

# HOW DO NUTRITIONAL STATUS AND EXERCISE AFFECT DYSMENORRHEA IN JUNIOR HIGH SCHOOL STUDENTS

Hari Adi Rahmad<sup>\*1,2</sup>, Eri Barlian<sup>1</sup>, Wilda Welis<sup>1</sup>

<sup>1</sup>Doctoral Program in Sports Science, Universitas Negeri Padang, Indonesia

<sup>2</sup>Sekolah Tinggi Keguruan dan Ilmu Pendidikan (STKIP) Meranti, Indonesia

Email: [hariadirahmad03@gmail.com](mailto:hariadirahmad03@gmail.com)<sup>\*1</sup>, [e.barlian@fik.unp.ac.id](mailto:e.barlian@fik.unp.ac.id)<sup>1</sup>, [wildawelis@fik.unp.ac.id](mailto:wildawelis@fik.unp.ac.id)<sup>1</sup>

Submitted: 2022-10-17, Reviewed: 2022-11-09, Accepted: 2022-11-27

DOI: 10.22216/jcc.2022.v7i3.1792 URL: <http://dx.doi.org/10.22216/jcc.2022.v7i3.1792>

## Abstract

Children in junior high school benefit significantly from participating in various sports, particularly those geared toward female students. Many people achieve a healthy level of physical activity, which is affected by multiple factors, including nutritional status and those connected to dietary factors. Because the body relies on certain foods as sources of energy, the construction of body cells, the production of biocatalysts, and the metabolism of food are all required to follow the body. This study focused on the experiences of female students at SMP Kepulauan Meranti Regency when they were engaged in the process of acquiring sports-related knowledge. Through the use of the correlational research approach, this study aims to establish whether there is a connection between two or more variables. According to the findings, it was determined that the level of physical activity engaged by some of the female students at this institution is still inadequate or not very excellent. This can be seen mainly from their appearance and attitude, particularly in following and doing the learning materials of the health assessor, where it seems that female students are lazy in doing sports activities, get tired quickly, and lack enthusiasm. Some of them have pale faces, indicating that they are unhealthy.

**Keywords:** exercise, nutrition, sport, students

## Abstrak

Anak-anak di sekolah menengah pertama sangat diuntungkan dengan mengikuti berbagai macam olahraga, terutama yang diperuntukkan bagi siswa perempuan. Banyak orang mencapai tingkat aktivitas fisik yang sehat, yang dipengaruhi oleh berbagai faktor, termasuk status gizi dan faktor makanan. Karena tubuh bergantung pada makanan tertentu sebagai sumber energi, konstruksi sel-sel tubuh, produksi biokatalis, dan metabolisme makanan diperlukan untuk mengikuti tubuh. Penelitian ini berfokus pada pengalaman siswa putri SMP Kabupaten Kepulauan Meranti ketika mereka terlibat dalam proses memperoleh pengetahuan yang berhubungan dengan olahraga. Melalui penggunaan pendekatan penelitian korelasional, tujuan penelitian ini adalah untuk mengetahui apakah ada hubungan antara dua variabel atau lebih. Dari hasil temuan diketahui bahwa tingkat aktivitas fisik yang dilakukan oleh sebagian mahasiswa di lembaga ini masih kurang atau kurang baik. Hal ini sebagian besar terlihat dari penampilan dan sikap mereka, khususnya dalam mengikuti dan mengerjakan materi pembelajaran asesor kesehatan, dimana terlihat bahwa siswi malas dalam melakukan kegiatan

*olahraga, cepat lelah, kurang semangat, dan sebagian yang memiliki wajah pucat, yang sepertinya menandakan bahwa mereka tidak sehat.*

