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## **Investigating physical activity as a buffer against academic burnout in rural academia**

## **Investigación sobre la actividad física como protección contra el agotamiento académico en la academia rural**

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## Abstract

This study explored the relationship between physical activity engagement and academic burnout among university students in a rural university. A descriptive-correlational research design was employed, involving a sample of tertiary students selected through simple random sampling. Standardized questionnaires were used to assess students' levels of physical activity engagement and academic burnout, including the domains of exhaustion, mental distance, cognitive impairment, emotional impairment, psychological distress, and psychosomatic complaints.

Data were analyzed using descriptive statistics and Pearson's correlation to determine the strength and significance of the relationships. Results revealed that students generally maintained moderate physical activity engagement (46.0%) and experienced moderate to high levels of academic burnout, with the emotional and psychological domains being the most affected (mean = 2.54). Significant negative relationships were observed between physical activity engagement and specific burnout domains, including exhaustion ( $r = -0.244$ ;  $p = .002$ ), cognitive impairment ( $r = -0.195$ ;  $p = .016$ ), and psychological distress ( $r = -0.183$ ;  $p = .024$ ), suggesting a role for physical activity in mitigating burnout symptoms.

The findings suggest that lifestyle factors, such as physical activity, can impact students' academic and psychological well-being, potentially contributing to a healthier educational experience. These insights may guide institutions in developing wellness-oriented strategies to support students. The primary objective of this study was to examine the relationship between students' physical activity engagement and their level of academic burnout.

**Keywords:** bodily engagement; scholastic exhaustion; student well-being; tertiary learners; university education

## Resumen

Este estudio exploró la relación entre la participación en actividades físicas y el agotamiento académico entre los estudiantes universitarios en una universidad rural. Se empleó un diseño de investigación descriptivo-correlacional, involucrando una muestra de estudiantes de educación superior seleccionados mediante muestreo aleatorio simple. Se utilizaron cuestionarios estandarizados para evaluar los niveles de compromiso con la actividad física y el agotamiento académico de los estudiantes, incluyendo los dominios de agotamiento, distancia mental, deterioro cognitivo, deterioro emocional, malestar psicológico y quejas psicósomáticas.

Los datos fueron analizados utilizando estadísticas descriptivas y la correlación de Pearson para determinar la fuerza y la significancia de las relaciones. Los resultados revelaron que los estudiantes generalmente mantenían un compromiso moderado con la actividad física (46.0%) y experimentaban niveles moderados a altos de agotamiento académico, siendo los dominios emocional y psicológico los más afectados (media = 2.54). Se observaron relaciones negativas significativas entre la participación en actividad física y dominios específicos del agotamiento, incluyendo el agotamiento ( $r = -0.244$ ;  $p = .002$ ), el deterioro cognitivo ( $r = -0.195$ ;  $p = .016$ ) y el malestar psicológico ( $r = -0.183$ ;  $p = .024$ ), lo que sugiere un papel para la actividad física en la mitigación de los síntomas del agotamiento.

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Los hallazgos sugieren que los factores de estilo de vida, como la actividad física, pueden impactar el bienestar académico y psicológico de los estudiantes, contribuyendo potencialmente a una experiencia educativa más saludable. Estos hallazgos pueden guiar a las instituciones en el desarrollo de estrategias orientadas al bienestar para apoyar a los estudiantes. El objetivo principal de este estudio fue examinar la relación entre el compromiso de los estudiantes con la actividad física y su nivel de agotamiento académico.

**Palabras clave:** compromiso corporal; agotamiento escolar; bienestar estudiantil; estudiantes de educación superior; educación universitaria

## Introduction

Academic burnout is a psychological condition that results from prolonged academic stress and excessive workload, often leading to emotional exhaustion, a sense of detachment from one's studies, and a decline in academic performance (May et al., 2015). It is marked by fatigue, reduced motivation, and a growing sense of incompetence in fulfilling academic responsibilities (Smith & Emerson, 2021). Students experiencing burnout may also display symptoms such as decreased concentration, irritability, and a lack of enthusiasm toward school-related tasks (Koropets et al., 2019). This condition affects academic outcomes and poses serious threats to students' overall mental health and well-being (Win, 2024).

