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RELATIONSHIP BETWEEN PHYSICAL ACTIVITY, JOGGING REGULARLY, AND THE DEGREE OF DYSMENORRHEA IN STUDENTS OF THE NURSING DEPARTMENT, MADURA STATE POLYTECHNIC

Hubungan Antara Aktivitas Fisik Jogging Secara Teratur Dengan Derajat Dismenore Pada Mahasiswi Jurusan Keperawatan Politeknik Negeri Madura

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Abstract

Dysmenorrhea is a condition of pain and cramps experienced by women before they experience menstruation or when menstruation occurs. Physical activity can be done in the form of sports such as jogging. This study aimed to determine the relationship between physical activity, jogging, and the degree of dysmenorrhea in 3rd year female students majoring in Nursing at the Madura State Polytechnic. This study used an analytical correlation method using the Analytic Correctional-Cross Sectional. The population was 25 people, and the sample in this study was 3rd-year female students majoring in Nursing at the Madura State Polytechnic who experienced dysmenorrhea and did physical jogging activities routinely and regularly. Data collection by providing a closed-ended questionnaire for physical jogging activities and a Numeric Rating Scale (NRS) questionnaire for the degree of dysmenorrhea, and analysis using the Spearman Rank test statistical analysis method with α = <0.05. The results obtained a significant value of 0.006, meaning <0.05 means that physical jogging activities are related to the degree of dysmenorrhea, where most female students who experience mild dysmenorrhea do physical jogging activities routinely. The limitations of this study are the relatively small number of samples taken and other factors that can affect the degree of dysmenorrhea, such as stress levels, nutritional status, lifestyle, and family history. Based on the results of the research that has been conducted, it can be concluded that the degree of dysmenorrhea can be reduced if someone routinely does physical activity, in this case by jogging.
Keywords: menstruation, dysmenorrhea, physical activity, jogging.

Abstrak

Disminore merupakan suatu keadaan timbulnya rasa nyeri dan kram yang dialami perempuan pada saat sebelum mereka mengalami fase menstruasi atau pada saat menstruasi itu terjadi. Aktivitas fisik dapat dilakukan dalam bentuk olahraga seperti jogging. Tujuan penelitian ini untuk mengetahui bagaimana hubungan aktivitas fisik jogging dengan derajat disminore terhadap mahasiswi tingkat 3 jurusan kesehatan Politeknik Negeri Madura. Penelitian ini menggunakan metode analitik korelasi dengan menggunakan Analytic Correctional-Cross Sectional. Jumlah populasi 25 orang dan sampel dalam penelitian ini yaitu mahasiswi tingkat 3 jurusan kesehatan Politeknik Negeri Madura yang mengalami disminore dan melakukan aktivitas fisik jogging secara rutin dan teratur. Pengambilan data dengan cara memberikan kuesioner Close Ended untuk aktivitas fisik jogging dan kuesioner Numeric Rating Scale (NRS) untuk derajat disminore serta analisis menggunakan metode analisis statistik uji Rank Spearman dengan a = <0,05. Diperoleh hasil nilai signifikan 0,006 yang berarti <0,05 artinya aktivitas fisik jogging secara rutin berkaitan dengan derajat disminore dimana sebagian besar mahasiswi yang mengalami disminore ringan melakukan aktivitas fisik jogging secara rutin. Keterbatasan penelitian ini adalah pengambilan jumlah sampel yang relative kecil, serta factor lain yang dapat mempengaruhi derajat dismenore seperti tingkat stress, status gizi dan pola hidup, dan Riwayat keluarga. Berdasarkan dari hasil penelitian yang telah dilakukan dapat disimpulkan bahwa derajat disminore dapat berkurang apabila seseorang rutin melakukan aktivitas fisik dalam hal ini yaitu dengan berolahraga jogging.
Kata kunci: menstruasi, dismenore, aktifitas fisik, jogging.

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INTRODUCTION

Menstruation is a major sign of sexual and reproductive maturity in adolescent girls. Menstruation is a temporary manifestation of the uterus that occurs every month in women with a cycle length of 28 days and a duration of 3 to 7 days, as a result of the absence of fertilization. During this period, the most common health disorder during menstruation is dysmenorrhea. In general, menstruation causes a person to feel cramps and pain, especially at the beginning of the menstrual cycle. However, the pain directed at each person is not the same. Some people feel the pain is so excruciating that it interferes with daily activities, while going to school or working. However, some do not feel pain (Setiawan, 2018). Dysmenorrhea is pain felt by women in the lower abdomen that lasts 2-3 days, and the intensity of the pain usually lasts for 24 hours on the first day of menstruation (Andriana et al., 2018).