**Kata kunci:** senam, gizi, olahraga, siswa

## INTRODUCTION

Sports for female students are essential for the development and growth of junior high school children. Mark, according (Hari Adi Rahmad et al., 2021) that "is a sequence of regular and planned physical movements that people execute intentionally to improve their functional capacities." that "is a series of regular and planned physical movements that people perform." This indicates that the amount of exercise referred to in this study is the capacity of female students to carry out activities of daily living with relative ease and without suffering considerable levels of exhaustion (Muller et al., 2009). For instance, in the case of interrupting study assignments at school and home, or activities such as playing with peers while still enjoying their free time, or if other unexpected needs arise. There are many things to consider to achieve a healthy level of physical activity, and many things affect it, like your nutritional condition or things linked to food (Syaiful Anwar et al., 2019) (H A Rahmad, 2020). Since the body relies on certain foods as energy sources, the creation of body cells, the activity of biocatalysts, and the metabolism of food are all required to adhere to the quantitative and qualitative body requirements (Wijaya, 2019). The human body needs nutrition to gain energy to carry out daily physical activities, recover biological functions, and grow and develop, especially for those who are still developing, and this necessitates a quantitative adjustment in the number of carbs, fats, and

proteins consumed to account for the individual's activities.

In addition, other factors that affect sports are age and gender, the habits of female students in physical activities such as sports exercises and play activities, and good facilities and infrastructure (Saleh et al., 2013). The effect of female students who are active in learning health workers in the learning process is closely related to physical work, a clean and comfortable environment, knowledge and education, and social and economic parents (Honey-Escandón et al., 2015). The ability of female students to compete in sports is impacted not only by their level of physical fitness but also by the amount of rest they get. The author believes, based on the observations and observations made by the author in the field of female students in SMP Kepulauan Meranti Regency, specifically when following the learning process of the health program, that the level of exercise of some female students is still low or not very good in their sports levels. This conclusion is based on the author's observations and observations made in the field of female students. This can be inferred from both their demeanor and the way they present themselves (Hari Adi Rahmad et al., 2021), especially in following and doing the learning materials of the health assessor (Maughan et al., 2004), where it seems that female students are lazy in doing sports activities, get tired quickly, lack enthusiasm and some whose pale faces seem to be unhealthy(Welis & Rifki, 2013).

Nutritional status can be interpreted as the amount and food consumed by a person, which is an indicator of their nutritional status (Alexander et al., 2011). Because the energy that is needed for physical performance comes from the metabolism of the foodstuffs that are consumed daily, food and nutrients are one of the factors that determine the level of a person's ability to grow and their level of physical performance (Hari Adi Rahmad & Rahmat, 2021). The range of numbers that describe the three different types of physical appearance, namely fat, ideal, and thin, higher than the fat limit, excluding healthy nutritional status, and classified as more nutritional status, is where the state of healthy nutrition can be found for all demographics and sexes. This range of numbers is called the healthy nutritional status interval (Maryelliwati et al., 2022). Lower than the limit of the skinny number, excluding healthy nutritional status, is classified as a state of malnutrition status (Maryelliwati; Rahmat, Wahyudi; Rahmad, 2020). In addition, a person's conduct toward daily eating habits determines that person's level of nutritional status. This is because what a person eats or consumes affects metabolic processes and what is produced from within oneself.

Pain during menstruation, also known as dysmenorrhea, is a symptom of the uterus's hypercontractility induced by prostaglandins. This condition is not a disease in and of itself. Only prostaglandins can induce pain, which only occurs when there is a deficient amount of progesterone in the blood (Zulkifli et al., 2019). Dysmenorrhea means abdominal pain in the

lower abdomen before, during, and after menstruation. It is continuous (Rizal et al., 2019). Menstruation is the discharge of blood from the uterus, which results from the detachment of the lining of the uterine wall accompanied by the release of the endometrium and occurs monthly (H. Rahmad, 2016). This menstruation is evaluated based on three criteria: first, the length of the monthly cycle, which should not exceed 15 days; second, the volume of blood, which should be between 20 and 80 milliliters; and third, the duration of the menstruation, which should not exceed 15 days.

