



## Identification of Types and Levels of Physical Activity Among Students Aged 18-24 Years

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### Abstract

The purpose of this study is to identify physical activity and see activities that involve physical activity in leisure time in students aged 18-24 years who are currently active in lectures. The research method used descriptive quantitative with survey design through questionnaire. The instrument used in this study was a short form IPAQ physical activity questionnaire consisting of 7 main questions and 1 additional question to see the physical activities carried out in leisure time. The selection of subjects was based on the consent form distributed through several criteria, namely active students aged 18-24 years, in good health for the last 7 days, and if they have a disability, they are able to do heavy physical activity. The data analysis technique used excel with a combination of formulas from IPAQ-SF to process questionnaires and excel formulas to process data. The results showed that 47% of respondents had a high level of physical activity with an average METs score of 2903.12. Sitting activities performed during weekdays averaged 677 minutes per week or 2 hours 20 minutes per day. Leisure time activities are mostly done for sports according to the branch they like.

**Keywords:** Physical activity, Leisure time, Student college

### INTRODUCTION

Physical activity is a body movement that involves skeletal muscles and requires more energy to be able to perform this activity (World Health Organization, 2017). Physical activity if done regularly can be a preventive measure for diseases such as cardiovascular disease, type 2 diabetes and cancer (Kurniawan et al., 2019). A healthy lifestyle such as regular physical activity affects health and fitness, this lifestyle has benefits in improving a person's well-being (Firdaus et al., 2024). This healthy lifestyle can be physical activity carried out during activities at school, work, in the family or household, while traveling and other activities carried out throughout the day. For example, when on campus or at work, people prefer to walk rather than take *the elevator*. However, as people get older, physical activity decreases due to various reasons such as being busy with work or being in college when physical activity should be a necessity to maintain body health (Sulistiyana et al., 2016). WHO data shows that global physical activity levels among adults aged 18 and over are insufficient (World Health Organization, 2019). Previous research on physical

activity among college students has focused on a single university sample. This study, however, distributed questionnaires to all students actively participating in lectures, resulting in a more diverse sample from various universities in Indonesia. This fills the gap in the population and contributes to a more comprehensive body of knowledge.

In Indonesia, sedentary behavior or a sedentary lifestyle is practiced by most teenagers or students (Pengpid & Peltzer, 2019). In the group of teenagers to young adults, namely 15-24 years old, they have an inactive lifestyle and this causes diseases such as obesity, hypertension, and even heart problems (Farradika et al., 2019). Research conducted by Setiawan & Lontoh, (2023) stated that students aged 18 years and above are on average at a low level of physical activity. Based on the benefits and negative effects of lack of physical activity, it is necessary to conduct research on physical activity and free time used for physical activity among students who are actively involved in lectures. Students who are actively involved in lectures have a busy routine consisting of academic and non-academic activities such as organizational Thoriq & Ariati, (2023) this is supported by the statement that students spend their time in a sitting position due to academic demands that require them to be in the same position, namely sitting (Wicaksono & Willy, 2021). It is hoped that the results of this study will motivate students to use their free time wisely and increase their physical activity for a healthy body.

## **METHOD**

This study uses a quantitative descriptive method with a survey design. The instrument used is a questionnaire distributed through social media such as *WhatsApp* and *Instagram*. The questionnaire used is *the International Physical Activity Questionnaire Short Form* (IPAQ-SF) (Schuhl, 2014) which contains 7 questions about physical activity and the researcher added one question about what physical activity is done in free time to find out the type of physical activity used. Subject selection is based on the distributed consent form, and respondents who fill out the physical activity questionnaire stage are then made subjects in the study. The number of samples to be taken in this study is 161 people, with the following eligible criteria: 1) Active students aged 18-24 years, both male and female 2) In good health in the last 7 days 3) If you have a disability, you are able to do heavy physical activity. The data analysis technique uses Excel with a combination of formulas from the IPAQ-SF to process questionnaire data and formulas from Excel to process overall data. The calculation of physical activity levels uses the MET score, which is a unit of the IPAQ, as follows: Walking is equivalent to 3.3 METs, moderate activity is equivalent to 4.0 METs, and vigorous exercise is equivalent to 8.0 METs; these values are

multiplied by the intensity in minutes and days, then added to determine the overall physical activity score.

From the physical activity data, the respondents' answers will be averaged to determine the average METs score, which will then be categorized according to their physical activity level. Similarly, the data on sitting activity will be averaged to determine the duration of sitting. Leisure-time physical activity will be categorized into several types for simplicity.

