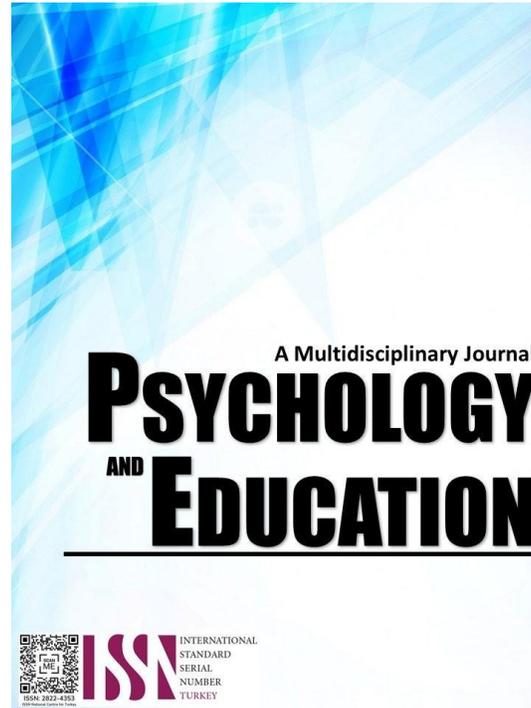


PHYSICAL ACTIVITY, SEDENTARY LIFESTYLE, AND ACADEMIC PERFORMANCE OF COLLEGE PHYSICAL EDUCATION STUDENTS



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 49

Issue 10

Pages: 1206-1229

Document ID: 2025PEMJ4828

DOI: 10.70838/pemj.491002

Manuscript Accepted: 11-28-25

Physical Activity, Sedentary Lifestyle, and Academic Performance of College Physical Education Students

Eric Anthony T. Beciete Jr.,* Jaffy Glenn D. Guillena
For affiliations and correspondence, see the last page.

Abstract

This study explored the relationship between physical activity, sedentary lifestyle, and academic performance among first-year college students enrolled in Physical Education courses at Liceo de Cagayan University during the second semester of the 2024–2025 academic year. Guided by the Activation Theory, Health Belief Model, and Ecological Model of Health Behavior, the research aimed to determine the participants' engagement in physical activity across work, travel, and recreation; their sedentary habits in various domains; and how these behaviors relate to academic performance. A predictive correlational research design was employed involving 306 students. Data were gathered using structured questionnaires and analyzed using descriptive statistics, Pearson's correlation, and multiple regression. The findings showed that although students engaged in moderate levels of physical activity, sedentary behavior was widespread, especially during schoolwork. Both physical activity and a sedentary lifestyle were significantly correlated with academic performance. Notably, recreational physical activity positively predicted academic success, whereas leisure-time sedentary behaviors negatively influenced academic success. The findings emphasize the need to promote balanced routines that reduce sedentary behavior and enhance active behaviors. The study provides critical insights for educators and administrators in developing wellness-centered curricula and support systems that align physical health with academic achievement.

Keywords: *academic performance, college students, physical activity, physical education, sedentary lifestyle*

Introduction

In an era when academic achievement often overshadowed physical well-being, the question arose: Could students truly excel in the classroom while neglecting their physical well-being? The connection between academic achievement and physical education (PE) has become a crucial topic worldwide, especially as students increasingly struggle to balance their academic obligations with their physical well-being. At a higher education institution, this phenomenon was apparent among higher-level physical education students. Despite a curriculum that emphasized movement, fitness, and physical training, many students struggled to maintain consistent physical activity due to academic pressures and personal lifestyle habits. These challenges raised concerns regarding the potential impact of sedentary behaviors on academic performance. Consistent with global patterns, this localized issue underscores the importance of understanding how physical activity—or its absence—affects academic success, particularly for students whose field of study is inherently linked to physical performance (Dyer et al., 2017; Alvarez-Bueno et al., 2017).

McPherson et al. (2018) reported that numerous studies across regions have demonstrated that physical activity is strongly associated with cognitive development, mental well-being, and enhanced academic outcomes. However, despite this established correlation, many educational systems have struggled to incorporate adequate physical activity into their curricula. As a result, students' sedentary behavior increased. This issue was particularly noticeable in higher education institutions, where academic burdens often lead to reduced physical activity, endangering both academic performance and physical well-being (Teuber et al., 2024). Students enrolled in physical education programs were not exempt from these trends. Although these students studied courses directly connected to physical health and fitness, they frequently engaged in sedentary behavior, particularly during academic assignments that required extended periods of sitting or substantial screen time. As a result, a contradiction emerged: students trained to promote physical exercise may engage in lower levels of physical activity when scholastic needs take precedence.

Furthermore, physical activity has been related to improved physical and mental well-being. Studies highlighted how it enhanced cardiovascular fitness, strengthened muscles, and supported overall well-being (Mahindru et al., 2023). Interestingly, research has also examined its effects on academic performance, especially among students engaged in higher levels of physical education. While the health benefits of exercise were well documented, its academic benefits remained less explored, particularly when weighed against sedentary behaviors. This knowledge gap raised important questions, as inactivity among young people is becoming a global concern.

Furthermore, Sedentary lifestyles contributed to serious health issues such as obesity, heart problems, and even mental health challenges. However, growing evidence pointed to the academic potential of physical activity (Park et al., 2020). School-based programs, including physical education classes, have been shown to positively influence cognitive skills, learning-related behaviors, and academic outcomes (Donnelly et al., 2016). These findings suggested that integrating more movement into students' daily routines could yield both health and academic rewards.

There is also a significant research gap regarding higher education students enrolled in physical education programs. While several studies have confirmed the association between physical exercise and academic achievement in the general student population, fewer have examined this relationship among physical education students. Thus, more research was required to investigate the specific

problems faced by these individuals, who had to excel both academically and physically. To address these issues, this study examined the relationships among physical activity, sedentary behavior, and academic performance among higher-level physical education students.

The study sought to identify patterns of physical activity and sedentary living, assess the impact of these behaviors on academic outcomes, and offer solutions to improve both physical fitness and academic achievement. By addressing this gap in the literature, this study sought to provide valuable insights that could inform educational practices and contribute to a more holistic approach to student development.

Research Questions

This research delved into how physical activity levels and sedentary behaviors influence the academic success of students enrolled in physical education programs at higher education institutions. It aimed to examine the relationship between different degrees of physical engagement—whether students are actively participating or leading more inactive, seated lifestyles—and their impact on grades. Specifically, it aimed to answer the following questions:

1. What is the participants' level of physical activity engagement across the following dimensions:
 - 1.1. work;
 - 1.2. travel from places; and
 - 1.3. recreational activities?
2. What is the participants' level of Sedentary Lifestyle in the following dimensions:
 - 2.1. work-related sedentary lifestyle;
 - 2.2. leisure-time sedentary lifestyle;
 - 2.3. household sedentary lifestyle; and
 - 2.4. transportation-related sedentary lifestyle?
3. What is the academic performance level of the participants in physical education?
4. Is there a significant relationship between participants' academic performance and:
 - 4.1. level of physical activity engagement; and
 - 4.2. sedentary lifestyle?
5. Which among the variables, singly or in combination, significantly predicts the participants' academic performance in Physical Education?

Methodology

Research Design

The predictive-correlational research design was used to examine relationships between two or more variables and to predict future outcomes based on these relationships. Ghanad (2023) theorized that, unlike purely descriptive research, which only identified whether variables were related, this design assessed the direction and strength of those associations. It aimed to determine whether changes in one variable can predict changes in another, making it a valuable approach for understanding trends and making informed forecasts about the studied phenomenon (Hamaker et al., 2020).

This approach was particularly suitable for the study because it enabled an in-depth analysis of how physical activity levels and sedentary behaviors might have influenced academic achievement. By focusing on prediction, the design helped to uncover whether increased physical activity correlates with better performance or if extended periods of inactivity are linked to lower academic success in physical education courses.

Lastly, the non-experimental nature of the predictive-correlational design aligned well with the educational setting, where manipulating variables such as physical activity and academic outcomes is impractical. Instead, the study observed naturally occurring behaviors and outcomes, enabling a realistic examination of how students' lifestyle choices affect their academic performance. This made the design an effective tool for gaining insights into the complex factors that influenced success in higher education.

Respondents

The study participants were first-year students taking the Physical Education 2 course at Liceo de Cagayan University. The sample size of 306 was determined using the Cochran sample size formula, based on a total population of 1478. To ensure a representative sample, the participants were selected through a proportionate stratified random sampling.

Using proportionate stratified random sampling ensured that all subgroups within a study were fairly represented. This minimized bias and strengthened the study's reliability, ultimately supporting the validity of its findings. The structured approach reflected a rigorous methodology, leading to conclusions that were not only precise but also broadly applicable.

Instrument

The researcher employed two primary instruments to gather data on students' physical activity levels and sedentary behaviors. The first

tool used is the Global Physical Activity Questionnaire (GPAQ), developed by the World Health Organization in 2021. This instrument measures physical activity in three categories: work-related activity, travel-related activity (e.g., walking or cycling), and recreational physical activity. Furthermore, the GPAQ records information about the intensity of these activities—whether moderate or vigorous—as well as their duration, providing a complete picture of students' overall physical activity levels.

The second portion of the study, which looks at sedentary lifestyle practices, will use a questionnaire adapted from Rosenberg et al. (2015). This test is specifically designed to assess sedentary behavior by measuring how much time students spend sitting or lying down during their waking hours when not engaged in physical activity. Sedentary behaviors include watching television, researching, and using electronic devices, all of which contribute to a sedentary lifestyle with little physical movement. By combining these two instruments, the study aims to establish robust relationships among students' physical activity levels, sedentary behavior, and academic achievement in Physical Education classes.

Procedure

Before beginning data collection, the researcher carefully prepared the necessary tools. This preparation included creating the survey questionnaire and conducting both validity and reliability testing, with pilot testing as a key component. Once these steps were completed, the researcher submitted the manuscript to the Institutional Review Ethics Board (IREB) for approval. Upon receiving the REB approval certificate, the researcher presented an official letter to the principal, outlining the study's objectives and the planned data collection process. Once the dean approved and signed the letter, a preliminary survey was conducted to determine the total college student population. Using Cochran's formula and proportionate stratified random sampling, the researcher determined the target sample size.

The exclusion criteria stipulated that students not enrolled in Physical Education 1 or who had not completed at least one semester at the institution were excluded. Withdrawal criteria were established to uphold participant autonomy, permitting voluntary withdrawal while ensuring that data from these individuals were managed with stringent confidentiality. Confidentiality was maintained by anonymizing data, employing secure storage systems, and restricting access, thereby ensuring that participant information was utilized solely for academic purposes. Instructors collaborated to enlist participants during their Physical Education 1 class to guarantee accessibility. Prior to data collection, relevant participants were informed of the study's objectives and methodology, with emphasis on the voluntary nature of their participation. The risks to participants were minor, and they could delete any questions they were uncomfortable answering.

The study also examined community dynamics by ensuring that the research process did not interfere with the participants' academic schedules. Plans for dissemination were established to communicate findings to academic and institutional stakeholders responsibly. Findings were disseminated through academic journals, conferences, and institutional reports to enhance educational policy and practice. The next step involved coordinating with the dean to schedule the data collection. With the schedule finalized, the researcher began data collection. Participants completed the survey questionnaire in approximately 15 to 30 minutes. Finally, after all the surveys were completed, the researcher will deliver the collected data to a statistician for analysis and interpretation.

Data Analysis

To treat the data, the researcher used the following statistical tools:

For the first three research questions, the study utilized descriptive statistics, including the mean and standard deviation. These measures helped summarize and illustrate the levels of physical activity, sedentary behaviors, and students' performance in Physical Education (PE). To address the fourth problem, the Pearson Product-Moment Correlation was applied. This statistical tool assessed the degree and direction of the relationship among the different variables being studied. When assessing the direction and strength of linear relationships between continuous variables, this approach worked exceptionally well (Mukaka, 2016). The analysis assessed the significance of the relationship between the variables by computing the correlation coefficient (r), which provided important insights into their interdependence.

For the final research question, multiple regression analysis was employed. This method aimed to identify which variables were the most effective predictors of students' academic performance in PE. Multiple regression was a valuable tool for examining academic performance because it is frequently used in educational research to ascertain the impact of several independent variables on a dependent variable (Tabachnick & Fidell, 2019). This method enabled a thorough understanding of how different elements interacted to affect student outcomes.

Results and Discussion

This section discusses the results and their interpretations concerning the problem statement of this investigation.

Problem 1. What is the participants' level of physical activity engagement across the following dimensions: work, travel from places, and recreational activities?

Table 1 presents the mean and standard deviation for the level of physical activity engagement at work. The data showed that the



participants obtained the highest mean of $M=4.33$ ($SD=.802$) for indicator number 8 “My instructors encourage regular participation in physical activities” followed by indicator number 13 “My physical education program incorporates group activities that require teamwork” ($M=4.25$, $SD=.821$), and indicator number 1 “My physical education classes involve frequent physical movement” ($M=4.21$, $SD=.851$).

The findings suggest that instructor support and collaborative activities are significant motivators for participants' engagement in physical activity. The highest mean score for the indicator of instructor encouragement suggests that when educators actively promote participation, students are more likely to engage. The high ratings for the physical education program's group-oriented and movement-intensive components further support this claim. These findings highlight the importance of both motivational teaching strategies and structured physical activity formats in encouraging consistent student participation.

