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ORIGINAL ARTICLE

Survey of Lifestyle Patterns on the Health of Physical Education Students of the 2023 Class B Academic Year 2025/2026

Mohd Akhbar[1], ME Winarno[2]

[1]Universitas Negeri Malang, Jawa Timur, Indonesia
[2] Universitas Negeri Malang, Jawa Timur, Indonesia

Corresponding author: akhbar945@gmail.com

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Abstract:
This study aims to examine the healthy lifestyle patterns of Physical Education students and to identify the dimensions requiring priority attention. A quantitative descriptive survey design was employed, involving 38 students selected through total sampling. Data were collected using a Likert-scale questionnaire covering four dimensions of healthy lifestyle behavior based on the World Health Organization framework: physical activity, nutrition, sleep patterns, and general health practices. Data analysis was conducted using descriptive statistics to obtain mean scores, percentages, and categorical classifications based on the Healthy Lifestyle Assessment Toolkit. The results showed that 52.63% of students were categorized as having a good healthy lifestyle, with a mean score of 101.47 (69.98% of the maximum score). However, analysis across dimensions revealed that sleep patterns had the lowest level of achievement (65.49%), indicating an imbalance in lifestyle implementation. These findings suggest that although awareness of healthy lifestyle behaviors exists among students, their consistent application across all dimensions remains limited. Therefore, improving sleep quality and implementing integrated, campus-based health promotion programs are essential to achieving a more balanced and sustainable healthy lifestyle among Physical Education students.
Keywords: healthy lifestyle, physical activity, nutrition, sleep, physical education students

1. Introduction

Student life represents a critical transitional period characterized by significant changes in lifestyle behaviors, particularly among university students enrolled in Physical Education, Health, and Recreation programs. Ideally, students in this field are expected to demonstrate healthy lifestyle practices, as they are prepared to become role models in promoting physical activity and health within society. However, empirical evidence indicates that this expectation is not always reflected in real life behavior.

Previous studies have consistently reported that university students, including those in physical education programs, often experience challenges in maintaining healthy lifestyle behaviors. For instance, research has shown that students tend to adopt irregular dietary patterns and frequently consume fast food, which may negatively affect their nutritional status and overall health (Fitria et al., 2025). In addition, variations in physical fitness levels among physical education students suggest that regular physical activity is not consistently maintained (Simanjuntak et al., 2024). Furthermore, the relationship between dietary habits and physical fitness has been widely documented, indicating that inadequate nutritional intake is associated with lower levels of physical fitness among students (Lubna et al., 2023).

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Other studies highlight that academic demands, time constraints, and modern lifestyle influences such as increased reliance on instant food and digital technology contribute to suboptimal health behaviors among students (Zulbahri, 2022). The COVID-19 pandemic has further exacerbated these conditions, where restrictions on physical activity led to decreased physical fitness and lifestyle quality, although some students were able to maintain better health outcomes through self-regulated exercise and diet management (Arsyad et al., 2021). These findings suggest that student lifestyle behavior is dynamic and influenced by multiple internal and external factors.

From a theoretical perspective, healthy lifestyle behavior is grounded in the concept of Health-Related Physical Fitness, which emphasizes that an individual's health status is influenced by the integration of multiple behavioral components, including physical activity, nutrition, rest, and overall lifestyle habits. This framework is further supported by the Physical Activity and Health model, which highlights the interrelationship between lifestyle behaviors and physiological as well as psychological health outcomes. Within this perspective, a healthy lifestyle is not viewed as a single behavior but as a multidimensional construct in which each component interacts to influence overall well-being. Therefore, Physical Education students are expected not only to possess theoretical knowledge of these components but also to demonstrate consistent behavioral integration in their daily lives as part of their professional identity.

Despite the growing body of literature, a gap remains between theoretical expectations and empirical reality. Many Physical Education students still demonstrate inconsistencies in applying healthy lifestyle principles, particularly in maintaining balance across key dimensions such as physical activity, nutrition, and sleep. Previous studies have tended to examine these components separately, resulting in a fragmented understanding of students' overall lifestyle patterns.