## RESULTS & DISCUSSION

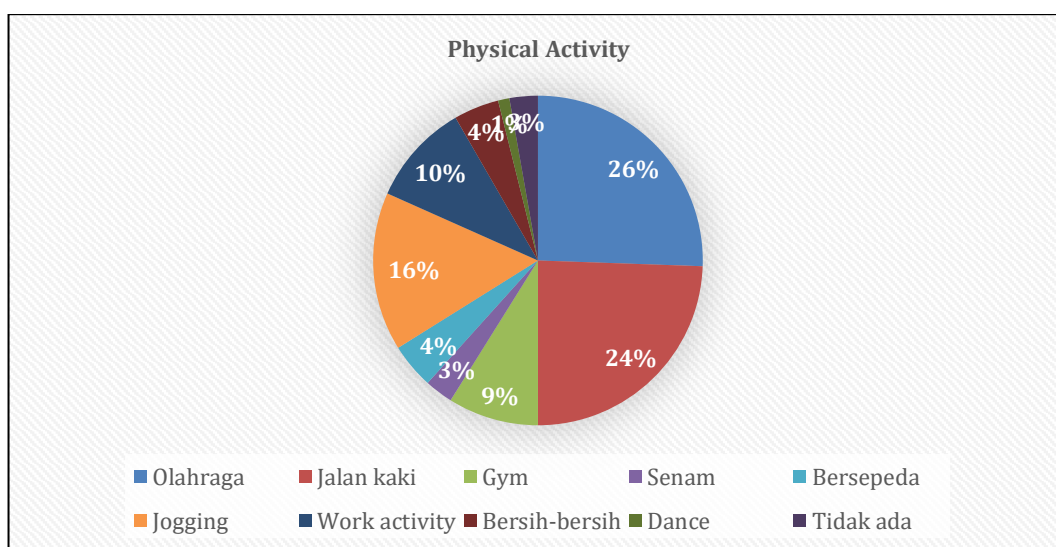
### Results

Based on the availability form, 163 respondents completed the questionnaire up to the consent stage, and 161 respondents completed the physical activity questionnaire, resulting in a sample size of 161 individuals, consisting of 115 women and 37 men. Respondent characteristics are shown in the following table:

**Table 1.** Respondent characteristics

| NO | AGE | N  | %   |
|----|-----|----|-----|
| 1  | 18  | 11 | 6.8 |
| 2  | 19  | 10 | 6.2 |
| 3  | 20  | 21 | 13  |
| 4  | 21  | 54 | 34  |
| 5  | 22  | 50 | 31  |
| 6  | 23  | 12 | 7   |
| 7  | 24  | 3  | 2   |

Based on table 1. The majority of respondents were aged 21 years (34%) and 22 years (31%), indicating that the majority were in their late teens-early adulthood, who were generally final year students.



**Figure 1.** Pie chart of types of physical activity during leisure time

Figure 1 shows that the most common physical activities during leisure time are sports (23%) and walking (22%). More intense activities like the gym and jogging also feature prominently. Several respondents reported no physical activity (2.5%), indicating a sedentary lifestyle.

**Table 2.** IPAQ physical activity levels

| NO | CATEGORY  | FREQUENCY | %  | METs            |
|----|-----------|-----------|----|-----------------|
| 1  | Walking   | 39        | 24 | 365 ± 169       |
| 2  | Moderate  | 47        | 29 | 1037.8 ± 323.5  |
| 3  | Virgorous | 75        | 47 | 2903.1 ± 1242.6 |

Table 2 shows that nearly half of respondents (47%) had a high level of physical activity, indicating that they were considered physically active. This is consistent with the majority of students' backgrounds, who are involved in sports or training. METs scores reflect an active and healthy lifestyle. However, the presence of a group with low METs scores indicates that not all respondents have optimal active habits. Physical activity promotion interventions are still needed for this group.

### Discussion

Based on the results of the study, it is known that the average student aged 18-24 years has a METs score that is classified as a high level of physical activity with an average score of 2903.12 METs. The average METs score that must be owned to be categorized as a high level of physical activity is more than 1500 METs. The level of physical activity is one of the factors that influence the risk of death (Kujala, 2018). High physical activity if done regularly can provide health benefits, can control weight and reduce the risk of heart disease, cancer, and strengthen bones and muscles (Handayani & Fithroni, 2017).

The high level of physical activity they get from various types of physical activities, namely Sports (23%) according to the branch of sport they are involved in, because most of the characteristics of respondents in this study are sports students or athletes where sports students have an obligation to carry out sports-based courses and if not a sports student, he is an athlete who is required to exercise regularly. In addition, a high level of physical activity is also obtained from walking activities (22%) and Jogging (14%). In addition to exercise, there are other types of physical activities that support the high average METs score in the form of Work involving physical activity (9%), Cleaning (4%), Gymnastics (2.5%), Dance (1%). While the activities that are routinely carried out by TC Cabor (6%) for an athlete who is undergoing a training program and Coaching Cabor (4%).