Table 1. Results of Mean and Standard Deviation for the Level of Physical Activity Engagement in terms of Work

Indicators	Mean	SD	Description	Interpretation
1. My physical education classes involve frequent physical movement.	4.21	.851	Agree	Frequently Engaged
2. I often participate in hands-on training that requires physical effort.	3.86	.890	Agree	Frequently Engaged
3. My coursework includes both physical and theoretical activities.	4.02	.913	Agree	Frequently Engaged
4. I can balance the physical demands of my program with my academic workload.	3.84	.860	Agree	Frequently Engaged
5. My program encourages me to stay active outside of class.	3.97	.877	Agree	Frequently Engaged
6. I regularly practice new physical techniques taught in my classes.	3.70	.937	Agree	Frequently Engaged
7. I am physically challenged during my physical education sessions.	3.95	.869	Agree	Frequently Engaged
8. My instructors encourage regular participation in physical activities.	4.33	.802	Agree	Frequently Engaged
9. I perform exercises and drills as part of my physical education training.	3.97	.904	Agree	Frequently Engaged
10. My program includes activities that help me improve endurance and strength.	4.11	.862	Agree	Frequently Engaged
11. I can effectively manage physical fatigue from my physical education classes.	3.82	.912	Agree	Frequently Engaged
12. I am physically prepared for the challenges of my coursework.	3.86	.895	Agree	Frequently Engaged
13. My physical education program incorporates group activities that require teamwork.	4.25	.821	Agree	Frequently Engaged
14. I am energized after completing my physical activities in class.	3.98	.872	Agree	Frequently Engaged
15. My program helps me develop habits to maintain physical fitness over time.	4.03	.852	Agree	Frequently Engaged
Over-all Mean	3.99	.673	Agree	Frequently Engaged

Legend: 5 (4.50–5.00) Strongly Agree – Fully Engaged; 4 (3.50–4.49) Agree – Frequently Engaged; 3 (2.50–3.49) Moderately Agree – Moderately Engaged; 2 (1.50–2.49) Disagree – Rarely Engaged; 1 (1.00–1.49) Strongly Disagree – Not Engaged

On the other hand, participants obtained the lowest mean of $M=3.70$ ($SD=.937$) for indicator number 6 “I regularly practice new physical techniques taught in my classes” followed by indicator number 11 “I can effectively manage physical fatigue from my physical education classes” ($M=3.82$, $SD=.912$), and indicator number 4 “I can balance the physical demands of my program with my academic workload” ($M=3.84$, $SD=.86$).

The lower mean scores suggest potential issues with students' physical education experience, particularly in skill retention, fatigue management, and balancing academic and physical demands. The lowest score for practicing new physical techniques indicates that students may have difficulty applying or revisiting what they have learned, possibly due to time constraints or a lack of reinforcement. Similarly, the low ratings for managing fatigue and balancing workloads highlight the difficulties in maintaining physical activity without jeopardizing academic performance. These findings highlight the need for more integrated support systems and strategies to help students develop both physical and time-management skills.

The overall mean is $M=3.99$ ($SD=.673$), indicating agreement, and suggests that participants have frequently engaged in physical activity at work. Meanwhile, the overall mean for $SD = .673$ indicated that the data were widely dispersed around the mean. This indicates that, although the majority of participants engage in work-related physical exercise regularly, the data's apparent range suggests that engagement levels vary by individual.

This variability may suggest varying levels of motivation, accessibility, or personal capacity to participate in physical tasks, underscoring the potential need for more inclusive and adaptive physical activity programs to ensure broader and more consistent participation.

This finding corroborates Munna and Kalam's (2021) assertion that student engagement in physical activities is profoundly affected by



supportive instructional methodologies, organized opportunities for collaboration, and the ability to balance academic and physical responsibilities. Suguís and Belleza (2022) also indicate that disparities in participation frequently stem from variations in student motivation, time management abilities, and the perceived significance of physical activities in relation to their overarching academic objectives.

Table 2 presents the mean and standard deviation for the level of physical activity engagement in terms of travel from places. The data showed that the participants obtained the highest mean of $M=4.13$ ($SD=.897$) for indicator number 3 “I walk between buildings on campus for classes or activities” followed by indicator number 12 “I feel that walking or biking to college helps me stay physically active” ($M=3.92$, $SD=.911$), and indicator number 4 “My travel routines contribute to my overall fitness level” ($M=3.91$, $SD=.914$).

The findings indicate that active travel, such as walking between campus buildings or commuting by foot or bicycle, plays an important role in maintaining participants' physical activity levels. The high mean scores indicate that these daily travel routines are not only familiar but also valued by students as important contributors to their overall fitness. This emphasizes the importance of promoting active transportation on campus as a practical and accessible way to improve student health and physical activity.

Table 2. Results of Mean and Standard Deviation for the Level of Physical Activity Engagement in terms of Travel from Places

Indicators	Mean	SD	Description	Interpretation
1. I include physical activity as part of my commute to and from campus.	3.79	.979	Agree	Frequently Engaged
2. I prefer taking stairs over elevators on campus.	3.61	1.10	Agree	Frequently Engaged
3. I walk between buildings on campus for classes or activities.	4.13	.897	Agree	Frequently Engaged
4. My travel routines contribute to my overall fitness level.	3.91	.914	Agree	Frequently Engaged
5. I feel comfortable using active transportation methods around my college.	3.77	.956	Agree	Frequently Engaged
6. I choose walking routes that involve physical exertion (e.g., hills, stairs).	3.74	.985	Agree	Frequently Engaged
7. My commute provides opportunities for additional physical activity.	3.74	.991	Agree	Frequently Engaged
8. I find ways to integrate short physical activities during my daily travel.	3.81	.871	Agree	Frequently Engaged
9. I enjoy walking or biking with friends to college events or classes.	3.88	1.00	Agree	Frequently Engaged
10. I intentionally park farther away to increase my walking distance.	3.09	1.25	Moderately Agree	Moderately Engaged
11. My daily travel habits align with my fitness goals.	3.58	.962	Agree	Frequently Engaged
12. I feel that walking or biking to college helps me stay physically active.	3.92	.911	Agree	Frequently Engaged
13. I enjoy the time spent walking or cycling to and from campus.	3.80	1.05	Agree	Frequently Engaged
Over-all Mean	3.75	.741	Agree	Frequently Engaged

Legend: 5 (4.50–5.00) Strongly Agree – Fully Engaged; 4 (3.50–4.49) Agree – Frequently Engaged; 3 (2.50–3.49) Moderately Agree – Moderately Engaged; 2 (1.50–2.49) Disagree – Rarely Engaged; 1 (1.00–1.49) Strongly Disagree – Not Engaged

On the other hand, participants obtained the lowest mean of $M=3.09$ ($SD=1.25$) for indicator number 10 “I intentionally park farther away to increase my walking distance”, followed by indicator number 11 “My daily travel habits align with my fitness goals” ($M=3.58$, $SD=.962$), and indicator number 2 “I prefer taking stairs over elevators on campus) ($M=3.61$, $SD=1.01$).

The lower average scores for these variables indicate that many middle-class students walk instead of driving their own cars because of cost, not being able to afford a car, or the ease of walking on campus. Because of this, people are less likely to do things that automobile owners do, such as park farther away. For many kids, walking is the default and most practical way to get around, so physical activity is a standard component of their everyday lives.

Sallis et al. (2016) highlight that socioeconomic factors significantly influence transportation choices, noting that middle-income students often favor walking or public transit over private vehicles due to cost and accessibility. Bauman et al. (2019) assert that walking is the most common form of physical activity globally, especially among people with limited access to automobiles.

Molina-García, Castillo, and Queralt (2015) found that students with less access to private cars were much more likely to walk or bike to school or university. Kärmeniemi et al. (2018) also support this, stating that socioeconomic status has a strong effect on the amount of physical activity people engage in while traveling. People with lower incomes and middle-class people do more physical activity because they have to, not because they want to.

Lastly, Yang et al. (2021) highlight that campuses with pedestrian-based layouts naturally promote walking as the primary mode of travel, lessening dependence on automobiles and increasing incidental physical activity. This is in line with the current findings, which show that walking between campus buildings yielded the highest mean score. A relatively low mean score on car-use indicators reflects the fact that walking is the default mode of getting around for many middle-class students. They do not have to "add" walking by



parking farther away; their socioeconomic environment and campus layout already condition active travel as a regular part of daily life. The overall mean is $M=3.75$ ($SD=.741$), indicating agreement, and suggests that participants have frequently engaged in physical activity in terms of travel. Meanwhile, the overall mean for $SD = .741$ indicated that the data were widely dispersed around the mean. This suggests that participants typically maintain their physical health by engaging in travel-related physical activities, such as biking or walking. The comparatively high standard deviation, however, suggests a noticeable difference in the frequency with which people engage in these activities. This implies that although active travel is widespread, it may not be the same for all students; some may depend heavily on it, while others may not. Teuber et al. (2024) corroborate these findings, claiming that incorporating physical activity into everyday activities, such as commuting, greatly increases overall activity levels. However, the extent of engagement frequently varies depending on environmental design, individual motivation, and the availability of active travel options.

Table 3 presents the mean and standard deviation for the level of physical activity engagement in recreational activities. The data showed that the participants obtained the highest mean of $M=3.85$ ($SD=.875$) for indicator number 9 “My recreational activities help me relieve academic stress” followed by indicator number 10 “I feel more connected to my peers through shared physical activities” ($M=3.83$, $SD=.866$), and indicator number 13 “My recreational habits contribute to my overall physical and mental well-being” ($M=3.79$, $SD=.944$).

Table 3. Results of Mean and Standard Deviation for the Level of Physical Activity Engagement in terms of Recreational Activities

Indicators	Mean	SD	Description	Interpretation
1. I regularly participate in recreational sports or activities on campus.	3.56	1.03	Agree	Frequently Engaged
2. I enjoy joining college intramural sports or fitness groups.	3.65	1.08	Agree	Frequently Engaged
3. I make time for outdoor physical activities like running or hiking.	3.79	1.00	Agree	Frequently Engaged
4. I enjoy using the college gym or fitness facilities in my free time.	3.16	1.26	Moderately Agree	Moderately Engaged
5. I set fitness goals for myself outside of my academic requirements.	3.66	.982	Agree	Frequently Engaged
6. I feel motivated to try new recreational activities offered by my college.	3.72	.934	Agree	Frequently Engaged
7. I participate in group fitness classes or recreational clubs.	3.50	1.08	Agree	Frequently Engaged
8. I enjoy active social events organized by my peers or college groups.	3.73	.964	Agree	Frequently Engaged
9. My recreational activities help me relieve academic stress.	3.85	.875	Agree	Frequently Engaged
10. I feel more connected to my peers through shared physical activities.	3.83	.866	Agree	Frequently Engaged
11. I enjoy recreational activities that challenge my physical abilities.	3.75	.991	Agree	Frequently Engaged
12. I feel satisfied with the variety of recreational opportunities available on campus.	3.71	.952	Agree	Frequently Engaged
13. My recreational habits contribute to my overall physical and mental well-being.	3.79	.944	Agree	Frequently Engaged
14. I prioritize recreational physical activities as part of my college experience.	3.72	.978		
Over-all Mean	3.67	.814	Agree	Frequently Engaged

Legend: 5 (4.50–5.00) Strongly Agree – Fully Engaged; 4 (3.50–4.49) Agree – Frequently Engaged; 3 (2.50–3.49) Moderately Agree – Moderately Engaged; 2 (1.50–2.49) Disagree – Rarely Engaged; 1 (1.00–1.49) Strongly Disagree – Not Engaged

The results show that students' mental health, social connections, and general well-being are significantly supported by recreational physical activities. The fact that stress relief received the highest mean score indicates that students see these activities as a useful way to cope with the demands of their studies.

Likewise, there is broad consensus regarding the benefits of recreation for both physical and mental health as well as for fostering a sense of community through shared activities. This implies that in order to foster emotional resilience and a sense of community, educational institutions should prioritize inclusive, easily available recreational programs as part of their student support services.

On the other hand, participants obtained the lowest mean of $M=3.16$ ($SD=1.26$) for indicator number 4 “I enjoy using the college gym or fitness facilities in my free time” followed by indicator number 7 “I participate in group fitness classes or recreational clubs” ($M=3.50$, $SD=1.08$), and indicator number 1 “I regularly participate in recreational sports or activities on campus” ($M=3.56$, $SD=1.03$).

The lower mean scores imply that this can be explained by the deficiency of proper fitness centers in the school gym. When the gym areas are insufficiently equipped or endowed with fewer resources, the students tend to view these areas as less inviting or less functional, thereby lowering their incentives for getting engaged in formal fitness exercise. Rather, they will resort to informal or unstructured forms of recreation like walking, outdoor play, or peer-organized activities with lower resource requirements. This



understanding is consistent with similar research. Downes (2015) noted that convenience and accessibility of proper exercise machinery are key factors in motivating students to participate in gym-based physical activity.

Likewise, Marmol and Vásquez (2017) noted that universities with poorly developed recreational facilities have lower enrollment in gyms compared to institutions with up-to-date, well-conditioned facilities. More recent research by Niu et al. (2025) highlighted that campus facilities—such as the quality and diversity of the fitness centers—straightforwardly foretells the continuous engagement of students in physical activities. Additionally, Regidor et al. (2022) asserted that without institutional investment in accessible fitness spaces, students are less likely to engage in organized programs, even when they are aware of the importance of recreation for health and stress relief.

Briefly, the low gym usage mean indicates not lack of awareness or interest but structural constraint: the school gym lacks sufficient fitness facilities to fulfill students' demands. Increasing equipment diversity, space layout, and program accessibility would likely boost participation levels and benefit students' physical and mental health is due to the absence of proper fitness equipment in the school gym. Where gym areas are inadequately equipped or resource-scarce, students will experience these areas as less attractive or less valuable and are thus discouraged from engaging in formal fitness activity. They will instead opt for informal or unprogrammed leisure activity such as walking, outdoor play, or unstructured peer activity that is lower in resources.

More contemporary evidence by Niu et al. (2025) confirms that campus facilities—be it the quality and diversity of fitness centers—serve as a direct predictor for students' regular enrollment in physical activity. Again, Regidor et al. (2022) highlighted that unless there is adequate institutional investment in accessible fitness spaces, students tend to remain less inclined to engage in formal programs even if they acknowledge the health and stress benefits associated with recreation. Briefly, the low mean for gym use indicates not a lack of interest or awareness, but one of structural constraint: the school gym lacks sufficient fitness facilities to service the needs of students. Increasing equipment diversity, space planning, and access to programs would most likely boost participation levels and assist students with physical and mental health although students are aware of the advantages of leisure activities, they still participate in structured or facility-based options like going to the gym, taking fitness classes, or playing sports on campus at a relatively low rate.

Barriers like lack of interest, perceived intimidation, time constraints, or restricted accessibility may be the cause of this disparity. These results suggest that more inclusive and engaging recreational opportunities are required, as well as focused strategies to promote increased student participation in structured physical education classes.

The over-all mean is $M=3.67$ ($SD=.814$), described as agree and interpreted that the participants have frequently engaged in physical activity in terms of recreational activities. Meanwhile, the overall mean for $SD = .814$ indicated that the data were widely dispersed around the mean. This suggests a positive trend in the use of leisure time for health and well-being, as participants typically participate in recreational physical activities. An extensive range in individual engagement levels, however, is suggested by the comparatively high standard deviation. Some students may be very active, while others participate sparingly. This emphasizes the importance of recognizing and removing obstacles to regular recreational participation.

Regidor et al. (2022) corroborate these findings by stressing that although students frequently acknowledge the importance of recreational activities for social interaction and stress relief, their actual participation is impacted by accessibility, motivation, and individual schedules, factors that educational institutions must take into account when creating wellness programs that work.