The Relationship of Nutritional Status to Learning Outcomes of Assessors in Schools in Polewali Mandar Regency is the title of one study that has been done on this topic, and it was published in 2021 by Yaco. The issue that has to be addressed in this research is the connection between a student's nutritional state and the knowledge gained through participating in physical education classes in schools (Surahman & Rahmad, 2022). The findings of this study can be determined based on the outcomes of the height measurement test. The nutritional status of the very thin category (0%), the thin category (as many as six students or 20%), the normal category (as many as 24 students or 80%), the fat category (0%), and the very fat category (0%), as determined by weight measurement (Nutritional Status Measurement). In general, the nutrition status of SMP Negeri 1 Wonomulyo students is predominately in the normal category. Following that is Beddu's (2015) study, published in 2015 and titled The Relationship of Nutritional Status and Age

of Menarche with Primary Dysmenorrhea in Young Women. She added that primary dysmenorrhea is an issue in gynecology that many young ladies struggle with.

The symptoms of adolescent dysmenorrhea can make it difficult for adolescents to participate in their regular activities and may even cause them to skip school. A risk factor for quick primary dysmenorrhea is an abnormal nutritional condition. Another risk factor is the early age of menarche. This study aims to examine the link between nutritional condition and age of menarche with primary dysmenorrhea in high school students who attended SMA Negeri Makassar from May to June 2013. The study will take place in 2013. According to the research findings, when analyzed with the chi-square statistical test combined with Pearson's chi-square, the variables pertaining to nutritional status received a p-value of 0.008, indicating a significant connection between nutritional status and primary dysmenorrhea.

Furthermore, there was a significant link between menarche age and primary dysmenorrhea, as the results of statistical tests for the menarche age variable showed a p-value of 0.006. Based on the findings of some of these studies, it is clear that this research is doable and ought to be conducted. This is because the relationship between nutrition and health status and the capacity of female students to participate in sporting activities ought to be exposed and investigated further.

## METHOD OF RESEARCH

According to Arikunto (2010), this kind of research is referred to as

correlational research. Correlational research is an investigation that seeks to establish whether or not there is a connection between two or more variables. One advantage of correlational research is that it does not necessitate the participation of an excessive number of research subjects. The participants in this study included all students and students of classes VII, VIII, and IX, totaling 118 people. There were 73 students and 46 students included in the student population. Methods of purposive sampling were utilized throughout this investigation to collect samples. According to Zhou (2005), "sampling based on preconceived intentions or with particular considerations" is the definition of "purposive sampling." As a result, the sample solely consists of female students in classes VII and VIII because the researcher has limited resources regarding time, money, and energy. Therefore, the number of samples consisted of twenty different female students.

## DISCUSSION / RESEARCH FINDINGS

A physical activity that includes games and competition with oneself and others about environmental interactions or natural components and is open to all levels of society in line with their skills and pleasures is referred to as a sport. The many definitions of sports are caused by the characteristics of the sport itself, which are increasing, the longer it changes and the more complicated both from the type of activity, as well as the emphasis on the motives to be reached or the context of the socio-cultural milieu in which it is carried out. The activities considered to be sports

rely on the attitude of the person from which he interprets them. This is because the numerous definitions of sports are caused by the characteristics of the sport, which are expanding. As machines now do most work, humans increasingly need to engage in activities that keep their bodies active. This is because a lack of exercise and other forms of physical activity has been linked to the increased prevalence of various health conditions.

On the other hand, many people participate in sports either actively or passively through the medium of athletic events, either by presenting sports themselves or by actively watching sports. In general, physical activity is beneficial to both the mental and physical health of individuals and provides them with a source of enjoyment and entertainment. Because of this, engaging in physical activity or exercising will bring about various positive effects on our bodies. For some members of the general population, participation in sports has evolved from a fad or lifestyle choice into a fundamental requirement for everyday existence. Therefore, getting enough exercise is a critical necessity since it is inextricably linked to the fundamental requirements of daily tasks, including movement. Exercise is a set of physical motions performed regularly and according to a predetermined schedule to maintain and improve a person's ability to move and maintain and improve a person's quality of life. Pain during menstruation, also known as dysmenorrhea, is a symptom of the uterus's hypercontractility induced by prostaglandins. This condition is not a disease in and of itself. Prostaglandins can

only cause pain; this condition arises when insufficient amounts of progesterone are in the blood.

