

RISK FACTORS OF STRESS AND HISTORY OF ALLERGY TO DYSMENORRHEA IN ADOLESCENT STUDENTS IN PUBLIC MIDDLE SCHOOL 1 PASIKOLAGA

Sinarning^{1*}, Tasnim Tasnim², La Banudi³

^{1,2,3}Master of Public Health Study Program, Mandala Waluya University, Southeast Sulawesi, Indonesia

Corresponding Author : Sinarning
Jl. Gene. A. Nasution No. G-37 Tel. 3193176 (0401), Kendari, Indonesia
E-mail: Sinarmeriki@gmail.com

Abstract

Background: The prior study for 20 students in Public Middle School 1 Pasikolaga showed that 16 students (32.8%) experienced dysmenorrhea, 3 students (1.46%) often experienced dysmenorrhea and 1 student never experienced dysmenorrhea. The objective of this study was to analyse the risk factor of stress and history of allergy to dysmenorrheal in adolescent students in Public Middle School 1 Pasikolaga.

Methods: Quantitative research with analytical method with case control study design. The research location is Public Middle School 1 Pasiokolaga, Muna Regency, Southeast Sulawesi. The population of all students from class VII to class IX is 205. The number of samples is 134 with a sampling technique using stratified random sampling.

Result: The results of data analysis obtained the value of Odds Ratio (OR) = 1.568, this means that stress with the incidence of dysmenorrhea has a 1.56 times greater risk of developing dysmenorrhea compared to respondents who do not have stress and the value of Odds Ratio (OR) = 1.459, this means history of allergy with dysmenorrhea has a risk of 1,459 times the occurrence of dysmenorrhea compared to respondents who do not have a history of allergies.

Conclusion: Stress and history of allergies are risk factors for the incidence of dysmenorrhea in public of female students 1 Pasikolaga.

Key words: *Stress, Allergy, Dysmenorrhea, Adolescent.*

INTRODUCTION

Many consider health to be the umpteenth business and they decide to go to the doctor or hospital when the illness is more severe. This disturbance should not be ignored because it can have serious consequences. The impact that occurs if menstrual pain (dysmenorrhea) is not treated (1).

In Indonesia, it is estimated that 55% of women of reproductive age are tormented by menstrual pain during menstruation (2). The incidence of primary type dysmenorrhea is around 54.89%, the rest sufferers with secondary type. According to the results of Riskesdas in Indonesia, the average age of menarche is 13 years (20.0%) with an earlier occurrence at the age of less than 9 years and some delaying up to 20 years and 7.9% not answering or forgetting. There were 7.8% who reported not having menstruation. Nationally, the average age of menarche is 13-14 years, which occurs in 37.5% of Indonesian children (3).

Based on the results of a study conducted by (4) explained that 81.30% of dysmenorrhea sufferers are a common problem that is often complained of by women who are menstruating. This is the main gynecological problem that is most often complained of. Factors that occur are psychological and physical conditions such as stress, shock, constriction of blood vessels, lack of blood, and decreased body condition (5), other than that. The risk factors for primary dysmenorrhea are age at menarche, nullipara, duration of menstruation, age, and habits of consuming alcohol, smoking, exercise, and stress (6), (7).

Based on a survey conducted in two schools in the coastal area of East Muna, namely Public Middle School 1 Pasikolaga and Public Middle School 1 Pasir Putih, there were many complaints related to menstrual pain before and during

menstruation. At the time of interviewing several students, when they experienced menstrual pain they could not carry out work activities and even did not go to school. The average complaint of menstrual pain is felt in class XIII children. From the results of interviews in two schools, it turns out that Public Middle School 1 Pasikolaga has a number of students who tend to complain a lot about menstrual pain but they do not report to health services, especially the midwife on duty because they think this condition is a normal thing.

With the existence of cases or problems of dysmenorrhea in Public Middle School 1 Pasikolaga, researchers are interested in conducting research with the title "Risk Factors for the Incidence of Dysmenorrhea in students of Public Middle School 1 Pasikolaga".

METHOD

Quantitative research with analytical method with case control study design (8). The research location at Public Middle School 1 Pasikolaga, Muna Regency, Southeast Sulawesi from March to May 2021. The population of all students from class VII to class IX is 205. The number of samples is 134 with a sampling technique using stratified random sampling.

RESULT

Table 1 shows that out of 134 respondents. There are 87 respondents who have stress in the mild category and there are 47 respondents who have stress in the severe category. Furthermore, from 87 respondents who had mild stress, there were 23 respondents who experienced dysmenorrhea and 24 respondents who experienced dysmenorrhea. Then from 47 respondents who had stress with 33 respondents who did not experience dysmenorrhea and there were 54 respondents who experienced dysmenorrhea. The results of data analysis obtained the value of Odds Ratio (OR) =

1.568, this means that stress with the incidence of dysmenorrhea has a 1.56 times greater risk of developing dysmenorrhea compared to respondents who do not have stress. The OR value shows $1.568 > 1$, meaning that there is a stress risk factor for the incidence of dysmenorrhea at Public Middle School 1 Pasikolaga.