Gray and Diloreto (2016) assert that student participation in recreational activities is influenced by institutional support, peer motivation, and perceived academic demands, indicating that fostering a balanced environment is crucial. Niu et al. (2025) contend that social support and campus infrastructure are significant predictors of consistent physical activity participation among university students. Harold and Cook (2016) emphasize the importance of customized wellness programs that accommodate students' varied schedules and preferences to foster ongoing participation in health-promoting activities.

Table 4. Summary of Results of Mean and Standard Deviation for the Level of Physical Activity Engagement

Sub-variables	Mean	SD	Description	Interpretation
Work	3.99	.673	Agree	Frequently Engaged
travel from places	3.75	.741	Agree	Frequently Engaged
recreational activities	3.67	.814	Agree	Frequently Engaged
Over-all Mean	3.81	.645	Agree	Frequently Engaged

Legend: 5 (4.50–5.00) Strongly Agree – Fully Engaged; 4 (3.50–4.49) Agree – Frequently Engaged; 3 (2.50–3.49) Moderately Agree – Moderately Engaged; 2 (1.50–2.49) Disagree – Rarely Engaged; 1 (1.00–1.49) Strongly Disagree – Not Engaged

Table 4 presents a summary of the results for the mean and standard deviation of physical activity engagement across different sub-variables. The data showed that participants obtained the highest mean ($M=3.99$, $SD=.673$) for work, followed by travel from places ($M=3.75$, $SD=.741$), and lastly, recreational activities ($M=3.67$, $SD=.814$). This suggests that physical activity is more commonly integrated into routine tasks, such as occupational responsibilities and commuting, rather than pursued intentionally through leisure or recreational activities. The relatively lower engagement in recreational activities, despite still falling under the "Frequently Engaged" category, may highlight a need to promote greater awareness and opportunities for structured leisure-based physical activity. Encouraging individuals to participate in recreational exercises could not only help diversify their activity patterns but also support holistic health, stress management, and overall well-being.



Moreover, the overall mean of 3.81 further reinforces the notion that, while participants are generally physically active, their engagement leans heavily toward functional rather than voluntary or planned activity. Meanwhile, the overall mean for SD = .645 indicated that the data were dispersed mainly around the mean.

The overall mean suggests that participants agree on the frequency of their physical activity, indicating that they lead a relatively active lifestyle. However, the standard deviation varies significantly between individuals, implying that while some college students are highly active, possibly due to participation in sports, structured fitness routines, or active commuting. Others may be less engaged, perhaps due to academic pressures, sedentary habits, or limited access to recreational resources. These findings support Macali et al.'s (2025) claim that patterns of physical activity frequently vary due to differences in personal motivation, lifestyle demands, and access to supportive environments.

Macali et al. (2025) observed that while work-related and incidental physical activities are common, consistent participation in structured or recreational physical activity necessitates more deliberate effort and supportive infrastructure, such as community programs and accessible facilities.

Problem 2. What is the participants' level of Sedentary Lifestyle in the following dimensions: Work-related sedentary lifestyle; Leisure-time sedentary lifestyle; Household sedentary lifestyle; and transportation-related sedentary lifestyle?

A work-related sedentary lifestyle was assessed using self-reported indicators of the frequency and duration of sitting or physically inactive behaviors during academic tasks, such as attending lectures, studying, completing assignments, and using digital devices for coursework.

Table 5 presents the mean and standard deviation for the level of sedentary lifestyle in the work-related sedentary lifestyle. The data showed that the participants obtained the highest mean of M=4.16 (SD=.786) for indicator number 1 "I spend long hours sitting during lectures or classes" followed by indicator number 5 "I complete most of my academic tasks while sitting" (M=4.15, SD=.822), and indicator number 7 "I remain seated while reviewing lecture notes or materials." (M=4.11, SD=.826).

The findings suggest a high prevalence of sedentary behavior among participants, particularly in academic settings. The highest mean scores were associated with prolonged sitting during lectures, completing academic tasks, and reviewing materials, indicating that the majority of academic activities are carried out while seated. This pattern indicates a systemic issue in educational routines that encourages prolonged physical inactivity, potentially increasing the risk of health problems such as poor posture, decreased physical fitness, and long-term metabolic issues if not addressed with adequate movement breaks or ergonomic interventions.

Table 5. Results of Mean and Standard Deviation for the Level of Sedentary Lifestyle in terms of Work-Related Sedentary Lifestyle

Indicators	Mean	SD	Description	Interpretation
1. I spend long hours sitting during lectures or classes.	4.16	.786	Agree	Frequently Sedentary
2. I use a computer or laptop for academic work for extended periods.	4.06	.918	Agree	Frequently Sedentary
3. My study habits involve minimal physical movement.	3.89	.882	Agree	Frequently Sedentary
4. I rarely take breaks to stretch or move while studying.	3.70	1.00	Agree	Frequently Sedentary
5. I complete most of my academic tasks while sitting.	4.15	.822	Agree	Frequently Sedentary
6. I sit for long periods during group study sessions or meetings.	4.04	.855	Agree	Frequently Sedentary
7. I remain seated while reviewing lecture notes or materials.	4.11	.826	Agree	Frequently Sedentary
8. I feel physically inactive during most of my academic activities.	3.91	.879	Agree	Frequently Sedentary
9. My assignments often require sitting for hours at a time.	4.09	.834	Agree	Frequently Sedentary
10. I use a desk or table for studying without standing breaks.	3.95	.934	Agree	Frequently Sedentary
11. I spend more time sitting than standing during the day due to college work.	3.99	.879	Agree	Frequently Sedentary
12. I rely on a sedentary posture for completing online classes or coursework.	3.88	.818	Agree	Frequently Sedentary
13. I rarely walk or move between tasks during academic work.	3.77	.931	Agree	Frequently Sedentary
14. I use mobile devices for educational purposes while sitting for extended periods.	4.16	.817	Agree	Frequently Sedentary
15. My academic responsibilities leave little time for physical activity.	3.98	.856	Agree	Frequently Sedentary
Over-all Mean	3.99	.673	Agree	Frequently Sedentary

Legend: 5 (4.50-5.00) Strongly Agree - Fully Sedentary; 4 (3.50-4.49) Agree - Frequently Sedentary; 3 (2.50-3.49) Moderately Agree - Moderately Sedentary; 2 (1.50-2.49) Disagree - Rarely Sedentary; 1 (1.00-1.49) Strongly Disagree - Not Sedentary

On the other hand, participants obtained the lowest mean of M=3.70 (SD=1.00) for indicator number 4 "I rarely take breaks to stretch or move while studying" followed by indicator number 12 "I rely on a sedentary posture for completing online classes or coursework" (M=3.77, SD=.931), and indicator number 12 "I regularly participate in recreational sports or activities on campus I rely on a sedentary posture for completing online classes or coursework" (M=3.88, SD=.818).

The data indicate that participants exhibited minimal engagement in behaviors that mitigate sedentary habits, such as taking breaks to



stretch or move during study sessions. This trend underscores a pattern of sustained physical inactivity, particularly in educational environments where students frequently remain seated for prolonged durations while engaging in study or online coursework.

Moreover, although involvement in recreational sports or campus activities indicates marginally greater engagement, it still implies the necessity for enhancement in promoting more regular physical activity and breaks. These findings indicate a greater necessity for institutional support and awareness programs that encourage active study practices and mitigate the health risks linked to sedentary behavior among college students. The over-all mean is $M=3.99$ ($SD=.673$) described as agree and interpreted that the participants have frequently sedentary level in terms of work-related sedentary lifestyle.

Meanwhile, the overall mean for $SD=.673$ implied that the data were largely dispersed around the mean. It can be concluded that participants frequently engage in work-related sedentary behavior, such as sitting during academic tasks. The relatively high standard deviation indicates significant variation in participants' sedentary habits, possibly due to schedule differences, academic workload, or personal routines. This finding aligns with Edelman et al.'s (2022) claim that university students frequently spend more than 70% of their academic hours seated, which contributes significantly to sedentary risk profiles.

Similarly, Caromano et al. (2015) found a significant association between prolonged academic sitting and reported physical discomfort and fatigue among tertiary students. Furthermore, Tonne (2021) stated that institutional learning environments often lack infrastructure or policies that promote movement, reinforcing sedentary academic cultures and limiting opportunities for integrating physical activity. Leisure-time sedentary lifestyle was measured using self-reported variables that assessed the extent to which people engage in low-energy, sitting or reclining activities during their free time, such as screen use, sedentary hobbies, and passive social contact.

Table 6 presents the mean and standard deviation for the level of leisure-time sedentary lifestyle. The data showed that the participants obtained the highest mean of $M=4.08$ ($SD=.823$) for indicator number 5 “My relaxation time involves sitting or lying down for extended periods” followed by indicator number 3 “I enjoy spending my leisure time on sedentary hobbies (e.g., reading, gaming)” ($M=3.92$, $SD=.882$), and indicator number 15 “I feel more comfortable relaxing in a sedentary position.” ($M=3.87$, $SD=.887$).

Table 6. Results of Mean and Standard Deviation for the Level of Sedentary Lifestyle in terms of Leisure-Time Sedentary Lifestyle

Indicators	Mean	SD	Description	Interpretation
1. I spend most of my free time watching TV or streaming videos.	3.73	.970	Agree	Frequently Sedentary
2. I use social media or play games on my phone for hours at a time.	3.86	.861	Agree	Frequently Sedentary
3. I enjoy spending my leisure time on sedentary hobbies (e.g., reading, gaming).	3.92	.882	Agree	Frequently Sedentary
4. I often binge-watch shows or movies during my free time.	3.79	.967	Agree	Frequently Sedentary
5. My relaxation time involves sitting or lying down for extended periods.	4.08	.823	Agree	Frequently Sedentary
6. I prefer sedentary activities over physical hobbies during weekends.	3.70	.939	Agree	Frequently Sedentary
7. I rarely engage in active recreational activities with friends.	3.59	.940	Agree	Frequently Sedentary
8. I spend long periods using electronic devices for leisure.	3.78	.866	Agree	Frequently Sedentary
9. I feel physically inactive during most of my leisure time.	3.70	.914	Agree	Frequently Sedentary
10. I sit or lie down when talking with friends or family.	3.76	.935	Agree	Frequently Sedentary
11. My free time rarely includes activities that require physical exertion.	3.69	.906	Agree	Frequently Sedentary
12. I enjoy indoor sedentary hobbies more than outdoor activities.	3.71	.945	Agree	Frequently Sedentary
13. I spend a significant part of my leisure time in front of screens.	3.75	.895	Agree	Frequently Sedentary
14. My social interactions often involve sitting in one place for hours.	3.74	.929	Agree	Frequently Sedentary
15. I feel more comfortable relaxing in a sedentary position.	3.87	.887	Agree	Frequently Sedentary
Over-all Mean	3.78	.702	Agree	Frequently Sedentary

Legend: 5 (4.50–5.00) Strongly Agree – Fully Sedentary; 4 (3.50–4.49) Agree – Frequently Sedentary; 3 (2.50–3.49) Moderately Agree – Moderately Sedentary; 2 (1.50–2.49) Disagree – Rarely Sedentary; 1 (1.00–1.49) Strongly Disagree – Not Sedentary

It implies that participants engage heavily in sedentary behaviors during their leisure time, with the highest mean indicating that the majority of relaxation activities involve sitting or lying down for extended periods.

The preference for sedentary hobbies like reading or gaming, as well as a general comfort with sedentary positions, reflect a lifestyle in which inactivity extends beyond academic or work-related tasks into personal time. This pattern suggests a broader behavioral tendency toward inactivity, which, if sustained over time, may increase the risk of adverse health outcomes, such as cardiovascular disease, obesity, and mental fatigue, due to limited physical activity.

On the other hand, participants obtained the lowest mean of $M=3.59$ ($SD=.940$) for indicator number 7 “I rarely engage in active recreational activities with friends” followed by indicator number 6 “I prefer sedentary activities over physical hobbies during weekends” ($M=3.70$, $SD=.939$), and indicator number 9 “I feel physically inactive during most of my leisure time” ($M=3.70$, $SD=.914$).

The findings indicate a concerning trend of decreased participation in active recreational activities, particularly during leisure time and weekends. The low mean scores indicate that many participants prefer sedentary activities over physically demanding hobbies and frequently feel inactive in their spare time. This pattern could indicate barriers such as a lack of motivation, social opportunities, or access to recreational spaces, all of which may affect their overall physical health. In college students, this behavior may also be linked



to academic fatigue or digital distractions, underscoring the importance of incorporating enjoyable physical activities into social and leisure activities.

The overall mean is $M = 3.78$ ($SD = .702$), indicating agreement and suggesting that participants have a sedentary lifestyle. Meanwhile, the overall mean for $SD = .673$ indicated that the data were widely dispersed around the mean. The overall mean indicates that participants frequently engage in sedentary behaviors during leisure time, suggesting a general tendency toward an inactive lifestyle outside of academic or work-related responsibilities. The standard deviation indicates significant variation in these behaviors, suggesting that while some people are consistently inactive, others exhibit varying sedentary habits.

These findings support Kolhar et al.'s (2021) assertion that the digital nature of modern student life contributes to long periods of inactivity. This is supported by Kumban et al. (2025), who discovered that increased screen time during leisure is associated with lower physical activity among university students. Muñoz-Bullón et al. (2017) found that academic demands and a lack of structured recreational options contribute to sedentary behaviors. Finally, von der Heiden et al. (2019) identified the psychological appeal of passive activities such as streaming and gaming as a major contributor to leisure-time inactivity among young adults.

Sedentary lifestyle in the household was assessed using self-reported indicators measuring the extent of physical inactivity in the home setting, including preferences for sitting or lying down, avoidance of physically demanding tasks, minimal engagement in household chores, and prolonged use of gadgets or screen-based activities at home.

Table 7 presents the Results of the Mean and Standard Deviation for the Level of Sedentary Lifestyle in the household sedentary lifestyle. The data showed that the participants obtained the highest mean of $M=3.79$ ($SD=.952$) for indicator number 1 “I spend most of my time at home sitting or lying down” followed by indicator number 11 “I spend a lot of time sitting during family gatherings or interactions” ($M=3.76$, $SD=.892$), and indicator number 7 “I spend extended periods sitting while working on personal tasks at home” ($M=3.73$, $SD=.912$).

