


Overview of the Characteristics of Primary Dysmenorrhea in Female Adolescents at Madrasah Aliyah Negeri (MAN) 2 Model, Palu City.

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ARTICLE INFO	ABSTRACT
Article History: Received Accepted Published online	<i>Primary dysmenorrhea or menstrual pain causes discomfort in daily physical activities. This complaint is related to repeated absences from school, which can disrupt productivity. Based on the background explanation above, researchers are interested in conducting research on the description of the characteristics of primary dysmenorrhea in young women at MAN 2 Palu. The aim of this research is to determine the characteristics of primary dysmenorrhea which have an impact on the activities of young women and the degree of primary dysmenorrhea at MAN 2 Palu. This research is descriptive observational with a cross sectional design. Sampling used a purposive sampling technique, namely all female students at MAN 2 Palu whose sample size had been calculated using the Slovin formula, with a total of 684 female students after being calculated using the Slovin formula, which then resulted in a sample size of 114 female students. It can be concluded that the majority of respondents experienced disruption in their activities due to primary dysmenorrhea, namely 70 respondents and the degree of primary dysmenorrhea most often experienced by female students was 76 respondents.</i>
Keywords: Primary Dysmenorrhea; Activity; Degree; This is an open access article under the  CC-BY-SA license.	

INTRODUCTION

Primary dysmenorrhea, or menstrual pain, causes discomfort in daily physical activities. This complaint is associated with repeated school absenteeism, thus potentially affecting productivity. Menstrual pain or dysmenorrhea is a gynecological complaint caused by an imbalance of the hormone progesterone in the blood, resulting in pain that most commonly occurs in women, particularly those of reproductive age.¹

Approximately 70-90 percent of cases of menstrual pain occur during adolescence, and adolescents who experience menstrual pain may have their academic, social, and sports activities affected.² Women in every country experience menstrual pain. Data from the World Health Organization (WHO) indicates that 1,769,425 women (90%) experience dysmenorrhea, with 10-15% of them suffering from severe dysmenorrhea. In the United States, menstrual pain is reported as the primary cause of repeated absenteeism among female students at school. An epidemiological study of adolescents (aged 12-17 years) in the United States by Klein and Litt reported a prevalence of dysmenorrhea of 59.7%. Among those who complained of pain, 12% experienced severe pain, 37% moderate, and 49% mild. This study also reported that dysmenorrhea caused 14% of adolescents to frequently miss school. Meanwhile, the prevalence of dysmenorrhea in Indonesia is 64.25%, consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea. Based on the 2018 South Sulawesi Provincial Health Profile, the incidence of dysmenorrhea was quite high, with mild pain accounting for 57.7% and moderate pain 3.8%. This indicates that many female adolescents experience dysmenorrhea (South Sulawesi Provincial Health Office, 2018). Based on a survey among female junior high school students in Tatanga Subdistrict, Palu City, 138 individuals (37.07%) were found to experience primary dysmenorrhea.³

Madrasah Aliyah Negeri (MAN) 2 Palu is a Technical Implementation Unit of the Ministry of Religious Affairs in the field of education, operationally responsible to the Regional Office of the Ministry of Religious Affairs in Palu City. MAN 2 Palu is located at Jalan Moh. Husni Thamrin No. 41 Palu, Besusu Timur, East Palu

District. It now has an excellent class as well as a dormitory, known as a boarding school, which was first established in 2014. Since then, the students of the boarding school have been recognized for their excellence in both academics and religious studies, elevating the prestige of MAN 2 Palu among other madrasahs, the community, and the Ministry of Religious Affairs. Efforts for development and restructuring continue to be pursued through innovations in educational content, methodological improvements, development of facilities and infrastructure, and expansion of the madrasah's functions—from educational development to socio-economic development and the strengthening of faith and piety. The school has a vision to produce graduates with spiritual maturity, noble character, and proficiency in science and technology. MAN 2 has established a mission to implement active, creative, and innovative learning processes, enhance students' awareness and enthusiasm, cultivate future leaders with an Islamic perspective, and carry out educational processes through its Islamic boarding school program.⁴

The female students of MAN 2 Palu appear to be very active in the learning process as well as in participating in extracurricular activities. Primary dysmenorrhea often occurs in women of reproductive age, and at this age, many women are attending senior high schools, including SMA, SMK, and MAN. Achieving academic success requires significant effort and continuous activity to attain the desired outcomes. The level of activity among students can influence the impact of primary dysmenorrhea they experience, reflecting a relationship between activity levels and the effects of primary dysmenorrhea among these students.

MATERIAL AND METHOD

Research Design

This study employed a purposive sampling technique with a cross-sectional design. The data collected in this study consisted of primary data obtained directly from the research subjects or samples, including respondents' identity data and questionnaires used to measure the impact of activity on primary dysmenorrhea and the degree of primary

dysmenorrhea among female adolescents at Madrasah Aliyah Negeri 2 Palu.