Physical activity engagement refers to the regular participation in bodily movements that result in energy expenditure and contribute to physical fitness and overall health (Gothe et al., 2020). It encompasses various forms of movement, including exercise, sports, active recreation, and even daily activities such as walking or cycling (Zheng et al., 2022). Engaging in physical activity has been linked to improved cardiovascular health, enhanced mood, improved cognitive functioning, and reduced symptoms of anxiety and depression. Among students, consistent physical activity has also been linked to improved academic performance, better stress management, and enhanced emotional resilience (Marsigliante et al., 2023).

Academic burnout among students has become a growing concern due to the increasing demands of academic life, heightened competition, and inadequate mental health support in schools (Nicita et al., 2025). Many students experience chronic stress, anxiety, and emotional exhaustion, which negatively impact their motivation,

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concentration, and academic performance (Atik & Çelik, 2021). On the other hand, physical activity engagement among students is declining due to sedentary lifestyles, increased screen time, academic workload, and limited access to recreational facilities, especially in rural areas (Canby et al., 2015). This decline contributes to poor physical health, weakened mental well-being, and diminished coping mechanisms for stress. The combination of academic pressure and physical inactivity creates a cycle that further exacerbates students' vulnerability to burnout and emotional distress (Park et al., 2022).

Several studies have extensively explored academic burnout, highlighting its prevalence, causes, and consequences among students across different educational levels. Research has shown that academic burnout is closely linked to excessive workload, poor time management, lack of autonomy, and high academic expectations, which collectively contribute to emotional exhaustion and reduced academic efficacy (Wei et al., 2021). Burnout is not only a psychological concern but also a predictor of decreased academic engagement and increased dropout intentions (Vizoso et al., 2019). It consists of three core dimensions—exhaustion, cynicism, and inefficacy—that consistently appear across global contexts (Cheng & Lin, 2023). Students experiencing high levels of burnout tend to report lower grades, decreased satisfaction with their studies, and greater psychological distress (Wang et al., 2015).

Numerous studies have highlighted the positive effects of physical activity on both physical and mental health, particularly among students (Westerbeek & Eime, 2021). Research has consistently shown that regular physical activity enhances mood, reduces symptoms of anxiety and depression, and improves overall psychological well-being (Romeo et al., 2019). It also supports cognitive function, memory, and academic performance by increasing blood flow to the brain and promoting the release of mood-regulating neurotransmitters (Martins et al., 2021). Among youth, engaging in physical activity is associated with higher self-esteem, better social interactions, and lower stress levels (Donnelly & Lambourne, 2011). However, recent findings indicate a concerning decline in student physical activity levels due to technological distractions, academic pressure, and lack of access to safe spaces for exercise (Klussman et al., 2021).

Despite the substantial body of research on academic burnout and physical activity, a significant gap exists in understanding the relationship between these two

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variables, particularly within rural academia. While studies have examined the individual effects of academic burnout and physical activity, limited research has explored how physical activity might serve as a buffer against academic burnout among students, especially in rural settings where unique challenges, such as limited resources and increased isolation, may intensify academic stress. How does physical activity participation influence academic burnout in rural students? The primary purpose of this study is to investigate the role of physical activity in alleviating academic burnout, aiming to provide valuable insights into how incorporating physical movement can support student well-being and enhance academic performance in rural academic environments.

This research is crucial for understanding how physical activity can help alleviate academic burnout among students, particularly in rural academia, where unique challenges prevail. By exploring this relationship, the study aims to provide valuable insights that can inform interventions and support mechanisms to improve student well-being. The findings could offer practical strategies for managing academic stress and enhancing the overall educational experience for the respondents. In the broader scholarly community, this research contributes to the body of knowledge by bridging the gap between physical activity and academic burnout, ultimately guiding educators, policymakers, and mental health professionals in developing more effective, holistic approaches to student support.

## Methods

### Research Design:

This research employed a quantitative research design, specifically a descriptive correlation approach, to explore the relationship between physical activity and academic burnout among students in rural academia. Quantitative research is a systematic investigation involving collecting and analyzing numerical data to uncover patterns, relationships, or generalizable findings (Hirose & Creswell, 2023). On the other hand, descriptive correlation is a research method that seeks to describe the relationship between two or more variables without manipulating them, aiming to identify how

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changes in one variable may be associated with changes in another (Creswell & Poth, 2016).

