



Factors Associated with Menstrual Disorders in Adolescents at SMPN 2 Kota Padangsidempuan in 2024

Ghevina Diva Zahra Harahap¹, Yanna Wari Harahap², Nefonavrtilova Ritonga³.

^{1,2,3}Department of Public Health, Universitas Aupa Royhan

Article Info

Article history:

Received: 12 March, 2024

Revised: 07 April, 2024

Accepted 19 May, 2024

Keywords:

Menstrual Disorders, Anxiety, Physical Activity, Adolescent Girls

ABSTRACT

Menstrual disorders are abnormalities that occur in the menstrual cycle. Common menstrual disorders can be divided into five types, namely: Amenorrhea, Dysmenorrhea, Menorrhagia, Oligomenorrhea, Polymenorrhea. Therefore, this study was conducted with the aim of determining the factors related to menstrual disorders in adolescent girls at SMP N 2 Padangsidempuan City. This type of research is quantitative with a research design, namely Cross-sectional. The population of this study was 222 and the sample in this study was 69 respondents with a sampling technique using Simple random Sampling. Data were collected through questionnaires and data analysis using the chi Square statistical test with a confidence level of 95% ($\alpha = 0.05$). The results of the study of anxiety with menstrual disorders showed a p-value ($0.663 > 0.05$) and physical activity with menstrual disorders showed a p-value of $0.054 > 0.05$ means that there was no relationship between anxiety and physical activity with menstrual disorders in SMP N 2 Padangsidempuan City. Research at SMP N 2 Padangsidempuan showed there is no relationship between anxiety and physical activity with menstrual disorders. However, schools are still advised to provide comprehensive menstrual education, increase awareness of mental health, educate healthy physical activity, and encourage a healthy lifestyle. Students are advised to monitor their menstrual cycle and consult a doctor if there is a disorder. Further research is needed to determine other factors that may affect menstrual health.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Ghevina Diva Zahra Harahap,
Department Of Public Health,
Universitas Aupa Royhan
Email: ghevinadivazaharahap@gmail.com

1. INTRODUCTION

The prevalence of menstrual disorders is approximately 73.83%, with a prevalence of menstrual cycle disorders in women of approximately 45%, according to the World Health Organization (2020). The global prevalence of menstrual disorders among adolescent females is subject to variation; however, it is generally estimated to be between 20% and 25%. This figure encompasses a variety of menstrual disorders, such as dysmenorrhea (menstrual discomfort), amenorrhea (menstrual absence), and menorrhagia (heavy menstrual bleeding). The prevalence of menstrual disorders is extremely high, with approximately 1,769,425 women (90%) experiencing dysmenorrhea, 10-16% experiencing severe dysmenorrhea, and an average of 50% of women experiencing mild dysmenorrhea. Primary dysmenorrhea is estimated to affect 55% of women of reproductive age in Indonesia, with an estimated 54.89% of cases (Aprianti et al., 2024).

The incidence of menstrual disorders in Indonesia is 107,673 individuals (64.25%), with 59,671 individuals (54.89%) experiencing primary dysmenorrhea and 9,496 individuals (9.36%) experiencing secondary dysmenorrhea (Hasiani, A., et al., 2024). According to Basic Health Research data (Ministry of Health of the Republic of Indonesia, 2018), irregular menstruation is experienced by 11.7% of adolescents in Indonesia and 14.9% of adolescents in metropolitan areas of Indonesia. The Yogyakarta region has the highest irregularity rate, at 15.8% (Nasution et al., 2024).

According to the North Sumatra Provincial Health Office, the prevalence of amenorrhea among 1,600 adolescents is 170 adolescents (10%-13%), with a higher incidence observed in several public and private institutions. As adolescents age, the effects of amenorrhea will become more apparent, including the potential inability to conceive after they marry (FITRI, D. 2023). Meanwhile, the incidence rate of dysmenorrhea in Padangsidempuan is 25-30% (Daully, H.V.A. 2022).

