

Too lazy, too low? A correlational study of sedentary lifestyle and self-esteem among university students



Original article

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Abstract: **Objective:** To examine the relationship between sedentary lifestyle and self-esteem among nursing students. A sedentary lifestyle has become increasingly prevalent among university students, particularly in this digital era, and is suspected to affect not only physical health but also psychological aspects such as self-esteem.

Methods: This correlational analytic study used a quantitative approach and was conducted at the Institute of Technology and Health Sciences (ITSKes) ICMe Jombang from January to February 2025. A total of 252 active nursing students from semesters 2, 4, and 6 were selected through purposive sampling. Sedentary lifestyle was measured using the International Physical Activity Questionnaire (IPAQ) short form, while self-esteem was assessed with the Rosenberg Self-Esteem Scale (RSES). Data were analyzed using Spearman's rank correlation and simple linear regression.

Results: Most respondents reported high levels of sedentary behavior and moderate to low levels of self-esteem. A strong and statistically significant negative correlation was found between sedentary lifestyle and self-esteem (Spearman's $\rho = -0.773$, $P = 0.002$). Regression analysis also showed that a sedentary lifestyle significantly predicted self-esteem ($R^2 = 0.597$, $\beta = -0.773$, $P = 0.000$), indicating that 59.8% of the variance in self-esteem could be explained by sedentary behavior.

Conclusions: A high level of sedentary lifestyle is significantly associated with lower self-esteem among nursing students. These findings highlight the need for interventions promoting active lifestyles to support the psychological well-being of students.

Keywords: mental health • nursing students • physical activity • sedentary lifestyle • sedentary behavior • self-esteem

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1. Introduction

Today's university students live in an instant, convenience-driven era where most needs can be fulfilled with just a touch on a screen. Many students spend the majority of their time sitting, whether attending online classes, completing assignments, or engaging

in digital entertainment such as watching movies or playing video games.¹ Physical activity, which should be an essential part of daily routine, has been replaced by a passive and sedentary lifestyle. This condition gradually forms a pattern of sedentary

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behavior that is becoming normalized among most students.²

The World Health Organization (WHO) reports that insufficient physical activity is the fourth leading cause of global mortality, highlighting the serious threat posed by a physically inactive lifestyle.³ More than 1.4 billion adults do not meet the recommended levels of physical activity, and this number continues to rise each year.⁴ Data from Indonesia's Ministry of Health also indicates that over 33% of the population lacks sufficient physical activity, with the majority coming from the productive age group, including university students.⁵ These facts confirm that a sedentary lifestyle is not merely a bad habit but a serious public health issue requiring immediate attention.

A study conducted by the Faculty of Public Health at Muhammadiyah University of Jakarta in 2021 revealed that among 237 students surveyed, 50.2% exhibited a sedentary lifestyle with durations exceeding 1157 min/week. The most dominant sedentary activity was social media use, averaging 2260 min/week. Additionally, the proportion of sedentary lifestyle was higher among female students (52.2%) than males (38.2%).⁶ Recent studies such also indicate a growing trend of psychological symptoms, such as irritability, low self-worth, and depressive mood, associated with long sedentary hours among young adults.^{7,8}

Students caught in this sedentary pattern are not only at risk of physical issues, such as chronic fatigue, metabolic disorders, and obesity, but are also vulnerable to psychological decline. One emerging concern is the decline in self-esteem, which serves as a crucial foundation for self-confidence and mental well-being.⁹ Students with low self-esteem often feel unworthy, experience anxiety in social settings, and lack motivation in their academic roles. This illustrates that the sedentary lifestyle is not merely a physical issue, but is also closely linked to students' mental well-being.¹⁰ In fact, multiple meta-analyses have begun to suggest that sedentary time is not only correlated with, but may contribute to, deteriorating psychological resilience.^{8,11}

The high-performance demands of academic life often become the main trigger of inactivity.¹² Students feel bound to their laptops or devices for long hours to meet deadlines, neglecting their bodies' need for movement and real-world social interaction. This imbalance affects their overall quality of life, including productivity, social engagement, and self-perception.^{10,13} However, few local studies in Indonesia have explored the psychosocial consequences of this trend, especially with a specific focus on self-esteem as an outcome. This represents a gap that this study seeks to address.