A quantitative research design, specifically descriptive correlation, is suitable for this study because it enables a precise examination of the relationship between physical activity engagement and academic burnout. These two variables cannot be manipulated in an experimental setting. This approach allows for the collection of objective data on students' physical activity levels and their experiences with burnout, facilitating the identification of patterns or associations. Furthermore, the descriptive correlation method aligns well with the study's goal of understanding how physical activity may mitigate academic burnout, offering a foundation for future interventions and research.

### **Respondents and Sampling**

A total of 152 respondents were selected for this study using simple random sampling, a technique in which every individual in the population has an equal chance of being chosen (Noor et al., 2022). This sampling method is well-suited for this study, as it ensures a fair and unbiased selection of participants, thereby reducing potential selection bias. By using simple random sampling, the study aims to achieve a representative sample of students from rural academia, thereby increasing the generalizability of the findings. This approach also enhances the reliability of the results by minimizing systematic errors in the selection process, ensuring that the study's conclusions are based on a diverse and random group of respondents.

The data for this study were collected through an online survey administered to university students, using standardized instruments that measured physical activity engagement and academic burnout. This sample size was determined based on the accessible population within the university and aligns with similar studies using correlational designs, where samples of over 100 are generally considered adequate for detecting meaningful relationships between variables. The population from which the sample was drawn consisted of enrolled undergraduate students across various academic programs in a public university located in a rural area. These students represent a diverse academic demographic, making the sample suitable for examining trends in physical activity and academic burnout in the context of higher education.

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## Research Instrument

This study utilized two standardized research instruments to measure the key variables. To assess physical activity engagement, the International Physical Activity Questionnaire – Short Form (IPAQ-SF) was adopted. It consists of 7 items covering different intensities of physical activity (vigorous, moderate, and walking) and sedentary behavior over the past seven days. Responses are scored based on duration (in minutes) and frequency (in days) and categorized into low, moderate, or high physical activity levels. To measure academic burnout, the Student Version of the Burnout Assessment Tool (BAT-Student) developed by Schaufeli et al. (2020) was used. This scale includes 22 items divided into six dimensions: exhaustion, mental distance, cognitive impairment, emotional impairment, psychological distress, and psychosomatic complaints. Each item is rated on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating greater levels of burnout. Both instruments have been widely validated and demonstrated acceptable reliability, with the BAT reporting a Cronbach's alpha of 0.88 in previous studies.

## Statistical Analysis

This research used both descriptive and inferential statistics to analyze the data, employing frequency counts, mean, and composite mean to describe the two variables: physical activity and academic burnout. Descriptive statistics were used to summarize the demographic profile of the respondents and the overall levels of physical activity and burnout. Pearson's Correlation Coefficient was applied to test the relationship between physical activity and academic burnout. This statistical test is ideal for determining the strength and direction of the linear relationship between two continuous variables, making it suitable for analyzing how physical activity levels correlate with the degree of academic burnout. Pearson's correlation allows for assessing the magnitude and significance of the association, ensuring a comprehensive understanding of their relationship. This method is well-suited for the nature of this study, providing clear insights into the link between the two variables.

## Ethical Consideration

Ethical considerations were strictly observed throughout the conduct of this research. Before data collection, informed consent was obtained from all participants,

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clearly explaining the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without penalty. Anonymity and confidentiality were ensured by not collecting any personally identifiable information, and all responses were used solely for academic purposes. The research protocol was reviewed and approved by the relevant institutional research ethics committee, ensuring adherence to ethical standards in the conduct of studies involving human participants. These measures ensured that the rights, privacy, and well-being of the respondents were fully protected.

## Results

Table 1 displays the frequency and percentage distribution of respondents' physical activity engagement, categorized into low, moderate, and high levels. It provides a clear overview of how many students fall into each category, offering insight into the overall physical activity patterns among the respondents.

Table 1. Distribution of Respondents According to Level of Physical Activity Engagement

| Physical Activity Engagement | Frequency (n=152) | Percentage (%) |
|------------------------------|-------------------|----------------|
| Low Activity                 | 23                | 15.0           |
| Moderate Activity            | 70                | 46.0           |
| High Activity                | 59                | 39.0           |

Table 2 illustrates the levels of academic burnout among the respondents, showing the frequency and percentage distribution of students experiencing low, moderate, and high levels of burnout. This table clearly illustrates how academic burnout affects students, providing valuable insights into their mental and emotional well-being.

