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Kinetics of growth in education: physical activity as a psychological pathway to students' individual growth orientation

Cinética del crecimiento en la educación: la actividad física como vía psicológica hacia la orientación al crecimiento individual de los estudiantes

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Abstract
This study explored the dynamic relationship between students' physical activity engagement and their individual growth orientation, recognizing both as essential dimensions of holistic development. Specifically, it examined how varying levels of activity are associated with students' tendencies toward growth recognition, strategic goal setting, support mobilization, and active pursuit of personal development. Employing a quantitative research design, particularly descriptive-correlational, the study involved 215 student respondents selected through simple random sampling. Data were gathered using standardized instruments: the International Physical Activity Questionnaire for assessing physical activity and the Individual Growth Orientation Scale-II for measuring individual growth orientation, both of which have established reliability indices. Descriptive statistics were used to describe the variables, while Pearson correlation determined the relationship between them. Results revealed that students generally demonstrated moderate levels of both physical activity and individual growth orientation. More notably, a significant positive correlation was found, indicating that higher levels of physical activity were strongly associated with stronger orientations toward personal growth. These findings imply that students' active lifestyles meaningfully contribute not only to their physical well-being but also to their readiness and initiative for self-improvement. The study concludes that physical activity and growth orientation are mutually reinforcing, highlighting the importance of integrating behavioral and psychological perspectives in understanding student development. By offering insights into the interplay between these constructs, this research provides a holistic lens for appreciating the interconnected pathways to student well-being and success.

Keywords: behavioral development; physical education; physical well-being; self-improvement; student health

Resumen
Este estudio exploró la relación dinámica entre la participación de los estudiantes en actividades físicas y su orientación al crecimiento individual, reconociendo ambas como dimensiones esenciales del desarrollo integral. Específicamente, examinó cómo los diferentes niveles de actividad se asocian con las tendencias de los estudiantes hacia el reconocimiento del crecimiento, el establecimiento de metas estratégicas, la movilización de apoyo y la búsqueda activa del desarrollo personal. Utilizando un diseño de investigación cuantitativa, particularmente descriptivo-correlacional, el estudio incluyó a 215 estudiantes como participantes, seleccionados mediante muestreo aleatorio simple. Los datos se recogieron utilizando instrumentos estandarizados: el Cuestionario Internacional de Actividad Física para evaluar la actividad física y la Escala de Orientación al Crecimiento Individual-II para medir la orientación al crecimiento individual, ambos con índices de fiabilidad establecidos. Se utilizaron estadísticas descriptivas para describir las variables, mientras que la correlación de Pearson determinó la relación entre ellas. Los resultados revelaron que los estudiantes generalmente demostraron niveles moderados tanto de actividad física como de orientación al crecimiento individual. Más notablemente, se encontró una correlación positiva

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significativa, lo que indica que los niveles más altos de actividad física estaban fuertemente asociados con una orientación más marcada hacia el crecimiento personal. Estos hallazgos implican que el estilo de vida activo de los estudiantes contribuye significativamente no solo a su bienestar físico, sino también a su disposición e iniciativa para la superación personal. El estudio concluye que la actividad física y la orientación al crecimiento se refuerzan mutuamente, destacando la importancia de integrar las perspectivas conductuales y psicológicas para comprender el desarrollo estudiantil. Al ofrecer información sobre la interacción entre estos conceptos, esta investigación proporciona una perspectiva holística para apreciar las vías interconectadas hacia el bienestar y el éxito estudiantil.

Palabras clave: desarrollo conductual; educación holística; bienestar personal; auto mejora; desarrollo estudiantil

Introduction

Individual Growth Orientation (IGO) refers to an individual's proactive and intentional efforts to develop their skills, perspectives, and personal capacities across different life domains. It encompasses growth recognition, strategic goal setting, support mobilization towards active pursuit of growth. This construct highlights one's conscious and deliberate engagement in personal development, making it a dynamic aspect of psychological well-being (Herbert, 2022). Students with higher IGO demonstrate resilience, adaptability, and motivation to achieve both academic and personal goals (Cereda, 2024). In this sense, IGO serves as an essential framework for understanding how individuals actively direct their growth toward meaningful life outcomes (Caramenti & Castiglioni, 2022).