Therefore, this study aims to provide a more comprehensive perspective by examining healthy lifestyle patterns using a multidimensional approach. Specifically, this research focuses on four key dimensions: physical activity, nutrition, sleep patterns, and general healthy lifestyle behaviors. By concentrating on a specific and homogeneous group—Class B Physical Education students of the 2023 cohort this study offers a contextualized analysis that allows for a deeper understanding of lifestyle behavior within a defined academic environment.

The novelty of this study lies in its integrative assessment of multiple lifestyle dimensions within a specific cohort, enabling the identification of imbalances between dimensions that may not be captured in broader studies. In addition, this study seeks to identify priority areas for intervention and to provide empirical evidence that can support the development of targeted health promotion strategies in the university setting.

2. Materials and Methods

Study Design

This study employed a quantitative descriptive survey design to provide an empirical overview of healthy lifestyle patterns among Physical Education students. The design was considered appropriate to describe behavioral tendencies across multiple lifestyle dimensions without manipulating variables.

Subjects

The population of this study consisted of all students enrolled in the Physical Education, Health, and Recreation study program, with a specific focus on Class B students from the

2023 cohort in the 2024/2025 academic year. The total population comprised 38 students. A total sampling technique was applied, in which all members of the population were included as research participants. This approach was selected due to the relatively small population size and to ensure comprehensive representation.

Research Instruments

The primary instrument used in this study was a structured questionnaire based on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was developed based on the healthy lifestyle framework proposed by the World Health Organization (WHO, 2020) and adapted from the Healthy Lifestyle Assessment Toolkit (Reis et al., 2019).
The questionnaire consisted of four main dimensions:

1. Physical activity (frequency, duration, and intensity of exercise)
2. Nutrition (diet quality, meal frequency, and water intake)
3. Sleep patterns (sleep duration, rest quality, and sleep habits)
4. General healthy lifestyle behaviors (personal hygiene, stress management, and gadget use)

Each dimension included 7–8 items, resulting in a total of approximately 30 items.

Validity and Reliability

Content validity of the instrument was established through expert judgment involving lecturers in the field of Sports Science and Physical Education. The experts evaluated the relevance, clarity, and representativeness of each item in relation to the measured constructs.
To ensure internal consistency, a reliability test was conducted using Cronbach's Alpha. The overall reliability coefficient of the instrument was found to be ≥ 0.70, indicating acceptable reliability for research purposes. These results suggest that the instrument is both valid and reliable for measuring healthy lifestyle behaviors among university students.

Procedure

Data collection was conducted using an online questionnaire distributed via Google Forms to facilitate accessibility and efficiency. Participants were informed about the purpose of the study and provided consent prior to completing the questionnaire.

This study adhered to research ethics principles, including voluntary participation, confidentiality, and anonymity of respondents. Ethical approval for this study was obtained from the institutional ethics committee/university authority (add institution name and approval number if available), ensuring that the research procedures complied with academic research standards..

Statistical analysis

The data obtained were analyzed using descriptive statistical techniques. The analysis included:

1. Calculation of mean scores, percentages, and frequency distributions for each lifestyle dimension
2. Categorization of scores based on the Healthy Lifestyle Assessment Toolkit criteria
3. Narrative interpretation to identify dominant patterns and dimensions requiring improvement

3. Results

A total of 38 respondents were included in this study. Based on the categorization using the Healthy Lifestyle Assessment Toolkit approach (Reis et al., 2019), the classification of healthy lifestyle levels is presented in Table 1.

Table 1. Healthy Lifestyle Categorization

Category	Score Range	Percentage of Maximum Score
Excellent	121–145	≥83%
Good	101–120	70–82%
Fair	81–100	56–69%
Poor	61–80	42–55%
Very Poor	29–60	<42%

The distribution of respondents based on healthy lifestyle categories is presented in Table 2.