The results show that most of the students who took part in the study led sedentary lifestyles at home, with prolonged sitting or lying down being the most common behavior. This trend is supported by the fact that the mean scores for sitting while interacting with family and doing personal tasks are both very high. These patterns show that people consistently engage in less physical activity across a variety of home settings. This highlights the health risks of prolonged sedentary behavior, such as metabolic disorders and heart problems, and emphasizes the need for targeted interventions that encourage movement at home.

Table 7. Results of Mean and Standard Deviation for the Level of Sedentary Lifestyle in terms of Household Sedentary Lifestyle

Indicators	Mean	SD	Description	Interpretation
1. I spend most of my time at home sitting or lying down.	3.79	.952	Agree	Frequently Sedentary
2. I rarely perform household chores that require physical activity.	3.21	1.18	Moderately Agree	Moderately Sedentary
3. I avoid physically demanding tasks at home whenever possible.	3.10	1.06	Moderately Agree	Moderately Sedentary
4. I prefer resting or sitting during my time at home.	3.66	.941	Agree	Frequently Sedentary
5. My daily routine at home involves minimal movement.	3.55	1.02	Agree	Frequently Sedentary
6. I use devices or gadgets that reduce the need for physical effort at home.	3.60	.980	Agree	Frequently Sedentary
7. I spend extended periods sitting while working on personal tasks at home.	3.73	.912	Agree	Frequently Sedentary
8. I often remain sedentary during weekends or holidays at home.	3.75	.927	Agree	Frequently Sedentary
9. My home activities mostly involve screen time or stationary tasks.	3.65	.949	Agree	Frequently Sedentary
10. I prefer activities like reading or watching TV over household chores.	3.52	.965	Agree	Frequently Sedentary
11. I spend a lot of time sitting during family gatherings or interactions.	3.76	.892	Agree	Frequently Sedentary
12. My household routine does not include any active physical tasks.	3.18	1.16	Moderately Agree	Moderately Sedentary
13. I avoid standing or moving unless absolutely necessary at home.	3.33	1.06	Moderately Agree	Moderately Sedentary
14. My leisure time at home is spent primarily in a seated or lying position.	3.61	.972	Agree	Frequently Sedentary
15. I rarely feel the need to get up and move while at home.	3.44	.994	Moderately Agree	Moderately Sedentary
Over-all Mean	3.52	.783	Agree	Frequently Sedentary

Legend: 5 (4.50–5.00) Strongly Agree – Fully Sedentary; 4 (3.50–4.49) Agree – Frequently Sedentary; 3 (2.50–3.49) Moderately Agree – Moderately Sedentary; 2 (1.50–2.49) Disagree – Rarely Sedentary; 1 (1.00–1.49) Strongly Disagree – Not Sedentary

On the other hand, participants obtained the lowest mean of $M=3.10$ ($SD=1.06$) for indicator number 3 “I avoid physically demanding tasks at home whenever possible” followed by indicator number 12 “My household routine does not include any active physical tasks”



(M=3.18, SD=1.16), and indicator number 2 “I rarely perform household chores that require physical activity” (M=3.21, SD=1.18). Although participants report high levels of sedentary behavior, the lowest mean scores suggest slightly greater variability or greater potential engagement in physically demanding household tasks than in passive activities. Some people may still engage in physical household duties, as evidenced by the comparatively lower agreement with statements such as avoiding physically demanding chores or lacking active routines.

Meanwhile, the overall mean for SD = .783 indicated that the data were widely dispersed around the mean. The overall mean, which is labeled "agree," indicates that participants frequently engage in sedentary behavior at home. The standard deviation indicates a moderate spread in the data, implying variability in individual behaviors.

These findings are consistent with those of Campoamor-Olegario et al. (2025), who emphasized that domestic environments often promote prolonged inactivity due to convenience-driven lifestyles. Similarly, Wells et al. (2023) noted that the rise in digital home entertainment and remote responsibilities has worsened sedentary tendencies, particularly in residential settings where opportunities for physical engagement are limited. Sedentary lifestyle in terms of transportation-related behavior was assessed using self-reported indicators of the extent of physical inactivity during daily commutes, including prolonged sitting, reliance on motorized transport rather than active alternatives, use of elevators or escalators, and limited use of physically exerting travel options such as walking or cycling.

Table 8 presents the Results of the Mean and Standard Deviation for the Level of Sedentary Lifestyle in transportation-related sedentary behavior. The data showed that the participants obtained the highest mean of M=3.83 (SD=1.00) for indicator number 1 “I spend most of my commute sitting in a car or bus” followed by indicator number 12 “I use my phone or other devices during sedentary commutes” (M=3.68, SD=.974), and indicator number 15 “My transportation routine contributes to my sedentary lifestyle” (M=3.64, SD=.94). The results show a strong link between transportation habits and sedentary behavior, with the highest mean indicating that the majority of participants spend their commute sitting in vehicles such as cars or buses. This is worsened by the use of mobile devices during commutes and a general recognition that their transportation habits contribute to sedentary behavior.

Table 8. Results of Mean and Standard Deviation for the Level of Sedentary Lifestyle in terms of Transportation-Related Sedentary Lifestyle

Indicators	Mean	SD	Description	Interpretation
1. I spend most of my commute sitting in a car or bus.	3.83	1.00	Agree	Frequently Sedentary
2. I prefer driving or taking public transport over walking.	3.58	1.00	Agree	Frequently Sedentary
3. My travel to college involves minimal physical activity.	3.60	.983	Agree	Frequently Sedentary
4. I use motorized transport even for short distances.	3.20	1.13	Moderately Agree	Moderately Sedentary
5. I rarely walk or bike as a means of transportation.	3.32	1.07	Moderately Agree	Moderately Sedentary
6. I spend significant time sitting while waiting for transportation.	3.31	1.10	Moderately Agree	Moderately Sedentary
7. My daily commute does not include any physical activity.	3.15	1.14	Moderately Agree	Moderately Sedentary
8. I rely on elevators or escalators instead of stairs during travel.	3.17	1.14	Moderately Agree	Moderately Sedentary
9. I feel physically inactive during my daily commute.	3.24	1.08	Moderately Agree	Moderately Sedentary
10. I rarely choose active transportation options like walking or cycling.	3.33	1.074	Moderately Agree	Moderately Sedentary
11. My transportation habits involve long periods of sitting.	3.50	.999	Agree	Frequently Sedentary
12. I use my phone or other devices during sedentary commutes.	3.68	.974	Agree	Frequently Sedentary
13. My travel choices limit opportunities for physical exertion.	3.52	.962	Agree	Frequently Sedentary
14. I prefer convenience over physical activity when it comes to transportation.	3.61	.968	Agree	Frequently Sedentary
15. My transportation routine contributes to my sedentary lifestyle.	3.64	.940	Agree	Frequently Sedentary
Over-all Mean	3.45	.784	Moderately Agree	Moderately Sedentary

Legend: 5 (4.50–5.00) Strongly Agree – Fully Sedentary; 4 (3.50–4.49) Agree – Frequently Sedentary; 3 (2.50–3.49) Moderately Agree – Moderately Sedentary; 2 (1.50–2.49) Disagree – Rarely Sedentary; 1 (1.00–1.49) Strongly Disagree – Not Sedentary

These patterns highlight how daily mobility, which is frequently perceived as neutral, actually reinforces inactivity, increasing the risk of health problems like obesity, cardiovascular disease, and poor metabolic health. This emphasizes the critical need to promote more active commuting options, such as walking and cycling, as well as incorporating movement breaks into travel schedules.

On the other hand, participants obtained the lowest mean of M=3.15 (SD=1.14) for indicator number 7 “My daily commute does not include any physical activity” followed by indicator number 8 “I rely on elevators or escalators instead of stairs during travel” (M=3.17, SD=1.14), and indicator number 4 “I use motorized transport even for short distances” (M=3.20, SD=1.13). The lowest mean scores in the transportation-related sedentary lifestyle data indicate that participants have a slightly reduced tendency to avoid physical activity altogether during commutes. Although the figures remain moderately high, they suggest that some of them incorporate minor forms of movement into their daily routines, such as occasional walking or stair use.

This creates a subtle yet meaningful window of opportunity to encourage behavior change. Promoting active choices, such as walking short distances or taking the stairs, could significantly reduce overall sedentary time associated with transportation. The overall mean



is $M=3.45$ ($SD=.784$), indicating agreement, and suggests that participants have a moderately sedentary transportation-related lifestyle. Meanwhile, the overall mean for $SD = .784$ indicated that the data were widely dispersed around the mean.

The findings suggest that participants have a moderately sedentary transportation lifestyle. This level indicates regular, prolonged sitting during travel, such as driving or taking the bus, but it also reveals that some students may engage in occasional physical activity.

The standard deviation represents a wide range of responses, indicating varying levels of sedentary behavior among participants. This variation emphasizes the importance of personalized strategies to reduce transportation-related sedentary behavior, including encouraging more active commuting habits where possible.

Several related studies support this finding. Stappers et al. (2018) emphasized that the global increase in motorized transportation use contributes significantly to sedentary lifestyles, particularly in urban areas with limited walkability. Sugiyama et al. (2020) noted that sedentary commuting is strongly associated with total sedentary time and adverse metabolic outcomes, underscoring the importance of addressing transportation-related inactivity.

Meanwhile, Ding et al. (2024) advocated for integrated urban planning that promotes active commuting, such as walking or cycling, to mitigate the health risks associated with transportation-related inactivity. These studies agree that transportation habits play an important role in the sedentary behavior equation and must be addressed through targeted behavioral and environmental strategies.

Table 9 presents the summary of results of the mean and standard deviation for the level of sedentary lifestyle. The data showed that the participants reported the highest mean ($M=3.99$, $SD=.673$) for work-related sedentary lifestyle, followed by leisure-time sedentary lifestyle ($M=3.78$, $SD=.702$), household sedentary lifestyle ($M=3.52$, $SD=.783$), and transportation-related sedentary lifestyle ($M=3.45$, $SD=.784$). These findings indicate that, while all domains have high levels of sedentary behavior, work-related and leisure-time activities are the most significant drivers.

The data indicate that among the different categories of sedentary behavior, work-related activities are the most significant contributors to participants' sedentary lifestyles, suggesting that occupational demands may be a primary factor in prolonged sitting. This underscores a vital area for intervention, particularly in workplace environments, where strategies such as standing desks or scheduled movement breaks could help alleviate health risks associated with prolonged sedentary behavior.

Table 9. Summary of Results of Mean and Standard Deviation for the Level of Sedentary Lifestyle in terms of Transportation-Related Sedentary Lifestyle

Sub-variables	Mean	SD	Description	Interpretation
work-related sedentary lifestyle	3.99	.673	Agree	Frequently Sedentary
leisure-time sedentary lifestyle	3.78	.702	Agree	Frequently Sedentary
household sedentary lifestyle	3.52	.783	Agree	Frequently Sedentary
transportation-related sedentary lifestyle	3.45	.784	Moderately Agree	Moderately Sedentary
Over-all Mean	3.69	.569	Agree	Frequently Sedentary

Legend: 5 (4.50–5.00) Strongly Agree – Fully Sedentary; 4 (3.50–4.49) Agree – Frequently Sedentary; 3 (2.50–3.49) Moderately Agree – Moderately Sedentary; 2 (1.50–2.49) Disagree – Rarely Sedentary; 1 (1.00–1.49) Strongly Disagree – Not Sedentary

The relatively lower scores in transportation and household contexts indicate that, although these areas contribute to sedentary time, they are not the primary sources, underscoring the necessity to prioritize occupational health initiatives.

The overall mean is $M=3.69$ ($SD=.569$), indicating agreement, and suggests that participants have a sedentary level of activity. Meanwhile, the overall mean with $SD = .569$ indicated that the data were moderately dispersed around the mean. The overall mean, classified as "agree," indicates that participants typically recognize frequent sedentary behavior in their daily activities. This discovery aligns with global trends, as sedentary lifestyles are increasingly common due to the proliferation of digital work environments and screen-based leisure activities.

The standard deviation suggests moderate variability, indicating a relatively consistent sedentary pattern among individuals. These findings highlight the growing need for lifestyle interventions that promote more active behaviors, particularly in environments where sedentary behavior has become prevalent. Existing research literature strongly supports the finding that participants frequently engage in sedentary behavior.

According to Goyal and Rakhra (2024), adults in both developed and developing countries spend more than half of their waking hours sitting, particularly at work and in recreational settings, findings that support the frequency observed in this study.

Similarly, Yang et al. (2022) noted that sedentary behavior is now a significant global public health concern, despite its association with chronic diseases such as obesity, cardiovascular disease, and diabetes. Furthermore, Park et al. (2020) found that sedentary habits are deeply embedded in modern lifestyles, particularly among populations with greater access to technology and passive transportation, findings consistent with participants' reported frequent sedentary behavior.

Problem 3. What is the academic performance level of the participants in physical education?

Table 10 presents the frequency, percentage, mean, and standard deviation of the participants' academic performance in physical



education. The data showed that 85.5% of the participants obtained a grade from 1.3 to 1.0, 5.2% from 2.0 to 1.7, 4.6% from 2.6 to 2.1, 1.7% from 3.0 to 2.7, and 0.7% from below 3.0. These findings suggest that the vast majority of participants demonstrated high academic achievement in Physical Education, which may reflect not only their proficiency but also a strong interest and engagement in the subject.

Table 10. Results of Frequency, Percentage, Mean, and Standard Deviation for the Academic Performance Level of the Participants in Physical Education

Range	F	%	Mean	SD	Interpretation
1.3-1.0	262	85.5			
1.6-1.4	7	2.3			
2.0-1.7	16	5.2			
2.6-2.1	14	4.6	1.19	.515	Excellent
3.0-2.7	5	1.7			
Below 3.0	2	.7			
Total	306	100.0			

Legend: 1.0-1.3 Excellent; 1.4-1.6 Outstanding; 1.7-2.0 Very Satisfactory; 2.1-2.6 Satisfactory; 2.7-3.0 Fair; Below 3.0 Failed

This high performance suggests that, despite reported frequent sedentary behaviors, students are still performing well in physical education, which could be attributed to structured PE programs or assessments that prioritize participation and skill acquisition over pure physical activity volume. The small percentages of students in lower grade brackets may indicate individual differences in motivation, physical ability, or lifestyle factors that warrant further investigation to support at-risk students better.

The overall mean is $M = 1.19$ ($SD = .515$), indicating that participants have excellent performance in Physical Education. Meanwhile, the overall mean for $SD = .515$ indicated that the data were moderately dispersed around the mean. The overall mean suggests that participants typically excelled in Physical Education, indicating high engagement, skill development, or potentially advantageous grading practices within the program. The moderate score standard deviation indicates that while the majority of students excelled, there is slight variation in academic performance, suggesting that a few individuals may require additional support or motivation.