Physical activity (PA) is broadly defined as any bodily movement produced by skeletal muscles that requires energy expenditure, encompassing exercise, sports, and daily movement behaviors. It is widely acknowledged as a fundamental determinant of physical health, cognitive functioning, and psychological well-being (Zhan & Santos-Paulino, 2021). Among students, PA not only enhances fitness but also promotes stress reduction, emotional regulation, and social connectedness (Miller et al., 2019). Furthermore, consistent engagement in PA is linked with improved self-discipline, perseverance, and lifestyle balance, positioning it as a critical factor in holistic student development (Dik et al., 2019).

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Despite its importance, Individual Growth Orientation faces pressing challenges, as many students struggle with low self-regulation, lack of goal clarity, and difficulty accessing growth-oriented resources (Martins et al., 2021). These issues are compounded by academic pressures, technological distractions, and limited institutional support for self-directed development (Namaziandost et al., 2025). Similarly, physical activity among students continues to decline due to sedentary lifestyles, excessive screen time, and academic workload (Yang et al., 2023). Barriers such as lack of motivation, inadequate facilities, and changing social norms further exacerbate inactivity rates in youth populations (Murniati et al., 2023). These parallel concerns underscore the urgent need to examine how fostering PA could simultaneously promote higher levels of IGO among students (Mwaanga & Chifita, 2025).

Existing studies on Individual Growth Orientation have underscored its critical role in student success and well-being. Research demonstrates that students with higher IGO exhibit stronger academic engagement, greater resilience, and higher psychological well-being (Nharirire, 2018). Other investigations highlight the relationship between IGO and adaptive coping strategies, showing that it buffers stress and enhances personal fulfillment (McKeering et al., 2021).

The benefits of physical activity are well-documented across a wide range of studies. Evidence consistently links PA with improved physical health outcomes, including cardiovascular fitness, muscular strength, and metabolic efficiency (Donnelly et al., 2016). Beyond physical benefits, PA has been shown to enhance cognitive performance, emotional stability, and academic achievement among students (Ortega et al., 2018). Research also suggests that regular PA fosters self-efficacy, persistence, and positive social interactions, contributing to students' overall well-being and success (Peromingan et al., 2026).

Although extensive studies have been conducted separately on Individual Growth Orientation and Physical Activity, there remains insufficient evidence exploring their direct relationship. The interplay between PA and IGO, particularly among students, is not yet fully understood, leaving a gap in both psychological and educational research. This study, therefore, seeks to answer the general research question: How does physical

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activity serve as a pathway to students' individual growth orientation? The overarching purpose of this research is to examine the extent to which PA contributes to fostering students' growth orientation, thereby addressing both developmental and health-related dimensions of student life.

This research is significant as it provides students with insights into how engaging in physical activity can support their self-improvement and overall growth. For the body of knowledge, it advances understanding of the psychological mechanisms linking PA and IGO, thereby offering a fresh perspective in the fields of education, psychology, and health sciences. Finally, for the broader academic community, this study emphasizes the value of integrating physical and psychological development, highlighting the importance of holistic approaches in preparing students for future personal and professional challenges.

In light of these considerations, this study aims to examine students' levels of physical activity and individual growth orientation, as well as to determine the relationship between these two constructs. Specifically, it seeks to describe students' physical activity engagement, assess their individual growth orientation across its key dimensions, and analyze the association between physical activity and growth orientation. Guided by these objectives, the study hypothesizes that students' physical activity engagement is significantly related to their individual growth orientation. By addressing these objectives and hypotheses, the study endeavors to contribute to a deeper understanding of how physical activity functions as a pathway to students' psychological and educational development.

