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The Relationship Between Fat Consumption Levels And Nutritional Status On The Level Of Dysmenorrhea Among Female Students At Junior High School 3 Tampaksiring Gianyar

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ABSTRACT

Based on National Health Survey in 2018, the prevalence of dysmenorrhea in Indonesia is 64.25% of the total female population. According to theory, an imbalance in fat consumption and nutritional status can trigger dysmenorrhea. This study aims to determine the relationship between fat consumption and nutritional status on the level of dysmenorrhea among female students at SMP Negeri 3 Tampaksiring. This type of research is observasional with a crosssectional design, conducted in April 2025 with a sampel of 60 people, using proportional random sampling. The data collected included fat consumption levels using a Food Recall 24-hour method, nutritional status using anthropometric measurements, and dysmenorrhea levels using a Numeric Rating Scale Questionnaire. Analysis of variable tendency tests using the Collerasi statistical method. The results showed that 85% experienced dysmenorrhea and 15% did not experience dysmenorrhea, with 83.33% having an unbalanced and 16.67% having a balanced fat intake, as well as 65% having a normal nutritional status and 34% having an abnormal nutritional status. The tendency for increased dysmenorrhea pain increased in samples with moderate to excessive fat consumption accompanied by an increase in nutritional status (p-value = 0.75). Needed to improve knowledge about preventing menstrual and nutritional issues.

Keywords: Dysmenorrhea Level, Fat Consumption Level, Nutritional Status

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INTRODUCTION

Adolescents are an important asset in supporting the success of national development [11]. Adolescents are individuals aged 10 until 18 years old who are not yet married (Permenkes, 2014). Based on data from the Central Statistics Agency in 2023, 17% of Indonesia's population are adolescents, with 21 million (47,73%) of them being female. During this period, the reproductive organs develop functionally, a process known as puberty. Puberty in adolescent girls is marked by the onset of menstruation. According to 2018 Riskesdas data, out of 22 million adolescent girls aged 10-18 years in Indonesia, 11,7% have menstrual disorder. Lower abdominal pain is the most common complaint, known as dysmenorrhea [17]. The prevalence of dysmenorrhea worldwide is quite high. According to World Health Organization (WHO) data from 2020, the prevalence of dysmenorrhea was 1.7 million, equivalent to 16.8%. Meanwhile, according to Riskesdas data from 2018, the prevalence of dysmenorrhea is to be 107,673 people of the total female population in Indonesia [15]. Specifically in Gianyar Regency, based on the results of Diastinni's 2021 study, it was found that out of 661 female students, 36.9% of them experienced dysmenorrhea [9].

Dysmenorrhea can affect the productivity of adolescent girls. According to research conducted by Abdelazim et al**.** **(**2020), adolescent girls who experience dysmenorrhea have lower productivity compared to those who do not experience dysmenorrhea [1]. For school-aged children, dysmenorrhea can lead to low physical activity, concentration problems, poor social relationships, and even academic difficulties. In addition, severe dysmenorrhea can also be a contributing factor to infertility, ruptured endometriosis, ruptured cysts, and uterine perforation [20]. There are several factors that influence dysmenorrhea, including fat consumption and nutritional status. Fat consumption and nutritional status are believed to affect reproductive hormone balance and trigger dysmenorrhea [21].

The prevalence of fatty and instant food consumption among adolescents is quite high. The rate of fatty food consumption among adolescents aged 10-14 years is 39.8%, and among those aged 15-19 years is 39%. Meanwhile, consumption of instant foods was found to be

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38.9% among those aged 10–14 years and 39% among those aged 15–19 years [13]. In Bali Province, consumption of these two types of food ranked second highest after staple foods In terms of the nutritional status of adolescent girls, there has been an increase in the prevalence of underweight and overweight among those aged 13–15 years, with 4.2% underweight and 12% overweight, and among those aged 16–18 years, with 4.4% underweight and 9.5% overweight [13]. Meanwhile, in Bali Province, the most common nutritional problems among adolescents aged 13–15 years are overweight (15.9%) and obesity (4.1%). Specifically, at one school in Bali, namely SMP Negeri 3 Tampaksiring, Gianyar, based on data from the Tampaksiring II Community Health Center UPTD in 2024, it is known that out of a total of 461 female students in grades VII, VIII, and IX, 4% are underweight, 11% are overweight, and 11% are obese.The percentage of obesity problems in this school is higher than the percentage of nutritional status of adolescent girls in Bali.

