

Original article. Driven by Willpower: Exploring the relationship between physical activity engagement and self-control motivation in students. Vol. 11, n. ° 3; p. 1-17, July 2025.

<https://doi.org/10.17979/sportis.2025.11.3.11674>

**Driven by willpower: exploring the relationship between physical activity
engagement and self-control motivation in students**
**Impulsado por la fuerza de voluntad: exploración de la relación entre la
participación en la actividad física y la motivación del autocontrol en los
estudiantes**

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Editorial schedule: Article received 26/01/2025 Accepted: 19/04/2025 Published: 01/07/2025

<https://doi.org/10.17979/sportis.2025.11.3.11674>

To cite this article use the following reference:

Aton, A.G. (2025). Driven by Willpower: Exploring the relationship between physical activity engagement and self-control motivation in students. Sportis Sci J, 11 (3), 1-17
<https://doi.org/10.17979/sportis.2025.11.3.11674>

Authors' contributions: The author contributed all for the work.

Funding: The study did not receive funding.

Conflicts of interest: The author declares no conflict of interest.

Ethical aspects: The study declares the ethical aspects.

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Abstract

This study explores the relationship between physical activity engagement and self-control motivation among college students, focusing on self-control capacity internal and external motivation. A quantitative research design, specifically descriptive correlation, was used to examine the link between these variables. The respondents, comprising 249 college students, were selected using simple random sampling to ensure representation. Data was collected through validated instruments: the International Physical Activity Questionnaire (IPAQ) to measure physical activity engagement and a self-control motivation and capacity scale to assess students' self-regulation levels. Descriptive and inferential statistics, including Pearson's correlation coefficient, were applied to analyze the data and determine the relationships between physical activity engagement and self-control motivation and capacity. The findings revealed significant positive correlations between physical activity engagement and self-control capacity and between physical activity engagement and internal motivation, suggesting that physical activity may play a crucial role in enhancing students' self-control and intrinsic motivation. However, no significant relationship between physical activity engagement and external motivation was found. These results highlight the importance of promoting physical activity to improve students' self-control, motivation, and capacity. This study contributes to the body of knowledge by offering insights into how physical activity may support students' self-regulation skills, ultimately informing policies and practices to enhance students' academic and personal development. The study concludes by emphasizing the need for more integrated approaches to self-regulation and physical activity in educational settings.

Keywords: physical activity; motivation; self-control; self-regulation; participation; students.

Resumen

Este estudio explora la relación entre la participación en la actividad física y la motivación de autocontrol entre estudiantes universitarios, centrándose en la motivación interna y externa de la capacidad de autocontrol. Se utilizó un diseño de investigación cuantitativa, específicamente de correlación descriptiva, para examinar el vínculo entre estas variables. Los encuestados, compuestos por 249 estudiantes universitarios, fueron seleccionados mediante muestreo aleatorio simple para garantizar la representación. Los datos se recopilaron a través de instrumentos validados: el Cuestionario Internacional de Actividad Física (IPAQ) para medir la participación en la actividad física y una escala de capacidad y motivación de autocontrol para evaluar los niveles de autorregulación de los estudiantes. Se aplicaron estadísticas descriptivas e inferenciales, incluido el coeficiente de correlación de Pearson, para analizar los datos y determinar las relaciones entre la participación en la actividad física y la motivación y capacidad de autocontrol. Los hallazgos revelaron correlaciones positivas significativas entre la participación en la actividad física y la capacidad de autocontrol y entre la participación en la actividad física y la motivación interna, lo que sugiere que la actividad física puede desempeñar un papel crucial en la mejora del autocontrol y la motivación intrínseca de los estudiantes. Sin embargo, no se encontró una relación significativa entre la participación en la actividad física y la motivación externa. Estos resultados resaltan la importancia de promover la

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actividad física para mejorar el autocontrol, la motivación y la capacidad de los estudiantes. Este estudio contribuye al conjunto de conocimientos al ofrecer información sobre cómo la actividad física puede apoyar las habilidades de autorregulación de los estudiantes y, en última instancia, informar políticas y prácticas para mejorar el desarrollo académico y personal de los estudiantes. El estudio concluye enfatizando la necesidad de enfoques más integrados para la autorregulación y la actividad física en entornos educativos.