Methods

Research Design

This research employed a quantitative research design, specifically a descriptive correlational design. Quantitative research is a systematic investigation that primarily focuses on quantifying data and analyzing measurable variables using statistical techniques to test relationships and draw conclusions (Esto et al., 2025). A descriptive correlational design, on the other hand, is a non-experimental method that seeks to

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determine the degree and direction of relationships between two or more variables without manipulating them.

The use of a quantitative design, particularly descriptive correlational, was deemed most appropriate for this study as it allowed for an objective and statistical examination of the relationship between physical activity and individual growth orientation among students. By utilizing this design, the researchers were able to gather measurable data from a sizable sample, providing insights into the nature and strength of the relationship without the need for intervention or experimental manipulation.

Respondents and Sampling

The respondents of this study were 215 students selected using simple random sampling. Simple random sampling is a probability sampling method where each member of the population has an equal chance of being included in the study, thereby reducing selection bias and ensuring representativeness (Hernani et al., 2025). This sampling technique was considered the most appropriate for this research because it allowed every student in the population to be fairly represented, thus enhancing the validity and generalizability of the findings.

The respondents of this study were undergraduate students enrolled in a higher education institution during the academic year of data collection. To ensure relevance to the objectives of the study, respondents were required to be currently enrolled students and able to engage in physical activity at the time of participation. Students who provided informed consent and completed all sections of the survey were included in the final analysis. Exclusion criteria included incomplete survey responses, withdrawal of consent, and respondents with medical conditions or physical limitations that restricted participation in regular physical activity, as these could affect the validity of physical activity reporting.

Procedure

Following approval from the appropriate institutional authorities, the researchers coordinated with academic units to facilitate data collection among eligible students. The respondents were selected through simple random sampling and were invited to

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participate voluntarily in the study. Data were collected using standardized self-administered questionnaires distributed through an online survey platform, allowing respondents to complete the instruments at their convenience. Clear instructions were provided prior to participation to ensure accurate and honest responses. Upon completion, the responses were securely recorded and prepared for statistical analysis.

Research Instrument

Two standardized questionnaires were adopted in this study. Physical activity was measured using the International Physical Activity Questionnaire (IPAQ) developed by (Craig et al., 2003) which has demonstrated acceptable reliability with a Cronbach's alpha of 0.80. Individual Growth Orientation was measured using the Individual Growth Orientation Scale developed by (Linderbaum & Levy, 2010) which also showed strong internal consistency, with a Cronbach's alpha of 0.88. These instruments were chosen due to their strong psychometric properties and widespread use in related studies.

No contextualization or modifications were made to the items of the questionnaires, as their content was found to be fully applicable in the context of the respondents. The IPAQ items were straightforward in assessing students' physical activity levels, while the Individual Growth Orientation Scale statements were directly relevant to students' growth recognition, strategic goal setting, support mobilization towards active pursuit of growth.

Statistical Analysis

The study utilized both descriptive and inferential statistics to analyze the data. Descriptive statistics such as the mean and composite mean were employed to summarize and describe students' physical activity levels and individual growth orientation. To examine the relationship between the two variables, Pearson product-moment correlation coefficient was used. Pearson correlation was deemed the most appropriate test since it measures the strength and direction of linear relationships between continuous variables.

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Ethical Considerations

Ethical principles were strictly observed throughout the conduct of this study. Participation was entirely voluntary, and informed consent was obtained from all respondents prior to data collection. Respondents were assured of the confidentiality and anonymity of their responses, and no personally identifiable information was collected. They were informed of their right to withdraw from the study at any time without penalty. All data were handled responsibly and used solely for academic and research purposes, in accordance with established ethical standards for research involving human participants.

Results

Figure 1 illustrates the distribution of respondents' levels of physical activity engagement. The data show that a larger proportion of students fall under the low and moderate activity categories, while a smaller group demonstrates high activity levels. This distribution highlights the tendency of students to engage less consistently in vigorous physical activity, reflecting a general pattern of moderate to limited movement.

