



Sleep Quality Is Related to Health and Skills

Wahyana Mujari Wahid

Department of Sport Science/Faculty of Health and Sport Science, Universitas Negeri Makassar,
Street AP Pettarani, South Sulawesi, 90222, Indonesia

Abstract

The formulation of the problem in this research is to find out how physical fitness correlates with health and skills with sleep quality. The aim of this research is to find out whether there is a relationship between fitness and health and skills with sleep quality. The type of research used in this research is quantitative descriptive research with a correlational research plan and design. In this research design, the research sample was selected by purposive sampling based on certain characteristics to become one overall sample. One of the aims was that in this research the research sample was homogeneous. The total sample in this study was 18 samples who were Hippocrates FK Unhas futsal athletes aged 16-20 years. Based on the results of data analysis of the relationship between physical fitness in relation to health and skills and sleep quality, the results of the correlation test were obtained, namely that there was a relationship between physical fitness in relation to health and sleep quality with the Pearson correlation coefficient between variables, namely $(r) = 0.203$ with a significance level of 0.007 ($p < 0.05$) and the results of the correlation test were obtained, namely that there was a relationship between physical fitness in relation to fitness and sleep quality with the Pearson correlation coefficient between variables, namely $(r) = 0.821$ with a significance level of 0.006 ($p < 0.05$). So, it can be concluded that there is a significant relationship between physical fitness, both related to health and skills, with sleep quality.

Keywords: *Physical fitness, Health, Skills, Sleep quality*

Correspondence author: Wahyana Mujari Wahid, Department of Sport Science, Faculty of Health and Sport Science, Universitas Negeri Makassar, Indonesia.

Email: wahyana.mujari@unm.ac.id



Jurnal Pendidikan Jasmani (JPJ) is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

INTRODUCTION

The need for sleep is an essential basic need for humans. Every individual needs time to rest and sleep in order to restore their body's stamina so that it can function optimally the next day. To achieve this, basic human needs must be met properly. One of the basic human needs is sleep (Wicaksono et al., 2013). Sleep is an unconscious state where an individual's perception and reaction to the environment decreases or disappears, and can be awakened again with sufficient senses or stimulation (Sutanti et al., 2015). The need for sufficient sleep is determined not only by the number of hours of sleep (sleep quantity), but also by the depth of sleep (sleep quality). According to (Guyton & Hall, 2012), there are two important physiological effects that occur during sleep, namely the effect on the nervous system, especially the central nervous system, and the

effect on the body's functional systems. According to (Susanti, 2018) that the function and purpose of sleep is believed to be used to maintain mental, emotional balance, health, reduce stress on the lungs, cardiovascular, endocrine, and others. Energy is stored during sleep, so it can be redirected to important cellular functions. (Reza et al., 2019) argue that, during sleep with slow eye movement Non-Rapid Eye Movement (NREM) is beneficial in maintaining heart function and during deep low wave sleep (NREM stage IV) the body releases growth hormone humans to repair and renew epithelial and special cells such as brain cells. Sleep is one of the human physiological needs that is very important in maintaining life (Mufidah & Soeyono, 2021). The benefits of sleep can be felt if a person sleeps for sufficient duration and good quality sleep, which will result in a fresh body when he wakes up.

Sleep patterns can change depending on daily activities or routines. Activities that are too busy can result in a reduction in a person's sleep duration. If this happens continuously, it can have a negative impact on health. A person will wake up from sleep slowly and naturally when the body has had enough sleep (Iqbal, 2017). Poor sleep quality will have negative effects on the body. Excess or lack of sleep can both be dangerous for health. If you don't receive special attention, poor quality sleep on a continuous basis may also have an impact on physical fitness problems (Sukmawati et al., 2023). Lack of daily activities or unstructured activities will reduce sleep time or sleep quality (Hidayat Ashari et al., 2022). Sleep duration influences endocrine function and metabolism. Lack of sleep triggers impaired glucose tolerance and reduces insulin sensitivity which can increase the risk of hardening of the arteries. These various diseases will ultimately cause excessive fatigue, resulting in a decline in physical fitness. One way to improve sleep quality is to maintain physical fitness. Physical fitness is the quality of a person to carry out activities according to their work optimally without causing health problems and excessive fatigue (Sepriadi et al., 2017). Physical fitness is the main capital for all human life. Athletes need a high level of physical fitness to achieve good performance, employees need sufficient physical fitness to work well so that they can produce high work productivity. (Putra & Kriswanto, 2019) state that the components of physical fitness consist of two types, namely:

1. Components of physical fitness related to health include: cardio respiration, body composition, muscle endurance, flexibility.