Based on the above issues, the researcher was interested in analyzing the relationship between fat consumption and nutritional status on the level of dysmenorrhea in adolescent girls. The research location was SMP Negeri 3 Tampaksiring, Gianyar

METHOD

The type of research is observational with a cross-sectional design. This research was conducted at SMP Negeri 3 Tampaksiring in April 2025. The population of this study was all female students of SMP Negeri 3 Tampaksiring, with the target population being eighth-grade students in the 2024/2025 academic year.The sample in this study was selected using proportional random sampling based on inclusion criteria, with a total of 70 people. The inclusion criteria for the sample were still being registered as an active student, had already menstruate, and were willing to be a sample.

The collection of data was assisted by four enumerators who had been trained in advance and performed directly with the sample. The data of dysmenorrhea variables were collected through interviews about menstrual complaints and categorized based on the Numeric Rating Scale (NRS). Dysmenorrhea pain is classified into three categories namely mild,

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moderate, and severe. Data collection on consumption levels was conducted through interviews using the 24-hour food recall method. The data collected was consumption data over 2 x 24 hours on different days. The time between the first and second interviews was 9 days. Then, the nutritional value, especially the fat content, of the food consumed in a day is calculated using NutriSurvey 2007. Then, calculate the average daily fat consumption, which will then be compared to the requirements according to the converted Nutritional Adequacy Rate. Fat consumption levels is classified into three categories, the following of low (<80%), adequate (80-110%), and excessive (>110%). Nutritional status variables were collected through anthropometric measurements using digital scales and a oneMed microtoise with an accuracy of 0.1 centimeters. Then, the calculation of the Z-score for children aged 5-18 years was performed using the Body Mass Index According to Age indicator (BMI/U). Analysis of variable tendency tests using the Collerasi statistical method

RESULTS

Based on the results of the study, it was found that more than half of the sample (56.7%) were fourteen years old, and some of the sample (50%) experienced a menarche under the age of 12 years. Most of the samples (85%) experienced dysmenorrhea, with almost half of them (35%) had moderate to severe dysmenorrhea. More than half of the samples (83.3%) have an unbalanced fat consumption level, including 75% of samples with low fat consumption, and 8.3% of samples with excessive fat consumption. A half of the sample (35%) had a nutritional status that is to do not normal, including 1.7% malnutrition and 33.3% overweight to obesity. The relationship between fat consumption levels, nutritional status, and dysmenorrhea levels is presented in full in the table below.

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Level of Fat Consumption	Dysmenorrhea Rate							
	Normal		Mild		Moderate		Severe	
	n	%	n	%	n	%	n	%
Less	8	88,9	22	73,3	11	78,6	4	57,1
Enough	1	11,1	7	23,3	2	14,3	0	0,0
Excess	0	0,0	1	3,4	1	7,1	3	42,9
Amount	9	100	30	100	13	100	7	100

Table 1

Distribtion Sample Based on Level of Dysmenorrhea and Level of Fat Consumption

Based on Table 1, it is known that the intensity of dysmenorrhea increases with the increase in fat consumption. In mild dysmenorrhea, 3.4% of samples had excessive fat consumption. In moderate dysmenorrhea, 7.1% of samples had excessive fat consumption. Then, in severe dysmenorrhea, 42.9% of samples had excessive fat consumption. Samples that did not experience dysmenorrhea mostly (88.9%) had low fat consumption.

Table 2.

