

Early menarche, menstrual duration with dysmenorrhea in adolescents in Surabaya



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ABSTRACT

Introduction: Early menarche and long menstrual cycle were several factors that influence the occurrence of dysmenorrhea. Girls who have early menarche got a higher risk of experiencing dysmenorrhea as well as girl who experience long menstrual cycle. These both problems resulted excessive uterine contractions and secreted more prostaglandins so that causing dysmenorrhea. This study aims to analyze whether there is a relationship between early menarche, menstrual duration and dysmenorrhea in class VIII students in 2019-2020 school year at SMPN 20 Surabaya.

Methods: The design of this study used a cross-sectional approach. The population was all students of class VIII 2019-2020 school year at SMPN 20 Surabaya. Sample were 140 students which were taken based on proportional stratified simple random sampling technique. Retrieval of data by taken through filling out online forms. The independent variable were early menarche and menstrual duration, and the dependent variable was dysmenorrhea. The data analysis used the Spearman rank test with the significance level $\alpha = 0,05$.

Results: Research result of first independent variable, it was obtained p value = 0.022 which means there is a relationship between early menarche and dysmenorrhea in class VIII students of SMPN 20 Surabaya, and research for the second independent variable, it was obtained p value = 0.04 which means there is a relationship between menstrual duration and dysmenorrhea in class VIII students of SMPN 20 Surabaya.

Conclusion: Students who experience early menarche and have a long menstrual duration are more at risk of experiencing dysmenorrhea with severe pain levels. Students who experience early menarche and long menstrual periods are able to minimize the incidence of dysmenorrhea by such as maintaining a regular diet, consuming nutritious food intake, and taking pain relievers if dysmenorrhea occurs.

Keywords: dysmenorrhea, early menarche, long menstrual cycle, teenage girl.

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INTRODUCTION

Adolescence is a period of transition from childhood to adulthood. At this time, adolescents experience a process of physical, psychological and sexual function maturation, which is known as puberty. This period is marked by the first menstruation (menarche). Menstruation usually begins between the ages of 10-16 years. Menstruation in this young woman will take place normally once a month. In fact, there are still many women who experience physical discomfort. Some teenagers sometimes feel in the lower back, waist, hips, thigh muscles to calves. This is reported as dysmenorrhea.¹

Some women experience menstrual pain which can interfere with their

daily activities, ranging from lack of concentration to being unable to carry out normal activities. Menstrual pain occurs in the days leading up to or at the beginning of menstruation, with symptoms of discomfort in the lower abdomen before and during menstruation, forcing the sufferer to rest and leave work or usual daily activities for several hours or even days.²

As many as 90% of adolescent girl worldwide experience problems during menstruation and more than 50% experience primary dysmenorrhea with 10-20% of them experiencing severe symptoms.³ The incidence of menstrual pain in Indonesia is estimated at around 55% of women of reproductive age who experience pain during menstruation.⁴ In

East Java the incidence of dysmenorrhea is 64.25% consisting of 54.89% experiencing primary dysmenorrhea and 9.36% experiencing secondary dysmenorrhea.³ Based on the results of the data recapitulation of students who came to UKS with complaints of menstrual pain for the 2019 period at SMPN 20 Surabaya, there were 6 students (33.3%) in class VII, 8 students (44.4%) in class VIII, and 4 students (22.2%) class IX. From these results, it can be seen that there are still many cases of dysmenorrhea in SMPN 20 Surabaya, especially in class VIII students.

Menarche early and long menstrual duration is one of the factors that influence the occurrence dysmenorrhea. A teenager who has a younger age of menarche or early menarche will

have a higher risk of experiencing dysmenorrhea than a teenager who has menarche at a normal age. This is due to a teenager who experienced menarche earlier, maturation of the reproductive organs have not been up so easily causing dysmenorrhea.⁵ According to the results of Riskesdas, adolescents who have experienced menstruation in Indonesia are 13 years old (20.0%) with an earlier incidence of less than 9 years of age.⁶ The duration of menstruation that occurs in women is normally 7 days and someone who experiences menstruation more than normal or the duration of menstruation is longer will result in excessive uterine contractions and secrete more and more prostaglandins, causing dysmenorrhea.⁷

Although dysmenorrhea is experienced by many teenagers, not many teenagers know in depth about dysmenorrhea and based on data from UKS there are still many students from SMPN 20 Surabaya who come to UKS and complain of pain. To anticipate a worse impact, I as a researcher will collaborate with the UKS SMPN 20 Surabaya to hold health education counsel about dysmenorrhea for students of SMPN 20 Surabaya.