This study focuses on exploring the relationship between sedentary lifestyle and self-esteem among

university students, as an initial effort to highlight the urgency of this often-overlooked issue. By addressing this gap, the research not only contributes to local evidence but also lays a foundation for future experimental or longitudinal studies that can better establish causality and inform intervention design. The findings are expected to serve as a foundation for developing intervention strategies that emphasize not only physical activity but also the psychological empowerment of students.

2. Methods

2.1. Study design

This study employed a quantitative approach with a correlational analytic design to examine the relationship between sedentary lifestyle and self-esteem among university students.

2.2. Setting and participants

The study was conducted at the Institut Teknologi Sains dan Kesehatan (ITSKes) Insan Cendekia Medika Jombang from late January to February 2025. A total of 252 active nursing students from semesters 2, 4, and 6 were recruited using purposive sampling based on predefined inclusion and exclusion criteria.

2.3. Inclusion and exclusion criteria

Students were eligible if they were actively enrolled and willing to participate by completing the questionnaires independently and thoroughly. Students with physical or psychological conditions that could influence physical activity or self-esteem were excluded.

2.4. Instruments

Data were collected using a structured questionnaire consisting of 2 instruments. Sedentary lifestyle was measured using the International Physical Activity Questionnaire—Short Form (IPAQ-SF), while self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSES).

2.5. Data collection

Data collection was conducted offline in a controlled classroom setting using printed questionnaires. Prior to data collection, all participants were informed about the study objectives and procedures, and written informed consent was obtained.

2.6. Sample size determination

A priori power analysis using G*Power version 3.1 (Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany) indicated that a minimum sample size of 85 respondents was required to detect a medium effect size ($r = 0.3$) at a significance level of 0.05 with 80% statistical power. The final sample size of 252 participants exceeded this requirement, thereby enhancing the statistical validity of the study.

2.7. Data analysis

Data were analyzed using Spearman's rank correlation test due to the non-normal distribution of ordinal data. In addition, simple linear regression analysis was performed to examine the predictive effect of sedentary lifestyle on self-esteem and to control for potential confounding variables, such as age, gender, and academic semester.

2.8. Ethical consideration

This study was conducted in accordance with ethical standards for research involving human participants. Informed consent was obtained from all participants

Characteristics and category	<i>n</i>	Percentage (%)
<i>Age (years)</i>		
18–19	44	17.3
20–21	155	61.5
22–23	53	21.2
<i>Gender</i>		
Male	102	40.4
Female	150	59.6
<i>Monthly allowance</i>		
<IDR 500,000	39	15.4
IDR 500,000–1,000,000	15	5.8
IDR 1,000,001–2,000,000	150	59.6
>IDR 2,000,000	48	19.2
<i>Social status</i>		
Living with parents	63	25.0
Living in boarding/hostel	111	44.2
Living with friends/relatives	78	30.8
<i>Social habits</i>		
Not active	39	15.4
Active in one organization	174	69.2
Active in ≥2 organizations	39	15.4

Note: IDR, Indonesian Rupiah; Source: Primary data, 2025.

Table 1. Distribution of respondents by demographic characteristics ($n = 252$).

before the data collection began, and anonymity and confidentiality were strictly maintained throughout the study. No financial or material compensation was given to participants. Ethical approval for this research was granted by the Research Ethics Committee of the Institut Teknologi Sains dan Kesehatan Insan Cendekia Medika Jombang, with the reference number: ICMe/KEPK/038/01/2025, dated January 15, 2025.

3. Results

3.1. Univariate analysis

The univariate analysis presents the characteristics of the respondents in this study, including demographic data, such as age, gender, monthly allowance, social status, and social habits, as well as specific data regarding sedentary lifestyle behavior and self-esteem levels.