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Table 2. Distribution of Academic Burnout Levels Among the Respondents Across Key Domains

| Statements   | Standard Deviation | Mean        | Verbal Description      |
|--|--------------------|-------------|-------------------------|
| <b>Exhaustion</b>  |                    |             |                         |
| 2. Everything I do at school requires a great deal of effort.                    | .68                | 3.14        | Agree                   |
| 8. I feel mentally exhausted and drained at the end of my school day.            | .61                | 2.88        | Agree                   |
| 3. After a day at school, I find it hard to recover my energy.                   | .60                | 2.78        | Agree                   |
| 4. At school, I feel physically exhausted.                                       | .71                | 2.75        | Agree                   |
| 1. At school, I feel mentally exhausted.   | .62                | 2.70        | Agree                   |
| 5. When I get up in the morning, I lack the energy to start a new day at school. | .67                | 2.70        | Agree                   |
| 6. I want to be active at school, but I somehow struggle to manage.              | .67                | 2.63        | Agree                   |
| 7. When I exert myself at school, I quickly get tired.                           | .61                | 2.57        | Agree                   |
| 9. I struggle to find any enthusiasm for school.                                 | .66                | 2.47        | Disagree                |
| <b>Composite Mean</b>  | <b>.71</b>         | <b>2.73</b> | <b>High Burnout</b>     |
| <b>Mental distance</b>   |                    |             |                         |
| 11. I feel a strong aversion towards my school.                                  | .67                | 2.57        | Agree                   |
| 10. I do not think much about what I am at school.                               | .62                | 2.47        | Disagree                |
| 13. I'm cynical about what my school means to others.                            | .69                | 2.47        | Disagree                |
| 12. I feel indifferent about my school.  | .68                | 2.38        | Disagree                |
| <b>Composite Mean</b>  | <b>.68</b>         | <b>2.47</b> | <b>Moderate Burnout</b> |
| <b>Cognitive impairment</b>  |                    |             |                         |
| 18. I make mistakes at school because I have my mind on other things.            | .73                | 2.58        | Agree                   |
| 14. At school, I have trouble staying focused.                                   | .70                | 2.47        | Disagree                |
| 15. At school, I struggle to think clearly.                                      | .69                | 2.45        | Disagree                |
| 17. When I'm at school, I have trouble concentrating.                            | .68                | 2.43        | Disagree                |
| 16. I'm forgetful and distracted at school.                                      | .68                | 2.42        | Disagree                |
| <b>Composite Mean</b>  | <b>.69</b>         | <b>2.47</b> | <b>Moderate Burnout</b> |
| <b>Emotional Impairment</b>  |                    |             |                         |
| 21. During school time, I become irritable when things don't go my way.          | .74                | 2.40        | Disagree                |
| 22. I get upset or sad at school without knowing why.                            | .76                | 2.34        | Disagree                |
| 19. At school, I feel unable to control my emotions.                             | .71                | 2.28        | Disagree                |
| 20. I do not recognize myself in the way I react emotionally at school.          | .73                | 2.27        | Disagree                |
| 23. At school, I may overreact unintentionally.                                  | .72                | 2.27        | Disagree                |
| <b>Composite Mean</b>  | <b>.73</b>         | <b>2.31</b> | <b>Moderate Burnout</b> |
| <b>Psychological distress</b>  |                    |             |                         |
| 28. Noise and crowds disturb me.   | .68                | 2.78        | Agree                   |
| 25. I tend to worry.   | .65                | 2.75        | Agree                   |
| 26. I feel tense and stressed.   | .68                | 2.73        | Agree                   |
| 24. I have trouble falling or staying asleep.                                    | .66                | 2.55        | Agree                   |
| 27. I feel anxious and/or suffer from panic attacks.                             | .62                | 2.34        | Disagree                |
| <b>Composite Mean</b>  | <b>.64</b>         | <b>2.63</b> | <b>High Burnout</b>     |
| <b>Psychosomatic complaints</b>  |                    |             |                         |
| 32. I experience muscle pain, for example, in my                                 | .62                | 2.74        | Agree                   |