Palabras clave: actividad física; motivación; autocontrol; autorregulación; participación; estudiantes.

Introduction

Self-control motivation is the internal drive that enables individuals to resist immediate temptations and make decisions aligned with long-term goals (Taylor et al., 2020). It involves regulating one's thoughts, emotions, and behaviors to achieve desired outcomes, particularly in the face of short-term distractions or challenges. This type of motivation is crucial for maintaining discipline in various areas of life, including academics, health, and personal development (Laran, 2020). Research has shown that individuals with higher self-control motivation are more likely to persevere in tasks requiring sustained effort and avoid behaviors that may undermine long-term success (Dörnyei & Henry, 2022).

Physical activity refers to any body movement that requires energy expenditure, ranging from simple daily tasks to structured exercise programs (Dishman et al., 2021a). It encompasses activities such as walking, running, cycling, and strength training, all of which contribute to improving or maintaining physical health. Regular physical activity has been widely recognized for its benefits, including enhancing cardiovascular health, improving mental well-being, and reducing the risk of chronic diseases (Siedentop & Van der Mars, 2022). Consistent physical activity is essential for overall health and is critical in promoting long-term well-being (Wolf et al., 2021).

Students today face significant physical activity and self-control motivation challenges, impacting their academic performance and overall well-being. Many students struggle to engage in regular physical activity due to increased academic pressures, technological distractions, and sedentary lifestyles (Tagare & Tagare, 2022). Additionally, the lack of self-control and motivation often leads to difficulties

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maintaining consistent exercise habits, with many students succumbing to immediate temptations such as social media or unhealthy eating (Hofmann, 2023). These problems are further compounded by a lack of time management skills, and the pervasive culture of instant gratification undermines long-term health goals (Burkeman, 2021). As a result, students not only face adverse physical health outcomes but also experience increased stress and lower levels of academic achievement, highlighting the need for improved strategies to enhance self-regulation and physical activity engagement (Merino et al., 2024).

Recent studies on self-control motivation have highlighted its crucial role in regulating behaviors and achieving long-term goals across various domains, including health, academics, and personal development. Research has demonstrated that individuals with higher self-control motivation exhibit better academic performance, as they are more likely to resist distractions and stay focused on their studies (Troll et al., 2021). Similarly, self-control motivation has significantly contributed to healthier lifestyle choices, such as maintaining regular exercise routines and adhering to dietary plans (Wehrt et al., 2022). Additionally, studies suggest that self-control motivation is not only linked to immediate behavior regulation but also broader life satisfaction, with individuals demonstrating greater resilience in the face of challenges (Chi & Wang, 2022). These findings underscore the importance of developing self-control motivation to enhance overall well-being and success (Lee et al., 2021).

Recent studies on physical activity have underscored its critical importance for physical and mental health, particularly among students. Research has shown that regular physical activity improves cognitive function, emotional regulation, and academic performance (Steigleder et al., 2020). Additionally, studies suggest that engaging in physical activity can significantly reduce the risk of chronic diseases, such as cardiovascular disease and diabetes, particularly in sedentary populations (Vasilopoulos & Ellefson, 2021). Furthermore, physical activity has been found to play a key role in stress reduction and mental well-being, with individuals who engage in regular exercise reporting lower levels of anxiety and depression (Ferreira Vorkapic et al., 2021). These findings highlight the wide-ranging benefits of physical activity and its essential role in promoting overall health, especially among students (Bahir et al., 2023).

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Despite the wealth of studies exploring the individual relationships between physical activity and self-control motivation, there remains a notable gap in the literature regarding the correlation between these two variables, particularly among college students in the Philippines. Most existing research has focused on these factors separately, with limited attention given to how self-control motivation might influence physical activity engagement within this population. This study addresses this gap by investigating the relationship between physical activity engagement and self-control motivation among college students. The general research question guiding this study is: What is the relationship between physical activity engagement and self-control motivation among college students? The purpose of this research is to explore how self-control motivation may impact the physical activity levels of college students and to provide insights that could inform strategies for promoting healthier lifestyle habits in this population.

This research is essential as it provides valuable insights into how self-control motivation can influence physical activity engagement among college students, offering potential benefits for individual health and academic performance. By exploring this relationship, the study contributes to the existing body of knowledge, particularly in the Philippines, where limited research has been conducted. Moreover, the findings of this research could inform educational strategies and wellness programs aimed at improving students' physical activity levels and overall well-being, benefiting not only the participants but also the wider academic community and public health initiatives.