Time and Place of Research

This research was conducted at Madrasah Aliyah Negeri 2 Palu, located at Jl. M.H. Thamrin No. 41 Palu, Besusu Timur, East Palu District, Central Sulawesi Province.

Population and Sample

The population in this study comprised all female students of Madrasah Aliyah Negeri 2 Palu. In the initial survey, the total number of female students at Madrasah Aliyah Negeri 2 was 684. The sample size was determined using the Slovin formula, resulting in a sample of 114 students.

Data Presentation

Statistical analysis in this study was carried out using Statistical Product for Social Science 25 (SPSS 25). Data processing was conducted after entering the questionnaire data into tables, using the IBM Statistical Product for Social Science (SPSS 25) software.

RESULTS AND DISCUSSIONS

Table 1. Characteristic of Menstrual Pain on the First and Second Day

Description	Frequency (N)	Percentage (%)
Yes	99	86.8
No	15	13.2
Total	114	100

Table 1 shows that the characteristics of menstrual pain on the first and second day among female adolescents at MAN 2 Palu in 2023 indicate that the majority of respondents experienced menstrual pain on the first and second day, with 99 individuals (86.8%) reporting pain, while 15 individuals (13.2%) did not experience pain on the first and second day of menstruation.

Table 2. Characteristics of the Longest Menstrual Cycle

Description	Frequency (N)	Percentage (%)
Less than 6 Days	35	30.7
More than 6 Days	79	69.3
Total	114	100

The results of this study showed that 79 individuals (69.3%) experienced a menstrual cycle lasting more than 6 days, while the group of female adolescents who experienced a menstrual cycle lasting less than 6 days totaled 35 individuals (30.7%).

Table 3. Characteristics of Regular Menstrual Cycles

Description	Frequency (N)	Percentage (%)
Irregular	39	34.2
Regular	75	65.8
Total	114	100

The results of this study showed that the majority of female adolescents at MAN 2 Palu had regular menstrual cycles, totaling 75 individuals (65.8%), while the group of female adolescents who experienced irregular menstrual cycles numbered 39 individuals (34.2%).

Table 4. Characteristics of the Degree of Primary Dysmenorrhea Based on the Condition Prior to Menstruation

Description	Premenstrual Syndrome			
	Yes		No	
	n	%	n	%
Normal	0	0	0	0
Mild	0	0	0	0
Moderate	18	52.9	20	25
Severe	16	47.1	60	75
Total	34	100	80	100

Based on the results of this study, it was found that the majority of respondents with severe primary dysmenorrhea did not experience premenstrual syndrome symptoms such as lower abdominal pain, back pain, dizziness, nausea, or diarrhea, totaling 60 individuals (75%). Meanwhile, in the group with moderate dysmenorrhea, 18 individuals (52.9%) experienced premenstrual syndrome.

Table 5. Characteristics of Frequent Pain During Menstruation

Description	Frequency (N)	Percentage (%)
Frequent	22	19.3
Sometimes	92	80.7
Total	114	100

The results of this study showed that experiencing pain during menstruation was more dominant in the "sometimes" group, with 92 individuals (80.7%), while those who frequently experienced pain during menstruation totaled 22 individuals (19.3%).

Table 6. Characteristics of Menstrual Pain that Interferes with Activities

Description	Frequency (N)	Percentage (%)
Yes	70	61.4
No	44	38.6
Total	114	100

The results of this study showed that 70 individuals (61.4%) experienced menstrual pain severe enough to interfere with their activities. Meanwhile, the group of female adolescents whose activities were not disrupted by menstrual pain totaled 44 individuals (38.6%).

Table 7. Characteristics of the Degree of Primary Dysmenorrhea Based on the Use of Pain Relievers During Menstruation

Description	Consumption of Pain Relievers			
	Yes		No	
	n	%	N	%
Not Always	0	0	114	100
Always	0	0	0	0
Total	114	100	114	100

Based on the results of this study, it was found that 114 individuals (100%) did not always consume pain relievers during menstruation.

Table 8. Characteristics of Primary Dysmenorrhea Pain

Description	Frequency (N)	Percentage (%)
Normal	8	7.0
Mild	50	43.9
Severe	56	49.1
Total	114	100

Based on the results of this study, it was found that the majority of respondents experienced severe pain, totaling 56 respondents (49.1%), followed by the group with mild pain totaling 50 individuals (43.9%), and those experiencing normal pain totaling 8 individuals (7.0%).

Table 9. Characteristics of the Degree of Primary Dysmenorrhea

Degree of Primary Dysmenorrhea	Frequency (N)	Percentage (%)
Normal	0	0
Mild	0	0
Moderate	38	33.3
Severe	76	66.7
Total	114	100

The results of this study showed that the majority of respondents were in the severe primary dysmenorrhea group, totaling 76 respondents (66.7%), while the group with moderate dysmenorrhea consisted of 38 individuals (33.3%).

DISCUSSION

Based on Table 1, the results showed that the majority of female adolescent respondents at MAN 2 in 2023 experienced menstrual pain on the first and second day, totaling 99 individuals (86.8%), while 15 individuals (13.2%) did not experience pain on the first and second day of menstruation.

