

Correlates of Physical Activity, Fitness Habits, and BMI among University Students: Implications for Institutional Health Policy

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Abstract: University students face increasing health challenges that affect their academic performance and long-term well-being. In line with Sustainable Development Goal 3, particularly the promotion of mental health and healthy lifestyles, universities play a vital role in creating environments that encourage physical activity and health literacy. Regular physical activity is associated with improved mental well-being and healthier Body Mass Index (BMI), reducing the risk of obesity and other noncommunicable diseases. This quantitative cohort study examined the relationship between physical activity and BMI among university students enrolled in HK11 (Wellness and Injury Management) over two years. A total of 247 randomly selected students (90 males and 157 females) participated. Physical activity levels were measured based on the World Health Organization recommendation of at least 60 minutes of moderate-to-vigorous physical activity daily, while BMI served as the primary health outcome. Data were collected through an online questionnaire and analyzed using descriptive statistics and inferential tests. Results revealed that 87% of respondents met the WHO recommendation for daily physical activity. However, more than half did not regularly perform muscle-strengthening exercises. Students who achieved at least 60 minutes of daily physical activity had significantly lower BMI than those who did not ($t = -2.01, p = 0.045$). The findings demonstrate a significant association between physical activity and healthier BMI among university students while highlighting gaps in complementary fitness habits and nutrition. These results underscore the need for stronger institutional health policies, including accessible workout facilities, nutrition and meal support programs, and academic schedules that encourage healthy eating and active lifestyles. By fostering supportive campus environments, universities can promote healthier BMI, enhance mental well-being, and contribute to the lifelong health and academic success of students.

Keywords: health, quantitative study, SDG, young adults, well-being

1. Introduction

The adoption of the 2030 Agenda for Sustainable Development by the United Nations in 2015 marked a global commitment to achieving a more inclusive and sustainable future through seventeen interconnected goals. Central to this agenda is Sustainable Development Goal 3 (Good Health and Well-Being), which seeks to ensure healthy lives and promote well-being for all across the lifespan. In particular, Target 3.4 emphasizes the reduction of premature mortality from non-communicable diseases through prevention, alongside the promotion of mental health and well-being. Higher education institutions play a pivotal role in advancing these global priorities. As emphasized by Althonayan et al. (2021), universities are instrumental in implementing the Sustainable Development Goals (SDGs) by shaping future generations, generating research-driven solutions to complex societal challenges, and fostering initiatives that benefit both campus communities and society at large. In this context, the SDGs serve not merely as policy aspirations but as a transformative framework for higher education. Recent scholarship highlights how universities integrate sustainability into teaching, research, and institutional practices, while also facing constraints related to resources, institutional alignment, and policy coherence (Škokić, 2025). Moreover, higher education has been identified as a key driver of broader sustainable development outcomes, given its role in cultivating knowledge, critical thinking, and leadership necessary for addressing global challenges (Gharzeddine & Davies, 2025; Compagnucci & Spigarelli, 2020).

Despite this recognized importance, significant gaps remain in the integration of sustainability and health promotion within university systems. Existing literature suggests that many institutions struggle to adopt a whole-of-university approach to sustainability, often treating wellness initiatives as peripheral rather than integral to their mission (Amaral et al., 2015). This gap underscores the need to reposition student health and well-being as central components of institutional development. Promoting physical activity and healthy lifestyle choices within universities requires not only accessible programs and facilities but also supportive policies and environments that encourage sustained behavioral change.

Engagement in physical activity has been shown to produce multidimensional benefits, encompassing physiological, psychological, and social domains. Beyond its biological effects on physical health, participation in regular physical activity contributes to improved mental well-being by providing stress relief, opportunities for social interaction, positive emotional experiences, and a sense of personal achievement. These benefits are particularly relevant for university students, a population consistently identified as being at elevated risk for sedentary behavior, stress, and mental health challenges.