Previous research has found that Physical Education students perform exceptionally well academically. Gray and Diloreto (2016) emphasized that when physical education programs are well-structured and assessments are aligned with students' engagement and effort, the majority of learners achieve high academic performance. Similarly, Young-Jones et al. (2022) found that regular participation in PE improves not only physical skills but also motivation and classroom behavior, thereby positively impacting academic outcomes. Furthermore, Toprak et al. (2021) found that schools with supportive environments and engaging PE curricula often see improved performance, as students feel more encouraged and confident in their ability to succeed in physical tasks, which contributes to higher grades. In line with these findings, the analysis is guided by the null hypothesis (H_0):

Problem 4. Is there a significant relationship between participants' academic performance and the level of physical activity engagement and sedentary lifestyle?

Table 11. Results of Pearson R Correlation between Participants' Academic Performance, Level of Physical Activity Engagement, and Sedentary Lifestyle

Variables	N	R	P-value	Interpretation
Work	306	-.004	.942	Not Significant
travel from places	306	.016	.779	Not Significant
recreational activities	306	-.040	.481	Not Significant
Physical Activity Engagement	306	-.012	.831	Not Significant
work-related sedentary lifestyle	306	-.004	.942	Not Significant
leisure-time sedentary lifestyle	306	.002	.974	Not Significant
household sedentary lifestyle	306	-.046	.428	Not Significant
transportation-related sedentary lifestyle	306	-.063	.273	Not Significant
Sedentary Lifestyle	306	-.038	.509	Not Significant

Legend: $p = .05$ or $p < .05$ is significant, and $p > .05$ is not significant; Correlation Coefficient Range: .50 and above – Strong Correlation/Large Relationship; .30 to .49 – Moderate Correlation/Medium Relationship; .10 to .29 – Weak Correlation/Small Relationship

Table 11 presents the results of the Pearson's r correlation between participants' academic performance, level of physical activity, and sedentary lifestyle. As depicted in the table none from work ($r = -.004$, $p = .942$), travel from places ($r = .016$, $p = .779$), recreational activities ($r = -.040$, $p = .481$), Physical Activity Engagement ($r = -.012$, $p = .831$), work-related sedentary lifestyle ($r = -.004$, $p = .942$), leisure-time sedentary lifestyle ($r = .002$, $p = .974$), household sedentary lifestyle ($r = -.046$, $p = .428$), transportation-related sedentary lifestyle ($r = -.063$, $p = .273$), and Sedentary Lifestyle ($r = -.038$, $p = .509$) have indicated a significant correlation or relationship on students' performance in physical education since their p-values were greater than .05 ($p > .05$).

In other words, students' levels of activity or inactivity, whether influenced by work, travel, recreation, or household routines, do not appear to have a measurable effect on their academic achievement in the subject.

The absence of significant correlations suggests that any observed relationships could have occurred by chance and are not strong



enough to infer an actual effect. These findings imply that other unmeasured variables—such as instructional quality, motivation, prior skill level, or psychosocial factors—may have a greater influence on students' academic performance in Physical Education.

Consequently, any detected correlations are probably coincidental and do not signify a genuine causal relationship. These findings underscore the potential that unmeasured factors may exert a more significant influence on students' outcomes in physical education. This study's findings are consistent with earlier research suggesting that physical activity and sedentary behavior may not be directly associated with academic success in specific courses, such as physical education. For example, Sember et al. (2022) found that while physical fitness was linked to cognitive function, it did not significantly predict performance in PE classes, which often rely on skill demonstration and participation rather than fitness alone. Similarly, Park et al. (2020) discovered that students' motivation and enjoyment in PE were better predictors of academic success than their overall physical activity levels.

Furthermore, Pearson et al. (2017) emphasized that sedentary behaviors, such as screen time, have stronger associations with mental health than physical education outcomes. These findings lend support to the idea that other psychological and contextual factors, rather than physical activity or sedentary lifestyle, may better explain academic performance in physical education. In line with these results, the analysis is guided by the null hypothesis (H₀): There is no substantial correlation between students' academic achievement in Physical Education and their levels of physical activity participation or sedentary lifestyle.

Problem 5. Which among the variables, singly or in combination, significantly predicts the participants' academic performance in Physical Education?

Table 12 presents the results of a multiple regression predicting participants' academic performance in Physical Education from physical activity engagement and sedentary lifestyle. This resulted in a model, $F(6, 299) = .543, p > .05, R^2 = .011$. The individual predictors were examined further and indicated that Travel from places ($t=.868, p=.386$), Recreational activities ($t=-.914, p=.362$), work-related sedentary lifestyle ($t=.821, p=.412$), leisure-time sedentary lifestyle ($t=.927, p=.355$), transportation-related sedentary lifestyle ($t=.383, p=.702$), and Sedentary Lifestyle ($t=-.896, p=.371$) were not significant predictors since their p-values are greater than .05 ($p>.05$).

Table 12. Results of Multiple Regression for the Variables That Were Used to Predict the Participants' Academic Performance in Physical Education

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Interpretation
	B	Std. Error	Beta			
(Constant)	1.23	.215		5.74	.000	Significant
Travel from places	.053	.061	.077	.868	.386	Not Significant
Recreational activities	-.054	.059	-.086	-.914	.362	Not Significant
work-related sedentary lifestyle	.070	.085	.091	.821	.412	Not Significant
leisure-time sedentary lifestyle	.112	.120	.152	.927	.355	Not Significant
transportation-related sedentary lifestyle	.040	.105	.061	.383	.702	Not Significant
Sedentary Lifestyle	-.240	.267	-.265	-.896	.371	Not Significant
R=.104 R ² =.011 F(6, 299)=.543 P=.775						

These results suggest that neither physical activity engagement nor sedentary behavior has a statistically significant impact on students' performance in Physical Education. Thus, the hypothesis is accepted. The low R² value and non-significant p-values further suggest that the model's predictive power is weak and that any observed associations may have occurred by chance. This suggests that other unmeasured factors, such as individual skill level, participation effort, instructional quality, and psychological variables like motivation and attitude, may have a greater impact on students' performance in physical education. As a result, interventions to improve PE performance may need to focus on more than simply increasing physical activity or reducing sedentary time.

The findings of this study are consistent with prior research on the direct influence of physical activity levels and sedentary behaviors on academic performance in physical education. Marques et al. (2018) and Daramola and Aribasoye (2023) found that while physical exercise benefits general health, it does not immediately translate into improved academic achievement in physical education, which is typically assessed on skill execution and participation rather than fitness levels.

Likewise, Breed et al. (2024) underscored that physical education performance is more significantly affected by pedagogical methods and student engagement than by lifestyle factors such as activity frequency. Furthermore, Breed et al. (2024) observed that increased physical activity did not inherently lead to enhanced academic performance, particularly in disciplines with practical elements, such as physical education, where cognitive demands are lower than in theoretical subjects. These studies collectively confirm that, while physical activity and sedentary behavior are important for overall health, they may not be necessary predictors of performance in physical education classes.

Conclusions

The findings showed that, while students generally lead active lifestyles, their physical activity is primarily tied to daily responsibilities, such as work or commuting, with fewer students intentionally engaging in recreational exercise. This variation demonstrates how

lifestyle demands, access to resources, and individual motivation influence college students' physical activity patterns.

The study also revealed that participants lead sedentary lifestyles, particularly during work, leisure, and household activities. Although transportation-related sedentary behavior was less common, it still had a significant impact on overall sedentary patterns. These findings highlight the importance of addressing students' deeply embedded sedentary habits in their daily routines.

Most students performed well academically in physical education, with a large proportion earning high grades. This suggests a high overall level of competence or engagement in the course, which could be attributed to effective teaching methods, student participation, or intrinsic motivation.

Despite this, no significant correlation was found between academic performance in physical education and either participation in physical activity or engagement in sedentary behavior. The lack of significant correlations suggests that students' physical education grades are minimally influenced by their daily activity or inactivity levels.

Finally, the regression analysis demonstrates that physical activity and sedentary behavior are unreliable predictors of academic success in physical education. The lack of statistically significant predictors suggests that other variables—such as skill level, teaching quality, class participation, or psychological factors—may have a greater influence on subject performance. Future studies may benefit from exploring these alternative predictors to deepen understanding of academic success in PE settings.

School administrators. They may offer programs that promote physical activity, such as fitness facilities, wellness events, and sports clubs. Because students are primarily active through obligation-based tasks, providing opportunities for enjoyable, voluntary physical activities may encourage a healthier, more balanced lifestyle. Administrators may also consider policies that limit sedentary behavior in learning environments, such as incorporating movement breaks or encouraging active learning strategies.

Teachers. To maintain student interest in physical activity outside of the classroom, physical education teachers may prioritize motivation and engagement strategies. Because academic performance in PE is not strongly linked to overall activity levels, teachers may focus on skill development, teamwork, and personalized goal-setting to help students grow. Educators may also incorporate health literacy components into the curriculum to help students understand the long-term effects of both active and sedentary behaviors.

Physical Education students. They are encouraged to engage in recreational and leisure-based exercise, rather than just those related to daily tasks. Even if it does not directly affect PE grades, being more intentional about reducing sedentary time, particularly during study sessions or screen time, can improve overall well-being. Students may also take personal responsibility for researching physical activities that are both enjoyable and long-lasting.

Future researchers. They may examine other factors that impact academic performance in physical education, including motivation, self-efficacy, participation rates, instructional methods, and psychological well-being. Researchers could also benefit from using qualitative methods more effectively to better understand students' attitudes and behaviors towards physical activity. Longitudinal studies or experimental interventions could provide stronger causal evidence and validate the current findings.

References

- Adams, R. H. (2017). International remittances and the household: Analysis and review of Global evidence. *Social Science Research Network*, 5(3). <https://doi.org/10.1093/jae/ejl028>
- Adeyemi, F. B. (2019). Peer group influence on academic performance of undergraduate students in Babcock University, Ogun State. *African Educational Research Journal*, 7(2), 81–87. <https://doi.org/10.30918/aerj.72.19.010>
- Akira, M. (2024). No studies about Financial literacy of Filipinos working abroad - Bing. Bing. https://www.bing.com/search?pglt=425&q=no+studies+about+financial+literacy+of+filipinos+working+abroad&cvid=4e46779581694dca9256eb5f9ab2f1ff&gs_lcrp=egrlzgdldkgyiabfbgdkybggaeuyodibcte3ode2ajbqmagcalacaa&form=anntl1&pc=asts
- Al-Haifi, A. R., Al-Awadhi, B. A., Bumaryoum, N. Y., Alajmi, F. A., Ashkanani, R. H., & Al-Hazzaa, H. M. (2023). The association between academic performance indicators and lifestyle behaviors among Kuwaiti college students. *Journal of Health, Population and Nutrition*, 42(1). <https://doi.org/10.1186/s41043-023-00370-w>
- Alyafei, A., & Easton-Carr, R. (2024, May 19). The health belief model of behavior change. Nih.gov; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK606120/>
- Alvarez-Bueno, C., Pesce, C., Caverro-Redondo, I., Sánchez-López, M., Garrido-Miguel, M., & Martínez Vizcaino, V. (2017). Academic achievement and physical activity: A meta-analysis. *National Institute of Health*, 140(6). <https://doi.org/10.1542/peds.2017-1498>
- Amparo, A. (2022). Budgeting in Thailand Public Governance Directorate Senior Budget Officials. <https://sdgs.nesdc.go.th/wp-content/uploads/2021/05/Budgeting-in-Thailand-Full-Report.pdf>
- Amparo, J. (2022). A descriptive phenomenological analysis of the financial blueprints and coping mechanisms of overseas filipino workers in Thailand. *Human Behavior, Development and Society*, 23(2). <https://so01.tci->

thaijo.org/index.php/hbds/article/view/255964

Aparicio-Ugarriza, R., Mielgo-Ayuso, J., Ruiz, E., Ávila, J. M., Aranceta-Bartrina, J., Gil, Á., Ortega, R. M., Serra-Majem, L., Varela-Moreiras, G., & González-Gross, M. (2020). Active commuting, physical activity, and sedentary behaviors in children and adolescents from Spain: findings from the ANIBES Study. *International Journal of Environmental Research and Public Health*, 17(2), 668. <https://doi.org/10.3390/ijerph17020668>

Aquino, J. M. D. (2023). Assessing the role of recreational activities in Physical Education participation of college students in one State University in Laguna Philippines. *International Journal of Multidisciplinary Sciences*, 1(2), 190–204. <https://doi.org/10.37329/ijms.v1i2.2506>

Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2020). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, 241(108224), 108224. <https://doi.org/10.1016/j.biocon.2019.108224>

Armstrong, T., & Bull, F. (2016). development of the world health organization global physical activity questionnaire (GPAQ). *Journal of Public Health*, 14(2), 66–70. <https://doi.org/10.1007/s10389-006-0024-x>

Bailey, R. (2019). The educational benefits claimed for physical education and school sport: An academic review. ResearchGate. https://www.researchgate.net/publication/29439843_The_educational_benefits_claimed_for_physical_education_and_school_sport_An_academic_review

Bakker, E. A., Hopman, M. T. E., Lee, D., Verbeek, A. L. M., Thijssen, D. H. J., & Eijssvogels, T. M. H. (2020). Correlates of Total and domain-specific Sedentary behavior: a cross-sectional study in Dutch adults. *BMC Public Health*, 20(1). <https://doi.org/10.1186/s12889-020-8316-6>

Balboa, E., Delfin, J., Malicay, E., & Yuro, K. (2023). The correlation of international remittance of overseas Filipino workers (OFWs) to their families' financial capabilities and life satisfaction. *International Journal of Thesis Projects and Dissertations (IJTPD)*, 11, 13–33. <https://doi.org/10.5281/zenodo.10432389>

Balse, J. (2018, October 10). Aggregate Remittance Cost and Diaspora Financing of Overseas Filipino Teachers in the Kingdom of Thailand. *Papers.ssrn.com*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3744805

Bandhu, D., Mohan, M. M., Nittala, N. A. P., Jadhav, P., Bhadauria, A., & Saxena, K. K. (2024). Theories of motivation: A comprehensive analysis of human behavior drivers. *Acta Psychologica*, 244(1), 104177. <https://www.sciencedirect.com/science/article/pii/S0001691824000544>

Bauman, A. E., Reis, R. S., Sallis, J. F., Wells, J. C., Loos, R. J., & Martin, B. W. (2019). Correlates of physical activity: why are some people physically active and others not? *The Lancet*, 380(9838), 258–271.