The physical exercise aims to improve one's capacity, the function of the respiratory and cardiovascular systems, and the volume of blood in the body. However, the most substantial changes occur in the muscle fibers engaged during exercise. This is because activity causes the muscle to work harder. Aerobic exercise improves the capacity of muscles to generate energy through aerobic means. Aerobic exercise also results in alterations in the metabolism of fats and carbohydrates. Because of this, the muscles are in a better position to burn fat, one of the most significant positive benefits of exercise on one's health. One factor that affects the quantity of physical activity that female students participate in is the nutritional state of these students. The term "nutritional status" refers to the condition of an individual's body as a direct result of the intake, utilization, and use of the food in the body.

This suggests a connection between a woman's nutritional status and her engagement in athletics and her risk of dysmenorrhea among female pupils attending junior high school in the Meranti Islands Regency. The study was conducted on female students from schools in the Meranti Islands Regency. Junior high school children's physical and mental development correlates to their participation in various sports. People engage in the sport when they engage in a sequence of regular and planned physical motions to improve their functional capabilities. This indicates that what is meant by the level of exercise in this study

is the ability of female students to easily complete tasks in daily life without experiencing significant fatigue.

This could include the ability to interrupt study tasks at school and home, as well as activities such as playing with peers while still enjoying their leisure time or for other unexpected needs. Because the body needs some foods for energy sources, the construction of body cells, biocatalysts, and food metabolism must follow the quantitative and qualitative body to obtain a good level of exercise. Many factors influence it, including nutritional status or food-related factors. It is important to consider all of these factors to obtain a good level of exercise. Quantitative means that the ratio of the number of carbohydrates, fats, and proteins eaten must be adjusted to a person's activities. This means that the human body needs nutrients to obtain energy to carry out daily physical activities, restore body processes, and grow and develop, particularly for those still growing.

The habits of female students in physical activities such as sports exercises and play activities, good facilities and infrastructure can affect female students who are active in learning health workers who in the learning process are directly tied to physical labor, a clean and pleasant environment, knowledge and education, social, economic parents. A variety of other factors also have an impact on sports. In addition, additional elements that affect sports include age and gender. A lack of sufficient rest, in addition to poor physical condition, can have a negative impact on the athletic ability of female pupils. Findings from a literature review, as well as the use of

methodologies and the application of techniques, led to the discovery that the level of exercise experienced by certain female students is still quite low, or at least not very excellent, compared to other students' levels of exercise. This can be seen very clearly from their appearance and attitude, particularly in following and doing the learning materials of the health assessor, where it seems that female students are lazy in doing sports activities, get tired quickly, lack enthusiasm, and some of whom have pale faces that seem to be unhealthy. This can be seen very clearly.

There is still a significant gap between the athletic ability of female pupils in grades 7 and 8 at SMP in the Meranti Islands Regency. Their poor nutritional status may be the reason for the low level of sports participation among female students, the state of living environments that are unclean and unhealthy, the habits of female students in physical activities, and inadequate facilities and infrastructure, so that female students are lazy to exercise, limited time so that enough rest because children now prefer to play games instead of playing in the field with peers, disparities in age, and the physical condition of female students. The years between 11 and 20 are known as adolescence and mark the transition from puberty to adulthood. Individuals undergo a process of maturation that occurs simultaneously on a physiological, psychological, mental, emotional, and social level during this age of transition. Even though the development of primary sexual traits is a hallmark of adolescence, this process is heavily impacted by the first signs of activity in the

reproductive glands. Puberty is characterized by the rapid expansion of the body, the development of secondary sexual traits, the menarche, and changes in a person's psychic abilities. The onset of menstruation or menstruation is an indicator that a female child has reached the puberty stage. The menstrual period When a woman is of childbearing age, she will have menstruation every month.

