nu17071190

Moltoni, G., Lucignani, G., Sgrò, S., Guarnera, A., Rossi Espagnet, M. C., Dellepiane, F., Carducci, C., Liberi, S., Iacoella, E., Evangelisti, G., Contini, A., Campi, F., Savarese, I., Gandolfo, C., & Longo, D. (2024). MRI scan with the "feed and wrap" technique and with an optimized anesthesia protocol: A retrospective analysis of a single-center experience. *Frontiers in Pediatrics*, *12*. https://doi.org/10.3389/fped.2024.1415603

Muluneh, A. A., Nigussie, T. S., Gebreslasie, K. Z., Anteneh, K. T., & Kassa, Z. Y. (2018). Prevalence and associated factors of dysmenorrhea among secondary

and preparatory school students in Debremarkos town, North-West Ethiopia. *BMC Women's Health*, *18*(1). https://doi.org/10.1186/s12905-018-0552-x

Rizsya, Friska Realita, & Noveri Aisyaroh. (2024). External Factors that Cause Dysmenorrhea in Adolescent Girls: Literature Review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, *7*(9), 2260–2267. https://doi.org/10.56338/mppki.v7i9.5488

Saragih, H., Ginting, A. A. Y., & Manek, E. (2024). *Gambaran Faktor-faktor yang Mempengaruhi Dismenore pada Remaja Putri di Asrama Putri Santa Theresia Lisieux Sibolga*. *5*(2).

Sembiring, E. B., Siburian, F. L. Y., Suci, T., & Ginting, A. N. B. (2025). *Factors associated with self-medication practices of primary dysmenorrhea among students*. *4*(1).

Sepriani, P., Yuriah, S., & Juniarti, S. (2024). *Empowerment of women of fertilizing age regarding health education for early detection of neccical cancer using method visual inspection of acetic acid (Iva Test)*. *18*(1).

Triwahyuningsih, R. Y., Rahfiludin, M. Z., Sulistiyani, S., & Widjanarko, B. (2024). Role of stress and physical activity on primary dysmenorrhea: A cross-sectional study. *Narra J*, *4*(1), e685. https://doi.org/10.52225/narra.v4i1.685

Yeh, C.-H., Muo, C.-H., Sung, F.-C., & Yen, P.-S. (2022). Risk of Ischemic Heart Disease Associated with Primary Dysmenorrhea: A Population-Based Retrospective Cohort Study. *Journal of Personalized Medicine*, *12*(10), 1610. https://doi.org/10.3390/jpm12101610

Yuriah, S., Ananti, Y., & Nurjayanti, D. (2024). Dynamics of the experience of sexual violence and its impact on girls in Ogan Komering Ulu Regency. *International Journal of Health Sciences*, *8*(S1), 579–592. https://doi.org/10.53730/ijhs.v8ns1.14860