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|   |            |             |                         |
|---|------------|-------------|-------------------------|
| neck, shoulders, or back.                               |            |             |                         |
| 31. I suffer from headaches.                            | .63        | 2.55        | Agree                   |
| 30. I suffer from stomach and/or intestinal complaints. | .68        | 2.32        | Disagree                |
| 29. I suffer from palpitations or chest pain.           | .67        | 2.28        | Disagree                |
| 33. I often get sick.                                   | .68        | 2.25        | Disagree                |
| <b>Composite Mean</b>                                   | <b>.64</b> | <b>2.43</b> | <b>Moderate Burnout</b> |
| <b>Grand Mean</b>                                       | <b>.68</b> | <b>2.54</b> | <b>High Burnout</b>     |

Legend:

|           |                    |                  |
|-----------|--------------------|------------------|
| Scale:    | Verbal Description | Interpretation   |
| 4.00-3.50 | Strongly Agree     | Severe Burnout   |
| 3.49-2.50 | Agree              | High Burnout     |
| 2.49-1.50 | Disagree           | Moderate Burnout |
| 1.49-1.00 | Strongly Disagree  | Low Burnout      |

Table 3 presents the test results of the relationship between the respondents' physical activity engagement and academic burnout, using Pearson's Correlation Coefficient. It illustrates the strength, direction, and significance of the correlation between the two variables, providing insight into how physical activity may impact academic burnout levels among students.

Table 3. Correlation Between Respondents' Physical Activity Engagement and Dimensions of Academic Burnout

| Paired Variables         | Pearson Correlation Coefficient | p-value | Interpretation $\alpha=0.05$ |
|--------------------------|---------------------------------|---------|------------------------------|
| Physical Activity and... |                                 |         |                              |
| Exhaustion               | -.244**                         | .002    | Significant                  |
| Mental distance          | -.059                           | .473    | Not Significant              |
| Cognitive impairment     | -.195*                          | .016    | Significant                  |
| Emotional Impairment     | -.017                           | .839    | Not Significant              |
| Psychological distress   | -.183*                          | .024    | Significant                  |
| Psychosomatic complaints | -.014                           | .865    | Not Significant              |

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

\* . Correlation is significant at the 0.05 level (2-tailed).

## Discussion

### Respondents' Physical Activity Engagement

Table 1 shows the students' physical activity engagement. Out of 152 respondents, 23 (15.0%) reported low activity, 70 (46.0%) reported moderate activity, and 59 (39.0%) reported high activity. While most students maintain an active lifestyle, over half are only moderately active or engage in minimal physical activity. This implies that many students may not achieve the optimal level of physical engagement that supports both physical and mental well-being, which in turn may influence their academic performance and stress levels.

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The data indicate that many students fall under the low and moderate physical activity categories, which could cause concern. This pattern suggests that many students may be insufficiently active, which could potentially affect their energy levels, concentration, and resilience to academic stress. Physical inactivity can limit the physiological and psychological benefits typically gained from regular exercise, possibly making students more vulnerable to academic burnout. Moreover, the moderate engagement category may reflect inconsistent or inadequate participation in physical activities, which may not be sufficient to provide the full protective effects against stress. These findings highlight how physical activity behaviors among students reflect broader patterns of wellness and lifestyle habits that academic demands or environmental limitations may influence.

These findings are supported by previous studies highlighting the insufficient physical activity levels among college students, especially in academically demanding environments (Esto et al., 2025). For instance, studies have shown that many students fail to meet recommended physical activity guidelines, which is linked to increased stress and decreased academic motivation (Caryl Esponja et al., 2025). Other research indicates that students with lower physical activity levels tend to report higher levels of mental fatigue and reduced emotional well-being. Similarly, moderate to low physical activity is observed daily among university students and may reflect growing lifestyle imbalances influenced by academic pressures (Zhu et al., 2021).

### Academic Burnout among the Respondents

Regarding **exhaustion**, the statement “Everything I do at school requires a great deal of effort” received the highest mean of 3.14, with a corresponding verbal description of “agree.” Many students perceive their academic tasks as demanding and mentally draining. It suggests that school-related responsibilities consume a substantial amount of their energy and concentration. This implies that students may be experiencing constant strain, potentially leading to decreased motivation and emotional fatigue.