This is the process by which blood is expelled from the uterus through the vagina. Menarche is the name given to a woman's initial menstrual period, which typically begins at 14 and is referred to as menarche. The onset of menarche indicates that a person has completed the puberty stage, which marks the beginning of the shift from childhood to adulthood. Menstruation or menstruation is affected by numerous cycles, including stress, chronic diseases, poor nutrition, physical activity, use of drugs, and hormonal imbalances. Hormonal imbalances can also cause menstruation or menstruation. The menstrual cycle that occurs in the values of the first three things, specifically the menstrual cycle which ranges from 28 days, the second is the duration of menstruation which is 3-6 days, and the third is the amount of blood that comes out during the menstrual cycle of 20-80 ml. Dysmenorrhea, often known as menstrual discomfort, is one of the issues that might arise when adolescent girls go through menstruation for the first time. The most frequent type of gynecological issue that affects women of all ages, including adolescents and adults, is dysmenorrhea.

According to these findings, it was determined that the level of physical activity

engaged by some of the female students at this institution is still inadequate or not very excellent. This can be observed very clearly from their look and attitude, particularly in following and executing the learning materials of the health assessor, where it seems that female students are passive in doing athletic activities, get tired fast, lack passion, and some of whom have pale features that seem to be sick.

## CONCLUSION

Based on these results, it is possible to establish the following findings: The consequences of not treating dysmenorrhea can have serious consequences, including an increased risk of death and infertility. In addition, poor nutritional status makes students and pupils less enthusiastic about participating in sports, further exacerbating the problem. Students and students are actively involved in the learning of health workers despite the lack of educational facilities and infrastructure that impacts them. It also influences a woman's limited awareness of dysmenorrhea that happens in teens can be a disorder in daily activities, such as menstruation discomfort, which also generates emotional conflicts, tension, and anxiety that play a part and cause uncomfortable sensations. Dysmenorrhea is most common in adolescents but can also be a disorder in adults.

## REFERENCES

Alexander, E., Yach, D., & Mensah, G. A. (2011). Major Multinational Food And Beverage Companies And Informal Sector Contributions To Global Food Consumption: Implications For Nutrition Policy. *Globalization And*

*Health*, 7, 1–8.  
<Https://Doi.Org/10.1186/1744-8603-7-26>

Arikunto, S. (2010). Metode Peneltian. *Jakarta: Rineka Cipta*.

Beddu, S., Mukarramah, S., & Lestahulu, V. (2015). Hubungan Status Gizi Dan Usia Menarche Dengan Dismenore Primer Pada Remaja Putri. *SEAJOM: The Southeast Asia Journal Of Midwifery*, 1(1), 16-21.

Hari Adi Rahmad, Maryelliwati, & Rahmat, W. (2021). *Pembinaan Kondisi Fisik Dan Olah Tubuh*. Haqi Paradise Mediatama.

Hari Adi Rahmad, & Rahmat, W. (2021). *Pengantar Dasar Sepakbola*. Haqi Paradise Mediatama.

Honey-Escandón, M., Arreguín-Espinosa, R., Solís-Marín, F. A., & Samyn, Y. (2015). Biological And Taxonomic Perspective Of Triterpenoid Glycosides Of Sea Cucumbers Of The Family Holothuriidae (Echinodermata, Holothuroidea). *Comparative Biochemistry And Physiology Part - B: Biochemistry And Molecular Biology*, 180, 16–39.  
<Https://Doi.Org/10.1016/J.Cbpb.2014.09.007>

Maryelliwati; Rahmat, Wahyudi; Rahmad, H. A. (2020). Peristiwa, Makna Dan Pengembangan Kesenian Di Padangpanjang Sebagai Sebuah Pelestarian. *Journal Asian Community Education*, 1(1), 28–36.

Maryelliwati, Rahmad, H. A., & Charaka, K. P. (2022). Minangkabau Traditional Theater In The Framework Of Discourse Studies. *Journal Of Pragmatics And Discourse Research*, 2(1), 31–38.  
<Https://Doi.Org/10.51817/Jpdr/V2i1.196>

Maughan, R. J., King, D. S., & Lea, T. (2004). Dietary Supplements. *Journal Of Sports Sciences*, 22(1), 95–113.  
<Https://Doi.Org/10.1080/0264041031000140581>