According to WHO data in 2020, the incidence rate of dysmenorrhea in the world is 90%, with 10–16% of patients suffering from severe dysmenorrhea (Herawati, 2017). In Indonesia, 64,25% of dysmenorrhea cases consist of (54,89% primary dysmenorrhea and 9,36% secondary dysmenorrhea). In East Java in 2018, dysmenorrhea occurred in 64,25% (54,89% primary dysmenorhea, 9,36% secondary dysmenorhea) (Rattu et al., 2019). Based on the number of 3rd year female students at the Madura State Polytechnic, which is 108, and after a survey was conducted

Initially, 10 female students were randomly selected and experienced dysmenorrhea during menstruation. The selection of third-year nursing students of Madura State Polytechnic as research respondents is due to the obligations as final year students that must be completed such as PKK (Clinical Nursing Practice), learning change patterns, group projects, TA (Final Assignment) work which makes students rarely or even never do physical activities (Jogging). The age of third-year nursing students of Madura State Polytechnic is also included in the age range that often experiences pain or primary dysmenorrhea during menstruation, namely late adolescence, 18-25 years. With the level of pain, dysmenorrhea often affects health, which makes teenagers feel uncomfortable. Although it is not a serious problem, judging from the effects of dysmenorrhea, dysmenorrhea is one of the health problems experienced by adolescent girls, which makes them use various ways to overcome it. Doing physical activity by exercising is one effective way to prevent dysmenorrhea. Regular exercise can improve health and help teenage girls maintain their menstrual cycles regularly every month. Walking, jogging, cycling, running, swimming, or you can also do aerobics. Teenage girls who exercise regularly two or three times a week are less likely to experience dysmenorrhea than those who never exercise at all.

The role of nurses in health, especially in adolescent reproduction and dysmenorrhea, is as a consultant or educator to improve adolescents' ability to maintain their health by expanding knowledge in female adolescents about dysmenorrhea. Seeing the role of sports that are related to and influence the occurrence of dysmenorrhea, it is necessary to conduct a study on the relationship between jogging and the level of menstrual pain or dysmenorrhea in 3rd year female students majoring in health at the Madura State Polytechnic.

METHOD

Research design is a guideline or steps generally used by researchers to conduct their research (Rapingah, 2022). The design of this study is a correlational analysis using an analytical correlational cross-sectional analysis. This method examines the relationship between variables at one point: physical activity and the degree of dysmenorrhea. This method is used in the study to

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evaluate the prevalence of a condition or characteristic in the population and to identify correlations or associations between variables efficiently and quickly (Hidayat, 2019). The researcher used a total sampling technique: sampling all population members. Total sampling is chosen because all population members are sampled, usually if the population is less than 100. This provides an accurate picture of the population, reduces the potential for bias, and allows analytical generalizations. The sample taken in this study is 25 third-year students of the Nursing Department of the Madura State Polytechnic. Variables are properties, characteristics, or quantities that researchers have determined and used to obtain an explanation and draw conclusions (Purwanto & Sulistyastuti, 2007). This study uses two variables. The independent variable in this study is physical activity (jogging) on 3rd year female students of the Nursing Department of the State Polytechnic of Madura. The dependent variable in this study is the degree of dysmenorrhea among 3rd-year female students of the Nursing Department of the State Polytechnic of Madura. Bivariate analysis is a process of analyzing two variables with a temporary assumption of a relationship or correlation. Data analysis was conducted bivariately to see the relationship between two variables, namely physical activity and dysmenorrhea levels. The statistical test used was Spearman's Rank because the data was not normally distributed. The level of significance used was $p < 0.05$.

RESULTS AND DISCUSSION

The results after the study showed that most respondents who did physical activity (jogging) were good, as many as 15 people, and almost half of the respondents who did physical activity (jogging) were bad, as many as 10 people (Table 1). Physical activity such as jogging is easy to do. If done regularly, it has extraordinary benefits for the body that will help the body respond to disease and fight bacterial and viral infections. Good jogging can be done 3-5 times weekly for 30-45 minutes.

Table 1. Frequency Distribution Based on Physical Activity Jogging of Third-Year Female Students Majoring in Health at Madura State Polytechnic

No	Physical Activity Jogging	Frequency	Presentation
1	Good physical activity	15	60%
2	Poor physical activity	10	40%
Total		25	100%

Several factors cause a person to do physical activity, including individual factors such as knowledge and perception of healthy living, motivation, and liking for sports. People with good knowledge and perception of healthy living will do physical activity to support their health. Moreover, someone motivated and hopeful to achieve optimal health will do physical activity according to health recommendations (Wati et al., 2017). Physical sports, such as jogging, can affect the pituitary gland to release an endogenous opiate substance called beta endorphin. This hormone works as a pain analgesic that can reduce the degree of dysmenorrhea when women experience menstrual cycles. Regular exercise can not only reduce stress, but can also reduce discomfort when women experience menstrual pain. After finishing exercise, it is certain that the body must get nutritious food intake and sufficient rest (Herdiani et al., 2020).