Sample Sample Distribution Based on Level of Dysmenorrhea and Level of Nutritional Status

Nutritional Status	Dysmenorrhea Rate							
	Normal		Mild		Moderate		Severe	
	n	%	n	%	n	%	n	%

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Malnutrition	0	0	1	3,3	0	0	0	0
Good Nutrition	9	100	26	86,7	3	21	1	14
More Nutrition	0	0,0	3	10,0	11	79	6	86
Amount	9	100	30	100	14	100	7	100

Based on Table 2, it is known that mild dysmenorrhea (10%) was experienced by samples with good nutritional status and 3.3% with poor nutritional status. Moderate dysmenorrhea was experienced by more than half (79%) of samples with good nutritional status. Then, severe dysmenorrhea was experienced by most (86%) samples with good nutritional status. Samples that did not experience dysmenorrhea (100%) had good nutritional status.

Table 3

The Degree of Dysmenorrhea Based on Nutritional Status According to Sample Fat Consumption Rate

Nutritional Status	Less Fat Consumption Rate				Enough/Excess Fat Consumption Rate			
	Status Overweight							
	Normal/Ringan		Medium/Heavy		Normal		Medium/Heavy	
	f	%	f	%	f	%	f	%
Malnutrition	0	0,00	0	0,00	1	0,11	0	0,00
Good Nutrition	27	0,90	3	0,20	8	0,89	2	0,33
More Nutrition	3	0,10	12	0,80	0	0,00	4	0,67
Sum	30	0,10	15	100,0	9	100,0	6	100,0
P value based on Correlation Test	0,23				0,75			

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As shown in Table 3, in the sample group with low fat consumption, in the subgroup experiencing moderate to severe dysmenorrhea, there were 12 samples (80%) who were overweight . Meanwhile, in the subgroup with normal to mild dysmenorrhea, there were 3 samples (10%) with overweight status. Thus, the risk of increased dysmenorrhea pain based on nutritional status in the sample group with low fat consumption was significant, with a correlation value (p-value 0.23). Meanwhile, in the sample group with adequate to excessive fat consumption, in the subgroup experiencing moderate to severe dysmenorrhea, there were 4 samples (67%) with excessive nutritional status. Meanwhile, in the normal to mild subgroup, there were 8 samples (89%) with good nutritional status. Thus, the risk of dysmenorrhea based on nutritional status was significant with a correlation value (p-value = 0.75) in the sample group with moderate to excessive fat consumption. The tendency for increased dysmenorrhea pain increased in samples with moderate to excessive fat consumption accompanied by an increase in nutritional status.

DISCUSSION

Based on the results of the study, out of 60 samples with an age range of 13-15 years, it is known that most (85%) suffer from dysmenorrhea. Dysmenorrhea is a menstrual complaint characterized by pain in the lower abdomen [6]**.** Based on its intensity, dysmenorrhea is divided into 3 levels, namely mild, moderate and severe dysmenorrhea. The intensity of dysmenorrhea felt by some samples (58.8%) was mild dysmenorrhea and 41.2% had moderate to severe dysmenorrhea. Dysmenorrhea occurs due to an imbalance of prostaglandin hormones (primary dysmenorrhea) and also disorders in the reproductive organs (secondary dysmenorrhea). The hormone prostaglandins is one of the hormones produced naturally by the body. This hormone functions in stimulating uterine contractions during the menstrual process. The higher the level of prostaglandins, the stronger the uterine contractions that occur [8]. Heavy contractions can reduce blood flow which will result in ischemia, causing cramps and pain during menstruation [23]. In addition, suboptimal maturation of the reproductive organs can worsen the perceived pain condition. The maturation of the functions of the reproductive organs is related to the age

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of menarche. Early menarche affects cervical elasticity which can increase the risk of pain during menstruation [16]. *Menarche* is said to be normal when it occurs at the age of 12-14 years [22]. Based on the results of the study, it is known that some of the 50% of the sample had *an early menarch* age under 12 years old. With *menarche,* the average sample occurs at the age of 11 years. In this study, it was found that 52.94% of adolescent girls with *early menarche* age (< 12 years) experienced pain during menstruation (dysmenorrhea). These results are in line with the 2021 study by Horman et al. which stated that there is a significant relationship between dysmenorrhea and the age of menarche in adolescent girls. Adolescent girls with *menarche age* under 12 years have an 88.5% risk of developing dysmenorrhea.