Muller, M., Tagtow, A., Roberts, S. L., & Erin, M. (2009). Aligning Food Systems Policies To Advance Public Health. *Journal Of Hunger And Environmental Nutrition*, 4(3–4), 225–240.  
<Https://Doi.Org/10.1080/19320240903321193>

Rahmad, H. (2016). Pengaruh Penerapan Daya Tahan Kardivaskuler (Vo Max) Dalam Permainan Sepakbola Ps Bina Utama. *Curricula*, 2(2), 1–10.  
<Https://Doi.Org/10.22216/Jcc.V2i2.1009>

Rahmad, H A. (2020). Strength Of Leg Muscle And Tender Muscle Flexibility And The Effect On Sepak Takraw Smash Mungka Regency 50 Kota. *Curricula: Journal Of Teaching And Learning*, 5(1), 1–13.  
<Https://Doi.Org/10.22216/Jcc.2020.V5i1.5312>

Rahmad, Hari Adi, Rahmat, W., & Maryelliwati. (2021). *Gizi Olahraga (Sports Nutrition)*. Haqi Paradise Mediatama.

Rizal, A., Rahmad, H. A., & Rambe, E. L. (2019). Hubungan Kelenturan Otot Pinggang, Dan Kekuatan Otot Tungkai, Terhadap Pukulan Smash Sepaktakraw Klub Suhada Kecamatan Tebing Tinggi Kabupaten Kepulauan Meranti. *Jurnal Online Mahasiswa (Jompenjas)*, 1(1), 71–79.  
<Http://Stkipmeranti.Ac.Id/Ejournal.Stkipmeranti.Ac.Id/Index.Php/Pjkr/Article/View/48>

Saleh, A. S. M., Zhang, Q., Chen, J., & Shen, Q. (2013). Millet Grains: Nutritional Quality, Processing, And Potential Health Benefits. *Comprehensive Reviews In Food Science And Food Safety*, 12(3), 281–

295. <Https://Doi.Org/10.1111/1541-4337.12012>

Surahman, F., & Rahmad, H. A. (2022). Analysis Of The Physical Education Learning Process At Smp Negeri 2 Meral During The Pandemic Of Covid-19. *Curricula : Journal Of Teaching And Learning*, 6(2), 121–133. <Https://Doi.Org/10.22216/Curricula.V6i2.490>

Syaiful Anwar, Hari Adi Rahmad, & Jaini. (2019). Pengaruh Latihan Sirkuit Training Terhadap Hasil Passing Permainan Sepakbola Pada Kegiatan Ekstrakurikuler Ma Darun Naim Desa Dedap Kecamatan Tasik Putri Puyu Kabupaten Kepulauan Meranti. *Jurnal Online Mahasiswa*, 1(1), 64–70.

Welis, W., & Rifki, M. S. (2013). Gizi: Untuk Aktifitas Fisik Dan Kebugaran. In *Repository UNP*. <Http://Repository.Unp.Ac.Id/Id/Eprint/489>.

Wijaya, S. (2019). Indonesian Food Culture Mapping: A Starter Contribution To Promote Indonesian Culinary Tourism. *Journal Of Ethnic Foods*, 6(1), 1–10. <Https://Doi.Org/10.1186/S42779-019-0009-3>

Yaco, N., & Abidin, U. W. (2021). Hubungan Status Gizi Dengan Prestasi Belajar Pada Siswa Di SMK Negeri 1 Polewali Kecamatan Polewali Kabupaten Polewali Mandar. *J-KESMAS: Jurnal Kesehatan Masyarakat*, 4(2), 102-112.

Zulkifli, Hari Adi Rahmad, & Jaini. (2019). Pengaruh Metode Latihan Interval Terhadap Hasil Passing Pemain Sepakbola Mts Al-Falah Dedap Kabupaten Kepulauan Meranti Kecamatan Tasik Putri Puyu. *Jurnal Online Mahasiswa*, 1(1), 64–70

Zhou, Q., & Joseph, P. F. (2005). A Numerical Method For The Calculation Of Dynamic Response And Acoustic Radiation From An Underwater Structure. *Journal Of Sound And Vibration*, 283(3-5), 853-873.