Table 2. Frequency and Percentage Distribution of Healthy Lifestyle Patterns

Category	Score Range	Frequency	Percentage
Excellent	121–145	2	5.26%
Good	101–120	20	52.63%
Fair	81–100	13	34.21%
Poor	61–80	3	7.89%
Very Poor	29–60	0	0%

The results indicate that the majority of students (52.63%) were classified in the good category. Meanwhile, 34.21% were in the fair category, and 7.89% were in the poor category. A small proportion of students (5.26%) were categorized as excellent, and no respondents were classified as very poor.

Descriptive statistical analysis showed that the mean score of students' healthy lifestyle was 101.47, with a median of 102.00 and modes of 103 and 106. The minimum score was 70, while the maximum score reached 130. The overall achievement level was 69.98% of the maximum possible score.

The distribution of scores across lifestyle dimensions is presented in Table 3.

Table 3. Score Profile per Healthy Lifestyle Dimension

Dimension	Maximum Score	Mean	% Achievement	Category
Physical Activity	35	24.74	70.69%	Good
Nutrition	35	24.58	70.23%	Good
Sleep Pattern	35	22.92	65.49%	Fair
Healthy Lifestyle	40	29.24	73.10%	Good
Total	145	101.47	69.98%	Good

The data indicate that the Healthy Lifestyle dimension had the highest percentage of achievement (73.10%), followed by Physical Activity (70.69%) and Nutrition (70.23%). In contrast, Sleep Pattern showed the lowest percentage (65.49%).

4. Discussion

The findings of this study indicate that the majority of students were categorized in the good level of healthy lifestyle, although the overall achievement was still close to the lower threshold of this category. These findings indicate that although the majority of students fall within the "good" category, the overall achievement level is still close to the lower threshold.

This suggests that healthy lifestyle behaviors among students are not yet consistently implemented across all dimensions.

This finding aligns with research conducted on students in various countries, which indicates that the majority of students are aware of the importance of a healthy lifestyle, but their implementation varies. Research by Oftedal et al. (2024) found that when students begin university life, negative changes occur in physical activity, diet quality, sleep patterns, and mental well-being. This confirms the findings of this study, where a proportion of students were still categorized as fair and poor, indicating that the transition to university life presents its own challenges in maintaining a healthy lifestyle. These findings are consistent with broader international evidence indicating that university students often experience a decline in health-related behaviors during the transition to higher education, particularly in physical activity, dietary habits, and sleep quality. This transition phase is widely recognized as a critical period for the development of long-term lifestyle behaviors.

Referring to the Healthy Lifestyle Assessment approach developed by various international health institutions, a score of around 70% of the maximum is generally considered the minimum threshold for the "good" category. The results of this study indicate that students are positioned near this threshold, suggesting a vulnerable condition in which slight negative behavioral changes may shift individuals into a lower category. From a health assessment perspective, values close to the minimum threshold of the "good" category indicate a vulnerable condition, where small negative changes in behavior may shift individuals into a lower category. Therefore, maintaining consistency across all lifestyle dimensions becomes essential.

A multidimensional perspective is essential in understanding healthy lifestyle behavior. A systematic review by Dehghani et al. (2024) identified that valid and reliable healthy lifestyle assessment instruments generally adopt a multidimensional approach, including diet, physical activity, sleep, and other health behaviors. This study adopts a similar approach by integrating four key dimensions of a healthy lifestyle. This finding supports the theoretical framework of Health-Related Physical Fitness, which emphasizes that health outcomes are determined by the interaction of multiple behavioral components rather than a single dominant factor. Imbalance in one dimension, such as sleep, may influence overall health status despite adequate performance in other areas.

A detailed analysis of each dimension revealed that sleep patterns had the lowest achievement compared to other dimensions. This finding warrants particular attention given the critical role of sleep in maintaining both physical and psychological health. The lower achievement in sleep patterns reflects a common issue among university students, where irregular sleep schedules and insufficient sleep duration are prevalent. Poor sleep quality has been associated with decreased cognitive performance, reduced physical recovery, and increased stress levels, which may ultimately affect both academic and physical performance. These results are consistent with global findings reported by Gardani et al. (2022), who identified a significant relationship between poor sleep quality and stress levels among university students. Their meta-analysis demonstrated that sleep problems are a widespread phenomenon across different countries and academic contexts. In addition, factors such as technology use before bedtime, academic workload, and social lifestyle changes have been identified as key contributors to poor sleep quality among students. Therefore, sleep should be considered a priority dimension in student health interventions, as improvements in sleep quality may have a cascading positive effect on other lifestyle components, including physical activity and mental well-being.