Data in Table 1 show that the majority (61.5%) of respondents were aged 20–21 years (155 respondents), and most of them (59.6%) were female (150 respondents). The majority (59.6%) had a monthly allowance of IDR 1,000,001–2,000,000 (150 respondents). Nearly half (44.2%) lived in boarding houses or dormitories (111 respondents). Additionally, most respondents (69.2%) were active in one organization (174 respondents).

Table 2 shows that most respondents (59.6%) had a high level of sedentary lifestyle (150 respondents).

Table 3 shows that nearly half (44.2%) of the respondents had moderate self-esteem levels (111 respondents), while 42.3% were categorized as having low self-esteem (107 respondents).

Category	<i>n</i>	Percentage (%)
Low	34	13.5
Moderate	68	26.9
High	150	59.6

Note: Source: Primary data, 2025.

Table 2. Distribution of respondents by level of sedentary lifestyle ($n = 252$).

Category	<i>n</i>	Percentage (%)
Low	107	42.3
Moderate	111	44.2
High	34	13.5

Note: Source: Primary data, 2025.

Table 3. Distribution of respondents by level of self-esteem ($n = 252$).

3.2. Bivariate analysis

This study conducted a bivariate analysis to examine the relationship between two variables. The Spearman Rank correlation test was used to determine the relationship between sedentary lifestyle and self-esteem. The results are presented in the following table.

Based on Table 4, the analysis showed a strong negative relationship between sedentary lifestyle and self-esteem. The Spearman correlation coefficient of -0.773 indicates that the higher the level of sedentary lifestyle, the lower the level of self-esteem. This relationship is statistically significant, with a P value of 0.002 , which is lower than $\alpha = 0.05$. Therefore, it can be concluded that there is a significant relationship between sedentary lifestyle and self-esteem.

3.3. Regression analysis

To further examine the predictive relationship between sedentary lifestyle and self-esteem, a simple linear regression analysis was performed with self-esteem as the dependent variable and sedentary lifestyle as the independent variable. The results of the regression analysis are presented below.

The regression analysis indicates that a sedentary lifestyle significantly predicts self-esteem ($P < 0.001$). The regression coefficient ($B = -0.524$) suggests that for every one-point increase in sedentary lifestyle score, the self-esteem score decreases by 0.524 points. The model explains approximately 59.7% of the variance in self-esteem ($R^2 = 0.597$), which denotes a strong predictive power. The regression model is statistically significant overall, as shown by the F -value of 370.29 ($P < 0.001$).

4. Discussion

The researcher found that most respondents were aged 20 – 21 years, which falls within early adulthood. This phase marks a transition from adolescence to

adulthood, characterized by challenges in decision making and identity formation.¹⁴ It is suspected that individuals in this age group are more likely to adopt a sedentary lifestyle due to increased academic demands, online classes, and prolonged use of digital devices for studying or leisure. These findings are consistent with previous studies indicating that university students aged 18 – 25 years tend to have higher sedentary levels due to passive learning activities and low awareness of the importance of physical activity.¹⁵

The study also revealed that most respondents had a high level of sedentary lifestyle. This may be influenced by student routines that involve prolonged sitting while studying, using gadgets, or watching entertainment, particularly among those living in boarding houses or dormitories. Students in such environments typically have limited space for movement, which restricts physical activity. The researcher observed that the place of residence plays a key role in shaping daily physical routines. These findings align with earlier studies showing that students living away from home and in limited spaces are more likely to lead sedentary lifestyles due to a lack of access to sports facilities and supportive environments.^{11,16}

Gender was also identified as a potential factor influencing sedentary behavior. Most respondents were female, and females generally exhibit lower levels of physical activity than males due to psychosocial factors, such as body image perception, social pressure, and motivation to exercise.^{17,18} Therefore, the predominance of female respondents in this study may have contributed to the high prevalence of sedentary behavior.