On the contrary, “When I exert myself at school, I quickly get tired” received the lowest mean of 2.47, still with a verbal description of “agree.” Although students feel

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that their tasks require effort, not all of them immediately experience physical or mental exhaustion. It indicates that while exertion is acknowledged, the threshold for tiredness may vary depending on task complexity or personal coping capacity. This implies that some students may still be able to sustain performance despite perceived effort, possibly due to resilience or effective time management.

In terms of exhaustion, the composite mean for this domain was 2.73, interpreted as “high burnout.” This means that, overall, students demonstrate considerable signs of academic exhaustion. It reflects a pattern of prolonged stress and energy depletion in the school setting. This implies that students are at risk of experiencing burnout symptoms, such as demotivation, fatigue, and reduced academic enthusiasm, which may hinder their performance and overall well-being.

The findings above align with previous studies, which indicate that academic tasks often leave students feeling emotionally and mentally overwhelmed (Basri et al., 2022). Research has shown that continuous academic demands can cause high levels of exhaustion among students, contributing to burnout and disengagement (Sun et al., 2024). Furthermore, similar results were observed in studies where high academic pressure and expectations led to significant fatigue and reduced coping abilities (Aghajari et al., 2018).

Regarding **mental distance**, “I feel a strong aversion towards my school” received the highest mean of 2.57, with a verbal description of “agree.” This means that several students reported feelings of dislike or emotional detachment from their academic environment. This suggests that some learners may have developed negative perceptions of school-related experiences. This implies a possible disconnection between the students and their educational institutions, which could affect their engagement and sense of belonging.

On the contrary, “I feel indifferent about my school” received the lowest mean of 2.38, with a verbal description of “disagree.” This means most students do not exhibit emotional apathy or neutrality toward their school. It reflects a level of emotional engagement, even if not entirely positive. This implies that while some students may feel aversion, they have not completely detached themselves from school life and still hold some emotional response toward it.

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The composite mean of mental distance was 2.47, interpreted as “moderate burnout.” This indicates that students generally exhibit moderate emotional and psychological detachment from the school. It suggests that while burnout is present, it has not reached a severe level for most students. This implies a growing disengagement that, if persistent, could eventually escalate into more serious forms of academic withdrawal.

These findings are consistent with studies indicating that emotional disconnection from academic settings can significantly contribute to burnout (Mamat et al., 2023). Other research also highlights that mental distance often develops as a response to prolonged stress and unmet academic expectations (Mikolajczak & Roskam, 2020). Furthermore, evidence suggests that moderate levels of mental distance can harm motivation, classroom participation, and student-teacher relationships (Jiménez-Ortiz et al., 2019).

Regarding **cognitive impairment**, “I make mistakes at school because I have my mind on other things” received the highest mean of 2.58, with a verbal description of “agree.” Students are often mentally preoccupied during academic tasks, which may hinder their ability to concentrate fully. It reflects cognitive overload, where distractions outside of school interfere with academic performance. This implies a reduced mental presence in learning activities, which may affect accuracy and productivity.

On the contrary, “I’m forgetful and distracted at school” obtained the lowest mean of 2.42, with a verbal description of “disagree.” Fewer students consider themselves generally forgetful or frequently distracted during class. It suggests that while distractions do occur, they may not be consistent or pervasive across academic situations. This implies that students may still retain cognitive control despite occasional lapses in attention.

The composite mean of cognitive impairment was 2.47, corresponding to a verbal interpretation of “moderate burnout.” This suggests that students encounter moderate cognitive challenges related to academic burnout. It reflects noticeable mental strain, though not at a highly critical stage. This implies an emerging cognitive disruption that could impact learning efficacy and educational decision-making.

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These results align with findings that burnout can affect cognitive performance by impairing concentration and increasing the likelihood of errors (Fiorilli et al., 2017). Other studies have shown that students experiencing burnout often report difficulties maintaining attention and organizing thoughts (Biali, 2022). Additionally, moderate cognitive impairment due to burnout has been linked to declining academic performance and reduced academic confidence (Choi et al., 2020).

Regarding **emotional impairment**, the statement “During school time, I become irritable when things don’t go my way” garnered the highest mean of 2.40, with a verbal description of “agree.” Many students experience irritability when faced with academic stressors or unmet expectations. It indicates that emotional regulation can be challenging during demanding school activities. This implies a presence of emotional strain that could affect students’ interpersonal behavior and overall learning atmosphere.