The aim of the study was to prove whether there is a relationship menarche early, the duration of menstruation with dysmenorrhea in eighth grade student in the 2019-2020 school year SMPN 20 Surabaya.

METHODS

General Background of Research

This study uses an observational analytic type with a cross-sectional design. The population in this study is class VIII students in the 2019-2020 school year who have experienced menstruation at SMPN 20 Surabaya by 215 students. The inclusion criteria in this study were healthy and menstruating female students. The exclusion criteria were female students with reproductive diseases and were sick.

Sample of Research

Calculation of the number of samples using probability sampling, namely the proportional stratified simple random sampling technique so that a sample of 140 students from 11 classes is obtained.

Instrument and Procedures

The independent variable is the age of early menarche and the duration of menstruation, while the dependent variable is dysmenorrhea. The instruments used in this study include: the age of early menarche with a 1 question questionnaire (3 answer choices), menstrual duration with a 1 question questionnaire (3 answer choices) and the dysmenorrhea questionnaire using 13 questions with a Likert scale so that the lowest score is 13 and the highest is 52 and categorized into 3 answers.

Data Analysis

Data from the research on the age of early menarche with dysmenorrhea were analyzed using the Spearman Rank test with a level of significance ($\alpha = 0.05$). The data for the results of the study on the duration of menstruation with dysmenorrhea were analyzed using the Spearman Rank test with a level of significance ($\alpha = 0.05$).

RESULTS

Based on the results of data analysis using the SPSS statistical test of Rank Spearman with a significance level ($\alpha = 0.05$) was obtained $p = 0.022$ where $p < \alpha$, H_0 is rejected, meaning that there is a relationship menarche early with dysmenorrhea the VIII grade student at SMPN 20 Surabaya. Based on the results of data analysis using the SPSS program with the Spearman Rank statistical test with a significance level ($\alpha = 0.05$) it was found that $p = 0.004$ where $p < 0.05$, H_0 was rejected, meaning that there was a relationship between menstrual duration and dysmenorrhea in

class VIII students at SMPN 20 Surabaya.

According to the table 1 is obtained from 140 respondents, mostly grader SMPN 20 Surabaya (64,3%) had a history of menstrual pain the family and the majority (55%) fall into the category of body mass index is normal.

Based on Table 2, it was found that from 140 respondents, most of the eighth grade students of SMPN 20 Surabaya (5 4.3 %) had a normal menarche age category, (37.1%) had a history category of long menstrual duration and (44.3%) experienced moderate dysmenorrhea.

DISCUSSION

Relationship between early menarche and dysmenorrhea

The results of the existing research are in line with research conducted by Sophia et al in 2013 which concluded that there was a relationship between the age of menarche and the incidence of dysmenorrhea in students of SMK N 10 Medan and in her research Sophia stated that the age of menarche 12 years had a 1.6 times the probability more likely to experience dysmenorrhea than those aged 13-14 years.⁸ Based on the results of existing research and research conducted by Sophia et al (2013), this is contrary to the results of research conducted by Handayani & Rahayu in 2014 based on the results of bivariate analysis stating that there is no significant relationship between the factor of early menarche with dysmenorrhea. According to the researcher's assumption, the difference in research results that occurs is because in the research conducted by Handayani, the majority of respondents' age of menarche occurred

Table 1. Frequency distribution of respondents based on family history of menstrual pain and body mass index category.

Category	Frequency	Percentage (%)
History of menstrual pain		
Exist	90	64.3
There is not any	50	35.7
Body mass index		
Severe weight loss	25	17.9
Mild weight loss	25	17.9
Normal	77	55
Mild overweight	8	5.7
Excess weight level	5	3.5

Table 2. The frequency distribution of respondents based on category of age of menarche, menstrual duration and dysmenorrhea.