The study found that nearly half of the respondents had moderate or low levels of self-esteem. The correlation analysis revealed a strong negative relationship between sedentary lifestyle and self-esteem, suggesting that a higher sedentary lifestyle is associated with lower self-esteem. This supports prior research indicating that physical activity positively correlates with improved self-esteem, especially during adolescence and early adulthood. Physical activity enhances body image perception, reduces stress, and promotes a sense of achievement, all of which contribute to better self-esteem.¹⁹

Furthermore, the regression analysis showed that a sedentary lifestyle is a significant predictor of self-esteem ($P < 0.001$), accounting for approximately 59.7% of the variance in self-esteem levels. This indicates that a sedentary lifestyle not only correlates with but also strongly influences students' psychological well-being. The negative regression coefficient ($B = -0.524$) confirms that increased sedentary behavior is associated with a measurable decline in self-esteem. These

Items	Sedentary lifestyle	Self-esteem
Sedentary lifestyle	Correlation coefficient	1.000
	Sig. (2-tailed)	.
Self-esteem	Correlation coefficient	-0.773^{**}
	Sig. (2-tailed)	0.002

Note: Source: Processed primary data, 2025.

Table 4. Spearman correlation between sedentary lifestyle and self-esteem ($n = 252$).

findings strengthen the argument that reducing a sedentary lifestyle should be a critical target in mental health promotion among university students.

The researcher also highlighted the role of organizational involvement in daily student life. Although most respondents were active in one organization, many still exhibited a high sedentary lifestyle. This suggests that organizational involvement does not necessarily equate to high physical activity, depending on the type and nature of the organization's activities. Organizations with predominantly administrative or intellectual tasks may still involve prolonged sitting or screen time.²⁰ The researcher believes that participation in organizations should be accompanied by personal awareness to remain physically active.

In light of these findings, it becomes imperative for educational institutions to incorporate more active learning methods and provide access to facilities that encourage movement. The researcher concludes that interventions to reduce sedentary behavior should be developed in the form of enjoyable and inclusive campus programs, particularly targeting students living in dormitories and female students, as these groups appear to be at higher risk.

Despite the meaningful findings, this study is not without limitations. First, its cross-sectional design restricts the ability to establish causal relationships between sedentary lifestyle and self-esteem. Second, the use of self-reported questionnaires may introduce response bias, as participants might underreport or overreport their actual behavior and self-perception. Third, the sample was limited to university students from a specific region, which may limit the generalizability of the results to wider populations. Future studies with longitudinal or experimental designs and more diverse samples are recommended to strengthen the findings and broaden the scope of applicability.

5. Conclusions

This study demonstrates that a sedentary lifestyle is not only significantly associated with, but also statistically

predictive of, lower self-esteem among university students. The regression model showed that sedentary behavior contributed meaningfully to the variance in self-esteem scores, reinforcing the urgent need to address this lifestyle trend from both a physical and psychological health perspective.

Given these findings, it is imperative for academic institutions to develop targeted and sustainable intervention strategies. These should include campus-based physical activity programs that are inclusive, gender-sensitive, and accessible to students living in constrained environments such as boarding houses. Mental health education must also integrate awareness of how inactivity impacts self-perception and emotional well-being.

Future research should explore longitudinal designs to assess causality and investigate other psychosocial variables that may mediate or moderate the relationship between sedentary lifestyle and self-esteem. Intervention-based studies are also needed to evaluate the effectiveness of movement-based or behavioral programs in improving self-esteem and reducing sedentary behavior among young adults.

Author contributions

Dessy Ekawati: Conceptualization, study design, data collection, data analysis and interpretation, manuscript writing, critical revision, and final approval of the version to be published.

Ethical approval

This study was approved by the Health Research Ethics Committee of the Institut Teknologi Sains dan Kesehatan Insan Cendekia Medika Jombang (IRB approval number: ICM/KEPK/038/01/2025).

Conflicts of interest

There are no conflicts of interest.

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