Bernardo, A., & Resurreccion, K. F. (2018). Financial stress and well-being of Filipino Students: The moderating role of external locus-of-hope. *Philippine Journal of Psychology*, 51(1). <https://doi.org/10.31710/pjp/0051.01.03>

Biddle, S. J. H., & Asare, M. (2017). Physical Activity and Mental Health in Children and adolescents: a Review of Reviews. *British Journal of Sports Medicine*, 45(11), 886–895. <https://doi.org/10.1136/bjsports-2011-090185>

Bidzan-Bluma, I., & Lipowska, M. (2018). Physical activity and cognitive functioning of children: a Systematic review. *International Journal of Environmental Research and Public Health*, 15(4). <https://doi.org/10.3390/ijerph15040800>

Biernat, E., & Piątkowska, M. (2019). Leisure-time physical activity participation trends 2014–2018: A cross-sectional study in Poland. *International Journal of Environmental Research and Public Health*, 17(1), 208. <https://doi.org/10.3390/ijerph17010208>

Booth, F. W., Roberts, C. K., Thyfault, J. P., Rueggsegger, G. N., & Toedebusch, R. G. (2017). role of inactivity in chronic diseases: Evolutionary insight and pathophysiological mechanisms. *Physiological Reviews*, 97(4), 1351–1402. <https://doi.org/10.1152/physrev.00019.2016>

Breed, R., Kay, A., Spittle, M., & Orth, D. (2024). The effect of pedagogical approach on physical activity of girls during Physical Education. *Research Quarterly for Exercise and Sport*, 9(5), 1–10. <https://doi.org/10.1080/02701367.2024.2329165>

Calunsag, B. D., & San, J. G. (2023). Students' Attitudes And Academic Performance In Physical Education. *ASEAN Council of Physical Education and Sports*. <https://doi.org/10.4108/eai.28-10-2022.2327388>

Campoamor-Olegario, L., Camitan, D. S., & Luisa, M. (2025). Beyond the pandemic: physical activity and health behaviors as predictors of well-being among Filipino tertiary students. *Frontiers in Psychology*, 16(9). <https://doi.org/10.3389/fpsyg.2025.1490437>

Carballo-Fazanes, A., Rico-Díaz, J., Barcala-Furelos, R., Rey, E., Rodríguez-Fernández, J. E., Varela-Casal, C., & Abelairas-Gómez, C. (2020). Physical Activity Habits and Determinants, Sedentary Behaviour and Lifestyle in University Students. *International Journal of Environmental Research and Public Health*, 17(9), 3272. <https://doi.org/10.3390/ijerph17093272>

Caromano, F. A., Amorim, C. A. P. de, Rebelo, C. de F., Contesini, A. M., Fávero, F. M., Frutuoso, J. R. C., Kawai, M. M., & Voos, M. C. (2015). Prolonged sitting and physical discomfort in university students. *Acta Fisiátrica*, 22(4). <https://doi.org/10.5935/0104->

7795.20150034

Castelli, D., Glowacki, E. M., Barcelona, J., & Calvert, H. G. (2015). Active education: growing evidence on physical activity and academic performance. *Active Living Research*, 5(3), 1–6. https://www.researchgate.net/publication/269708986_Active_Education_Growing_Evidence_on_Physical_Activity_and_Academic_Performance

Castro, O., Bennie, J., Vergeer, I., Bosselut, G., & Biddle, S. J. H. (2020). How sedentary are university students? a systematic review and meta-analysis. *Prevention Science*, 21(1). <https://doi.org/10.1007/s11121-020-01093-8>

Chang, Q., Zhu, Y., Liu, Z., Cheng, J., Liang, H., Lin, F., Li, D., Peng, J., Pan, P., & Zhang, Y. (2024). Replacement of sedentary behavior with various physical activities and the risk of all-cause and cause-specific mortality. *BMC Medicine*, 22(1). <https://doi.org/10.1186/s12916-024-03599-2>

Cherry, K. (2024). Self Efficacy: Why Believing in Yourself Matters. Verywell Mind. <https://www.verywellmind.com/what-is-self-efficacy-2795954>

Cohen, R. A. (2017). Yerkes–Dodson Law. *Encyclopedia of Clinical Neuropsychology*, 1(1), 2737–2738. https://doi.org/10.1007/978-0-387-79948-3_1340

Coles, E., Anderson, J., Maxwell, M., Harris, F. M., Gray, N. M., Milner, G., & MacGillivray, S. (2020). The influence of contextual factors on healthcare quality improvement initiatives: a Realist Review. *Systematic Reviews*, 9(1), 1–22. <https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/s13643-020-01344-3>

Conner, M., & Norman, P. (2019). Health Belief Model - An overview. *Scencedirect.com; Science Direct*. <https://www.sciencedirect.com/topics/medicine-and-dentistry/health-belief-model>

Coventry, P. A., Brown, Jennifer V. E., Pervin, J., Brabyn, S., Pateman, R., Breedvelt, J., Gilbody, S., Stancliffe, R., McEachan, R., & White, Piran C. L. (2021). Nature-based outdoor activities for mental and physical health: systematic review and meta-analysis. *SSM - Population Health*, 16(100934), 100934. <https://doi.org/10.1016/j.ssmph.2021.100934>

Daramola, M. A., & Aribasoye, R. M. (2023). Effect of physical activity, exercise and sedentary behaviour on academic performance of students in higher institutions. *European Journal of Theoretical and Applied Sciences*, 1(6), 547–556. [https://doi.org/10.59324/ejtas.2023.1\(6\).55](https://doi.org/10.59324/ejtas.2023.1(6).55)

Deliens, T., Deforche, B., De Bourdeaudhuij, I., & Clarys, P. (2015). Determinants of physical activity and sedentary behaviour in university students: a qualitative study using focus group discussions. *BMC Public Health*, 15(1). <https://doi.org/10.1186/s12889-015-1553-4>

Ding, D., Luo, M., Florencia, M., Gunn, L., Salvo, D., Zapata-Diomed, B., Smith, B., Bellew, W., Bauman, A., Nau, T., & Nguyen, B. (2024). The co-benefits of active travel interventions beyond physical activity: a systematic review. *The Lancet Planetary Health*, 8(10), e790–e803. [https://doi.org/10.1016/s2542-5196\(24\)00201-8](https://doi.org/10.1016/s2542-5196(24)00201-8)

Dobson, M., & Rawlings, T. (2023). Structuring after-school physical education programs that are engaging, diverse & inclusive. *International Journal of Physical Education, Sports and Health*, 10(6), 330–339. <https://doi.org/10.22271/kheljournal.2023.v10.i6e.3181>

Donnelly, J. E., Hillman, C. H., Castelli, D., Etnier, J. L., Lee, S., Tomporowski, P., Lambourne, K., & Szabo-Reed, A. N. (2016). Physical activity, fitness, cognitive function, and academic achievement in children. *Medicine & Science in Sports & Exercise*, 48(6), 1197–1222. <https://doi.org/10.1249/mss.0000000000000901>

Downes, L. (2015). Physical activity and dietary habits of college students. *Journal of Nurse Education and Practice*, 5(8), 63–66.

Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2015). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4–58. <https://doi.org/10.1177/1529100612453266>

Dyer, Angela M., Kristjansson, Alfgeir L., Mann, Michael J., Smith, Megan L., & Allegrante, John P. (2017). Sport Participation and Academic Achievement: A Longitudinal Study. *American Journal of Health Behavior*, 41(2), 179–185. <https://doi.org/10.5993/ajhb.41.2.9>

Edelmann, D., Pfirrmann, D., Heller, S., Dietz, P., Reichel, J. L., Werner, A. M., Schäfer, M., Tibubos, A. N., Deci, N., Letzel, S., Simon, P., & Kalo, K. (2022). Physical Activity and Sedentary Behavior in University Students—The Role of Gender, Age, Field of Study, Targeted Degree, and Study Semester. *Frontiers in Public Health*, 10(8). <https://doi.org/10.3389/fpubh.2022.821703>

Espesor, M. (2024). Assessing the current status of public-school teachers' financial well-being: basis for an intervention program. *European Journal of Education Studies*, 11(6). <https://doi.org/10.46827/ejes.v11i6.5336>

Fatih, H., Jong-Hoon, Y., & Iulian, A. (2020). Participation in physical activities as recreational activity. *Romania the Journal Is*

Indexed In: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST, XX(2), 113–116. https://analefeffs.ro/analefeffs/2020/i2/pe-autori/9._HAZAR_FATIH_YU_JONG-HOON__ALEXE_DAN_IULIAN.PDF

Ferrer-Uris, B., Ramos, M. A., Busquets, A., & Angulo-Barroso, R. (2022). Can exercise shape your brain? A review of aerobic exercise effects on cognitive function and neuro-physiological underpinning mechanisms. *AIMS Neuroscience*, 9(2), 150–174. <https://doi.org/10.3934/neuroscience.2022009>

Goyal, J., & Rakhra, G. (2024). Sedentarism and Chronic Health Problems. *Korean Journal of Family Medicine*, 45(5), 239–257. <https://doi.org/10.4082/kjfm.24.0099>

Gray, J., & Diloreto, M. (2016). The Effects of Student Engagement, Student Satisfaction, and Perceived Learning in Online Learning Environments. *NCPEA International Journal of Educational Leadership Preparation*, 11(1).

Haddad, M., Abbes, Z., & Abdel-Salam, A.-S. G. (2024). The impact of online classes on sleep, physical activity, and cognition functioning among physical education students. *Frontiers in Psychology*, 15(8). <https://doi.org/10.3389/fpsyg.2024.1397588>

Haverkamp, B. F., Oosterlaan, J., Königs, M., & Hartman, E. (2021). Physical fitness, cognitive functioning and academic achievement in healthy adolescents. *Psychology of Sport and Exercise*, 8(4), 102060. <https://doi.org/10.1016/j.psychsport.2021.102060>

Hazar, F., Yu, J.-H., & Alexe, D. I. (2020). Participation in physical activities as recreational activity. *Science, Movement and Health*, 20(2), 113–116. https://www.researchgate.net/publication/344046925_participation_in_physical_activities_as_recreational_activity

Herman, J. (2024). Influence of social media on physical activity engagement in Indonesia. *American Journal of Recreation and Sports*, 3(1), 34–45. <https://doi.org/10.47672/ajrs.2047>

Holliday, J. H., J., & Moniruzzaman, M. (2019). At what cost? women migrant workers, remittances and development january 2017 un women. <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2017/women-migrant-workers-remittances-and-development.pdf>

Hu, D., Zhou, S., Crowley-McHattan, Z. J., & Liu, Z. (2021). Factors that influence participation in physical activity in school-aged children and adolescents: a systematic review from the social ecological model perspective. *International Journal of Environmental Research and Public Health*, 18(6), 3147. <https://doi.org/10.3390/ijerph18063147>

Ilić, T., Stojanović, S., Rančić, D., Jorgić, B. M., Cristian, R. S., Iordan, D. A., Mircea, C. C., Leonard, S., & Onu, I. (2024). Relationship between physical activity levels and academic performance in adolescents from Serbia. *Children*, 11(10), 1198. <https://doi.org/10.3390/children11101198>

Iqra. (2024). A systematic – Review of academic stress intended to improve the educational journey of learners. *Methods in Psychology*, 11(7), 100163. <https://doi.org/10.1016/j.metip.2024.100163>

James, J., Pringle, A., Mourton, S., & Roscoe, C. M. P. (2023). The effects of physical activity on academic performance in school-aged children: a systematic review. *Children*, 10(6), 1019. <https://doi.org/10.3390/children10061019>

Jang, J., & Koo, H. (2022). Factors related to the financial capacity of filipino Workers in South Korea. *MRTC Working Paper Series. Migration Research & Training Centre(MRTC)*, 4.

Jesus, F. S. D., & Jesus, M. B. D. (2021). Spending habits of public school teachers in Palayan City. *OALib*, 08(02), 1–12. <https://doi.org/10.4236/oalib.1106332>

Kärmeniemi, M., Lankila, T., Ikäheimo, T., Koivumaa-Honkanen, H., & Korpelainen, R. (2018). The built environment as a determinant of physical activity: a systematic review of longitudinal studies and natural experiments. *Annals of Behavioral Medicine*, 52(3), 239–251.

Keadle, S. K., Conroy, D. E., Buman, M. P., Dunstan, D. W., & Matthews, C. E. (2017). Targeting reductions in sitting time to increase physical activity and improve health. *Medicine & Science in Sports & Exercise*, 49(8), 1572–1582. <https://doi.org/10.1249/mss.0000000000001257>

Keating, X. D., Guan, J., Piñero, J. C., & Bridges, D. M. (2015). A Meta-analysis of college students' physical activity behaviors. *Journal of American College Health*, 54(2), 116–126. <https://doi.org/10.3200/jach.54.2.116-126>

Khalfoui, A., García-Carrión, R., & Anabo, I. F. (2023). Supporting children's friendship stability in a culturally diverse school with a dialogic approach: A case study. *Learning, Culture and Social Interaction*, 41(5), 100737. <https://doi.org/10.1016/j.lcsi.2023.100737>

Khodaveisi, M., Azizpour, B., Jadidi, A., & Mohammadi, Y. (2021). Education based on the health belief model to improve the level of physical activity. *Physical Activity and Nutrition*, 25(4), 17–23. <https://doi.org/10.20463/pan.2021.0022>

Kolhar, M., Kazi, R. N. A., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi Journal of Biological Sciences*, 28(4), 2216–2222. <https://doi.org/10.1016/j.sjbs.2021.01.010>

Kparev, T., Umar, B., Ikpato, T. V., Agba, S. D., Duenya, J., Ihum, J., & Tyoakaa, A. A. (2022). Effect of recreational physical activities

