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Physical Activities of Student Gadget Users: Literature Study

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ABSTRACT

This study aims to describe the physical activity of students who use gadgets through an analysis of three related scientific articles. Increased gadget use has the potential to reduce students' physical activity and fitness. This study uses a literature study approach by searching various scientific sources through Google Scholar using the keyword "physical activity of gadget users." From the search results, three scientific articles published between 2019 and 2024 were obtained and deemed relevant to the research focus. The three articles were analyzed in depth to examine the research methods, findings, and implications of the relationship between gadget use and physical activity in students. The results of the study indicate that a high duration of gadget use is correlated with low physical activity in students, while good management of gadget use time has an impact on more optimal physical activity. This study emphasizes the importance of efforts to regulate technology use to prevent the reduction of students' health and physical fitness.

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INTRODUCTION

Technology plays a growing role in facilitating human activities in various fields. Its development has made work more efficient, communication smoother, and access to information and knowledge broader. Marpaung (2018) states that technology is any form of means or tool used to meet human needs to support the continuity and comfort of life. The development of digital technology over the past two decades has changed students' physical activity patterns. The use of smartphones, tablets, computers, and online games now dominates daily life, replacing physical activity with sedentary behavior. Easy access to digital entertainment leads students to spend more time in front of screens than exercising or participating in physical activities at school (Sinabang, 2023; Wati, 2024).

As a result, many students do not meet the WHO-recommended physical activity standards, which are a minimum of 60 minutes of moderate to vigorous activity per day

for children aged 5–17 years (Ramdhan et al., 2024; Wicaksono & Handoko, 2020). The increasing use of gadgets has resulted in decreased physical fitness and motor skills, as well as an increased risk of health problems due to a lack of physical activity. In the context of physical education, this phenomenon requires attention because it hinders the primary goal of fostering active and healthy lifestyle habits from an early age.

According to Marpaung (2018), gadgets are devices equipped with various applications that allow users to access a variety of media, including news, social media, hobbies, games, and entertainment. Interaction with gadgets influences students' mindsets, behaviors, and personalities. Excessive use leads to sedentary behavior, which replaces physical activities such as playing and exercising. This has negative health impacts, characterized by decreased fitness, an increased risk of obesity, poor posture, and reduced muscle strength and flexibility.

Empirical findings indicate that the duration of gadget use is significantly related to physical activity, diet, and nutritional status in adolescents (Lestari et al., 2023). According to Kumala et al. (2019), 72.1% of adolescents use gadgets for more than 2 hours per day, leading to a sedentary lifestyle and low physical activity. Excessive screen time is also associated with a poor diet, with 27.3% of adolescents failing to meet nutritional recommendations and 96.7% not consuming enough vegetables. From a health perspective, all adolescents with abnormal nutritional status (thin or obese) were recorded as having high screen time, and low physical activity was found in 77.8% of adolescents with obese nutritional status. These findings confirm that excessive screen time can reduce physical activity, disrupt eating patterns, and directly impact adolescents' nutritional status.

Physical activity plays a crucial role in supporting student growth and development, including physical, mental, social, and emotional aspects (Sari et al., 2024). For school-age children, physical activity not only improves physical fitness but also fosters character, discipline, cooperation, and responsibility (Pratiwi et al., 2024; Rosmi, 2016). Through regular movement routines, students learn body control, hone motor skills, and strengthen the muscular and cardiovascular systems.

In an educational context, physical activity is an essential component of the physical education curriculum, which aims to foster healthy and active lifestyle habits (Mustafa, 2020; Rohmah & Muhammad, 2021). However, the rapid development of digital technology has resulted in students being less involved in outdoor activities, resulting in decreased physical fitness levels. Therefore, the role of teachers, parents, and policymakers is crucial in encouraging students to remain active in the digital age.

The importance of physical activity underpins this study, which examines the effect of gadget use on the quality of students' physical activity. Based on this context, this study is structured as a literature review aimed at analyzing and integrating various previous research findings regarding the relationship between physical activity and the duration of gadget use. This study is expected to provide an understanding of the impact of excessive gadget use on students' physical activity. It also provides a basis for developing physical education programs relevant to the digital age and provides

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recommendations for educators, parents, and policymakers to balance technology use with increasing students' physical activity.

METHODS

This study uses a literature study approach with the title "Literature Study on Physical Activity of Students Who Use Gadgets." The research method used is a literature review, with data collection techniques through searching various scientific sources related to the research topic. Article searches were conducted through the Google Scholar database with the keyword "physical activity of gadget users." From the search results, three scientific articles published between 2019 and 2024 were obtained and were considered relevant to the focus of this study. Next, the three articles were analyzed in depth to examine the research results, methods used, and empirical findings related to the physical activity of students who use gadgets.