In terms of contribution, this study offers a more comprehensive perspective by integrating multiple lifestyle dimensions within a single analysis. Unlike previous studies that tend to examine lifestyle components separately, this study provides an integrated analysis of multiple lifestyle dimensions within a specific cohort, allowing for the identification of imbalance patterns that are often overlooked in broader assessments.

Furthermore, the findings of this study provide baseline data that can be used to support the development of targeted health promotion programs in the university setting. A holistic approach is needed, involving not only individual awareness but also institutional support, such as campus-based wellness programs, structured physical activity initiatives, and education on sleep and nutrition management.

Research Limitations

This study has several limitations that should be considered when interpreting the findings. First, the use of a cross-sectional design limits the ability to establish causal relationships between lifestyle behaviors and health outcomes. The results only reflect conditions at a single point in time and do not capture potential changes in lifestyle patterns over longer periods.

Second, the data were collected using a self-report questionnaire, which may introduce response bias, including social desirability bias and inaccuracies in participants' perceptions of their own behaviors. Although the instrument was designed to measure multiple dimensions of a healthy lifestyle, subjective reporting remains a limitation in behavioral research.

Third, the relatively small sample size (n = 38) and the focus on a single cohort limit the generalizability of the findings. The results may not fully represent the broader population of Physical Education students in different institutions or cultural contexts.

Fourth, this study did not control for potential confounding variables such as socioeconomic status, living conditions, academic workload, and psychological factors, which may influence lifestyle behaviors. The absence of these variables may affect the comprehensiveness of the analysis.

Despite these limitations, this study provides an important preliminary overview of healthy lifestyle patterns among Physical Education students and serves as a basis for further research with more robust methodological designs.

Directions for Future Research

Future research is recommended to expand and strengthen the findings of this study through several approaches. First, longitudinal study designs are needed to examine changes in healthy lifestyle behaviors over time and to better understand causal relationships between lifestyle dimensions and health outcomes among university students.

Second, future studies should involve larger and more diverse samples across different universities and regions to enhance the generalizability of the findings. Comparative studies between cohorts, academic disciplines, or institutional settings may provide deeper insights into contextual factors influencing student lifestyle behaviors.

Third, further research is encouraged to incorporate additional variables such as socioeconomic status, academic workload, psychological well-being, and environmental factors, which may act as important determinants of healthy lifestyle patterns. Including these variables would allow for a more comprehensive and multivariate analysis.

Fourth, the use of mixed-methods approaches combining quantitative and qualitative data is recommended to gain a deeper understanding of students' lifestyle behaviors. Qualitative

insights, such as interviews or focus group discussions, may help explain the underlying reasons behind behavioral patterns identified in quantitative findings.

Finally, intervention-based studies are strongly recommended to test the effectiveness of targeted programs, particularly those focusing on improving sleep patterns, which were identified as the most critical dimension in this study. Experimental or quasi-experimental designs can provide stronger evidence regarding the impact of structured health promotion programs in the university setting

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5. Conclusions

This study concludes that although Physical Education students generally demonstrate a good level of healthy lifestyle behavior, the consistency of its implementation across different dimensions remains uneven. In particular, sleep patterns emerged as the most critical aspect requiring attention, indicating that students' lifestyle behaviors are not yet fully balanced.

These findings highlight that university students are in a transitional phase that makes them vulnerable to fluctuations in lifestyle quality. Therefore, maintaining a healthy lifestyle requires not only individual awareness but also consistent behavioral practice across multiple dimensions.

This study contributes by providing a multidimensional perspective on student lifestyle behavior and identifying specific areas that require priority intervention. The findings offer practical implications for the development of integrated health promotion programs within the university environment, emphasizing the importance of a holistic and sustainable approach to student well-being.

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Conflict of Interest

The authors declare no conflict of interest.

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