An interview was conducted with the principal of SMP N 2 Kota Padangsidempuan, as indicated by the preliminary survey results, which revealed a total of 222 students. Several female pupils are afflicted with menstrual disorders, as indicated by an interview with a teacher at SMP N 2 Kota Padangsidempuan. Data was collected from 35 students who participated in interviews regarding menstrual disorders. The results indicated that 30 students experienced amenorrhea, a condition that is linked to a high level of physical activity, such as extracurricular activities, and can exacerbate premenstrual syndrome. Furthermore, dysmenorrhea was reported by five students, which is associated with the numerous school assignments.

2. RESEARCH METHODS

This study is of the quantitative variety and employs a cross-sectional research design. Cross-sectional research is a study design that stresses the measurement/observation of independent and dependent variable data just once at a particular moment in time, according to Notoatmodjo (2012). The study will be carried out at Padangsidempuan's SMPN 2. The population is one of the many traits that the population possesses (Sugiono, 2017). The 222 female students in the eighth grade at SMP N 2 Padangsidempuan make up the study's population. A sample is a subset of the population used as a source of data for the study. The researcher uses Slovin's Formula to measure the number of samples to be used (Hendryadi et al., 2019). The researcher utilized simple random sampling to determine the sample in each class after

determining the sample size in each class. Choosing sample members at random from the population without taking strata into account is known as simple random sampling. 69 samples are needed for this study, according to the sample size formula that was calculated. After manually entering the collected data using formulas into Microsoft Excel, the author will use the Statistical Product and Service Solutions (SPSS) version 24 software to process and statistically analyze the data in order to hopefully provide an answer to the problem formulation identified in this study.

3. RESULT AND ANALYSIS

The presentation of the research results is divided into two levels, namely univariate and bivariate:

3.1. Univariate Analysis

The results of the univariate analysis provide an overview of age, physical activity, anxiety, and menstrual disorders among respondents, presented in the form of tables and narratives. The results of the analysis are as follows:

Table 1. Age profile of adolescents at SMP N 2 Kota Padangsidimpuan

Age Variable	N	Percentage (%)
13 years	44	63,8
14 years	18	26,1
15 years	7	10,1
Total	69	100,0

Based on the analysis of age frequency distribution, the majority of respondents in this study fall within the early adolescent age range. This is evidenced by the dominance of respondents aged 13 years, which reached 63.8% of the total 44 respondents. In addition, there are 26.1% of respondents aged 14 and 10.1% of respondents aged 15. These findings indicate that the focus of this research is primarily on early adolescent groups, which is an important developmental period in an individual's life.

The results of the analysis regarding physical activity and anxiety among adolescents at SMP N 2 in Padangsidimpuan City are as follows:

Table 2. Description Of Physical Activity and Anxiety in Adolescents at Smp N 2 Kota Padangsidimpuan

Variable	N	%
Physical Activity		
Light	60	87,0
Currently	9	13,0
Anxiety		
Heavy	3	4,3
Currently	18	26,1
Light	48	69,6
Total	69	100,0

The results of this study indicate that the majority of respondents at SMP N 2 Kota Padangsidimpuan have a light level of physical activity, with 87.0% (60 people) falling into this category. On the other hand, only 13.0% (9 people) have moderate physical activity. These findings indicate that the majority of students tend to engage in physical activities that are not very intense.

In terms of anxiety, the majority of respondents experienced mild anxiety, with 69.6% (48 people) falling into this category. However, there is also a small portion of respondents who experience severe anxiety, namely 4.3% (3 people). This data shows that although mild anxiety is more common, anxiety issues can cause more serious physical and psychological changes that need to be addressed among the students of SMP N 2 Kota Padangsidimpuan.

Teenage females at SMPN 2 Kota Padangsidempuan are experiencing anxiety primarily due to the heavy academic load and the need to constantly perform well. Headaches, stomachaches, and trouble sleeping are common physical signs of this ongoing anxiety. Because of this, a large number of female students suffer from menstruation diseases, including irregular periods and excruciating pain. This ailment reduces their self-confidence in addition to interfering with their educational endeavors. The school has organized counseling and relaxation programs in an effort to solve this problem. According to the findings of the investigation, adolescents at SMP N 2 Kota Padangsidempuan tended to have mild anxiety, though some also had severe anxiety. The respondents most frequently reported feeling dizzy, having moist hands, and constantly finding it difficult to do everything or fearing something negative may happen as symptoms of anxiety.