RESULTS AND DISCUSSION

Result

The first research article conducted by Kumala et al. (2019) has been reviewed, and the results are presented in the table below:

Table 1.
Literature Study Results Article 1

Article Title	Results	Conclusion
Duration of Electronic Device (Gadget) Use, Physical Activity, and Diet with Nutritional Status in Adolescents Aged 13–15 Years. Anandita Mega Kumala, Ani Margawati, and Ayu Rahadiyanti (2019).	The results showed that 72.1% of respondents used gadgets for more than 2 hours per day. 14.8% had low physical activity, and 42.6% had moderate-high physical activity. 80.3% consumed a balanced diet, but 96.7% did not meet the recommended vegetable consumption. Based on the BMI/Age Z-score, 6.6% were classified as underweight and 14.8% were obese. There was a significant relationship between the duration of gadget use, physical activity, and diet with nutritional status ($p < 0.05$).	This study concluded that there was a significant relationship between the duration of gadget use and respondents' nutritional status, with a p-value < 0.05. Furthermore, a significant relationship was also found between physical activity and respondents' nutritional status ($p < 0.001$), as well as between eating patterns and respondents' nutritional status ($p < 0.001$). This study emphasizes the importance of monitoring gadget use duration, physical activity, and eating patterns to maintain adolescents' nutritional status.

Based on research conducted by Mega Kumala et al. (2019) entitled "The Relationship between the Duration of Electronic Device (Gadget) Use, Physical Activity, and Dietary Patterns with Nutritional Status in Adolescents Aged 13–15 Years", it is known that gadget use, physical activity, and dietary patterns affect the nutritional status of adolescents. The results showed that 72.1% of respondents used gadgets for more than two hours per day, 14.8% had low physical activity, and 42.6% were classified as moderate to high. A total of

80.3% fulfilled a balanced diet, but 96.7% did not consume enough vegetables. Based on the BMI/U Z-score, 6.6% of respondents were classified as thin, and 14.8% were obese. Statistical analysis showed a significant relationship between the duration of gadget use, physical activity, and dietary patterns with nutritional status ($p < 0.05$). This study confirms that excessive gadget use, low physical activity, and an unbalanced diet can affect the nutritional status of adolescents, so it is necessary to monitor gadget use, increase physical activity, and implement a healthy diet.

The second research article by Kamaruddin et al. (2023) has been reviewed and contains results, which are presented in the table below:

Table 2.
Literature Study Results Article 2

Article Title	Results	Conclusion
The Impact of Gadget Use on Students' Mental Health and Learning Motivation at School. Ilham Kamaruddin, Ferdinand Salomo Leuwol, Rahman Pranovri Putra, Mia Aina, Dina Mayadiana Suwarma, and Rosa Zulfikhar (2023).	Results show that excessive gadget use negatively impacts students' mental health, including increased anxiety, stress, and depression. Furthermore, sleep disturbances and gadget addiction can disrupt students' psychological well-being. In terms of learning motivation, gadgets can distract students from learning, resulting in decreased interest in social and academic activities.	This study concluded that Excessive gadget use negatively impacts students' mental health and motivation to learn, leading to addiction, reduced social interaction, sleep disturbances, and increased stress. Therefore, parents and teachers need to limit gadget use and encourage positive activities such as exercise, social interaction, and extracurricular activities.

Based on research by Kamaruddin et al. (2023) entitled "The Impact of Gadget Use on Mental Health and Student Learning Motivation at School," excessive gadget use has been shown to negatively impact students' psychological well-being and learning motivation. The results showed increased anxiety, stress, depression, sleep disturbances, and addiction due to uncontrolled gadget use. From an academic perspective, this decreases learning motivation, distracts from learning, and reduces interest in social and academic activities. This study concluded that excessive gadget use can harm mental health, reduce concentration, and reduce student happiness. Therefore, parents and teachers need to actively participate in limiting gadget use and encouraging student involvement in positive activities such as sports, social interaction, and extracurricular activities.

The third article in the research by Lagarinda & Nurhayati (2024) has been reviewed and contains the results, which are presented in the table below:

Table 3.
Literature Study Results Article 3

Article Title	Results	Conclusion
Analysis of Physical Activity on Students' Physical Fitness Levels. Ezra Lagarinda and Faridha Nurhayati (2024)	The results showed that the average physical activity score of students (IPAQ) was 20.91 (SD 5.179; min 12; max 33) and the average VO_2Max was 27.489 (SD 7.6491; min 20.1; max 49.5). A total of 50.9% of students had low physical activity, and 64.2% had very poor physical fitness, 28.3% had poor	The conclusion of the article shows that the physical fitness of students at SMAN 1 Waru Sidoarjo tends to be low, with 64.2% of students categorized as very poor and 50.9% having low physical activity. There is a significant positive relationship between physical activity and

	physical fitness, and only 1.9% had good physical fitness. There was a significant positive relationship between physical activity and physical fitness (gamma 0.665; p = 0.003), with physical activity contributing 66.5% to students' physical fitness.	physical fitness, with a gamma correlation of 0.665 and a significance of 0.003 (p < 0.05), where physical activity contributes 66.5% to physical fitness. Thus, increasing physical activity has a positive impact on students' physical fitness.