In the Philippine context, university students are at a critical stage for establishing lifelong health behaviors. However, national data from the Department of Health and the Philippine Statistics Authority indicate increasing levels of physical inactivity, sedentary lifestyles, and a growing prevalence of overweight and obesity among young adults. These trends contribute to the rising burden of non-communicable diseases in the country, reinforcing the urgency of preventive health strategies. Aligned with the United Nations Sustainable Development Goals—particularly Sustainable Development Goal 3 (Good Health and Well-being) and Sustainable Development Goal 4 (Quality

Education)—higher education institutions in the Philippines are strategically positioned to promote health-enhancing behaviors and integrate wellness into educational systems (United Nations, 2015; Škokić, 2025).

Nevertheless, many universities in the Philippines continue to face challenges in implementing comprehensive, evidence-based institutional policies that effectively promote physical activity and fitness among students. Research indicates that while higher education institutions have significant potential to contribute to sustainable development, gaps persist in policy implementation, student engagement, and the institutionalization of health promotion strategies (Amaral et al., 2015; Fia et al., 2023).

In response to these gaps, this study examines the correlates of physical activity, fitness habits, and body mass index (BMI) among university students in the Philippine context. By identifying key determinants of students' health behaviors, the study aims to generate evidence to inform the development of stronger institutional health policies. Ultimately, these efforts contribute not only to improving student well-being but also to advancing national and global commitments to sustainable development.

2. Methodology

This study employed a quantitative research design to investigate the relationship between physical activity levels and Body Mass Index (BMI) among university students. A longitudinal cohort design was utilized, with data collected over two consecutive academic years from students enrolled in the HK11 (Wellness and Injury Management) course. Participants were randomly selected from the university population. A total of 247 participants (male:89; female: 158) were included in the study.

This design enabled the observation of patterns and relationships in students' physical activity behaviors and BMI over time. The primary variables measured were the students' daily physical activity levels—based on the guideline of the World Health Organization recommending at least 60 minutes of moderate to vigorous physical activity and their corresponding BMI. Data were collected using a structured questionnaire administered through an online application. Descriptive statistics were used to summarize the data, while inferential analyses, such as correlation and regression, were used to assess the strength and significance of relationships between variables.

Ethical considerations were strictly observed throughout the study. Participation was voluntary, and informed consent was obtained from all respondents prior to survey administration. Participants were informed of the study's purpose, procedures, and their right to withdraw at any time without penalty. To ensure confidentiality and anonymity, no personally identifiable information was collected, and all responses were handled with strict confidentiality. Data were securely stored and used solely for academic purposes. The study adhered to ethical principles consistent with the World Health Organization and the Philippine Health Research Ethics Board guidelines for research involving human participants.

3. Results and discussion

Descriptive analysis revealed varying levels of physical activity among respondents, with a proportion of students meeting the World Health Organization-recommended guideline of at least 60 minutes of moderate-to-vigorous physical activity per day (United Nations, 2015; UNESCO, 2016). However, a considerable number of students were found to engage in insufficient physical activity, indicating the persistence of sedentary behaviors within the university setting.

In terms of BMI classification (Table 1), results showed that while many students fell within the normal range, a notable percentage were categorized as overweight or underweight. This suggests the presence of both undernutrition and overnutrition concerns among university students, reflecting broader public health trends.

Table 1 BMI classification of the respondents

BMI CLASSIFICATION	MALE		FEMALE		TOTAL	
	f	%	f	%	f	%
UNDERWEIGHT	14.00	15.56	34.00	21.66	48.00	19.43
NORMAL WEIGHT	42.00	46.67	77.00	49.04	119.00	48.18
OVERWEIGHT	15.00	16.67	17.00	10.83	32.00	12.96
OBESE CLASS 1	15.00	16.67	20.00	12.74	35.00	14.17
OBESE CLASS 2	4.00	4.44	9.00	5.73	13.00	5.26
TOTAL	90		157		247	100

Inferential analysis revealed a significant relationship between physical activity levels and BMI. Students who engaged in higher levels of physical activity tended to have more favorable BMI outcomes, supporting existing literature that highlights the protective role of regular physical activity against weight-related health risks (Gupta & Sawhney, 2023). These findings are consistent with previous studies emphasizing the importance of active lifestyles in maintaining healthy body composition and preventing non-communicable diseases.