Table 2 shows that out of 134 respondents There were 128 respondents who had a history of allergies with a mild category and there were 6 respondents who had a history of allergies with a severe category. Furthermore, from 128 respondents who had a history of disease in the mild category, there were 74 respondents who experienced dysmenorrhea and there were 54 respondents who did not experience

dysmenorrhea. Then from 6 respondents who had a history of disease in the severe category, there were 4 respondents who experienced dysmenorrhea and there were 2 respondents who did not experience dysmenorrhea. The results of data analysis obtained the value of Odds Ratio (OR) = 1.459, this means that a history of allergies with the incidence of dysmenorrhea has a risk of 1.459 times the occurrence of dysmenorrhea compared to respondents who do not have a history of allergies. The OR value shows $1.459 > 1$, meaning that there is a risk factor for a history of allergies to the incidence of dysmenorrhea at Public Middle School 1 Pasikolaga.

Table 1
Analysis of Stress Risk Factors for Events Dysmenorrhea at Public Middle School 1 Pasikolaga

Stress	Incidence of dysmenorrhea		Total	OR	Lower	Upper
	No	Yes				
Light	23	24	87	1.568	0.765	3,213
Heavy	33	54	47			
Total	56	78	134			

Table 2
Risk Factor Analysis of Allergy History of Incidence Dysmenorrhea at Public Middle School 1 Pasikolaga

Allergy History	Incidence of dysmenorrhea		Total	OR	Lower	Upper
	Yes	No				
Yes	74	54	128	1,459	0.258	8,259
No	4	2	6			
Total	56	78	134			

DISCUSSION

Analysis of Stress Risk Factors on the Incidence of Dysmenorrhea in Public Middle School 1 Pasikolaga

The results of this study indicate that of the 134 respondents there are 87 respondents who have stress in the mild category and there are 47 respondents who have stress in the severe category. Furthermore, from 87 respondents who had mild stress, there were 23 respondents who experienced dysmenorrhea and 24 respondents who did not experience dysmenorrhea. Then from 47 respondents who had stress with 33 respondents who did not experience dysmenorrhea and there were 54 respondents who experienced dysmenorrhea. This is due to the response to stress given by different individuals which is influenced by various factors such as personality factors, stressor characteristics and individual adaptability to stress or coping strategies against stress experienced. Personality factors are very influential on how a person processes stressors so that they cause different stress effects.

Respondents who have moderate and severe stress levels can be caused by pressure on exams, school assignments that must be done in a busy teaching and learning process, and assignments that must be collected before the exam schedule arrives. Stress can interfere with the work of the endocrine system. The endocrine system is disrupted when the endometrium is in the secretory phase producing prostaglandin which causes contraction of smooth muscles, causing pain during menstruation or dysmenorrhea. In addition to prostaglandins, the body also produces excessive adrenal hormones and estrogens. The increase in the hormone estrogens can cause an increase in excessive uterine contractions. In addition,

the increase in the hormone adrenaline can cause uterine muscle tension,

The results of data analysis obtained the value of Odds Ratio (OR) = 1.568, this means that stress with the incidence of dysmenorrhea has a 1.56 times greater risk of developing dysmenorrhea compared to respondents who do not have stress. The OR value shows $1.568 > 1$, meaning that there is a stress risk factor for the incidence of dysmenorrhea in Public Middle School 1 Pasikolaga. This is because in the results of the study, most of the students who often, occasionally, and never experienced dysmenorrhea had mild stress levels. That is, there is no difference in each category of dysmenorrhea frequency. According to (9), states that there is no relationship between stress levels and dysmenorrhea, besides that according to (9) stress is not the only cause of dysmenorrhea. Menstruation is not only influenced by stress levels but is also influenced by several other factors including genetic factors, nutritional intake and nutritional status, physical activity, and hormones (10). However, this is not in line with (11) which states that there is a relationship between stress levels and dysmenorrhea. This is because stress on pain during menstruation involves the neuroendocrine system as a system that plays a major role in female reproduction. Pain during menstruation will affect biochemical and cellular processes throughout the body, including the brain and psychological. When stressed, the body will produce excessive adrenal hormones, estrogens, progesterone and prostaglandins. The increase in the hormone estrogens can cause an increase in excessive uterine contractions. According to (12) states that the factors that cause stress are psychological factors.

Risk Factor Analysis of Allergy History on the Incidence of Dysmenorrhea in Public Middle School 1 Pasikolaga

The results of this study indicate that of the 134 respondents. There are 128 respondents who have a history of allergies with a mild category and there are 6 respondents who have a history of allergies with a severe category. Furthermore, from 128 respondents who had a history of disease in the mild category, there were 74 respondents who experienced dysmenorrhea and there were 54 respondents who did not experience dysmenorrhea. Then from 6 respondents who had a history of disease in the severe category, there were 4 respondents who experienced dysmenorrhea and there were 2 respondents who did not experience dysmenorrhea.