Methods

Research Design:

This research employs a quantitative research design, specifically a descriptive correlation, to examine the relationship between physical activity engagement and self-control motivation among college students. Quantitative research involves collecting and analyzing numerical data to identify patterns and relationships (Mohajan, 2020). On the other hand, descriptive correlation is a research method that seeks to determine the extent to which two variables are related without manipulating them (Siedlecki, 2020). This approach is particularly appropriate for this study as it allows for a precise analysis of how physical activity and self-control motivation are interconnected among college

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students, providing meaningful insights into their relationship without the need for experimental manipulation. The quantitative nature of this design ensures objective data collection and analysis, making it ideal for understanding patterns within a larger population.

Research Respondents:

The study involved 249 respondents selected using simple random sampling, a technique in which every individual in a population has an equal chance of being chosen (Noor et al., 2022). This method was employed to ensure that the sample is representative of the larger student population, providing a diverse and unbiased group from which generalizable conclusions can be drawn. Simple random sampling is particularly suitable for this study as it minimizes selection bias, ensuring that the results reflect the experiences and perspectives of students from various backgrounds, thus enhancing the reliability and validity of the findings.

Research Instruments:

This research adopted the International Physical Activity Questionnaire (IPAQ) to measure the physical activity engagement of the respondents, developed by (Craig et al., 2003), with a reliability index of 0.87. Additionally, the study utilized the Self-Control Motivation and Capacity scale, initially developed by (Papova, 2016), with a Cronbach's alpha of 0.91 to assess self-control motivation. These instruments were chosen for their proven reliability and validity in determining the respective variables, ensuring that the data collected accurately reflects the respondents' physical activity engagement and self-control motivation levels.

Statistical Analysis:

This research employed descriptive and inferential statistics, including frequency counts, mean, and composite mean, to describe the respondents' physical activity engagement and self-control motivation levels. The Pearson Correlation Coefficient was used to examine the relationship between the two variables. The Pearson correlation is the most appropriate for this study as it measures the strength and direction of the linear relationship between two continuous variables, such as physical activity engagement and self-control motivation. This statistical test is ideal for understanding the degree of association between these variables, clearly indicating how they are related.

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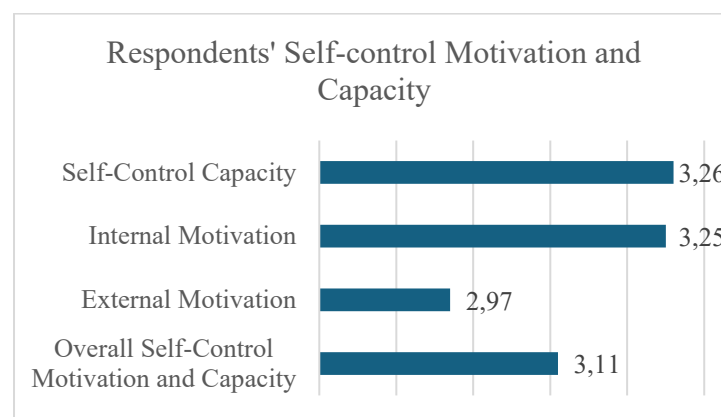
Results

Table 1 presents the respondents' levels of physical activity engagement, categorized into low, moderate, and high activity levels. These classifications provide an overview of the distribution of physical activity among the respondents, highlighting varying degrees of engagement. Understanding these levels is essential for analyzing their relationship with the fulfillment of Basic Psychological Needs.

Table 1. Respondents' Physical Activity Engagement

Physical Activity Engagement	Frequency (n=249)	Percentage (%)
Low Activity	82	32.93
Moderate Activity	114	45.78
High Activity	53	21.29

Figure 1 illustrates the respondents' self-control, motivation, and capacity levels, highlighting their ability to regulate behavior and resist temptations in various situations. The data provides insights into the respondents' motivation to exercise self-control, which is internally driven and influenced by external factors. This figure serves as a foundation for understanding the overall self-regulation patterns among the study participants.