Associations between physical activity, BMI, and related health behaviors were assessed. Results showed that 87% of respondents reported engaging in at least 60 minutes of physical activity daily, in accordance with WHO guidelines (Table 2). However, more than 50% reported not regularly engaging in muscle-strengthening activities to complement their fitness routines. BMI results revealed a distribution that included both healthy and unhealthy weight categories, highlighting the variability in students' overall physical health despite reported activity levels. Mean BMI of the Yes group = 21.71, while the mean BMI of the No group = 23.53. On average, people who do ≥ 60 mins physical activity (Yes) have a lower BMI than those who don't (No) (t Stat = -2.01, with a p = 0.045). Since $0.045 < 0.05$, there is a significant difference in BMI between the Yes and No

groups.

Interestingly, the female cohort showed a slight increase over the male cohort in the desire to complete a workout of at least 60 minutes a day (female: 89.24%, male: 88.76%) contradicting the results of Jiang et al, (2021) and Espada et al. (2023). As muscle strengthening is one of the factors that help improve fitness status, the data show that the correlation coefficient of -0.056 suggests a very weak negative relationship between performing strength exercises and BMI. Those who do strength training might have slightly lower BMI, but the effect is minimal. The current study showed 54% (who did muscle strengthening) and 46% (who did not). It was also evident that the university students wished to have workout areas, a space of their own, and a safe venue for any active workout.

Ensuring access to high-quality, affordable meals on campus is essential for students to maintain a healthy weight, especially since 86% of participants reported living away from their families. Alarming, 53% admitted to skipping meals due to class schedules and time constraints, while 13% cited lack of appetite. These findings call for stronger institutional policies that integrate nutrition and wellness into campus life. University administrators must prioritize meal-provision programs, revise academic scheduling to reduce barriers to healthy eating, and create holistic health initiatives that integrate fitness, balanced nutrition, and mental well-being. By doing so, universities can foster sustainable wellness environments and support healthier BMI outcomes among students.

Table 2 Top reasons why respondents checked fitness

	MALE	FEMALE	TOTAL	%
Personal health and appearance	61	97	158	64
Fatigue and stress	19	50	69	28
Influenced by someone	9	11	20	8
TOTAL	89	158	247	100

4. Conclusion

The findings of this study highlight the intertwined relationship between physical activity, BMI, fitness habits, and nutrition among university students. While a large proportion of students reported meeting the WHO-recommended 60 minutes of daily activity, gaps remain in areas such as muscle-strengthening exercises and access to nutritious meals. With 86% of students living away from their families, over half skipping meals due to class schedules, and others citing lack of appetite, it is evident that wellness cannot be achieved through exercise alone. Universities, therefore, play a pivotal role in shaping environments that make healthy choices the easier choices. Stronger institutional policies are needed—such as investing in workout spaces, implementing nutrition and meal-provision programs, and adjusting academic scheduling to reduce barriers to healthy eating.

By integrating these strategies, universities can foster a culture of wellness that supports healthier BMI outcomes, promotes mental well-being, and prepares students not only for academic achievement but also for long-term, sustainable health.

From a broader perspective, these results highlight the critical role of higher education institutions in promoting student health and well-being. In alignment with the United Nations Sustainable Development Goals, particularly Sustainable Development Goal 3 (Good Health and Well-being), universities must strengthen institutional policies that encourage physical activity and healthy behaviors. The findings also reinforce the role of education systems in advancing Sustainable Development Goal 4 (Quality Education) by fostering environments that support holistic student development. A relationship between regular physical activity and positive health outcomes and its impact on mental health is becoming the central point in multiple academic studies. According to Tyson et al. (2010), evidence suggests a particular "negative link" between physical exertion and common psychological disorders, specifically depression and anxiety. Studies have shown that engaging in aerobic exercise—aligned with the World Health Organization's daily recommendations—serves as a preventive measure that can be as effective as medication-free treatments for mild-to-moderate mental health concerns. Thus, as the frequency and intensity of physical activity increase, self-reported levels of psychological distress significantly decrease.

By addressing institutional barriers such as academic scheduling and the availability of wellness facilities, HEIs can fulfill their direct impact on national development. As the world strives toward accomplishing the 2030 targets, the role of the university is to ensure that students are not only academically prepared but also physically and mentally equipped to lead and support the community by moving beyond theory and integrating wellness in campus life.