The study conducted by Lagarinda & Nurhayati (2024) entitled "Analysis of Physical Activity on Students' Physical Fitness Levels" aims to analyze the relationship between physical activity and students' physical fitness levels. The results showed that the average physical activity score of students based on the IPAQ was 20.91 with a standard deviation of 5.179, while the average VO_2Max score was 27.489 with a standard deviation of 7.6491. A total of 59 percent of students had a low level of physical activity, while only 5.7% were in the high category. In terms of physical fitness, 64.2% of students were classified as very poor, 28.3% were classified as poor, and only 1.9% were classified as good. Statistical analysis showed a significant positive relationship between physical activity and physical fitness, with a gamma correlation value of 0.665 and a significance level of 0.003 (p < 0.05). Physical activity contributed 66.5% to students' physical fitness levels. This study concluded that students' physical fitness at SMAN 1 Waru Sidoarjo tends to be low, consistent with their low levels of physical activity. Therefore, increasing physical activity is crucial to improving physical fitness levels and supporting students' overall health.

Discussion

According to Wicaksono & Handoko (2020), physical activity is any bodily movement produced by the contraction of multiple muscles that increases energy demand above the resting metabolic rate and is characterized by its modality, frequency, intensity, duration, and context of practice. These two objectives appear in the definition of fair play. According to Lagarinda et al. (2024), physical activity creates a physical condition that serves as the basis for improving physical fitness. According to Adi et al. (2025), physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure. This term encompasses a wide range of human body movements, from competitive sports to hobbies or daily activities. Conversely, physical activity can also be defined as a condition in which bodily movement is minimal, and energy expenditure approaches the resting metabolic rate.

Physical activity is not only about physical movement but also encompasses psychological and social aspects. Physical activity can be understood as a form of interaction between individuals and their environment that can stimulate increased energy, improve mood, and support mental well-being (Ardiyanto & Mustafa, 2021).

According to the author, physical activity is any form of body movement that involves muscles and requires energy, whether through sports or daily activities. This activity is important for maintaining physical fitness, mental health, and social relationships, thus helping a person achieve a better life balance. Conversely, physical activity can also be defined as a condition with very minimal body movement, where

energy expenditure is approximately equal to the resting metabolic rate. Physical activity plays a vital role in maintaining physical fitness, preventing chronic disease, and significantly contributing to overall human well-being.

In today's modern era, smartphones have become the most widely used gadgets. Therefore, the term "gadget" is often equated with "smartphone," as this device is considered the most practical and versatile. Smartphones are one of the high-tech gadgets that have been widely accepted in various countries. In addition to being used for making and receiving calls, smartphones also function as a means of sending messages, accessing information, and running various applications with advanced features (Suwanti, 2025). Students are the group most impacted by technological advances. Their gadget use is not limited to learning activities but also for entertainment, such as playing games, watching videos, and interacting on social media. Although technology offers educational and social benefits, excessive use can negatively impact physical and mental health. Time spent using gadgets often eliminates opportunities for physical activity, thus encouraging a sedentary lifestyle. Several studies have shown that excessive gadget use is associated with an increased risk of obesity, poor posture, and decreased physical activity levels in children (Nurbaiti et al., 2025; Widodo et al., 2024).

According to the authors, gadgets are widely used in the modern era due to their practical and versatile nature. While gadget use among students does facilitate learning and communication, excessive use can negatively impact physical health. Students who use gadgets excessively tend to have a less active lifestyle, which can lead to problems such as obesity, poor posture, and decreased physical fitness. Therefore, gadget use needs to be balanced with sufficient physical activity to create a balance between the benefits of technology and physical health.

CONCLUSION

Based on research findings, physical activity and gadget use have a mutually influential relationship on students' physical fitness. Physical activity plays an important role in maintaining physical health, improving physical fitness, and supporting mental and social well-being. However, technological advances characterized by high gadget use, especially smartphones, have led to a decline in physical activity among students. Excessive gadget use tends to encourage a sedentary lifestyle, which has negative impacts on physical health, such as obesity, poor posture, and decreased physical fitness levels. Therefore, a balance between gadget use and physical activity needs to be maintained so that students can utilize technology optimally without sacrificing their health and fitness.