On the contrary, the statement “At school, I may overreact unintentionally” received the lowest mean of 2.27, with a verbal description of “disagree.” Students generally do not perceive themselves as emotionally reactive or excessively expressive. It suggests that while irritability may occur, most students retain a degree of emotional restraint. This implies a manageable level of emotional response even under stress.

The composite mean in terms of emotional impairment was 2.31, indicating a level of “moderate burnout.” This means students are experiencing a moderate level of emotional difficulty as part of their academic experience. Emotional exhaustion may manifest subtly, but it can have a significant impact on mood, motivation, and peer interactions. This implies a need for emotional balance as part of the academic journey.

These findings are consistent with prior studies, which have shown that students facing academic burnout report emotional exhaustion and irritability in response to academic challenges (van Dijk et al., 2020). Similarly, research indicates that burnout frequently leads to mood swings and difficulties managing emotions in school settings (Drăghici & Cazan, 2022). Emotional strain has also been linked to reduced engagement and academic satisfaction among students experiencing symptoms of burnout (Shankland et al., 2019).

In terms of **psychological distress**, the statement “Noise and crowds disturb me” received the highest mean of 2.78, with a verbal description of “agree.” This means that

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external environmental stimuli often affect students, which may heighten their stress levels. It reflects a tendency toward sensory sensitivity or discomfort in overstimulating academic environments. This implies that environmental factors may significantly contribute to students' psychological strain during school activities.

On the other hand, the statement “I feel anxious and/or suffer from panic attacks” garnered the lowest mean of 2.34, with a verbal description of “disagree.” This means that while some students may experience anxiety, it is not strongly pronounced across the group. It shows a relatively low prevalence of intense psychological symptoms such as panic attacks. This implies that although psychological distress exists, severe emotional disturbances are less commonly reported.

The composite mean in terms of psychological distress was 2.63, with a verbal interpretation of “high burnout.” This means that students exhibit elevated signs of psychological strain within the academic setting. It indicates that when combined with environmental triggers, internal stressors may challenge students' mental well-being. This implies that burnout is both physical and emotional, and manifests cognitively through heightened psychological sensitivity.

These results are supported by findings indicating that academic pressure and crowded environments can elevate students' psychological stress levels (Shen et al., 2015). Similar studies emphasize that students may react strongly to environmental triggers, even when not showing severe anxiety symptoms (Quina Galdino et al., 2020). Moreover, high academic demands have been associated with increased signs of psychological burnout among college students (Mojallal et al., 2022).

In terms of **psychosomatic complaints**, the statement “I suffer from muscle pain, for example, in the neck, shoulder, or back” received the highest mean of 2.74, with a verbal description of “agree.” Students commonly experience physical discomfort, which is likely related to stress or academic workload. It indicates a connection between psychological strain and bodily symptoms. This implies that stress may be physically manifested through musculoskeletal pain among students.

On the contrary, “I often get sick” obtained the lowest mean of 2.25, with a verbal description of “disagree.” Students do not frequently associate their academic experience with regular illness. It suggests that while they may feel physical strain, it

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does not often escalate into recurring sickness. This implies that their physical symptoms are more stress-related than indicative of a weakened immune system.

The composite mean of psychosomatic complaints was 2.43, with a verbal interpretation of “moderate burnout.” Students report noticeable, though not severe, physical discomfort associated with academic life. It shows that the presence of somatic symptoms is moderately common. This implies that physical manifestations of stress are relevant indicators of student burnout, even if not extreme.

These findings align with research showing that psychological stress among students can lead to muscle tension and body pain (Yadlovskaya et al., 2022). Other studies confirm that academic-related stress may cause somatic symptoms without necessarily resulting in frequent illness (Jackson-Koku & Grime, 2019). Similar trends have been documented where students reported moderate physical strain as part of their burnout experience (Smith & Emerson, 2021).

The **grand mean** for students' academic burnout was 2.54, with a verbal interpretation of “high burnout.” This means that students typically experience heightened levels of exhaustion, disengagement, and psychological strain in response to academic demands. It reflects the cumulative impact of mental, emotional, and physical stressors. This implies that academic responsibilities have a significant effect on students' overall well-being and functioning.