Based on the results of the study on the level of fat consumption on the level of dysmenorrhea pain, the higher the level of fat consumption, the more severe the dysmenorrhea pain felt. Adolescents with high levels of fat consumption have a greater risk of developing dysmenorrhea. Based on the data collection results, it was known that of the 5 samples that had an excessive level of fat consumption, all (100%) experienced dysmenorrhea with 60% of the samples experiencing severe dysmenorrhea. These results are in line with a study conducted by Soleha & Muharramah in 2025, which states that there is a relationship between fat intake and the incidence of primary dysmenorrhea in adolescents at SMA1 Gading Rejo, Pringsewu Regency with *a p-value* of 0.009 ($p < 0.05$) [19]. The excess fat intake in the body will be stored in the form of adipose tissue. The buildup of adipose tissue can disrupt the hormonal balance in the body. One of them is reproductive hormones, namely prostaglandins. The more adipose tissue, the higher the prostaglandin levels [2]. High levels of prostaglandins will affect uterine contractions which can lead to dysmenorrhea.

However, fat is not the only nutritional factor that affects dysmenorrhea. It can be seen from the results of the study that 45 samples with low fat consumption levels 82.2% experienced dysmenorrhea and 10.8% experienced severe dysmenorrhea. Unbalanced consumption habits Judging from the results of the interview, the sample deliberately reduced food consumption with the aim of losing weight. This is supported by attention to the body image that underlies the sample to make improvements according to the ideal assessment they

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have [12]. But in reality, improvements made without proper knowledge and understanding of nutrition tend to have a negative impact. Supported by research conducted on female students at SMPN 12 Semarang, the results of 65 female students, 33 (47.7%) had a negative body image with 90.8% having a low consumption rate [24]. Unbalanced levels of consumption can trigger a lack of intake of other nutrients needed to support smooth menstruation, such as iron, calcium, zinc, vitamin D, and vitamin E [5].

In addition to consumption levels, nutritional status can also affect the level of dysmenorrhea in adolescent girls. From the observation results, it was known that there was an increase in the percentage of dysmenorrhea intensity in samples with nutritional status problems, both poor nutritional status and excess nutritional status. Then the sample that did not experience dysmenorrhea overall had good nutritional status. In line with research conducted by (Retno & Amalia 2023) regarding the relationship between nutritional status and the incidence of primary dysmenorrhea in grade VIII junior high school students, it is known that there is a significant relationship between nutritional status and the incidence of dysmenorrhea (*p-value* = 0.003) [18]. Of the 100 dysmenorrhea samples, most of them occurred in 10 people (37%) with obesity nutritional status, 5 people (35.7%) had poor nutritional status and 5 people (8.5%) had good nutritional status. The balance of nutritional status plays a role in the smooth menstrual process [14]. In poor nutritional status, nutritional needs are not met properly, which interferes with metabolic processes. One of them is in the process of producing the hormone gonadoprin. A decrease in this hormone will disrupt the balance of the hormone estrogen. A decrease in the hormone estrogen will increase the production of prostaglandin hormones and cause menstrual pain [3]. In addition, nutritional status can also trigger dysmenorrhea. Excess fat in the body can trigger the occurrence of blood vessel hyperplasia or blockage of blood vessels that cause menstrual blood flow to be disrupted and cause pain [4].

CONCLUSION(S)

Most female students (88.9%) who did not experience dysmenorrhea had a low level of fat consumption. Students with an overall level of excess fat consumption experience

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dysmenorrhea with a pain intensity of 60% experience severe dysmenorrhea. The intensity of dysmenorrhea pain increases with an increase in nutritional status.