Category	Frequency	Percentage (%)
Age of menarche		
Early menarche	53	37.9
Normal menarche	76	54.3
Late puberty	11	7.9
Menstrual duration		
Shorter	43	30.7
Normal	45	32.1
Longer	52	37.1
Dysmenorrhea		
Light	61	43.6
Currently	62	44.3
Heavy	17	12.1

at normal age of menarche by 85% and female students who experienced menarche at an earlier age of only 10%. This difference is very far in comparison, therefore the majority of respondents do not experience dysmenorrhea.⁹

Research conducted by researchers at SMPN 20 Surabaya, most (54.3%) female students experienced menarche at normal age and almost half (37.9%) respondents experienced earlier age of menarche. The comparison of these differences is only slight so that the possibility of dysmenorrhea is also greater than the research conducted by Handayani in 2014. In addition, differences in research results can also be caused by many factors such as the number of respondents being too small, the data collection method used can be a limitation when conducting research.⁹ The research conducted by Handayani cannot describe in its entirety because the number of respondents used is only a few, namely as many as 40 respondents while the respondents used by researchers at SMPN 20 Surabaya are 140 respondents.

There are many other factors that influence the occurrence of dysmenorrhea. According to Saryono and Sejati (2009) that the lifestyle of teenagers in the city such as lack of exercise, eating non-nutritive foods, smoking, and using drugs will cause various health problems such as dysmenorrhea.¹⁰ This research was conducted in Surabaya where Surabaya is the largest metropolitan city after Jakarta so that the lifestyle of teenagers can also encourage them so

that dysmenorrhea occurs while the research conducted by Handayani was conducted in the Rokan Hulu area where the area is a rural area so that the lifestyle of teenagers there is also relatively simple.

The results of research conducted by researchers at SMPN 20 Surabaya are in accordance with the theory put forward by Proverawati and Misaroh (2009) women who have menarche age at risk (< 12 years) need to pay more attention to health problems, especially the incidence of dysmenorrhea.¹¹ Based on the theory, menarche at an earlier age causes the reproductive organs to not function optimally and are not ready to undergo changes so that pain occurs when menstruation to the uterus stops and dysmenorrhea.¹²

The relationship between menstrual duration and dysmenorrhea

Results of research conducted by researchers in line with research conducted by Sophia et al in 2013 at SMK N 10 Field which indicates that respondents who are dysmenorrhea most are those who experience long periods >7 days (87.2%) with a value p value of 0.046 so it can be concluded that there is a relationship between the length of menstruation > 7 days having a 1.2 times greater probability of experiencing dysmenorrhea than female students whose menstruation duration is 7 days.

The results of this study contradict the research conducted by Tina (2015) which shows that there is no relationship

between the length of menstruation and the incidence of primary dysmenorrhea in adolescent girls at SMK Negeri 4 Surakarta.¹⁴ A total of 96 female students (85.0%) were included in the category of menstrual duration 7 days and experienced dysmenorrhea. The absence of a relationship between the two variables is shown from the results of the Fisher's Exact test calculation with a 95% confidence level and the p value = 0.783 > 0.05, then H_0 is accepted and H_a is rejected so it can be concluded that there is no relationship between the length of menstruation and the incidence of primary dysmenorrhea in young women at SMK Negeri 4 Surakarta.

According to researchers, the results of different studies in the research conducted by Tina 2015 were due to differences in research locations. The research conducted by researchers at SMPN 20 Surabaya was conducted in Surabaya and the research conducted by Sophia was located in Medan. In research conducted by Tina located in Surakarta. Surabaya and Medan are metropolitan cities and the largest in Indonesia after Jakarta. So that the association of adolescents and adolescent lifestyles will also be different from developing areas. As stated by Saryono and Sejati (2009) that changes in the lifestyle of urban adolescents such as lack of exercise, eating non-nutritive foods, smoking, and use of drugs will cause various health problems, especially irregular menstrual periods which will further aggravate the incidence of dysmenorrhea and triggers other diseases.¹⁰

Menstruation duration is one of the risk factors for dysmenorrhea. The duration of a person's menstruation is influenced by several factors, one of which is stress. The stress experienced by adolescents will affect the duration of the adolescent's menstruation which will result in dysmenorrhea. However, in this study, neither the researcher nor the research conducted by Tina examined the stress factors that occurred so that this could affect the accuracy of the results obtained.