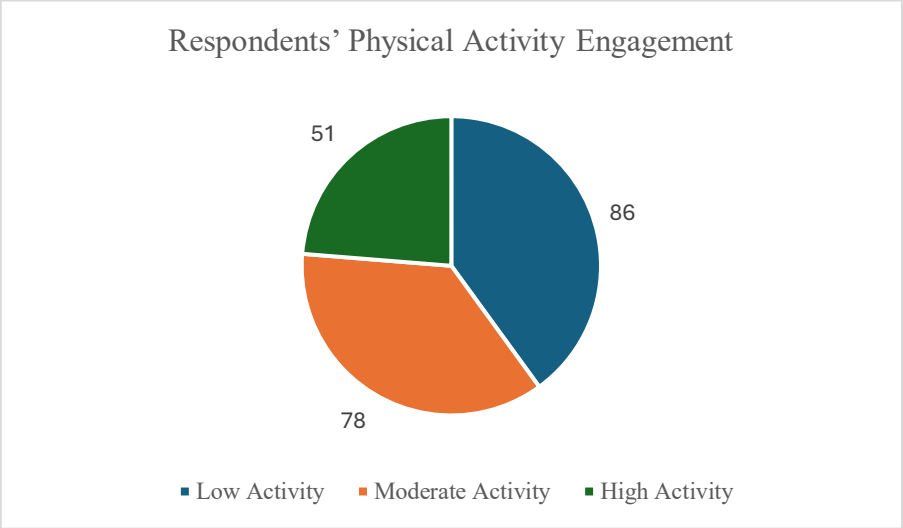

Figure 1. Respondents' Physical Activity Engagement

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Figure 2 presents the respondents' levels of individual growth orientation across its different dimensions. The results indicate that students generally demonstrate a moderate orientation toward personal development, including goal setting, growth recognition, support mobilization, and active pursuit of growth. This suggests that while students value self-improvement, their engagement in consistent and proactive growth-oriented behaviors remains balanced but not strongly emphasized.

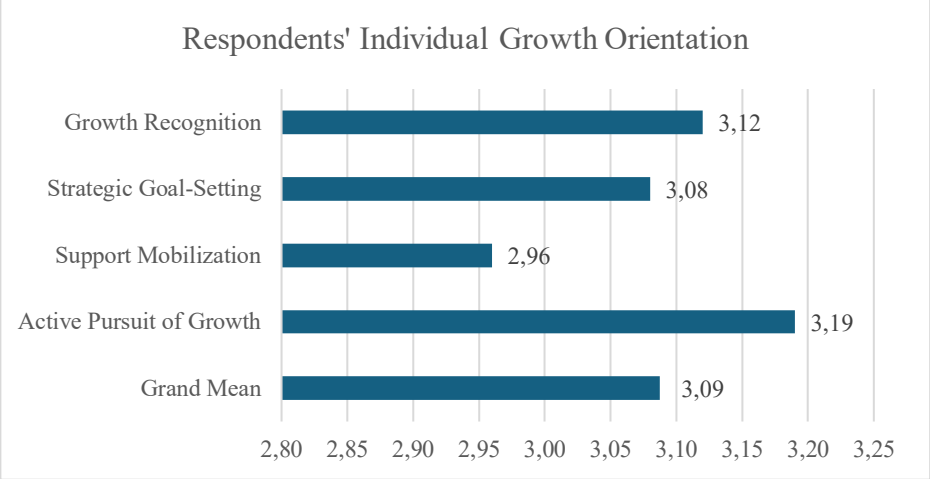

Figure 2. Respondents' Individual Growth Orientation

Legend:
4.00-3.50 High Individual Growth Orientation
3.49-2.50 Moderate Individual Growth Orientation
2.59-1.50 Low Individual Growth Orientation
1.49-1.00 Very Low Individual Growth Orientation

Table 1. Relationship between the Respondents' Physical Activity and Individual Growth Orientation

Variables	Correlation Coefficient	p-value	Interpretation α=0.05
Physical Activity and Individual Growth Orientation	.858**	.002	Significant

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

Respondents' Physical Activity Engagement

Table 1 presents the students' engagement in physical activity. Out of the 215 respondents, 86 or 40.0% were classified under low activity, 78 or 36.0% fell into the moderate activity category, while only 51 or 24.0% were engaged in high activity. This

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means that a considerable proportion of students engage in minimal physical activity, with fewer participating in high levels of movement. This implies that inactivity is a prominent pattern among the respondents, signaling a tendency toward sedentary behaviors rather than consistent engagement in physical exercise.