The results after the study showed that most respondents experienced mild dysmenorrhea, as many as 13 people (52%), a small number of respondents experienced moderate dysmenorrhea,

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as many as six people (24%), and a small number of respondents experienced severe dysmenorrhea, as many as six people (24%) (Table 2). Every month, a normal woman will periodically experience menstruation, and dysmenorrhea is a common symptom felt when women experience menstruation. Dysmenorrhea that occurs in each individual varies from those who experience mild to severe dysmenorrhea that interferes with daily activities. This uncomfortable feeling is caused by intense abdominal muscle contractions when menstrual blood is released. Symptoms of menstrual pain are generally in the form of pain that comes irregularly, accompanied by cramps in the lower abdomen. It can be done by forming physical activity habits to reduce the dysmenorrhea that is felt, because if someone routinely exercises, it can help smooth blood circulation.

Table 2. Frequency Distribution Based on The Degree of Dysmenorrhea in Third-Year Female Students Majoring in Health at Madura State Polytechnic

No	Degree of Dysmenorrhea	Frequency	Presentation
1	Dysmenorrhea Light	13	52%
2	Dysmenorrhea Currently	6	24%
3	Dysmenorrhea Heavy	6	24%
Total		25	100%

Dysmenorrhea can be treated by giving analgesic drugs such as aspirin and supportive treatment, including physical activity such as exercise. Supportive treatment, such as exercise, can strengthen the body's muscles so the heart muscle can pump oxygenated blood (Cahyaningtias, 2007). Several factors influence someone to experience dysmenorrhea, namely the age of menarche. The results of the study showed that most female students experienced their first menstruation at the age of 13 years, as many as 17 people (68%) (Table 3). The normal age of menarche is around 11-14 years. This is in line with research conducted by Aditiara (2018) on undergraduate nursing students at the University of Muhammadiyah Semarang, with a result of p = 0.041 (p <0.05), which also stated that in Indonesia, the average age of menarche occurs at the age of 13 years.

Table 3. Frequency Distribution of Respondents Based on Age of First Menstruation Female Students Majoring in Health at Madura State Polytechnic

No	Age of first menstruation	Frequency	Presentation
1	<12 years	1	4%
2	12 years old	7	28%
3	13 years old	17	68%
4	>13 years	0	0%
Total		25	100%

The Spearman Rank test analysis showed that physical activity (jogging) and the degree of dysmenorrhea have a significant relationship. (2-tailed) value of 0.006 (<0.05), it can be concluded that the physical activity variable (jogging) has a significant relationship with the degree of dysmenorrhea (Tabel 4). Hypothesis (H0) states no relationship between physical activity (jogging) and the degree of dysmenorrhea. At the same time, hypothesis (H1) states that there is a relationship between physical activity (jogging) and the degree of dysmenorrhea. Based on the results of the

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Spearman Rank test, sig. (2-tailed) of 0.006, it can be concluded that the physical activity variable (jogging) has a significant relationship with the degree of dysmenorrhea. This shows that H0 is rejected and H1 is accepted, which means a relationship exists between physical activity (jogging) and the degree of dysmenorrhea. If jogging is done correctly and routinely every week, it can reduce the pain that occurs when women experience menstruation.

Table 4. Spearman Rank Test Results on the Relationship Between Physical Activity (Jogging) of Third Year Students of the Nursing Department of Madura State Polytechnic

		Physical Activity Jogging	**Degree of Dysmenorrhea**
Physical Activity Jogging	Correlation Coefficient	1.000	-535″
	Sig (2-tailed)	.	.006
	N	25	25
Degree of Dysmenorrhea	Correlation Coefficient	-535″	1.000
	Sig (2-tailed)	.006	.
	N	25	25

Physical activity, including jogging, is a non-pharmacological management strategy that can be done safely because it uses physiological processes. Dysmenorrhea can be reduced by managing time in terms of activity and making a regular exercise schedule. Various studies have been conducted to identify risk factors that can be associated with the occurrence of dysmenorrhea during menstruation. Risk factors include the absence of physical activity, such as exercise. Lack of physical activity or movement during menstruation can cause reduced blood and oxygen circulation. Blood flow and oxygen in the body that is not smooth at birth causes disturbing pain (Prabawati et al., 2024).

Based on research conducted by Ningrum (2023), it was concluded that routine physical activity can reduce the intensity of dysmenorrhea pain felt during the menstrual cycle in women. The hormone endorphin acts as a natural analgesic in the body. Elvis's increased blood flow and metabolism during exercise can reduce ischemic pain during menstruation.