This finding is consistent with the study by Shabnam et al. (2015), which stated that 70.2% of subjects experienced pain for 1-2 days during menstruation, and 23.2% of adolescents experienced pain for 2-3 days.⁵

In this study, the degree of primary dysmenorrhea among female students at MAN 2 Palu, based on research conducted in 2023, showed that the majority of respondents were in the severe primary dysmenorrhea group, totaling 76 respondents (66.7%), while the group with moderate dysmenorrhea consisted of 38 individuals (33.3%).

This is similar to the results of a study conducted by Adinda and Yetty among female medical students at UMSU, with a sample of 67 students, which found that 26 students (38.8%) experienced severe primary dysmenorrhea, and the smallest group consisted of students with mild dysmenorrhea, totaling 17 students (25.4%).⁶

The high prevalence of primary dysmenorrhea is certainly influenced by various factors that contribute to its occurrence. Each

respondent has different characteristic profiles, as the results of this study showed that there were respondents who shared similar characteristics but experienced different occurrences of dysmenorrhea. This happens because each individual's perception of pain is subjective, resulting in varied pain responses. The pain experienced by each individual differs because it is influenced by factors causing the pain.⁷

Other studies have revealed that dysmenorrhea is also influenced by several factors, such as the psychological condition of adolescents. Amid their busy activities, adolescents tend to experience stress, which can lead to dysmenorrhea. Stress can affect hormones in the reproductive organs. The mechanism linking stress to the occurrence of dysmenorrhea is not yet fully understood. However, research suggests that individuals experiencing stress undergo a neuroendocrine response. Cortisol, regulated by corticotrophin-releasing hormone (CRH) as a key stress-response regulator in the hypothalamus, mediates secretion via the pituitary gland. As a result, adrenocorticotrophic hormone (ACTH) and progesterone, which play roles in follicle development, may be disrupted due to impaired follicle-stimulating hormone (FSH) and luteinizing hormone (LH). This condition can affect the synthesis of prostaglandins PGE2 (Griya Widya: Journal of Sexual and Reproductive Health, 1(1), 2021) and PGF2, as well as their binding to myometrial receptors, which in turn influences uterine contractions, leading to dysmenorrhea.⁸

CONCLUSION

Based on the results of the study involving 114 samples on the Overview of the Characteristics of Primary Dysmenorrhea Among Female Adolescents at MAN 2 Palu, it can be concluded that the most frequently experienced type of dysmenorrhea among female adolescents at MAN 2 Palu is severe primary dysmenorrhea, reported by 76 female adolescents (66.7%). The most commonly experienced pain associated with primary dysmenorrhea among these students was severe pain, affecting 56 female adolescents (49.1%). The majority of respondents experienced

menstrual pain on the first and second day, totaling 99 individuals (86.8%).

Andalas. 2018;41:48-58.

It was also found that the majority of respondents experienced disruptions in their activities due to primary dysmenorrhea, with 70 respondents (61.4%) affected.

AUTHOR CONTRIBUTIONS

Conceptualization, M.S.S, D.A., L.S.; Methodology, M.S.S.; Validation, D.A., L.S.; Formal Analysis, M.S.S.; Investigation, M.S.S., Resources, M.S.S.; Data Curation, M.S.S.; Writing-Original Draft Preparation, M.S.S., D.A., and L.S.; Visualization, M.S.S. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declares that there is no conflict of interest.

REFERENCES

1. Adinda L, Yetty M. Hubungan antara intensitas aktivitas fisik dengan derajat dismenore primer pada mahasiswi Fakultas Kedokteran Universitas Muhamadiyah Sumatera Utara. Jurnal UMSU. 2020.
2. Andi S. Pengaruh latihan peregangan perut terhadap intensitas dismenore pada remaja awal. J Kesehat Tadulako. 2019;5(2):1-71.
3. Husna S, Hayati E. Gambaran tingkat nyeri dismenore pada remaja putri. 2020.
4. Kusumaningrum T, Nastiti AA, Dewi LC, Lutfiani A. The correlation between physical activity and primary dysmenorrhea in female adolescents. 2019.
5. Maryam, Ritonga MA, Istriati. Relationship between menstrual profile and psychological stress with dysmenorrhea [Hubungan antara siklus menstruasi dan stres psikologis terhadap dismenorea]. Althea Med J. 2016;3(3):382-7.
6. Nur Resma A. Gambaran umum Madrasah Aliyah Negeri 2 [Internet]. 2024 Mar 2 [cited 2025 Jul 1]. Available from: https://www.academia.edu/43806101/Gambaran_Umum_Madrasah_Aliyah_Negeri_2_Palu
7. Shabnam O, Beghum K. Characteristics and determinants of primary dysmenorrhea in young adults. Am Med J. 2015;3(1):8-13.
8. Sri NM, Lestari D. Hubungan aktivitas fisik dan kualitas tidur dengan dismenore pada mahasiswa FK UPN "Veteran" Jakarta. J