Physical activity in adolescents using the Physical Activity Level instrument is categorized into three groups, namely: Light, Moderate, Heavy. The results of this study found that the physical activity of female adolescents at SMPN 2 Kota Padangsidempuan is mostly light. Whereas sports/walking activities still. Many female students prefer passive activities such as watching or using gadgets rather than exercising regularly.

The lack of sufficient physical activity can trigger various health problems, including menstrual disorders. This condition is exacerbated by a modern lifestyle that is increasingly sedentary and a preference for more leisurely activities. The importance of physical activity for reproductive health is often overlooked by teenage girls. At SMPN 2 Kota Padangsidempuan, many female students have very limited physical activity. However, regular exercise can help regulate hormones, improve blood circulation, and reduce stress. All of these factors are very important for maintaining reproductive health and preventing menstrual disorders. Therefore, efforts are needed to raise awareness among female students about the importance of maintaining physical fitness through adequate physical activity. The low level of physical activity among teenage girls at SMPN 2 Kota Padangsidempuan is a serious concern. This condition can trigger various health issues, including menstrual disorders. To address this issue, a joint effort is needed from various parties, such as schools, families, and the surrounding environment. Schools can organize engaging and varied sports programs, while families can provide support and motivation to encourage children to be more active. Thus, it is hoped that this can improve the quality of life for adolescent girls and prevent reproductive health disorders.

Table 3. Description of Menstrual Disorders in Adolescents at SMP N 2 Kota Padangsidempuan

Variable	N	Percentage (%)
Menstrual Disorders		
Disruption	51	73,9
No disturbance	18	26,1
Total	69	100,0

According to the study's findings, 73.9% of the 51 female students at SMP N 2 Kota Padangsidempuan reported having menstruation abnormalities, making them the majority of the students. However, only 18 individuals, or 26.1%, reported not having menstrual irregularities. According to these results, menstruation disorders are rather prevalent among SMP N 2 Kota Padangsidempuan's female students and need more care. Like many adolescent females, the girls at SMPN 2 Kota Padangsidempuan frequently deal with a variety of menstrual-related problems. Menstrual disorders—also known as irregular menstruation—are conditions in which patterns of menstrual changes occur in comparison to the prior state. The length of the menstrual cycle and the

volume of bleeding may be affected by these modifications. Menstrual disorders include amenorrhea, menorrhagia, oligomenorrhea, dysmenorrhea, and polymenorrhea, as well as lifestyle, mental health, and social variables, all have an impact on this condition. Additionally, anxiety and physical exercise are two highly important components. Adolescent girls at SMPN 2 Kota Padangsidimpuan have complicated menstrual problems that are influenced by a number of variables. It is intended that by comprehending the connection between anxiety, physical activity, and menstrual problems, more efficient programs will be created to deal with this issue. In order for teenage girls to grow and develop to their full potential, it is critical to provide an atmosphere that supports their physical and emotional well-being.

3.2. Bivariate Analysis

The association between anxiety and physical activity and menstrual disorders is investigated using the Research Concept Framework as a basis. To ascertain if the independent and dependent variables are related, use bivariate analysis. In this study, the independent variables are Anxiety and Physical Activity, while the dependent variable is Menstrual Disorders.

Table 4. The Relationship Between Anxiety and Menstrual Disorders at SMP N 2 Padangsidimpuan City

Table 4: The Relationship Between Anxiety and Menstrual Disorders at SMP N 2 Padangsidimpuan City							
Variable	Disorder Menstruation				Amount		<i>P</i> Value
	Available		Not Available				
	n	%	n	%	n	%	
Anxiety							0,663
Heavy	2	2,9	1	1,4	3	100	
Moderate	12	17,4	6	8,7	18	100	
Light	37	53,6	11	15,9	48	100	
Total	51	73,9	18	26	69	100	

Based on data obtained from SMP N 2 Kota Padangsidimpuan, the presented test results show no relationship between anxiety and menstrual disorders at SMP N 2 Kota Padangsidimpuan with a p-value of 0.663. In the mild anxiety group, out of 48 respondents, 37 people (53.6%) experienced menstrual disorders, and 11 people (15.9%) did not experience menstrual disorders. Meanwhile, in the moderate anxiety group of 18 respondents, 12 people (17.4%) experienced menstrual disturbances, and 6 people (8.7%) did not experience menstrual disturbances. Severe anxiety from 3 respondents, 2 people (2.9%) experienced menstrual disorders, and 1 person (1.4%) did not experience menstrual disorders. The research results show that there is no relationship between anxiety and menstrual disorders, with a p-value of 0.663. This value is greater than 0.05, which means we do not have enough evidence to reject the null hypothesis stating that there is no relationship between physical activity and menstrual disorders at SMP N 2 Padangsidimpuan.