Legend: 4.00-3.50 – Exemplary Self-control; 3.49-2.50 – Proficient Self-control; 2.59-1.50 Developing Self-control; 1.49-1.00 – Minimal Self-control

Figure 1. Respondents' Self-control, Motivation and Capacity

Table 3 tests the relationship between the respondents' physical activity engagement and self-control motivation and capacity. It highlights the strength and direction of the correlation between these variables, providing insights into how physical

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activity relates to the respondents' ability and motivation for self-regulation. This analysis serves as a basis for understanding the interconnectedness of physical activity and self-control behaviors.

Table 3. Test of Relationship between the Respondents' Physical Activity Engagement and Self-control Motivation and Capacity

Physical Activity Engagement and...	Pearson Correlation Coefficient	p-value	Interpretation $\alpha=0.05$
Self-control Capacity	.147**	.020	Significant
Internal Motivation	.200**	.002	Significant
External Motivation	.062	.330	Not Significant

Discussion

Respondents' Physical Activity Engagement

Figure 1 shows the students' physical activity engagement levels among 249 respondents. A total of 82 students (32.93%) have low physical activity engagement, 114 students (45.73%) exhibit moderate physical activity engagement, and 53 students (21.29%) demonstrate high physical activity engagement. This means that most students fall within the low to moderate levels of engagement in physical activity. This implies that most students may not fully benefit from regular physical activity's physical, mental, and emotional advantages, potentially impacting their overall health and well-being.

Many students with low and moderate physical activity engagement levels highlight a pressing concern regarding their lifestyle choices. Low physical activity engagement may contribute to sedentary behaviors, which are linked to increased risks of health problems such as obesity, cardiovascular diseases, and mental health issues. While better than low engagement, the moderate level still suggests that many students are not meeting the recommended physical activity levels to support optimal physical and psychological functioning. This pattern reflects a need to understand better the barriers preventing students from fully engaging in consistent and adequate physical activity.

The findings align with studies emphasizing the prevalence of low to moderate physical activity levels among students, which often stem from competing academic priorities, lack of motivation, and environmental factors (Marques et al., 2020) ; (Dishman et al., 2021b). Research further suggests that insufficient physical activity during formative years can lead to lifelong habits of inactivity, exacerbating risks for

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chronic diseases (Shi et al., 2021). Additionally, limited engagement in physical activity may adversely affect cognitive and emotional resilience, as highlighted in similar studies focusing on youth health and behavior (Lin & Chen, 2021).

Respondents' Self-control, Motivation and Capacity

The respondents' **self-control capacity** yielded a composite mean of 3.26, verbally interpreted as "Proficient Self-control." This means that the students, on average, possess a moderate to high ability to regulate their behaviors and actions effectively. This implies that while students demonstrate reasonable self-control, there is still potential for improvement in areas requiring consistent self-regulation, particularly in long-term goal attainment and managing impulses.

The findings align with previous studies highlighting student populations' moderate to high self-control capacity, often attributed to their ability to balance academic responsibilities and personal challenges (Tagare, 2023). Research suggests that proficient self-control is a critical predictor of academic success, emotional stability, and resilience in various contexts (van Dijk et al., 2020). Furthermore, studies underscore that while students generally exhibit functional levels of self-control, environmental and psychological factors may influence their ability to sustain this capacity consistently (Tiemeijer, 2022).

The respondents' **internal motivation** achieved a composite mean of 3.25, verbally interpreted as "Proficient Self-control." This means students possess a considerable intrinsic drive to regulate their behaviors based on personal values, standards, and long-term goals. This implies that their self-control stems largely from internal factors, enabling them to resist temptations, manage impulses, and align their actions with their objectives.

The findings are consistent with studies indicating that internal motivation plays a significant role in fostering student self-regulation and goal-directed behavior (Billore et al., 2023). Research emphasizes that intrinsic motivation enhances perseverance, as individuals are likelier to sustain effort in activities that align with their values (Lai et al., 2024). Additionally, students with proficient self-control often exhibit greater emotional regulation and adaptability, improving academic performance and overall well-being (Payan-Carreira et al., 2022).

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The respondents' **external motivation** attained a composite mean of 2.97, verbally interpreted as "Proficient Self-control." This means that students are moderately influenced by external factors such as societal expectations, peer perception, and parental approval in regulating their actions. This implies that while external motivators contribute to their self-control, these influences may not be as dominant or enduring as internal motivation.