2. Physical fitness components related to skills which include: agility, speed, explosive power, coordination and dexterity.

A person's physical fitness is influenced by several factors. According to (Alfarisi et al., 2013). To be able to have good fitness, a person must fulfill 3 elements, including: intake (eating), rest and exercise. Physical fitness, one of the variables of which is movement, really requires rest to recover after doing physical movement. With enough sleep, the body will be refreshed and ready to return to activities the next day. The sleep time needed in a day is approximately 7-10 hours at night. The National Sleep Foundation recommends for healthy individuals with normal sleep, the appropriate sleep duration for newborns is between 14 and 17 hours, infants between 12 and 15 hours, toddlers between 11 and 14 hours, preschoolers between 10 and 13 hours, and school-aged children between 9 and 11 hours. For teenagers, 8 to 10 hours was considered appropriate, 7 to 9 hours for young adults and adults, and 7 to 8 hours of sleep for older adults (Hirshkowitz et al., 2015). Adequate sleep duration will bring positive benefits to health. Someone who practices regular quality sleep will have a better level of physical fitness. A good level of physical fitness will enable a person to work effectively and efficiently.

METHOD

This research uses a type of correlational research, which aims to find out whether there is a relationship between existing variables. Correlational research is a type of descriptive research that describes the relationship between two or more variables, without manipulating these variables (Sugiyono, 2013). The sample in this study consisted of 18 people who were Hippocrates FK Unhas futsal athletes aged 16-20 years. Measurement of sleep quality, which is a description of a condition that shows an individual's ability to sleep and get the amount of rest according to their needs, is measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire (Lubis et al., 2022). Measurement of physical fitness is divided based on physical fitness in relation to health which consists of measuring endurance using the Bleep Test and physical fitness in relation to skills which consists of:

1. Leg muscle explosive power test measured by vertical jump.
2. 60 M running speed test.
3. Agility test measured by Ilionis Agility (Pasaribu, 2020).

After this research data was collected, namely data on sleep quality and physical fitness. Furthermore, to test the truth of the proposed hypothesis, the data needs to be analyzed using descriptive statistical analysis and inferential analysis is used to test the research hypothesis.

RESULTS AND DISCUSSION

Result

Descriptive Analysis

Table 1. Summary of results of descriptive analysis of the relationship between sleep quality with physical fitness.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Physical Fitness (Health)	18	7.00	13.00	9.72	1.63
Physical Fitness (Skills)	18	2.00	4.00	2.72	0.82
Sleep Quality	18	6.00	10.00	8.38	1.28

From the table above the following information can be drawn:

1. Data on physical fitness (health) test results with a sample size (N) of 18 obtained a minimum value of 7.00, a maximum of 13.00, a mean (average) value of 9.72, a standard deviation of 1.63.
2. Data on physical fitness (skills) test results with a sample size (N) of 18, obtained a minimum value of 2.00, maximum 4.00, mean value (average) 2.72, standard deviation 0.82.
3. Data on sleep quality test results with a sample size (N) of 18, obtained a minimum value of 6.00, maximum 10.00, mean value (average) 8.38, standard deviation 1.28.

Data Normality Test

Table 2. Data normality test results.

Variable	Positif	Negatif	KS-Z	Sig	Ket
Physical Fitness (Skills)	0,210	-0.178	0.893	0.403	Normal

Physical Fitness (Health)	0,309	-0,191	1.311	0.064	Normal
Sleep Quality	0,174	-.0,172	0.738	0.647	Normal

Based on the normality test results in the table above, it explains that the significance value of the initial physical fitness (health) test is 0.403, the significance value of physical fitness (skills) is 0.064, and the significance value of sleep quality is 0.647. The significance value of these three variables is greater than 0.05, which means there is no significant difference between the data to be tested and standard normal data, so it can be concluded that the data is normally distributed.

Hypothesis Testing

Table 3. Test results of correlation analysis of sleep quality with physical fitness.