The explanation for why no relationship was found may include several factors. First, there are other variables affecting menstrual disorders that are not measured in this study, such as hormonal factors or lifestyle. Second, the measured level of anxiety is not high enough to significantly impact menstrual disturbances. Additionally, some individuals have good coping mechanisms for anxiety, so they do not experience negative effects on their menstrual cycles.

The results of this study are also in line with Juniartini, I., 2023, which also shows similar results. For example, a study found a p-value of 0.506, indicating no significant relationship between anxiety levels and menstrual cycles in adolescent girls at SMP Negeri 1 Amlapura. These results are consistent with the findings of this study and indicate that although anxiety can generally affect mental health, its impact on the menstrual cycle may be more complex and influenced by various other factors.

Table 5. The Relationship Between Physical Activity and Menstrual Disorders at SMP N 2 Kota Padangsidempuan

Faktor yang Mempengaruhi Gangguan Menstruasi							P-Value
Variable	Gangguan Menstruasi				Amount		
	Available		Not Available				
Physical Activity	n	%	n	%	n	%	
Light	42	60,9	18	26,1	60	100	
Currently	9	13,0	0	0,0	9	100	
Total	51	73,9	18	26,1	69	100	

Based on the data obtained from SMP N 2 Kota Padangsidempuan, the presented test results show no relationship between physical activity and menstrual disorders at SMP N 2 Kota Padangsidempuan with a p-value of 0.054. In the group with light physical activity, out of 60 respondents, 42 people (60.9%) experienced menstrual disorders, and 18 people (26.1%) did not experience menstrual disorders. Meanwhile, in the Moderate Physical Activity group, out of 9 respondents, 9 people (17.4%) experienced menstrual disturbances, and 0 people (0.0%) did not experience menstrual disturbances.

4. DISCUSSION

Based on the results of the Chi-Square statistical test used, there is one cell with an expected count, meaning the Chi-Square statistical test does not meet the requirements, so the statistical test used is Fisher's Exact Test, which shows a p-value of 0.54. This value is greater than 0.05, so we can accept the null hypothesis which states that there is no relationship between physical activity and menstrual disorders at SMP N 2 Padangsidempuan.

The explanation for why no relationship was found between physical activity and menstrual disorders in this study does not mean that physical activity has no effect at all. Regular physical activity remains important for overall health, including reproductive health. However, it is important to remember that menstrual disorders are multifactorial issues, and other factors such as hormones, genetics, lifestyle, and medical conditions also play significant roles. For the management of menstrual disorders, it is advisable to consult a doctor to obtain an accurate diagnosis and appropriate treatment. To support the acceptance of the null hypothesis that there is no relationship between physical activity and menstrual disorders at SMP N 2 Padangsidempuan, it can be stated that the study by Hanifah et al. (2023) at Universitas Muhammadiyah Prof. Dr. HAMKA, using a cross-sectional method, did not find a significant difference between the level of physical activity and menstrual disorders among female students ($p=0.593$). This means that although there are differences in the level of physical activity among female students, this does not significantly affect the occurrence of menstrual disorders among them. This research highlights that other factors play a more significant role in influencing menstrual health.

Based on the research conducted (Hayya, R. F., 2023) titled "The Relationship Between Stress Levels, Fast Food, and Physical Activity on Menstrual Cycles in Adolescents at PMB N Jagakarsa." There are adolescents with irregular menstrual cycles more commonly found among those who engage in light physical activity, totaling 33 individuals (82.5%), compared to those who engage in moderate physical activity, totaling 7 individuals (17.5%), and those who engage in heavy physical activity, totaling 0 individuals (0%). On the other hand, the number of respondents who experience regular menstrual cycles is more commonly found among adolescents who engage in moderate physical activity, amounting to 14 people (51%), compared to the number of

respondents who engage in light physical activity, which is 13 people (48%), and respondents who experience high levels of stress, which is 0 people (0%). The research used a questionnaire aimed at obtaining data on menarche age, menstrual patterns, dysmenorrhea, marital status, exercise, BMI, and diet. The data only linked dysmenorrhea with physical activity and obtained a p-value of 0.38, indicating no relationship between physical activity and menstrual disorders.