The results of data analysis obtained the value of Odds Ratio (OR) = 1.459, this means that a history of allergies with the incidence of dysmenorrhea has a risk of 1.459 times the occurrence of dysmenorrhea compared to respondents who do not have a history of allergies. The OR value shows $1.459 > 1$, meaning that there is a risk factor for a history of allergies to the incidence of dysmenorrhea in Public Middle School 1 Pasikolaga. This study is not in line with research conducted by (13), which states that there is no significant relationship between a history of allergies and the incidence of dysmenorrhea in female students with $p = 0.215$. And contrary to the results of research conducted by (14), which states that respondents who have a history of allergies experience mild dysmenorrhea by 68.5% greater than respondents who experience moderate dysmenorrhea 31.5%, with the chi-square test proven the results of the calculation of the correlation test get the value of $p = 0.000$ which means it is smaller than $= 0.05$. The existence of a history of allergies with the incidence of dysmenorrhea can be caused by habitual factors with the child's lifestyle.

Based on this, one way to reduce the occurrence of dysmenorrhea is the relationship between exercise habits and the incidence of dysmenorrhea because exercise is one of the relaxation techniques that can

be used to reduce pain. Can be caused by the healthy behavior of teenagers who are accustomed to it from an early age (15). In the era of globalization, many teenagers rarely do sports, especially physical exercise, play gadgets more often and stay at home, causing pain during menstruation. When a person does exercise, it can make blood flow to the muscles around the uterus smooth so that pain can be resolved or reduced.

CONCLUSION

Stress and history of allergies are risk factors for the incidence of dysmenorrhea in public female students of 1 Pasikolaga. So as to reduce stress factors by increasing open and positive thinking, interacting with parents, friends, and practicing time management and reducing allergy history factors by reducing fast food consumption by eating more foods rich in nutrients and vitamins. Such as vegetables, fruit, fish, and honey.

REFERENCES

1. Rahmawati DM, Isnaeni Y, Sholihah AN. Risk Factors for Primary Dysmenorrhea in Adolescents at SMA Muhammadiyah 5 Yogyakarta City in 2018. 2018.
2. Ervina A. The Effect of Diversity of Food Types on the Incidence of Dysmenorrhea. *Journal of Obstetrics Scientia*. 2015;3(1).
3. Indonesian Ministry of Health. Basic health research. Jakarta, Head of the Health Research and Development Agency of the Indonesian Ministry of Health. 2013.
4. Purba EPN, Rompas S, Karundeng M. Relationship between Knowledge and Behavior in Handling Dysmenorrhea at middle public 7 Manado. *Nursing Journal*. 2014;2(2).



5. Diana S. 1 The Relationship between Stress and Primary Dysmenorrhea in Medical Students, Faculty of Medicine, Andalas University: Andalas University; 2013.
6. Hendrik H. Menstrual problems: An overview of Islamic law and medicine: The Triumvirate; 2006.
7. Kurniawati D, Kusumawati Y. The effect of dysmenorrhea on activity in vocational school students. PACKAGE: Journal of Public Health. 2011;6(2).
8. Notoatmodjo S. Health Research Methodology, Rineka Cipta. Jakarta, Indonesian. 2010.
9. Ismail IF, Kundre R, Lolong J. The Relationship between Stress Levels and the Incidence of Dysmenorrhea in Semester VIII Students of the Nursing Science Study Program, Faculty of Medicine, Sam Ratulangi University, Manado. Nursing Journal. 2015;3(2).
10. Yulianingsih R. The Relationship Between Fast Food Consumption And Physical Activity With The Nutritional Status Of Adolescents At Sma N 1 Baturetno Wonogiri: STIKES PKU Muhammadiyah Surakarta; 2017.
11. UTAMI NH. The Effect of Sanyinjiao Point Acupressure (Sp6) on Reducing Primary Dysmenorrhea Pain.
12. Hawari D. Holistic Approach to Mental Disorder: Schizophrenia, 3rd edition. Jakarta: Publishing Agency, Faculty of Medicine, University of Indonesian. 2012.
13. PRINCESS RC. The Relationship Between Nutritional Status, Family History, And Exercise Routine With The Incidence Of Dysmenorrhea In Middle Class XI Students 08 Pontianak: Faculty of Health Sciences; 2019.
14. Nuraini S, Sa'diah YS, Fitriany E. Relationship between Menarche Age, Nutritional Status, Stress and Hemoglobin Levels on the Incidence of Primary Dysmenorrhea in Medical Faculty Students, Mulawarman University. Journal of Science and Health. 2021;3(3):443-50.
15. Jayadipraja EA, Prasetya F, Azlimin A, Mando WOSY. Family clean and healthy living behavior and its determinant factors in the village of Labunia, Regency of Muna, Southeast Sulawesi Province of Indonesia. Public Health of Indonesia. 2018;4(1):39-45.