The findings align with research highlighting the role of external motivation in fostering self-discipline, particularly in environments where social and cultural norms reinforce desirable behaviors (Bear & Soltys, 2020). External motivators, such as rewards or fear of disapproval, are known to initiate behavior regulation, though their long-term effectiveness may depend on how they integrate with intrinsic factors (Adlaon et al., 2024); (Pascua & Tagare Jr, 2024). Moreover, studies suggest that a balance between external and internal motivation often enhances students' goal attainment and self-regulatory capacity (Tao & Jing, 2023).

Overall, the respondents' self-control motivation and capacity across the three areas achieved a grand mean of 3.11, verbally interpreted as a "Moderate Level of Fulfillment." This means that the students demonstrate a reasonable ability to regulate their behaviors, whether internally or externally motivated. This implies that while they possess a functional level of self-control, there is room for growth in sustaining and enhancing their motivation to effectively meet personal and academic demands.

The findings are consistent with studies showing that self-control among students typically falls within moderate levels, reflecting their ability to manage competing priorities and external pressures while striving for personal goals (Hennecke & Bürgler, 2023). Research indicates that self-control tends to fluctuate based on situational and environmental factors, such as academic stress and social expectations (Tiemeijer, 2022). Furthermore, studies emphasize that moderate levels of self-control are often linked to adaptive functioning, balancing immediate desires with long-term objectives (Tagare Jr, 2022).

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Relationship between the Respondents' Physical Activity Engagement and Self-control Motivation and Capacity

The findings reveal a significant positive relationship between physical activity engagement and self-control capacity ($r = .147$, $p = .020$) and between physical activity engagement and internal motivation ($r = .200$, $p = .002$). These results suggest that higher levels of physical activity engagement are associated with greater self-control capacity and stronger internal motivation. However, the relationship between physical activity engagement and external motivation was insignificant ($r = .062$, $p = .330$). This implies that students actively participating in physical activities are better equipped to manage their impulses and maintain intrinsic motivation. Still, external factors do not significantly influence their engagement in such activities.

These findings align with prior research indicating that physical activity enhances self-regulation and intrinsic motivation by fostering discipline and goal-oriented behavior (Chen & Solomon, 2024). Studies have shown that regular physical activity contributes to improved self-control, likely because it promotes mental resilience and emotional stability (Billore et al., 2023). Additionally, the connection between physical activity and internal motivation underscores the role of autonomy and personal satisfaction in maintaining consistent engagement (Minhui, 2023).

The results highlight the importance of promoting physical activity to enhance self-control capacity and internal motivation among students. Policies aimed at integrating regular physical activities into educational programs can foster physical health and the psychological attributes needed for academic success and personal development (Kosholap et al., 2021). Schools and universities should consider creating structured physical activity programs emphasizing intrinsic motivation to sustain students' participation and self-regulation.

Furthermore, the insignificant relationship between physical activity engagement and external motivation suggests that relying solely on external incentives may not effectively drive students' engagement. Practices that cultivate autonomy and intrinsic enjoyment in physical activities, such as goal-setting and self-monitoring strategies, may be more effective in sustaining long-term participation and overall self-control (Camp et

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al., 2024). Tailoring programs to address students' preferences can enhance their engagement and contribute to holistic development (Sarami & Hojjati, 2023).

Conclusion

The physical activity engagement of the respondents reflects a moderate level of involvement, with a notable proportion of students reporting low and moderate engagement. This indicates that physical activity, though acknowledged, may not be prioritized by a significant portion of the student population. The findings suggest that while some students actively engage in physical activity, others may face barriers or lack the motivation to participate regularly, underscoring the need for more accessible and appealing activity options.

The respondents exhibit moderate self-control, motivation, and capacity across all areas. This suggests that while students generally can regulate their behavior, there may be room for strengthening self-control strategies, especially regarding internal motivation. The moderate self-control levels imply that fostering greater personal discipline and intrinsic motivation can improve students' overall self-regulation and academic performance.

The significant relationships between physical activity engagement, self-control capacity, and internal motivation point to the potential benefits of incorporating physical activity into strategies to enhance self-control among students. These findings highlight that engaging in physical activity can improve both intrinsic motivation and self-control abilities, which are essential for academic and personal success. The study underscores the importance of promoting holistic approaches integrating physical activity with self-regulation practices to support students' overall well-being.

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