References

- Althonayan, Abraham, Tarasova, Elizaveta E., Isaenko, Elena V., 2021, The Role of Higher Educational Institutions in the Implementation of UN Sustainable Development Goals (SDGs), *Globalistics and Globalization Studies*, [Online],
〈https://www.sociostudies.org/almanac/articles/the_role_of_higher_educational_institutions_in_the_implementation_of_un_sustainable_development_goals_sdgs/〉, (Retrieved: 2026-03-28).
- Amaral, Luís Pedro, Martins, Nelson, Gouveia, Joaquim B., 2015, Quest for a Sustainable University: A Review, *International Journal of Sustainability in Higher Education*, Vol. 16 (No. 2), pp. 155 - 172.
〈<https://doi.org/10.1108/IJSHE-02-2013-0017>〉.
- Compagnucci, Lorenzo, Spigarelli, Francesca, 2020, The Third Mission of the University: A Systematic Literature Review on Potentials and Constraints, *Technological Forecasting and Social Change*, Vol.161, Article 120284. 〈<https://doi.org/10.1016/j.techfore.2020.120284>〉.
- Espada, María, Romero-Parra, Nuria, Bores-García, Daniel, Delfa-De La Morena, José Manuel, 2023, Gender Differences in University Students' Levels of Physical Activity and Motivations to Engage in Physical Activity, *Education Sciences*, Vol. 13(No.4), Article 340. 〈<https://doi.org/10.1016/j.techfore.2020.120284>〉.
- Fia, Magali, Ghasemzadeh, Khatereh, Paletta, Angelo, 2023, How Higher Education Institutions Walk Their Talk on the 2030 Agenda: A Systematic Literature Review, *Higher Education Policy*, Vol.36(No.3), pp. 599-632. 〈<https://doi.org/10.1057/s41307-022-00277-x>〉.

- Gharzeddine, Doaa, Davies, Dan, 2025, The Rise of Sustainable Development Goals in Higher Education Institutions, Perspectives: Policy and Practice in Higher Education, pp. 1 - 8. [〈https://doi.org/10.1080/13603108.2025.2528053〉](https://doi.org/10.1080/13603108.2025.2528053) .
- Gupta, Ankur, Sawhney, Seema, 2023, The Gamification of Indian Higher Education: Trends, Pitfalls and Ideas for Future, Journal of Engineering Education Transformations, Vol.36(No. 4),pp. 32-43. [〈https://doi.org/10.16920/jeet/2023/v36i4/23113〉](https://doi.org/10.16920/jeet/2023/v36i4/23113) .
- Jiang, Wenning, Luo, Jin, Guan, Hannan, 2021, Gender Difference in the Relationship of Physical Activity and Subjective Happiness Among Chinese University Students, Frontiers in Psychology, Vol.12, Article 800515. [〈doi: 10.3389/fpsyg.2021.800515〉](https://doi.org/10.3389/fpsyg.2021.800515) .
- Škokić, Vlatka, Jelić, Petra, Jerković, Igor, 2025, The Role and Contribution of Sustainable Development Goals as a Transformative Framework in Higher Education: A Case Study of the University of Split, World, Vol.6 (No.1), Article 22. [〈https://doi.org/10.3390/world6010022〉](https://doi.org/10.3390/world6010022) .
- Tyson, Philip, Wilson, Kelly, Crone, Diane, Brailsford, Richard, Laws, Keith, 2010. Physical activity and mental health in a student population, Journal of Mental Health, Vol.19(No.6), pp.492-499. [〈https://doi.org/10.3109/09638230902968308〉](https://doi.org/10.3109/09638230902968308) .
- United Nations, 2015, Transforming Our World: The 2030 Agenda for Sustainable Development, United Nations. [〈https://sdgs.un.org/2030agenda〉](https://sdgs.un.org/2030agenda) . (Retrieved: 2025-06-01).
- UNESCO, 2016, Global Action Programme on Education for Sustainable Development, UNESCO. [〈https://unesdoc.unesco.org/ark:/48223/pf0000246270〉](https://unesdoc.unesco.org/ark:/48223/pf0000246270) . (Retrieved: 2025-06-01).