Variable	Sleep Quality		
	N	Person Corelation	Sig.
Physical Fitness (Health)	18	0,438	0,007
Physical Fitness (Skills)	18	0.589	0,006

Based on the table above it can be stated that:

1. The relationship between sleep quality and physical fitness (health) was obtained by the Pearson correlation coefficient between the physical fitness (health) variable and sleep quality ($r = 0.438$ with a significance of 0.007 ($p < 0.05$) so that H_0 was rejected while H_a was accepted, so it can be concluded that there is a relationship between sleep quality and physical fitness which is related to health.
2. The relationship between sleep quality and physical fitness (skills) was obtained by the Pearson correlation coefficient between the physical fitness (skills) variable and sleep quality ($r = 0.598$ with a significance of 0.006 ($p < 0.05$) so that H_0 was rejected while H_a was accepted, so it can be concluded that there is a relationship between sleep quality and physical fitness related to skills.

Discussion

In this study, the variable used was the relationship between sleep quality and physical fitness involving 18 samples, with age criteria of 16-20 years. The results of the research show that

there is a relationship between physical fitness, both health-related and skill-related, and sleep quality. The relationship between physical fitness and sleep quality is important. Physical fitness refers to the body's ability to produce energy whether it involves the oxygen process or not in producing energy. Hippocrates FK Unhas futsal athletes, with a good level of fitness, have an advantage in undergoing training and matches that require a quick spike in energy. However, it is also important to understand the relationship between physical fitness and sleep quality. Intense physical activity or training and a tight competition schedule can often affect an athlete's sleep. Poor or insufficient sleep can affect physical and mental recovery, which in turn can affect an athlete's performance. Good physical fitness can help athletes reduce the negative impact of insufficient sleep by increasing the body's endurance. On the other hand, quality sleep can also improve physical fitness. During sleep, the body recovers and repairs itself, including muscle recovery and energy formation. Good quality sleep can maximize the benefits of training and help athletes maintain optimal anaerobic fitness. Therefore, it is important for FK Unhas futsal athletes to maintain a balance between good physical fitness and optimal sleep quality. This can be achieved through good time management, understanding the importance of sleep, and implementing effective post-workout recovery strategies. Thus, a positive relationship between physical fitness and sleep quality will help athletes become more prepared and efficient in training and matches, and ultimately achieve their highest potential in futsal. It is critical to understand the relationship between exercise and sleep in the context of athlete performance. Physical activity that involves high-intensity physical exercise, such as running, has a major impact on the health of athletes, including futsal players. Good fitness can increase cardiorespiratory capacity, optimize oxygen use in the body, and improve endurance.

Sleep is an important aspect related to physical fitness. Good quality sleep is needed for physical recovery, muscle renewal and overall body regeneration. FK Unhas futsal athletes, who are involved in intense training and competitive matches, need adequate sleep to ensure optimal recovery. Therefore, the relationship between physical fitness and improving sleep quality is important. Athletes who have a good level of fitness tend to sleep better and recover more quickly after training or competition. Apart from that, good quality sleep can also have a positive impact on athlete performance. When athletes sleep, sleep is an unconscious state where the individual's perception and reaction to the environment decreases or disappears, and can be awakened again with sufficient senses or stimulation (Sutanti et al., 2015). Based on the statements above, it can

be concluded that sleep quality includes quantitative aspects of sleep. Sleep quality is a measure of how easy it is for a person to start sleeping and to maintain sleep. A person's sleep quality can be described by the length of time they sleep and the complaints they feel while sleeping or after waking up. Thus, adequate physical fitness can influence the quality of a person's sleep, and vice versa, if the level of physical fitness is not good, the quality of a person's sleep will decrease. In accordance with the opinion of (Safaringga & Herpandika, 2018) that a person's ability to carry out daily activities easily without feeling tired and still having energy remaining or reserves to enjoy free time or for purposes that can be used at any time, thus physical fitness is a form of from a person's functional loyalty to doing a certain job with good or satisfying results. Maintaining quality sleep is the same as maintaining physical fitness. The level of physical fitness is not only caused by sleep quality factors. Sports or physical activity can support physical fitness levels. Good physical fitness can be beneficial both physically and psychologically. Several studies also show that fit students perform well.

CONCLUSION

Based on the results of data analysis and discussion from this research, it can be concluded that: There is a relationship between sleep quality and physical fitness related to health in Hippocrates FK Unhas futsal players. There is a relationship between sleep quality and physical fitness related to skills in Hippocrates FK Unhas futsal players.

ACKNOWLEDGMENT

Thank you to the FK Unhas Hipocrates futsal team for allowing us to collect data so that this research can run well.