The implication of these findings is that students are more inclined toward lower levels of movement, suggesting that physical activity is not prioritized as much as other daily routines. Such a pattern reflects the prevalence of sedentary lifestyles among the student population, which can affect not only their physical health but also their psychological well-being and capacity for personal growth.

The observed trend of low physical activity among students is consistent with prior research indicating widespread inactivity among young adults. Studies have shown that students often engage less in physical movement due to the competing demands of academics, social life, and technology use (Sangwan et al., 2024). Similarly, it has been reported that college students worldwide tend to display insufficient physical activity, with sedentary lifestyles becoming increasingly prevalent in higher education contexts (Liu et al., 2024).

Furthermore, other research emphasizes that reduced physical activity levels are associated with increased academic workload and changing lifestyle habits (Carballo-Fazanes et al., 2020). Likewise, studies affirm that students often fail to meet recommended activity levels, which places them at risk for long-term health issues and diminished psychological resilience (Abadejos et al., 2025). These studies reinforce the present findings that students' engagement in physical activity remains limited, thereby substantiating the evidence of inactivity as a continuing challenge among university students.

Respondents' Individual Growth Orientation

In terms of **Growth Recognition**, the respondents obtained a composite mean of 3.12, which is interpreted as Moderate Individual Growth Orientation. This means that students are somewhat aware of when they need to make changes in themselves and can identify areas for improvement, but such awareness is not consistently strong. The

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moderate level suggests that while they acknowledge the importance of personal growth, they may struggle with fully recognizing the right timing or opportunities to initiate change.

This implies that students demonstrate a balanced yet limited capacity for recognizing the need for change in their personal and academic lives. Their growth orientation is neither low enough to indicate passivity nor high enough to signify a strong proactive approach. This highlights the possibility that students are still navigating the complexities of self-awareness and growth recognition as part of their developmental stage. Consequently, their orientation toward growth is moderate, reflecting both potential and ongoing challenges in fully embracing personal development.

The findings are consistent with earlier studies suggesting that university students often report moderate levels of self-awareness and growth recognition. Research has shown that while students can identify personal areas for improvement, competing demands and transitional life challenges often moderate their orientation toward growth (Tagare et al., 2025). Similarly, other studies reveal that growth recognition among young adults is not always maximized due to fluctuating motivation and contextual barriers (Patton et al., 2016).

In terms of **Strategic Goal Setting**, the respondents obtained a composite mean of 3.08, which is interpreted as Moderate Individual Growth Orientation. This means that students are able to set goals for their self-improvement, but these goals may not always be concrete, consistent, or fully aligned with long-term aspirations. The moderate level suggests that while students recognize the importance of setting personal and academic objectives, they may face challenges in defining realistic and structured goals. In the context of the respondents, this indicates that their goal-setting ability is present but not yet developed into a strong and systematic approach toward growth.

This implies that students have an average capacity for directing their personal development through strategic planning. While they attempt to set goals, their approach may remain general or situational rather than deeply intentional and sustained. Such a pattern reflects the transitional phase students often experience in balancing academic demands, personal aspirations, and emerging adult responsibilities.