In addition, there are differences in education levels. In this study, respondents drawn is junior high school students and also in the region

of SMPN 20 Surabaya no activities aimed to add information schoolgirl related dysmenorrhea causing the students are indifferent to their behaviors that can lead to dysmenorrhea therefore still many events dysmenorrhea in class VIII SMPN 20 Surabaya. The research conducted by Tina and the respondents who were taken were vocational school students where this showed that the amount of information received regarding dysmenorrhea was certainly more than junior high school students so that they were able to minimize the incidence of dysmenorrhea to themselves. Of course, this results in differences in the results obtained.

CONCLUSION

Based on the research that has been done, most of the students had menarche in normal category with half of the samples had menstrual history with prolonged duration. Almost half of the samples had history of mild dysmenorrhea. Based on the analysis can be concluded that early menarche and menstrual duration have a significant relationship with dysmenorrhea. Further studies are needed to validate these findings with larger sample and more comprehensive design.

AUTHOR CONTRIBUTION

All authors equally contribute to the study from the research concepts, data

acquisitions, data analysis, statistical analyses, revising the paper, until reporting the study results through publication.

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CONFLICT OF INTEREST

There is no conflict of interest for this manuscript.

ETHICAL CONSIDERATION

This research has obtained another certificate of ethics from the Health Research Ethics Committee of Nahdlatul Ulama University Surabaya No. 106/EC/KEPK/UNUSA/2020.

REFERENCES

1. Winkjosastro H. Ilmu Kandungan. Jakarta : PT Bina Pustaka Sarwono Prawirohardjo. 2008.
2. Calis KA. Dysmenorrhea. E-Medicine Obstetrics and Gynecology. 2011.
3. Larasati TA and Alatas F. Dismenore primer dan faktor risiko dismenore primer pada remaja. *Majority*. 2016;5(3):79-84.
4. Utari, Elsa P. Pengaruh Pendidikan Kesehatan tentang Menstruasi terhadap Penurunan Kecemasan Menghadapi Menarche pada Siswi Kelas V SDN 16 Pontianak. Naskah Publikasi

- Program Studi Ilmu Keperawatan Fakultas Kedokteran Universitas Tanjung Pura. 2016.
5. Berkley KJ. Primary Dysmenorrhea : An urgent Mandate. *International Association for The Study of Pain*. 2013;21(3):1-8.
6. Kemenkes RI. Riset Kesehatan Dasar : RISKESDAS. Jakarta : Balitbang Kemenkes RI. 2013.
7. Nurwana. Analisis Faktor yang Berhubungan dengan Kejadian Dismenore Pada Remaja Putri di SMA Negeri 8 Kendari. *Jurnal Ilmiah Mahasiswa Kesmas*. 2017.
8. Sophia F, Sori M, Jemadi. Faktor - Faktor yang Berhubungan dengan Dismenore pada Siswi SMK Negeri 10 Medan. *Universitas Sumatera Utara*. 2013;2:5.
9. Handayani EY, and Rahayu LS. Faktor-Faktor Yang Berhubungan Dengan Nyeri Menstruasi (Dismenorea) Pada Remaja Putri Di Beberapa SMA Di Kabupaten Rokan Hulu. *Jurnal Martenitny and Neonatal*. 2014;1(4):161-171.
10. Saryono, and Sejati W. *Syndrom premenstruasi*. Yogyakarta: Nuha Medika. 2009.
11. Proverawati, and Misaroh. *Menarche: Menstruasi Penuh Makna*. Yogyakarta: Nuha Medika. 2009.
12. Bare, and Smeltzer. *Buku Ajar Keperawatan Medikal Bedah Brunner & Suddart (Alih bahasa Agung Waluyo) Edisi 8 vol.3*. Jakarta: EGC. 2002.
13. Tina A. Hubungan antara usia menarche dan lama menstruasi dengan kejadian dismenore primer pada remaja putri di SMK negeri 4 surakarta. *Skripsi*. 2015.



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