REFERENCES

- Alfarisi, R., Karhiwikarta, W., & Hermawan, D. (2013). Faktor–Faktor Yang Mempengaruhi Kebugaran Jasmani Mahasiswa Kedokteran Universitas Malahayati. *Jurnal Dunia Kesmas*, 2(1).
- Guyton, A. C., & Hall, J. E. (2012). *Pocket Companion to Guyton and Hall Textbook of Medical Physiology*. Elsevier Health Sciences.
- Hidayat Ashari, M., Hardianto, Y., & Nur, R. (2022). Hubungan antara Aktivitas Fisik dengan Kualitas Tidur pada lansia The Relationship Between Physical Activity and Sleep Quality in Elderly. *Jurnal Fisioterapi Dan Rehabilitasi*, 6(1).

- Hirshkowitz, M., Whiton, K., Albert, S. M., Alessi, C., Bruni, O., DonCarlos, L., Hazen, N., Herman, J., Katz, E. S., & Kheirandish-Gozal, L. (2015). National Sleep Foundation's sleep time duration recommendations: methodology and results summary. *Sleep Health, 1*(1), 40–43.
- Iqbal, M. D. (2017). Hubungan aktivitas fisik dengan kualitas tidur mahasiswa perantau di Yogyakarta. *Pendidikan Jasmani Kesehatan Dan Rekreasi, 6*(11).
- Lubis, L., Kusumawiyanti, T., Nasution, G. T. D., & Dwirahmadi, F. (2022). Sleep Quality Profile of Mining Workers Based on Pittsburgh Sleep Quality Index (PSQI). *Media Kesehatan Masyarakat Indonesia, 18*(4), 140–146.
- Mufidah, R., & Soeyono, R. D. (2021). Pola Makan, Aktivitas Fisik, Dan Durasi Tidur Terhadap Status Gizi Mahasiswa Program Studi Gizi Unesa. *Jurnal Gizi Unesa, 1*(1), 60–64.
- Pasaribu, A. M. N. (2020). Tes dan pengukuran olahraga. *Banten: Yayasan Pendidikan Dan Sosial Indonesia Maju (YPSIM)*.
- Putra, R. A. K., & Kriswanto, E. S. (2019). Hubungan Antara Kualitas Tidur Dengan Kebugaran Jasmani Kardiorespirasi Siswa Kelas VIII Di Sekolah Menengah Pertama Negeri 1 Mlati Kabupaten Sleman. *Pendidikan Jasmani Kesehatan Dan Rekreasi, 8*(10).
- Reza, R. R., Berawi, K., Karima, N., & Budiarto, A. (2019). Fungsi Tidur dalam Manajemen Kesehatan. *Medical Journal of Lampung University, 8*(2), 247–253.
- Safaringga, E., & Herpandika, R. P. (2018). Hubungan antara kebugaran jasmani dengan kualitas tidur. *Sportif, 4*(2), 235–247.
- Sepriadi, S., Hardiansyah, S., & Syampurma, H. (2017). Perbedaan tingkat kesegaran jasmani berdasarkan status gizi. *Media Ilmu Keolahragaan Indonesia, 7*(1), 24–34.
- Sugiyono, D. (2013). *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D*.
- Sukmawati, A. S., Isrofah, I., Yudhawati, N. L. P. S., Suryati, S., Putra, I. K. A. D., Juwariyah, S., Kamaryati, N. P., Rosalini, W., Ismail, R., & Haryati, O. (2023). *BUKU AJAR PEMENUHAN KEBUTUHAN DASAR MANUSIA*. PT. Sonpedia Publishing Indonesia.
- Susanti, N. L. (2018). Dukungan keluarga dalam meningkatkan kualitas hidup pasien kanker servik (Family Support for Improving Quality of Life in Cervical Cancer Survivor). *Jurnal Ners Lentera, 5*(2), 106–115.
- Sutanti, H., Satria, A. P., & Agustien, R. (2015). *Hubungan antara Pola Tidur dengan Tekanan Darah pada Pasien Terapi Hemodialisis di Ruang Hemodialisa Rumah Sakit di Bontang*.
- Wicaksono, D. W., Yusuf, A., & Widyawati, I. Y. (2013). Faktor dominan yang berhubungan dengan kualitas tidur pada mahasiswa Fakultas Keperawatan Universitas Airlangga. *Critical Medical and Surgical Nursing Journal, 1*(2), 92–101.