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The findings are consistent with existing literature indicating that students frequently display moderate levels of goal-setting skills as part of their developmental journey. Research has suggested that while learners acknowledge the importance of clear and strategic goals, factors such as fluctuating motivation and external pressures often hinder their ability to pursue them consistently (Robinson & Persky, 2020). Similarly, studies have shown that young adults often establish goals in response to immediate academic or social demands rather than as part of a structured growth plan (Hellström & Beckman, 2021). Other research also highlights that moderate strategic goal setting reflects students' ongoing efforts to transition into self-directed learning and personal development (Nioda & Tagare, 2024).

In terms of **Support Mobilization**, the respondents obtained a composite mean of 2.96, which is interpreted as Moderate Individual Growth Orientation. This means that students occasionally seek assistance from others or utilize external resources when pursuing personal growth, but they do not do so consistently. The moderate level suggests that while students recognize the value of support from peers, mentors, or institutional resources, they may hesitate to actively seek help due to self-reliance, lack of awareness, or perceived stigma.

This implies that students are moderately capable of acknowledging the importance of social and institutional support in their growth journey. However, their tendency to rely more on personal effort than collaborative or external assistance suggests limitations in their use of available resources. Such a pattern underscores the idea that students are navigating between independence and interdependence, reflecting the challenges of self-directed growth within the academic environment.

The findings are consistent with prior research indicating that students often underutilize available support systems despite recognizing their importance. Studies have shown that many young adults hesitate to seek help due to concerns about self-image, independence, or perceived social judgment (Seli, 2019). Similarly, research highlights that students demonstrate moderate tendencies in resource-seeking behaviors, often relying on peers rather than institutional or professional support (Lim et al., 2020).

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In terms of **Active Pursuit of Growth**, the respondents obtained a composite mean of 3.19, which is interpreted as Moderate Individual Growth Orientation. This means that students show a fair tendency to actively work on their personal growth, but their efforts are not fully consistent or sustained. The moderate rating suggests that while they are aware of opportunities for improvement and sometimes take initiative, such behaviors are not yet deeply ingrained as habitual practices.

This implies that students possess a moderate drive to improve themselves through active efforts and engagement in growth-oriented activities. Their orientation shows that they can recognize and pursue opportunities, but they may not always follow through with persistence or long-term consistency. This pattern demonstrates a balance between motivation and hesitation, indicating that growth is valued but not always prioritized in their daily lives.

The findings align with earlier research suggesting that students often demonstrate moderate levels of initiative in pursuing self-improvement. Studies indicate that while learners acknowledge the importance of personal growth, competing demands such as academic pressure and social responsibilities tend to limit their consistent engagement in growth-oriented actions (Yukhymenko-Lescroart, 2024). Similarly, research has shown that young adults frequently exhibit average persistence in actively pursuing self-directed goals, reflecting both motivation and external constraints (Eccles & Roeser, 2015). Other scholars also note that students' pursuit of growth is often contextual, influenced by opportunities and challenges in their environment (Comings, 2023).

The **grand mean** for the respondents' Individual Growth Orientation is 3.09, which is interpreted as Moderate Individual Growth Orientation. This means that, overall, students demonstrate an average tendency to recognize growth opportunities, set goals, mobilize support, and actively pursue personal development. While they possess awareness and initiative, their engagement in growth-oriented behaviors is not consistently strong or sustained. In the context of the respondents, this indicates that their orientation toward self-improvement is present but remains at a moderate level, reflecting both potential and limitations in their developmental journey.

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This implies that students exhibit a balanced but limited orientation toward growth across different dimensions. They are neither passive nor highly proactive in directing their development, suggesting that their motivation and efforts to grow are influenced by situational and personal factors. Their moderate level of growth orientation underscores that they value personal improvement but do not always prioritize or consistently act on it.

The findings are consistent with prior studies reporting moderate levels of personal growth orientation among students. Research has noted that while young adults often value self-improvement, their capacity to consistently engage in growth-oriented behaviors is influenced by transitional life challenges and academic demands (Bauer, 2021). Similarly, other studies have shown that students generally demonstrate average levels of self-awareness and initiative, reflecting both their motivation and the constraints of their environment (Flavian, 2016). Additional evidence suggests that growth orientation among learners often develops progressively rather than being fully established during their college years (Wolff et al., 2015).