REFERENCES

Adi, S., Soenyoto, T., Aliriad, H., & Utama, M. B. R. (2025). *Manajemen Aktivitas Fisik Siswa*. Cahya Ghani Recovery.

Ardiyanto, D., & Mustafa, P. S. (2021). Upaya Mempromosikan Aktivitas Fisik dan Pendidikan Jasmani via Sosio-Ekologi. *Jurnal Pendidikan: Riset Dan Konseptual*, *5*(2), 169–177.

Kamaruddin, I., Leuwol, F. S., Putra, R. P., Aina, M., Suwarma, D. M., & Zulfikhar, R. (2023). Dampak Penggunaan Gadget pada Kesehatan Mental dan Motivasi Belajar Siswa di Sekolah. *Journal on Education*, *6*(1), 307–316.

Kumala, A. M., Margawati, A., & Rahadiyanti, A. (2019). Hubungan antara durasi penggunaan alat elektronik (gadget), aktivitas fisik dan pola makan dengan status gizi pada remaja usia 13-15 tahun. *Journal of Nutrition College*, *8*(2), 73–80.

Lagarinda, E., & Nurhayati, F. (2024). Analisis aktivitas fisik terhadap tingkat kebugaran jasmani siswa. *Jurnal Pena Edukasi*, *11*(1), 1–10.

Lestari, A., Putri, D., Pardosi, R. A., & Gusmaneli, G. (2023). Pengaruh gadget terhadap akhlak seorang anak. *Journal of Creative Student Research*, *1*(4), 216–228.

Marpaung, J. (2018). Pengaruh penggunaan gadget dalam kehidupan. *KOPASTA: Journal of the Counselling Guidance Study Program*, *5*(2).

Mustafa, P. S. (2020). Kurikulum pendidikan jasmani, olahraga, dan kesehatan di Indonesia abad 21. *Jurnal Pendidikan: Riset Dan Konseptual*, *4*(3), 437–452.

Nurbaiti, N., Nasmi, N., & Marniati, M. (2025). Literature Review: Dampak Gadget terhadap Kesehatan Fisik dan Mental Anak. *Antigen: Jurnal Kesehatan Masyarakat Dan Ilmu Gizi*, *3*(3), 107–125.

Pratiwi, F., Sibua, S., & Hayun, S. (2024). Pendidikan Jasmani Dalam Karakteristik Pembelajaran Di Sekolah Dasar. *Jurnal Pasifik Pendidikan*, *3*(2), 141–148.

Ramdhan, A. F., Suherman, A., Sultoni, K., Damayanti, I., & Ruhayati, Y. (2024). Kepatuhan terhadap Pedoman Aktivitas Fisik WHO pada Anak Usia Dini: Evaluasi dengan Metode Machine learning. *Jurnal Pendidikan Kesehatan Rekreasi*, *10*(1), 184–195.

Rohmah, L., & Muhammad, H. N. (2021). Tingkat kebugaran jasmani dan aktivitas fisik siswa sekolah. *Jurnal Universitas Negeri Surabaya*, *9*(01), 511–519.

Rosmi, Y. F. (2016). Pendidikan jasmani dan pengembangan karakter siswa sekolah dasar. *Wahana: Tridarma Perguruan Tinggi*, *66*(1), 55–61.

Sari, Y. Y., Ulfani, D. P., & Ramos, M. (2024). Pentingnya pendidikan jasmani olahraga terhadap anak usia sekolah dasar. *Jurnal Tunas Pendidikan*, *6*(2), 478–488.

Sinabang, P. B. (2023). *Gaya Hidup Sedentari, Screen Time, Pola Makan Dan Aktivitas Fisik Terhadap Status Gizi Siswa Kelas X Di Smkn 2 Rantau Utara*.

Suwanti, N. (2025). Penggunaan Smartphone Sebagai Media Interaksi Sosial Siswa. *Syi'ar: Jurnal Ilmu Komunikasi, Penyuluhan Dan Bimbingan Masyarakat Islam*, *8*(1), 31–41.

WATI, D. D. K. (2024). *Hubungan Perilaku, Frekuensi Dan Lama Bermain Game Online Dengan Kelelahan Mata Pada Siswa SMP Negeri 2 Nguter-1951700001*. Universitas Veteran Bangun Nusantara.

Wicaksono, A., & Handoko, W. (2020). Aktivitas fisik dan kesehatan. *Akt Fis Dan Kesehatan*.

Widodo, T., Shinta, H. E., Putra, R. A. A.-H. S., & Yuliani, N. N. S. (2024). Hubungan Konsumsi Minuman Kemasan, Aktivitas Fisik dan Intensitas Penggunaan Gadget dengan Kejadian Obesitas pada Anak di SD Negeri Percobaan Palangka Raya. *Barigas: Jurnal Riset Mahasiswa*, *2*(3).