- on health related components of physical fitness of adolescents in secondary schools in Gboko local government area of Benue state, Nigeria. *Journal of Educational Research in Developing Areas*, 3(1), 49–64. <https://doi.org/10.47434/jereda.3.1.2022.49>
- Kumar, M. R., Mukherjee, D., Rachna, M., & Dular, S. K. (2023). Recreational approach -a stress reliever among elderly. *ResearchGate*, 12(2). https://www.researchgate.net/publication/378527435_recreational_approach_-_a_stress_reliever_among_elderly
- Kumban, W., Cetthakrikul, S., & Santiworakul, A. (2025). Smartphone Addiction, Screen Time, and Physical Activity of Different Academic Majors and Study Levels in University Students. *International Journal of Environmental Research and Public Health*, 22(2), 237. <https://doi.org/10.3390/ijerph22020237>
- Kuzik, n., da costa, b. g. g., hwang, y., verswijveren, s. j. j. M., Rollo, S., Tremblay, M. S., Bélanger, S., Carson, V., Davis, M., Hornby, S., Huang, W. Y., Law, B., Salmon, J., Tomasone, J. R., Wachira, L.-J., Wijndaele, K., & Saunders, T. J. (2022). School-related sedentary behaviours and indicators of health and well-being among children and youth: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 19(1). <https://doi.org/10.1186/s12966-022-01258-4>
- Lakka, T. A., & Bouchard, C. (2015). Physical Activity, Obesity and Cardiovascular Diseases. *Atherosclerosis: Diet and Drugs*, 11(5), 137–163. https://doi.org/10.1007/3-540-27661-0_4
- Latino, F., & Tafuri, F. (2023). Physical Activity and Academic Performance in School-Age Children: A Systematic Review. *Sustainability*, 15(8), 6616. <https://doi.org/10.3390/su15086616>
- Lee, E., & Kim, Y. (2018). Effect of university students' sedentary behavior on stress, anxiety, and depression. *Perspectives in Psychiatric Care*, 55(2), 164–169. <https://doi.org/10.1111/ppc.12296>
- Li, W., Yao, J., & Zhou, S. (2021). How Does Physical Exercise Affect Academic Performance? The Mediating Role of Non-Cognitive Abilities. *Best Evidence in Chinese Education*, 8(2), 1103–1120. <https://doi.org/10.15354/bece.21.or046>
- Lima, R. A., Soares, F. C., Bezerra, J., & de Barros, M. V. G. (2020). Effects of a Physical Education Intervention on Academic Performance: A Cluster Randomised Controlled Trial. *International Journal of Environmental Research and Public Health*, 17(12), 4287. <https://doi.org/10.3390/ijerph17124287>
- Liu, G., Li, W., & Li, X. (2023). Striking a balance: how long physical activity is ideal for academic success? Based on cognitive and physical fitness mediation analysis. *Frontiers in Psychology*, 14(7). <https://doi.org/10.3389/fpsyg.2023.1226007>
- Lizandra, J., Devís-Devís, J., Pérez-Gimeno, E., Valencia-Peris, A., & Peiró-Velert, C. (2016). Does Sedentary Behavior Predict Academic Performance in Adolescents or the Other Way Round? A Longitudinal Path Analysis. *PLOS ONE*, 11(4), e0153272. <https://doi.org/10.1371/journal.pone.0153272>
- Luiz, B. C., Paula, W. de , Martins, C., Machado, E. L., Dias, E., Silva , C., Cardoso, F., Nobre, L. N., Saraiva, L., & Meireles, A. L. (2024). Sedentary behavior is associated with the mental health of university students during the Covid-19 pandemic, and not practicing physical activity accentuates its adverse effects: cross-sectional study. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-19345-5>
- Lyubikh, Z., Gulseren, D., Premji, Z., Wingate, T. G., Deng, C., Bélanger, L. J., & Turner, N. (2022). Role of work breaks in well-being and performance: A systematic review and future research agenda. *Journal of Occupational Health Psychology*, 27(5). <https://doi.org/10.1037/ocp0000337>
- Macali, I. C., Smith, L., Dale, M., Lind, E., DeShong, H. L., & Holmes, M. E. (2025). Influences of motivation and personality on physical activity behavior: A systematic review . *Journal of Sports Sciences*, 6, 1–13. <https://doi.org/10.1080/02640414.2025.2468998>
- Macalintal, K. (2018). The relationship between leisure time and academic performance of students chapter I. *Www.academia.edu*, 9(2). https://www.academia.edu/41555833/the_relationship_between_leisure_time_and_academic_performance_of_students_chapter_i
- Magallón, J., & Catalán, P. (2024). Sedentary behaviour in college students and its influence on heart rate and mental health . *European Journal of Human Movement* , 52(4), 104–113. doi:%2010.21134/eurjhm.2024.52.9
- Mahfouz, H. A., Alhazmi, N. F., Almatrafi, M. K., Almeahadi, S. S., Alharbi, J. K., Qadi, L. R., Tawakul, A., Mahfouz, H. A., Alhazmi, N., Almatrafi, M. K., Almeahadi, S., Alharbi, J. K., Qadi, L. R., & Tawakul, A. (2024). The Influence of Lifestyle on Academic Performance Among Health Profession Students at Umm Al-Qura University. *Cureus*, 16(3). <https://doi.org/10.7759/cureus.56759>
- Mahindru, A., Patil, P., & Agrawal, V. (2023). Role of Physical Activity on Mental Health and Well-Being: a Review. *Cureus*, 15(1). <https://doi.org/10.7759/cureus.33475>
- Malm, C., Jakobsson, J., & Isaksson, A. (2019). Physical Activity and Sports—Real Health Benefits: A Review with Insight into the Public Health of Sweden. *Sports*, 7(5), 127. <https://doi.org/10.3390/sports7050127>
- Manapol, M. L., Lopez, S. R., & Sobrejuanite, Ma. V. E. (2022). Saving and Spending Habits of Overseas Filipino Workers (OFWs)

- and Their Families in Region Xi, Philippines. *Asean Social Work Journal*, 12(2), 59–71. <https://doi.org/10.58671/aswj.v10i1.15>
- Marconcin, P., Jones, B., Marques, A., Gouveia, É. R., & Zymbal, V. (2024). Home and Neighborhood Environments Impact Sedentary Behavior in Teens Globally. *Ucsd.edu*. <https://today.ucsd.edu/story/home-and-neighborhood-environments-impact-sedentary-behavior-in-teens-globally>
- Marconcin, P., Zymbal, V., Gouveia, É. R., Jones, B., & Marques, A. (2021). Sedentary Behaviour: Definition, Determinants, Impacts on Health, and Current Recommendations. In *www.intechopen.com*. IntechOpen. <https://www.intechopen.com/chapters/78658>
- Marmol, L., & Vásquez, E. (2017). University infrastructure and student participation in physical activity programs. *Journal of Physical Education and Sport*, 17(2), 1012–1018.
- Marques, A., Hillman, C., & Sardinha, L. (2018). Physical Activity, Aerobic Fitness and Academic Achievement. InTech EBooks, 9(7). <https://doi.org/10.5772/intechopen.71284>
- McPherson, A., Mackay, L., Kunkel, J., & Duncan, S. (2018). Physical activity, cognition and academic performance: an analysis of mediating and confounding relationships in primary school children. *BMC Public Health*, 18(1). <https://doi.org/10.1186/s12889-018-5863-1>
- Mensah, K., Maire, A., Jean-Michel Oppert, Dugas, J., Hélène Charreire, Weber, C., Simon, C., & Julie-Anne Nazare. (2016). Assessment of sedentary behaviors and transport-related activities by questionnaire: a validation study. *BMC Public Health*, 16(1). <https://doi.org/10.1186/s12889-016-3412-3>
- Mercado, W. (2024). Determinants of Financial Security of Overseas Filipino Workers' Dependents (OFWDs): An Analysis of Remittance Management of OFWDs in Region 12, Philippines. *IJFMR240423514*, 6(4). <https://www.ijfmr.com/papers/2024/4/23514.pdf>
- Molina-García, J., Castillo, I., & Queralt, A. (2015). Neighborhood built environment and socioeconomic status in relation to active commuting to school in children and adolescents. *Preventive Medicine*, 81, 1–8.
- Mondal, A., Bhat, C. R., Costey, M. C., Bhat, A. C., Webb, T., Magassy, T. B., Pendyala, R. M., & Lam, W. H. K. (2020). How do people feel while walking? A multivariate analysis of emotional well-being for utilitarian and recreational walking episodes. *International Journal of Sustainable Transportation*, 15(6), 419–434. <https://doi.org/10.1080/15568318.2020.1754535>
- Monhollen, C., Summers, L., Sabin, M., & Rutherford, J. (2016). Sedentary Behaviors and Physical Activity in Relation to Class Standing in University Students. *Medicine & Science in Sports & Exercise*, 48(6), 1063. <https://doi.org/10.1249/01.mss.0000488198.25704.eb>
- Muhammad, N., Hussain, M., & Adnan, S. M. (2021). Screen time and Sleep Quality among College and University Students of Karachi. *Journal of Health & Biological Sciences*, 9(1), 1. <https://doi.org/10.12662/2317-3076jhbs.v9i1.3214.p1-14.2021>
- Mukaka, M. (2016). Statistics Corner: A guide to appropriate use of Correlation coefficient in medical research. *Malawi Medical Journal*, 24(3), 69–71. https://www.researchgate.net/publication/236604665_Statistics_Corner_A_guide_to_appropriate_use_of_Correlation_coefficient_in_medical_research
- Munna, A. S., & Kalam, A. (2021). Impact of Active Learning Strategy on the Student Engagement. *An Interdisciplinary Journal of Human Theory and Praxis*, 4(2). <https://files.eric.ed.gov/fulltext/ED614302.pdf>
- Muñoz-Bullón, F., Sanchez-Bueno, M. J., & Vos-Saz, A. (2017). The influence of sports participation on academic performance among students in higher education. *Sport Management Review*, 20(4), 365–378. <https://doi.org/10.1016/j.smr.2016.10.006>
- Murata, A. (2024). How Mental Accounting, and Financial Literacy Shape the Financial Situation of Overseas Filipino Workers (OFWs): A Multinomial Logistic Regression Study No. 26. https://www.jica.go.jp/english/jica_ri/publication/discussion/_icsFiles/afieldfile/2024/10/16/Discussion_Paper_No26_1.pdf
- Mygind, L., Kjeldsted, E., Hartmeyer, R., Mygind, E., Bølling, M., & Bentsen, P. (2019). Mental, physical and social health benefits of immersive nature-experience for children and adolescents: A systematic review and quality assessment of the evidence. *Health & Place*, 58(102136), 102136. <https://doi.org/10.1016/j.healthplace.2019.05.014>
- Ndiaye, M. L. (2024). Fintech and economic opportunities in Sub-saharan Africa: the case of Senegal. leadership styles and financial decision making. <https://doi.org/10.13140/RG.2.2.32287.78243>
- Neil-Sztramko, S. E., Caldwell, H., & Dobbins, M. (2021). School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *Cochrane Database of Systematic Reviews*, 2021(9). <https://doi.org/10.1002/14651858.cd007651.pub3>
- Niu, Y., Zhang, L., & Sun, X. (2025). Social support, campus infrastructure, and physical activity participation among university students. *Frontiers in Psychology*, 16, 1456230.

- Norman, P., & Conner, M. (2017). Health Belief Model - an Overview | ScienceDirect Topics. [www.sciencedirect.com. https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/health-belief-model](https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/health-belief-model)
- Obi, L. (2024). The role of recreational activities in enhancing quality of life among the elderly. *International Journal of Arts, Recreation and Sports*, 3(3), 52–65. <https://doi.org/10.47941/ijars.1944>
- Owen, N., Healy, G. N., Dempsey, P. C., Salmon, J., Timperio, A., Clark, B. K., Goode, A. D., Koorts, H., Ridgers, N. D., Hadgraft, N. T., Lambert, G., Eakin, E. G., Kingwell, B. A., & Dunstan, D. W. (2020). Sedentary Behavior and Public Health: Integrating the Evidence and Identifying Potential Solutions. *Annual Review of Public Health*, 41(1), 265–287. <https://doi.org/10.1146/annurev-publhealth-040119-094201>
- Owen, K. B., Parker, P. D., Van Zanden, B., MacMillan, F., Astell-Burt, T., & Lonsdale, C. (2016). Physical Activity and School Engagement in Youth: A Systematic Review and Meta-Analysis. *Educational Psychologist*, 51(2), 129–145. <https://doi.org/10.1080/00461520.2016.1151793>
- Paixão, L. T., Amaral, L., & Luiz, N. (2024). Influence of sedentary behavior and physical activity in leisure and work on sleep duration: data from NHANES 2017–2018. *Journal of Activity Sedentary and Sleep Behaviors*, 3(1). <https://doi.org/10.1186/s44167-024-00067-3>
- Parilla, E. S., & Abadilla, M. E. M. (2023). Saving, Buying, and Spending Patterns of Overseas Filipino Workers in the Ilocos Region. *International Journal of Entrepreneurship and Sustainability Studies (IJEASS)*, 3(2). <https://doi.org/10.31098/ijeass.v3i2.1619>
- Park, J. H., Moon, J. H., Kim, H. J., Kong, M. H., & Oh, Y. H. (2020). Sedentary lifestyle: Overview of updated evidence of potential health risks. *Korean Journal of Family Medicine*, 41(6), 365–373. <https://doi.org/10.4082/kjfm.20.0165>
- Parveen, D. S., & Ramzan, S. I. (2024). The Role of Digital Technologies in Education: Benefits and Challenges. *International Research Journal on Advanced Engineering and Management (IRJAEM)*, 2(06), 2029–2037. <https://doi.org/10.47392/IRJAEM.2024.0299>
- Patil, A. (2024). *Wealth Wisdom: Principles of Financial Management*. Parab Publications, 4(2). <https://doi.org/10.5281/zenodo.11108763>
- Pearson, N., Haycraft, E., P. Johnston, J., & Atkin, A. J. (2017). Sedentary behaviour across the primary-secondary school transition: A systematic review. *Preventive Medicine*, 94(9), 40–47. <https://doi.org/10.1016/j.ypmed.2016.11.010>
- Pellicer-Chenoll, M., Garcia-Masso, X., Morales, J., Serra-Ano, P., Solana-Tramunt, M., Gonzalez, L.-M. ., & Toca-Herrera, J.-L. . (2015). Physical activity, physical fitness and academic achievement in adolescents: a self-organizing maps approach. *Health Education Research*, 30(3), 436–448. <https://doi.org/10.1093/her/cyv016>
- Pilar, A., & Aguila, N. (2019). Social Media and the Renegotiation of Filipino Diasporic Identities. https://era.library.ualberta.ca/items/46c17eea-ed05-469d-bdf4-943f9a2f7448/view/51a29b54-965f-46a2-827e-b1ce5f034165/Aguila_Almond_N_201409_PhD.pdf
- Pilcher, J. J., Morris, D. M., Bryant, S. A., Merritt, P. A., & Feigl, H. B. (2017). Decreasing Sedentary Behavior: Effects on Academic Performance, Meta-Cognition, and Sleep. *Frontiers in Neuroscience*, 11(9). <https://doi.org/10.3389/fnins.2017.00219>
- Pomohaci, C.-M., & Catană, L. (2015, September 13). The Relationship between Leisure Activities and Learning in Secondary School. ResearchGate; https://www.researchgate.net/publication/281747999_The_Relationship_between_Leisure_Activities_and_Learning_in_Secondary_School unknown.
- Prasand, S., & Nataraj. (2017). Impact of financial literacy on financial decision making- a study with reference to retail investors. ResearchGate, 6(2), 71. https://www.researchgate.net/publication/322329702_impact_of_financial_literacy_on_financial_decision_making_a_study_with_reference_to_retail_investors_in_chennai
- Prince, S. A., Rasmussen, C. L., Biswas, A., Holtermann, A., Aulakh, T., Merucci, K., & Coenen, P. (2021). The effect of leisure time physical activity and sedentary behaviour on the health of workers with different occupational physical activity demands: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 18(1). <https://doi.org/10.1186/s12966-021-01166-z>
- Quibra, R. K. (2024). Financial Knowledge, Behavior, and Attitude on The Financial Well-Being of The Sustainable Livelihood Program Associations. *RGSA*, 18(8), e06225–e06225. <https://doi.org/10.24857/rgsa.v18n8-029>
- Reddy, P. B., Gangle, G. R., & Srivastava, B. (2024). The future of education in the digital age. https://www.researchgate.net/publication/382066255_the_future_of_education_in_the_digital_age
- Redondo-Flórez, L., Ramos-Campo, D. J., & Clemente-Suárez, V. J. (2022). Relationship between Physical Fitness and Academic Performance in University Students. *International Journal of Environmental Research and Public Health*, 19(22), 14750. <https://doi.org/10.3390/ijerph192214750>