It should be noted that although physical activity is beneficial for health, excessive physical activity can have negative impacts, namely increasing the risk of injury and affecting mental health . Therefore, it is hoped that students who want to increase their

physical activity can follow the WHO guidelines regarding the recommended duration of physical activity, namely that people who have entered adulthood are recommended to do physical activity for 150-300 minutes per week at moderate intensity or 75-100 minutes at high intensity (Chaput et al., 2020).

Students currently actively participating in lectures are often associated with prolonged sitting due to the academic demands they face (Wicaksono & Willy, 2021). Sitting can be categorized as sedentary due to its low energy expenditure and prolonged sitting in the same position (Husain et al., 2024). Sedentary activity can be categorized as high if it lasts more than 5 hours per day, and low if it lasts less than 5 hours per day. According to WHO data from 2018, excessive sedentary lifestyles contribute to nearly 2 million deaths annually (Ilyas et al., 2023). . The duration of sitting activity, the average student aged 18-24 years spends time sitting during lectures 677 minutes per week or an average of 2 hours 20 minutes per day, this is included in the category of medium-level sedentary activities, namely not doing physical activity for 2 to 5 hours a day (Farid A & Puji Lestari, 2023). Therefore, health interventions that not only encourage increased physical activity, but also reduced sitting time, are important to be implemented in the student population, especially in the context of physical education.

It is interesting to note that only 8% of respondents engaged in gym activities, a relatively low number compared to other types of physical activity. Gym activities are known as a form of structured physical exercise that can provide comprehensive fitness benefits, both in terms of muscle strength, cardiorespiratory capacity, and body composition (Pinho et al., 2024). Wanasari et al., (2024) stated that the low level of respondents' involvement in gym activities could be caused by several factors, such as limited access to fitness facilities, gym membership costs, or lack of motivation and time to follow a regularly scheduled exercise program.

Most of them prefer activities that are free, affordable, and easily accessible, such as outdoor sports or light physical activity like walking and jogging. Furthermore, gym activities may be perceived as more individualistic and less engaging than group activities or more competitive and social sports (Martín-Rodríguez et al., 2024). Overall, although gym activities are not yet a primary choice among respondents, improved education and more student-friendly facilities have the potential to increase interest in this type of activity. Going forward, an intrinsic motivation-based approach and specific education on the benefits of weight training are needed so that students not only remain active but also achieve optimal fitness levels in line with the demands of their profession and competencies in the sports field.

## CONCLUSION

Students aged 18-24 years who are currently active in lectures have a high level of physical activity with an average METs score of 2903.12. This is because the characteristics of the respondents in this study were mostly sports students and athletes or non-sports students who were athletes and active in sports clubs. High levels of physical activity are also influenced by activities carried out in their free time such as walking, jogging, and work that involves physical activity. Based on the results and discussion above, it is recommended for students aged 18-24 years to achieve a high level of physical activity to maintain health, they can do physical activity according to WHO guidelines, namely moderate physical activity for 150-300 minutes per week or high physical activity for 75-100 minutes. Some types of physical activities recommended to increase physical activity are walking, jogging, working out/gym or being active in a sports club.