These results are consistent with studies indicating that high academic burnout is common among university students facing prolonged stress and academic overload (Mahmoud & Rothenberger, 2019). Research also highlights that burnout can manifest through both psychological distress and physical symptoms, reinforcing the study's findings (Nioda & Tagare, 2024). Moreover, similarly high levels of student burnout have been observed in related academic settings (Pascua & Tagare, 2024).

### **Relationship between Physical Activity Engagement and Academic Burnout**

The test of the relationship between respondents' physical activity engagement and academic burnout revealed significant negative correlations in three domains. Exhaustion had the strongest significant relationship, with a Pearson correlation coefficient of  $-0.244$  and a p-value of  $0.002$ , indicating that higher physical activity is associated with lower levels of exhaustion. Cognitive impairment also showed a

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significant inverse relationship ( $r = -.195$ ,  $p = .016$ ), as did psychological distress ( $r = -.183$ ,  $p = .024$ ). These findings suggest that students who engage more in physical activity report fewer symptoms related to exhaustion, cognitive difficulties, and psychological distress.

The results revealed that specific dimensions of academic burnout—specifically mental distance, emotional impairment, and psychosomatic complaints—did not show a significant relationship with physical activity engagement. This suggests that while physical activity may positively influence aspects such as exhaustion and cognitive functioning, it may not directly impact feelings of detachment from school, emotional volatility, or stress-related physical symptoms in the same manner. These domains may be influenced more by psychological, social, or academic factors rather than physical routines alone. The absence of significant correlations highlights the multifaceted nature of burnout, indicating that not all its components are equally affected by lifestyle behaviors such as exercise. This highlights the importance of addressing academic burnout through a broader range of interventions, extending beyond physical activity.

This means that physical activity may serve as a buffer against specific dimensions of academic burnout, particularly those affecting students' energy, mental clarity, and emotional stability. This implies that as students increase their engagement in physical activity, they are more likely to experience improved focus and reduced emotional fatigue. It also indicates that psychological well-being may benefit from regular physical engagement. These relationships highlight the role of physical activity in students' academic experiences.

These findings align with studies showing that physical activity reduces burnout symptoms and improves students' cognitive function (Camariñas et al., 2022). Other research also supports the idea that physical engagement enhances emotional resilience and mental focus, which counteracts symptoms of psychological distress and exhaustion (Mcdermott et al., 2020). Furthermore, physical activity has been identified as a contributing factor in maintaining academic performance by mitigating stress-related impairments (Veilleux et al., 2022).

The results suggest that increased physical activity engagement among students is associated with lower levels of academic burnout, particularly in terms of exhaustion,

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cognitive impairment, and psychological distress. For policy and practice, this highlights the importance of integrating physical wellness programs into the academic environment to support student well-being. Educational institutions may consider enhancing access to physical activities and encouraging movement as part of daily routines to improve mental clarity and reduce emotional fatigue (Singh et al., 2023). Recognizing physical activity as a key contributor to academic success can guide decision-makers in shaping more supportive, health-conscious learning environments (Sasso et al., 2016).

## Conclusion

This study highlights the importance of understanding how physical activity engagement relates to academic burnout, explicitly addressing the need for empirical data in rural educational settings where such investigations remain limited. By focusing on multiple burnout dimensions, the study contributes to a more nuanced perspective of how lifestyle behaviors affect students' academic and psychological functioning. However, it also highlights the complexity of academic burnout, demonstrating that not all its domains are significantly influenced by physical activity alone. The findings suggest that other contextual or psychosocial factors may play a more significant role in aspects such as emotional detachment and somatic complaints. Future research may consider employing longitudinal designs, larger and more diverse populations, or integrating qualitative approaches to explore the deeper mechanisms behind these relationships. Additionally, examining the interaction of physical activity with variables such as coping strategies, academic pressure, and mental health support could provide a broader framework for addressing student burnout holistically.

## Limitations of the Study:

This study is limited by its reliance on self-reported data, which may be influenced by social desirability or recall bias. The use of a single institution and a relatively small sample size may also limit the generalizability of the findings to broader student populations. Additionally, the cross-sectional design restricts the ability to draw causal inferences between physical activity engagement and academic burnout. Future

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studies may benefit from incorporating diverse institutions, larger sample sizes, and longitudinal methods to enhance validity and applicability.

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