- Regidor, E., Astasio, P., Ortega, P., & Martínez, D. (2022). Recreational physical activity and its relationship with social and institutional factors among university students. *International Journal of Environmental Research and Public Health*, 19(3), 1420.
- Regidor, S. C. G., Arroyo, R. A., Aclan, Q. A. J. E., & Azuelo, A. P. L. (2022). Preference and Constraints on Outdoor Recreational Activities: Insights from Hospitality Management Students. *International Journal of Academe and Industry Research*, 3(4), 145–164. <https://doi.org/10.53378/352945>
- Ryu, S., & Fan, L. (2022). The Relationship between Financial Worries and Psychological Distress among U.S. Adults. *Journal of Family and Economic Issues*, 44(1), 16–33. <https://doi.org/10.1007/s10834-022-09820-9>
- Sallis, J. F., Bull, F., Burdett, R., Frank, L. D., Griffiths, P., Giles-Corti, B., & Stevenson, M. (2016). Use of science to guide city planning policy and practice: how to achieve healthy and sustainable future cities. *The Lancet*, 388(10062), 2936–2947.
- Samuel, A. T. (2023). Exploring the Significance of Financial Stability and the Influence of Expert Financial Advisors on the Financial Well-Being of Nigerian Citizens. *International Journal of Research and Scientific Innovation*, X(XI), 01-15. <https://doi.org/10.51244/ijrsi.2023.1011001>
- Samuels, J. I. (2024). Financial Planning: A Comprehensive Guide to Achieving Financial Success. <https://doi.org/10.13140/RG.2.2.11984.07682>
- Sanaeifar, F., Pourranjbar, S., Mehr, S. R., Wadan, A.-H. S., Khazeifard, F., Ramezani, S., & Pourranjbar, M. (2024). Beneficial effects of physical exercise on cognitive-behavioral impairments and brain-derived neurotrophic factor alteration in the limbic system induced by neurodegeneration. *Elsevier*, 195(2). <https://doi.org/10.1016/j.exger.2024.112539>
- Santos, F., Sousa, H., Gouveia, É. R., Lopes, H., Peralta, M., Martins, J., Murawska-Ciałowicz, E., Żurek, G., & Marques, A. (2023). School-Based Family-Oriented Health Interventions to Promote Physical Activity in Children and Adolescents: A Systematic Review. *American Journal of Health Promotion*, 37(2), 243–262. <https://doi.org/10.1177/08901171221113836>
- Sember, V., Jurak, G., Starc, G., & Morrison, S. A. (2022). Can Primary School Mathematics Performance Be Predicted by Longitudinal Changes in Physical Fitness and Activity Indicators? *Frontiers in Psychology*, 13(9), 796838. <https://doi.org/10.3389/fpsyg.2022.796838>
- Shafie, S. N. M., Shahri, M. S., Izuddi, N. N. N. I., Shukri, N. M., Aziz, N. A., Amran, A., & Nafi, M. N. A. (2022). Association between Lifestyle-Related Behaviors and Academic Performance among Students. *International Academic Symposium of Social Science 2022*, 6(9). <https://doi.org/10.3390/proceedings2022082105>
- Sibley, B. A., & Etnier, J. (2018). Review article. *International Journal of the Sociology of Language*, 143(1). <https://doi.org/10.1515/ijsl.2000.143.183>
- Singh, K. (2024). The Impact of Physical Activity on Academic Performance in Elementary School Students. *Global Journal of Current Research*, 11(3), 57–62. <https://doi.org/10.13140/RG.2.2.35766.72000>
- Stappers, N. E. H., Van Kann, D. H. H., Ettema, D., De Vries, N. K., & Kremers, S. P. J. (2018). The effect of infrastructural changes in the built environment on physical activity, active transportation and sedentary behavior – A systematic review. *Health & Place*, 53(9), 135–149. <https://doi.org/10.1016/j.healthplace.2018.08.002>
- Subiron-Valera, A. B., Rodriguez-Roca, B., Calatayud, E., Gomez-Soria, I., Andrade-Gómez, E., & Marcen-Roman, Y. (2023). Linking sedentary behavior and mental distress in higher education: a cross-sectional study. *Frontiers in Psychology*, 14(4). <https://doi.org/10.3389/fpsyg.2023.1205837>
- Sugiyama, T., Chandrabose, M., Homer, A. R., Sugiyama, M., Dunstan, D. W., & Owen, N. (2020). Car use and cardiovascular disease risk: Systematic review and implications for transport research. *Journal of Transport & Health*, 19(8), 100930. <https://doi.org/10.1016/j.jth.2020.100930>
- Szalma, J. L., & Hancock, P. A. (2016). Noise effects on human performance: A meta-analytic synthesis. *Psychological Bulletin*, 137(4), 682–707. <https://doi.org/10.1037/a0023987>
- Tabachnick, B. G., & Fidell, L. S. (2019). *Tabachnick, B. G., & Fidell, L. S. (2019). Using Multivariate Statistics (7th ed.). Pearson. - References - Scientific Research Publishing. Scirp.org.* <https://scirp.org/reference/referencespapers?referenceid=3132273>
- Takiguchi, Y., Matsui, M., Kikutani, M., & Ebina, K. (2022). The relationship between leisure activities and mental health: The impact of resilience and COVID-19. *Applied Psychology: Health and Well-Being*, 15(1). <https://doi.org/10.1111/aphw.12394>
- Tan, C.-Y., Chuah, C.-Q., Lee, S.-T., & Tan, C.-S. (2021). Being Creative Makes You Happier: the Positive Effect of Creativity on Subjective Well-Being. *International Journal of Environmental Research and Public Health*, 18(14), 7244. <https://doi.org/10.3390/ijerph18147244>
- Teno, S. C., Silva, M. N., & Júdeice, P. B. (2024). Associations between domains of sedentary behavior, well-being, and quality of life – a cross-sectional study. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-19252-9>

- Teuber, M., Leyhr, D., & Sudeck, G. (2024). Physical activity improves stress load, recovery, and academic performance-related parameters among university students: A longitudinal study on daily level. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-18082-z>
- Tilan, A., & Cabal, E. M. (2021). (PDF) Financial Literacy of Filipino Public School Teachers and Employees: Basis for Intervention Program. ResearchGate. https://www.researchgate.net/publication/355680249_Financial_Literacy_of_Filipino_Public_School_Teachers_and_Employees_Basis_for_Intervention_Program
- Tomporowski, P. D., Davis, C. L., Miller, P. H., & Naglieri, J. A. (2017). Exercise and Children's Intelligence, Cognition, and Academic Achievement. *Educational Psychology Review*, 20(2), 111–131. <https://doi.org/10.1007/s10648-007-9057-0>
- Tonne, C. (2021). Defining pathways to healthy sustainable urban development. *Environment International*, 146(9), 106236. <https://doi.org/10.1016/j.envint.2020.106236>
- Toprak, M., Avcı, Y. E. A., & Cengiz, Ö. (2021). School physical education courses: A study on challenges and on restoring their functions. *Pegem Journal of Education and Instruction*, 11(4). <https://doi.org/10.47750/pegegog.11.04.29>
- Tremblay, M. S., LeBlanc, A. G., Kho, M. E., Saunders, T. J., Larouche, R., Colley, R. C., Goldfield, G., & Gorber, S. (2017). Systematic review of sedentary behaviour and health indicators in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity*, 8(1), 98. <https://doi.org/10.1186/1479-5868-8-98>
- Trudeau, F., & Shephard, R. J. (2018). Physical education, school physical activity, school sports and academic performance. *International Journal of Behavioral Nutrition and Physical Activity*, 5(1), 10. <https://doi.org/10.1186/1479-5868-5-10>
- Suguis, J. E., & Belleza, S. S. (2022). Student engagement as influenced by physical activity and student motivation among college students. *International Journal of Sports Science and Physical Education*, 7(1), 28. <https://doi.org/10.11648/j.ijsspe.20220701.15>
- Uibu, M., Kalma, M., Mägi, K., & Kull, M. (2021). Physical Activity in the Classroom: Schoolchildren's Perceptions of Existing Practices and New Opportunities. *Scandinavian Journal of Educational Research*, 1–18. <https://doi.org/10.1080/00313831.2021.1958376>
- Von der Heiden, J. M., Braun, B., Müller, K. W., & Egloff, B. (2019). The Association Between Video Gaming and Psychological Functioning. *Frontiers in Psychology*, 10(1731). <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.01731/full>
- Vo-Thanh, T., Luong, V.-H., Manthiou, A., & Petr, C. (2024). Slow Tourism and Well-Being: A Transformational Learning Perspective. *Tourism Planning & Development*, 5(2), 1–19. <https://doi.org/10.1080/21568316.2024.2443187>
- Wanjau, M. N., Dalugoda, Y., Oberai, M., Möller, H., Standen, C., Haigh, F., Milat, A., Lucas, P., & Veerman, J. L. (2023). Does active transport displace other physical activity? A systematic review of the evidence. *Journal of Transport & Health*, 31(5), 101631. <https://doi.org/10.1016/j.jth.2023.101631>
- Wells, J., Scheibein, F., Pais, L., Dalluege, C-Andreas., Czakert, J. P., & Berger, R. (2023). A systematic review of the impact of remote working referenced to the concept of work–life flow on physical and psychological health. *Workplace Health & Safety*, 71(11). <https://doi.org/10.1177/21650799231176397>
- White, R. L., Bennie, J., Abbott, G., & Teychenne, M. (2020). Work-related physical activity and psychological distress among women in different occupations: a cross-sectional study. *BMC Public Health*, 20(1). <https://doi.org/10.1186/s12889-020-09112-7>
- Whitford, T. C. (2021). A correlational study on physical activity and GPA among college students. *The Owl – Florida State University's Undergraduate Research Journal*, 11(2), 59–69. <https://journals.flvc.org/owl/article/view/128682>
- Whitsel, L. P., Huneycutt, F., Anderson, D. R., Beck, A. M., Bryant, C., Bucklin, R. S., Carson, R. L., Escaron, A. L., Hopkins, J. M., Imboden, M. T., McDonough, C., Pronk, N. P., Wojcik, J. R., Zendell, A., & Ablah, E. (2021). Physical Activity Surveillance in the United States for Work and Commuting : Understanding the Impact on Population Health and Well-being. *Journal of Occupational and Environmental Medicine*, 63(12), 1037–1051. <https://doi.org/10.1097/JOM.0000000000002305>
- Win, A. M., Yen, L. W., Tan, K. H., Lim, R. B. T., Chia, K. S., & Mueller-Riemenschneider, F. (2015). Patterns of physical activity and sedentary behavior in a representative sample of a multi-ethnic South-East Asian population: a cross-sectional study. *BMC Public Health*, 15(1). <https://doi.org/10.1186/s12889-015-1668-7>
- Wood, H. C., Prabhakar, S., Upsher, R., Duncan, M., Dommert, E. J., & Gardner, B. (2024). Understanding university students' experiences of sitting while studying at home: A qualitative study. *PLoS ONE*, 19(12), e0314768–e0314768. <https://doi.org/10.1371/journal.pone.0314768>
- World Health Organization. (2024). Physical Activity. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/physical-activity>
- Xinwen, L., Rong, X., Xiaotang, P., Chien-Ting, W., Linxuan, G., Rochester, C., & Tsung-Min, H. (2019). The relationship between



physical fitness and academic performance in college students. *Journal of Physical Education Research*, 6(11), 24–32. https://www.joper.org/JOPER/JOPERVOLUME6_Issue3_7_9_2019_187.pdf

Yang, Y., Diez-Roux, A. V., Evenson, K. R., & Colabianchi, N. (2021). Examining the impact of the built environment on physical activity using longitudinal data: Health and Retirement Study. *Health & Place*, 68, 102531.

Yang, Z., Chen, S., Bao, R., Li, R., Bao, K., Feng, R., Zhong, Z., & Wang, X. (2022). Public Health Concern on Sedentary Behavior and Cardiovascular Disease: A Bibliometric Analysis of Literature from 1990 to 2022. *Medicina*, 58(12), 1764. <https://doi.org/10.3390/medicina58121764>

Yangüez, M., Raine, L. B., Chanal, J., Bavelier, D., & Hillman, C. H. (2024). Aerobic fitness and academic achievement: Disentangling the indirect role of executive functions and intelligence. *Psychology of Sport and Exercise*, 70(8), 102514–102514. <https://doi.org/10.1016/j.psychsport.2023.102514>

Young-Jones, A., McCain, J., & Hart, B. (2022). Let's Take a Break: The Impact of Physical Activity on Academic Motivation. *International Journal of Teaching and Learning in Higher Education* 2022, 33(2), 110–118. <https://files.eric.ed.gov/fulltext/EJ1345538.pdf>.

Affiliations and Corresponding Information

Eric Anthony T. Beciete Jr., LPT

Liceo de Cagayan University – Philippines

Dr. Jaffy Glenn D. Guillena

Liceo de Cagayan University – Philippines