Relationship Between Physical Activity and Individual Growth Orientation

The analysis of the relationship between the respondents' physical activity and individual growth orientation revealed a correlation coefficient of .858 with a p-value of .002, indicating a significant positive relationship at the 0.01 level (2-tailed). This means that higher levels of physical activity are strongly associated with higher levels of individual growth orientation among students. The strength of this correlation suggests that students who are more physically active also tend to demonstrate greater recognition of growth opportunities, better goal setting, increased resource mobilization, and stronger pursuit of personal development.

This means that students who consistently engage in physical activity are more likely to foster a proactive mindset toward personal growth. It implies that physical movement does not only influence health but also correlates with self-awareness, motivation, and intentional action in their personal development. Furthermore, it reflects

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that an active lifestyle may serve as a context in which individuals develop traits that support growth orientation, such as discipline, persistence, and adaptability.

The findings are consistent with studies suggesting that physical activity plays a critical role in enhancing personal development and self-directed growth. Research has shown that active engagement in physical activities is associated with improved self-regulation and higher levels of initiative in pursuing personal goals (Marentes-Castillo et al., 2024). Other studies confirm that active individuals demonstrate greater motivation, resilience, and adaptability, which align with higher individual growth orientation (Camariñas et al., 2022).

Moreover, literature highlights that students who maintain higher activity levels are more likely to display proactive personal development behaviors, as physical activity fosters not only physical but also psychological benefits. Several studies emphasize that being physically active correlates with the development of positive self-concept, strategic goal pursuit, and a stronger orientation toward growth (Jiang et al., 2021). Similarly, research suggests that physical activity helps cultivate habits such as perseverance and effective use of resources, both of which support personal growth orientation (Ahmed et al., 2017).

The implications of these results for policy emphasize the importance of viewing physical activity not merely as a health-related behavior but as a developmental factor that contributes to students' personal growth orientation. Policies in education and health can highlight the dual role of physical activity in fostering both physical well-being and psychological readiness for growth (Khan & Subhan, 2023). This finding suggests that institutions may consider integrating perspectives that recognize physical activity as part of holistic student development policies.

For practice, the results imply that the academic community should acknowledge the developmental benefits of physical activity beyond fitness outcomes. Stakeholders such as educators, administrators, and student service providers can view physical activity as a meaningful factor in students' self-awareness, motivation, and proactive orientation to growth (Li & Zhang, 2024).

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Conclusion

This study concludes that physical activity and individual growth orientation are closely linked components of students' holistic development. The findings collectively demonstrate that engagement in physical activity aligns with students' capacities for self-awareness, goal-directed behavior, effective use of support, and purposeful pursuit of personal growth. Rather than functioning solely as a health-related behavior, physical activity emerges as a behavioral context associated with psychological readiness for growth. This underscores the importance of viewing student development through an integrated lens that connects movement with personal and educational development.

Furthermore, the relationship between physical activity and growth orientation highlights the interconnected nature of behavioral and psychological processes in student life. Growth orientation appears to be shaped not only by cognitive and motivational factors but also by everyday behaviors that cultivate discipline, persistence, and adaptability. By situating physical activity within the broader framework of psychological development, this study contributes to a more cohesive understanding of student well-being. Overall, the findings reinforce the value of interdisciplinary perspectives in advancing knowledge on how students develop both physically and psychologically within educational settings.

Limitations of the Study

This study is limited by its reliance on self-reported data, which may be subject to response bias and social desirability effects. The use of a descriptive-correlational design also restricts the ability to establish causality between physical activity and individual growth orientation, as the findings only indicate associations rather than direct influences. In addition, the sample was drawn from a single group of student respondents, which may limit the generalizability of the results to broader populations with different cultural, academic, or socioeconomic contexts. Finally, the study focused only on two variables, excluding other potential factors such as academic stress, social support, or mental health, which may also influence students' growth orientation and physical activity engagement.

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