For schools, it is necessary to provide education to students related to menstrual management and the regulation of balanced nutritious consumption patterns by utilizing contemporary media, provided by professional fields such as nutritionists and other health workers as an effort to increase the knowledge and ability of adolescents in overcoming the problems of nutritional status and menstrual disorders experienced. For students of SMP Negeri 3 Tampaksiring, it is necessary to increase awareness in the application of balanced nutritional consumption patterns and accuracy in the implementation of a balanced diet.

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REFERENCES

1. Abdelazim, Samar Shaban, Sabah Metwaly Mohamed, Eman Mostafa Sayed, And Hanaa Kamal Helmy. 2020. "Prevalence Of Dysmenorrea And Its Effect On Student's Quality Of Life." *Egyptian Journal Of Health Care* 11(4): 1–14. doi:10.21608/ejhc.2020.124844.
2. Aktaş, Demet. 2023. "The Relationships Between Primary Dysmenorrhea With Body Mass Index And Nutritional Habits In Young Women." *Journal Of Education And Research In Nursing* 20(2): 143–49. Doi:10.14744/Jern.2021.93151.
3. Amany, Fairuz Zahra. 2022. "The Relationship between Nutritional Status and Fast Food Consumption Patterns with Primary Dysmenorrhea in Adolescent Girls at Al-Azhar Private Junior High School Medan." *Sport And Nutrition Journal* 4(2): 15–23. doi:10.15294/Spnj.V4i2.58311.
4. Ardifi, Throne of Glory. 2024. "The Relationship Between Nutritional Status and the Incidence of Primary Dysmenorrhea in Grade XII Adolescent Girls." *Innovative: Journal Of Social Science Research* 4(5): 248–56. doi:10.30737/Jubitar.V2i2.2145.
5. Azahra, Sabrina. 2025. "An Overview of Adolescent Girls' Nutritional Intake on the Increase in the Phenomenon of Primary Dysmenorrhea." *Journal of Surya Medika*.
6. Azwar. 2021. *Non-Pharmacological Therapy of Dysmenorrhea Pain*. Ed. Nur Oalby. South Sulawesi: Pustaka Taman Ilmu.
7. Central Statistics Agency. 2023. "Total Population by Age Group and Gender 2023." Https://Www.Bps.Go.Id/Id/Statistics-Table/3/Wvc0mgeymxbkvfuxy25kee9hddzkbtqzwkvkb1p6mdkjmw==/Jumlah-Penduduk-Menurut-Kelompok-Umur-Dan-Jenis-