Sari (2018) stated that based on the results of the Chi Square statistical test, there is a relationship between physical activity (jogging) and the degree of dysmenorrhea ($p = 0.019$). Women who do physical activities more often have a positive impact on some of the symptoms experienced during dysmenorrhea. Doing physical activity regularly can stimulate the release of endorphins. Endorphins are produced in the brain, which function as natural sedatives that can be produced so that a feeling of comfort arises and as a natural analgesic without taking painkillers. Regular physical activity can improve the working system of blood vessels, reduce pain complaints, and increase physical fitness.

CONCLUSION

The results after the study showed that most respondents who did physical activity (jogging) were good, as many as 15 people (60%), and almost half of the respondents who did physical activity (jogging) were bad, as many as 10 people (40%). Based on the research that has been conducted, it can be concluded that there is a relationship between physical activity (jogging) and the degree of dysmenorrhea in third-year female students majoring in health at Madura State Polytechnic.

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REFERENCES

Aditiara, B. E, & Wahyuni, S. (2018). *Hubungan antara usia menarche dengan dysmenorrhea primer* [Skripsi]. Universitas Muhammadiyah Surakarta.

Andriana., Aldriana, N., & Andria. (2018). Faktor-Faktor Yang Mempengaruhi Siklus Menstruasi pada mahasiswi di Universitas Pasir Pengaraian. *Jurnal Martenity and Neonatal*, *2*(5), 271–279.

Cahyaningtias, P. L., & Wahyuliati, T. (2007). Pengaruh olahraga terhadap derajat nyeri dismenorea pada wanita belum menikah. *Mutiara Medika: Jurnal Kedokteran Dan Kesehatan*, *7*(2), 120–126. https://doi.org/10.18196/mmjkk.v7i2%20(s).1665

Herawati, R. (2017). Faktor-faktor yang mempengaruhi kejadian nyeri haid (dismenorea) pada siswi madrasah aliyah negeri pasir pengaraian. *Materniry and Neonatal Jurnal Kebidanan*, *2*(3), 161–172.

Herdiani, I., Susilawati, S., & Kurniawati, A. (2020). Hubungan Kebiasaan Olahraga Dengan Dismenorea Pada Mahasiswa Program Studi Diploma Iii Kebidanan Universitas Muhammadiyah Tasikmalaya. *Jurnal BIMTAS: Jurnal Kebidanan Umtas*, *4*(1), 27–33. https://doi.org/10.35568/bimtas.v4i1.1032

Hidayat, A. (2019). *Metodologi Penelitian. Kebidanan Dan Teknik Analisis Data.* Salemba Medika.

Ningrum, A. G., Setyowati, D., & Sema, M. O. K. (2023). Hubungan Aktivitas Fisik dengan Dismenore Primer pada Remaja Putri: Systematic Review. *Jurnal Ilmiah Universitas Batanghari Jambi*, *23*(2), 1997–2000.

Prabawati, S. A., Realita, F., & Adyani, K. (2024). Hubungan Aktivitas Olahraga terhadap Nyeri Haid (Dismenorea) pada Remaja Putri: Literature Review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, *7*(4), 805–814. https://doi.org/10.56338/mppki.v7i4.4728

Purwanto, E. A., & Sulistyastuti, D. R. (2007). *Metode Penelitian Kuantitatif untuk Administrasi Publik dan Masalah-Masalah Sosial*. Yogyakarta; Gava Media.

Rattu, O. S., Malisngorar, M. S. J., & Nastiti, E. T. (2019). Pengaruh Terapi Kompres Hangat terhadap Dismenore pada Remaja Putri di Kepulauan Kelang Tahun 2020. *GLOBAL HEALTH SCIENCE*, *5*(3), 151–154. https://doi.org/10.33846/ghs5310

Rapingah, S., Sugiarto, M., Sabir, M., Haryanto, T., Nurmalasari, N., Gaffar, M. I., & Alfalisyado, A. (2022). *Buku ajar metode penelitian*. Feniks Muda Sejahtera.

Sari, S. E. (2018). *Hubungan Anemia, Aktivitas Fisik, Asupan Kalsium Dan Magnesium Dengan Kejadian Dismenore Remaja Putri Sma Negeri 4 Kota Pekalongan* [Skripsi]. Diponegoro University.

Setiawan, S. A., & Lestari, L. (2018). Hubungan nyeri haid (dismenore) dengan aktivitas belajar sehari-hari pada remaja putri kelas vii di smpn 3 pulung. *Jurnal Delima Harapan*, *5*(1), 24–31.

Wati, L. R., Arifandi, M. D., & Prastiwi, F. (2017). Hubungan Aktifitas Fisik dengan Derajat Dysmenorrhea Primer pada Remaja. *Journal of Issues in Midwifery*, *1*(2), 1–8. https://doi.org/10.21776/ub.JOIM.2017.001.02.1

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