5. CONCLUSION

According to age, the respondents were between the ages of 13 and 15, with the majority (69) being teenage girls. Of those 60 respondents (87.0%), 42 (60.9%) had menstrual abnormalities, whereas 18 (26.1%) did not. The majority of respondents participated in light physical activity. A p-value of 0.054 ($p > 0.05$) indicates that there is no correlation between physical activity and menstruation abnormalities at SMP N 2 Padangsidimpuan. Subsequently, 48 respondents (69.6%) reported having mild anxiety, of whom 37 (53.6%) had menstruation difficulties and 11 (15.9%) did not. A p-value of 0.663 ($p > 0.05$) indicates that there is no correlation between anxiety and menstruation abnormalities at SMP N 2 Padangsidimpuan.

Based on the findings of the aforementioned study, the author recommends that the principal of the school and the faculty take into account educating students about menstruation problems and reproductive health through instruction and the inclusion of library materials.

6. REFERENCES

- [1] Aprianti, R. Z., & Lestari, N. E. (2024). Pengaruh Kompres Jahe Merah Terhadap Tingkat Nyeri Haid Pada Remaja di Mts Tanwiriyah Cianjur. *An-Najat*, 2(2), 92-100.
- [2] Nurhayati, S. S. T. M. K. (2022). *MONOGRAF Depo Medroxy Progesteron Acetate (Dmpa) & Gangguan Siklus Menstruasi*. CV Pena Persada.
- [3] DAULAY, H. V. A. (2022). *Gambar Karakteristik Dan Pengetahuan Remaja Putri Tentang Dismenorrhea Primer Di SMK. N. 3 Kota Padangsidempuan Tahun 2022*.
- [4] Hastuty, Y. D., & Nasution, N. A. (2023). *Pengetahuan dan Perilaku Personal Hygiene Remaja Putri Saat Menstruasi*. PT. Sonpedia Publishing Indonesia.
- [5] Nasution, N. A., Harahap, I., Harahap, N. H., Almadany, U. H., & Lubis, A. H. S. (2024). Pengaruh Aroma Terapi Lavender Terhadap Penurunan Intensitas Nyeri Haid (Dismenore Primer) Pada Mahasiswi Program Studi Keperawatan Universitas Aufa Royhan Padangsidempuan. *Jurnal Kesehatan Ilmiah Indonesia/Indonesian Health Scientific Journal*, 9(1), 353-358.
- [6] Fitri, D. (2023). *Asuhan Kebidanan Kesehatan Reproduksi Dengan Amenorea Sekunder Di PMB Dora Kecamatan PadangSidempuan Utara Di Kota PadangSidempuan Tahun 2023*.
- [7] Prayuni, E. D., Mandiri, A., & Adianti, M. (2019). Therapy for Irregular Menstruation With Acupuncture and Herbal Pegagan (*Centella Asiatica (L.)*). *Journal Of Vocational Health Studies*, 2(2), 86-91.
- [8] BKKBN, 2019). *Survei Demografi dan Kesehatan Indonesia (SDKI)*
- [9] Depkes RI. (2018). *Laporan Kesehatan Reproduksi Remaja Indonesia*. Jakarta: Kementerian Kesehatan Republik Indonesia.
- [10] Hayya, R. F., Wulandari, R., & Sugesti, R. (2023). Hubungan Tingkat Stress, Makanan Cepat Saji Dan Aktivitas Fisik Terhadap Siklus Menstruasi Pada Remaja Di Pmb N Jagakarsa. *SENTRI: Jurnal Riset Ilmiah*, 2(4), 1338-1355.
- [11] Juniartini, I., Sandra Putra., & Tresna Wicaksana, I (2023). Hubungan tingkat kecemasan dengan siklus menstruasi pada remaja putri di SMP Negeri 1 Amlapura.