## REFERENCES

- Chaput, J. P., Willumsen, J., Bull, F., Chou, R., Ekelund, U., Firth, J., Jago, R., Ortega, F. B., & Katzmarzyk, P. T. (2020). 2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5–17 years: summary of the evidence. *International Journal of Behavioral Nutrition and Physical Activity*, 17(1). <https://doi.org/10.1186/s12966-020-01037-z>
- Farid A, M., & Puji Lestari, P. (2023). *Apa Itu Sedentary Lifestyle? Ini Penjelasan, Ciri, hingga Dampaknya untuk Kesehatan*. Voi. <https://voi.id/lifestyle/322848/apa-itu-sedentary-lifestyle>
- Farradika, Y., Umniyatun, Y., Nurmansyah, M. I., & Jannah, M. (2019). Perilaku Aktivitas Fisik dan Determinannya pada Mahasiswa Fakultas Ilmu - Ilmu Kesehatan Universitas Muhammadiyah Prof. Dr. Hamka. *ARKESMAS (Arsip Kesehatan Masyarakat)*, 4(1), 134–142. <https://doi.org/10.22236/arkesmas.v4i1.3548>
- Firdaus, M. D., Suherman, A., Jajat, Ugelta, S., Ruhayati, Y., Sultoni, K., Damayanti, I., Zaky, M., & Rahayu, N. I. (2024). Analisis Promosi Gaya Hidup Sehat dan Aktif pada Perguruan Tinggi Negeri di Jawa Barat. *Jurnal Pendidikan Olahraga*, 14(2), 58–66. <https://doi.org/10.37630/jpo.v14i2.1612>
- Handayani, F., & Fithroni, H. (2017). Akhir Fakultas Ilmu Olahraga Universitas Negeri Surabaya. *Jurnal Kesehatan Olahraga*, 10(03), 131–138.
- Husain, R. M., Yuliasrid, D., Noordia, A., & Perwira, A. (2024). Hubungan Antara Aktivitas Sedentary Lifestyle dan Asupan Gizi Terhadap Kejadian Overweight pada Orang Dewasa. *Porkes*, 7(2), 646–661. <https://doi.org/10.29408/porkes.v7i2.26373>
- Ilyas, F. Z., Arneliwati, & Fitri, A. (2023). Hubungan Sedentary Lifestyle dan Pola Tidur Dengan Kejadian Obesitas pada Remaja Usia 14-18 Tahun. *Jurnal Keperawatan Tropis Papua*, 6(2), 68–73. <https://doi.org/10.47539/jktp.v6i2.355>
- Kujala, U. M. (2018). Is physical activity a cause of longevity? It is not as straightforward as some would believe. A critical analysis. *British Journal of Sports Medicine*, 52(14), 914–918. <https://doi.org/10.1136/bjsports-2017-098639>
- Kurniawan, R., Jajat, & Sutisna, N. (2019). Physical Self-Concept dan Aktivitas Fisik Remaja SMA. *Jurnal Terapan Ilmu Keolahragaan*, 4(2), 78–83.
- Martín-Rodríguez, A., Gostian-Ropotin, L. A., Beltrán-Velasco, A. I., Belando-Pedreño, N., Simón, J. A., López-Mora, C., Navarro-Jiménez, E., Tornero-Aguilera, J. F., & Clemente-Suárez, V. J. (2024). Sporting Mind: The Interplay of Physical Activity and Psychological Health. *Sports*, 12(1), 37. <https://doi.org/10.3390/sports12010037>
- Pengpid, S., & Peltzer, K. (2019). Sedentary behaviour, physical activity and life satisfaction, happiness and perceived health status in university students from 24 countries. *International Journal of Environmental Research and Public Health*, 16(12).

- <https://doi.org/10.3390/ijerph16122084>
- Pinho, C. D. F., Bagatini-PhD, N. C., Lisboa, S. D. C., Mello, J. B., & Cunha, G. dos S. (2024). Effects of different supervised and structured physical exercise on the physical fitness trainability of children and adolescents: a meta-analysis and meta-regression. *BMC Pediatrics*, 24(1), 798. <https://doi.org/10.1186/s12887-024-04929-2>
- Schuhl, C. (2014). *Intern. Metiers de La Petite Enfance*, 20(212–213), 41. <https://doi.org/10.1016/j.melaen.2014.07.015>
- Setiawan, Y., & Lontoh, S. O. (2023). Tingkat Aktivitas Fisik Dan Status Gizi Pada Mahasiswa Kedokteran Universitas Tarumanagara. *Ebers Papyrus*, 29(1), 108–115. <https://doi.org/10.24912/ep.v29i1.23749>
- Shimura, A., Masuya, J., Yokoi, K., Morishita, C., Kikkawa, M., Nakajima, K., Chen, C., Nakagawa, S., & Inoue, T. (2023). Too much is too little: Estimating the optimal physical activity level for a healthy mental state. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1044988>
- Sulistiyana, C., Solikah, N. L., Nurseskasatmata, S. E., Saputra, Y. D., Nurvitriana, N. C., Wijayanti, B. K., Fauzi, A., Christianingsih, S., & Nugraha, A. B. K. (2016). *Aktivitas Fisik dalam Kesehatan*.
- Thoriq, M. A., & Ariati, A. (2023). Hubungan Pola Makan Dengan Kejadian Dispepsia Fungsional Pada Mahasiswa Fakultas Kedokteran Uisu Angkatan 2018. *Ibnu Sina: Jurnal Kedokteran Dan Kesehatan - Fakultas Kedokteran Universitas Islam Sumatera Utara*, 22(1), 38–42. <https://doi.org/10.30743/ibnusina.v22i1.363>
- Wanasari, S. M., Noordia, A., Yuliastrid, D., & Kumaat, N. A. (2024). Motivasi Member gym dan Tingkat Perubahan Perilaku Sehat Ditinjau dari Perbedaan Jenis Kelamin. *Bravo's: Jurnal Program Studi Pendidikan Jasmani Dan Kesehatan*, 12(1), 79–88. <https://doi.org/10.32682/bravos.v12i1/17>
- Wicaksono, A., & Willy, H. (2021). *Buku Aktivitas Fisik dan Kesehatan* (01 ed., Issue July). IAIN Pontianak Press.
- World Health Organization. (2017). Physical activity fact sheet. *World Health Organization*.
- World Health Organization. (2019). Sedentary Behaviour and Sleep For Children Under 5 Years of Age. *Guidelines on Physical Activity*.