Corresponding author: sintyaprl15@gmail.com

8. Damayanti, Ni Ketut Septriana, Sunarsih Sunarsih, & Vida Wira Utami. 2020. "Zinc Therapy in Lowering Menstrual Pain (Dysmenorrhea)." *Malahayati Journal of Midwifery* 6(3): 394–400. doi:10.33024/Jkm.V6i3.1687.
9. Diastinni, by wayan ganga. 2021. *Overview of Non-Pharmacological Management of Dysmenorrhea in Adolescent Girls at SMAN1 Gianyar*. Denpasar. Https://Repository.Itekes-Bali.Ac.Id/Medias/Journal/Ni_Wayan_Gangga_Diastini.Pdf.
10. Directorate General, Ministry of Health of the Republic of Indonesia. 2014. *Regulation of the Minister of Health of the Republic of Indonesia Number 25 of 2014 concerning Child Health Efforts*. Jakarta, Indonesia.
11. Fitriyanti, Dahlia, & Rini Iswari. 2020. "Socialization of Character Development in the Generation Planning Program (Genre) through the Student Counseling Information Center (PIK-MA) Sahabat Kota Pekalongan." *Solidarity: Journal Of Education, Society And Culture* 9(2): 1014–25.
12. Iswari, NKAS, & N M A Wilani. 2019. "The Effect of Body Image on Self-Adjustment in Early Adolescents at SMPN 1 Denpasar." *Udayana Journal of Psychology*: 12–21. Https://Ocs.Unud.Ac.Id/Index.Php/Psikologi/Article/View/52404.
13. Health, Development Policy Agency. 2023. *Indonesian Health Survey (SKI)*. Jakarta.
14. Mai Revi, Wella Anggraini, & Warji. 2023. "The Relationship of Nutritional Status with Menstrual Cycles in High School Girls." *Medical Scholars: Journal of Stikes Al-Ma'Arif Baturaja* 8(1): 123–31. doi:10.52235/Scholarmed.V8i1.219.
15. Napu, Lia Afriani, Yusrah Taqiyah, & Wa Ode Sri Asnaniar. 2023. "Effect of Ginger Water Compresses on Reduction of Primary Dysmenorrhea in Adolescents." *Window Of Nursing Journal* 4(1): 33–39. doi:10.33096/won.V4i1.735.
16. Nuraini, Safira, Yasmin Sabina Sa'diah, & Evi Fitriany. 2021. "The Relationship between Menarche Age, Nutritional Status, Stress and Hemoglobin Levels to the Incidence of Primary Dysmenorrhea in Female Students of the Faculty of Medicine, Mulawarman University." *Journal of Science and Health* 3(3): 443–50. doi:10.25026/Jsk.V3i3.398.
17. Prihatin, Nova Sumaini, Nurmila, Ernita, & Rayana Iswani. 2022. "Counseling for Dysmenorrhea for Adolescent Girls at the Misbahul Ulum Islamic Boarding School, Lhokseumawe City." *Journal of Health Service (JAK)* 4(3): 532. doi:10.36565/Jak.V4i3.439.
18. Retno, Sri Nowo, & Rizki Amalia. 2023. "The Relationship between Nutritional Status and the Occurrence of Primary Dysmenorrhea in Grade VIII Students of State Junior High School 17 Bandar Lampung City in 2021." *Journal of Midwife Mandira Scholar* 2(1): 12–18.
19. Soleha, Nadya, & Alifiyanti Muharramah. 2025. "The Relationship between Fat Intake, Calcium Intake, Iron Intake and Physical Activity with the Incidence of Primary Dysmenorrhea in Adolescents Aged 15-18 at SMA Negeri 1 Gading Rejo in 2024." *Journal of Excellence Gemilang* Health 9(1): 53–63.
20. Sugiyanto, & Nur Annisa Luli. 2020. "The Relationship of Physical Activity with the

Corresponding author: sintyaprl15@gmail.com

Level of Dysmenorrhea in Grade XII Students of SMK Negeri 2 Godean Sleman Yogyakarta." *University Research Colloquium*: 7–15.

21. Swandari, Atik. 2022. UM Publishing Surabaya *Physiotherapy Intervention Textbook in Dysmenorrhea Cases*. Eds. Ken Siwi, Fadma Putri, and Nurul Faj'ri Romadhona. Surabaya: UM Publishing Surabaya.
22. Syam, Widya Dian Pratiwi, Sri Wahyuni Gaytri, Achmad Harun Muchsin, Aryanti Bamahry, and Nirwana Laddo. 2022. "The Relationship of Nutritional Status to Menarche Age." *Fakumi Medical Journal: Medical Student Journal* 2(9): 637–45. doi:10.33096/Fmj.V2i9.119.
23. Wahyuni, Leni Tri, Eva Yunitasari, Rosmawati, Ana Puji Astuni, Katarina Lit, and Elvine Ivana Kaconnect. 2024. *Textbook on Reproductive Disorders*. 1st ed. West Jakarta: Nuansa Fajar Cemerlang.
24. Yusnita, Dina Happy, Siti Fatimah Pradigdo, & Muhammad Zen Rahfiluddin. 2019. "The Relationship of Body Image with Consumption Patterns and Nutritional Status of Adolescent Girls at SMPN 12 Semarang." *Journal of Public Health* 7(2): 47–53. Http://Ejournal3.Undip.Ac.Id/Index.Php/Jkm.

Corresponding author: sintyaprl15@gmail.com