

Impact of Regular Physical Activity on Mental Health and Academic Performance among College Students: An Empirical Study in Davanagere

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ABSTRACT

Regular physical activity plays a vital role in promoting both physical and psychological well-being among college students. In today's competitive academic environment, students frequently experience stress, anxiety, and other mental health challenges that may adversely affect their academic performance. This study aims to examine the impact of regular physical activity on mental health and academic performance among college students. Specifically, the study investigates the relationship between students' participation in physical activities, their levels of stress, anxiety, emotional well-being, and academic achievement.

A quantitative research design was adopted using a structured questionnaire administered to college students from higher education institutions. Data were collected through a convenience sampling technique, and descriptive statistics, correlation analysis, and multiple regression analysis were employed to examine the relationships among the study variables. Mental health was measured using indicators such as stress management, emotional well-being, self-confidence, and anxiety levels, while academic performance was assessed through students' self-reported academic achievement and learning effectiveness.

The findings are expected to reveal a significant positive relationship between regular physical activity and mental health, indicating that students who engage in consistent physical exercise experience lower stress and anxiety levels, improved emotional stability, and greater self-confidence. Furthermore, the study is expected to demonstrate that improved mental health contributes positively to academic performance by enhancing concentration, motivation, classroom engagement, and overall learning outcomes.

The study concludes that regular physical activity should be encouraged as an essential component of higher education to improve students' psychological well-being and academic success. The findings provide valuable implications for educational institutions, policymakers, physical education professionals, and student support services in designing effective health promotion and wellness programs that foster holistic student development.

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KEYWORDS: Physical Activity, Mental Health, Academic Performance, College Students, Stress Management, Emotional Well-being, Higher Education.

1. INTRODUCTION

Physical activity is widely recognized as an essential component of a healthy lifestyle and plays a significant role in improving physical, mental, emotional, and social well-being. Regular participation in physical exercise contributes to better

cardiovascular health, muscular strength, flexibility, and overall fitness while reducing the risk of chronic diseases. Beyond physical health, numerous studies have demonstrated that physical activity positively influences psychological well-being by reducing

stress, anxiety, and depression and improving self-esteem, emotional stability, and cognitive functioning.

College life is a critical phase in an individual's personal and academic development. During this period, students encounter various academic responsibilities, examinations, project work, career planning, and social adjustments that often result in increased stress and psychological pressure. The rapid adoption of digital technology, prolonged screen time, sedentary lifestyles, and reduced participation in sports and recreational activities have further contributed to declining physical activity levels among college students. These lifestyle changes can negatively affect both mental health and academic performance.

Mental health is an important determinant of students' academic success. Students experiencing high levels of stress, anxiety, and emotional exhaustion often face difficulties in concentration, memory retention, classroom participation, decision-making, and academic achievement. In contrast, students who engage regularly in physical activities such as walking, jogging, yoga, gym workouts, sports, and recreational games generally report better emotional well-being, increased motivation, improved concentration, and enhanced learning outcomes.

Academic performance is influenced by several psychological, social, and behavioural factors. Regular physical activity enhances blood circulation to the brain, improves cognitive functioning, increases attention span, and promotes better sleep quality, all of which contribute to effective learning and improved academic achievement. Educational institutions are increasingly recognizing the importance of integrating physical fitness programmes into campus life to promote students' holistic development.

In Davanagere, several higher education institutions encourage students to participate in sports, yoga, fitness programmes, and extracurricular activities. However, differences in participation levels, academic workload, lifestyle habits, and awareness regarding physical fitness may influence students' mental health and educational outcomes. Despite increasing awareness about health and wellness, empirical evidence examining the relationship between physical activity, mental health, and academic performance among college students in Davanagere remains limited.

Therefore, this study aims to examine the impact of regular physical activity on the mental health and academic performance of college students in

Davanagere. The findings are expected to provide valuable insights for educational institutions, physical education professionals, policymakers, and student welfare departments in designing effective health promotion initiatives and wellness programmes that support students' academic excellence and overall well-being.

Regular Physical Activity as a Tool for Improving Mental Health

Regular physical activity is recognized as one of the most effective non-pharmacological approaches for promoting mental health and psychological well-being. Participation in activities such as walking, jogging, cycling, swimming, yoga, aerobic exercise, and sports not only enhances physical fitness but also contributes significantly to emotional and psychological health. Exercise stimulates the release of neurotransmitters, including endorphins, serotonin, and dopamine, which improve mood, reduce psychological distress, and enhance overall mental well-being. The following key elements explain how regular physical activity improves mental health among college students.

1. Stress Management

Stress management refers to an individual's ability to effectively cope with academic, personal, and social pressures. College students often experience stress due to examinations, assignments, career uncertainty, financial concerns, and interpersonal relationships. Regular physical activity helps regulate the body's stress response by reducing cortisol levels, increasing endorphin production, and promoting relaxation. Exercise also improves sleep quality, emotional regulation, and coping abilities, enabling students to manage stressful situations more effectively. Consequently, physically active students generally experience lower levels of perceived stress and greater emotional balance.

Key Indicators

- Ability to manage academic pressure
- Reduced emotional tension
- Better relaxation after stressful situations
- Improved sleep quality
- Effective coping with daily challenges

2. Anxiety Reduction

Anxiety is characterized by persistent feelings of worry, nervousness, fear, or apprehension that may interfere with daily functioning and academic performance. Regular physical activity has been shown to reduce anxiety by improving neurotransmitter activity, decreasing muscle tension, and enhancing psychological relaxation. Participation in sports and exercise also provides opportunities for social interaction, distraction from negative thoughts,

and increased self-control. Students who engage in regular physical activity often report lower levels of anxiety and improved emotional stability.

Key Indicators

- Reduced nervousness
- Lower examination anxiety
- Improved emotional calmness
- Better control over negative thoughts
- Increased feelings of relaxation

3. Emotional Well-being

Emotional well-being refers to the ability to experience positive emotions, maintain emotional balance, and effectively manage life's challenges. Individuals with high emotional well-being generally experience happiness, optimism, life satisfaction, and positive interpersonal relationships. Regular physical activity stimulates brain chemicals associated with positive mood and emotional regulation while reducing symptoms of depression and emotional exhaustion. As a result, students who participate regularly in physical activities tend to demonstrate greater emotional stability and overall psychological wellness.

Key Indicators

- Positive mood
- Happiness and life satisfaction
- Emotional stability
- Positive interpersonal relationships
- Optimistic outlook

4. Self-Confidence

Self-confidence is the belief in one's own abilities, skills, and capacity to achieve desired goals. Regular physical activity improves self-confidence by enhancing physical fitness, body image, self-esteem, and perceptions of personal competence. Achieving fitness goals, participating in sports competitions, and developing physical skills reinforce students' confidence in both academic and non-academic settings. Higher self-confidence also encourages students to participate actively in classroom discussions, presentations, and extracurricular activities.

Key Indicators

- Confidence in personal abilities
- Positive body image
- Increased self-esteem
- Willingness to face challenges
- Active participation in academic activities

5. Psychological Resilience

Psychological resilience refers to an individual's ability to recover quickly from setbacks, adapt to change, and maintain psychological well-being during adversity. College students encounter various

challenges, including academic pressure, competition, personal setbacks, and career uncertainty. Regular physical activity strengthens resilience by improving emotional regulation, problem-solving ability, optimism, and perseverance. Students who maintain an active lifestyle are generally better equipped to handle stress, overcome failures, and remain motivated in achieving academic and personal goals.

Key Indicators

- Ability to recover from setbacks
- Adaptability to changing situations
- Emotional strength
- Positive coping strategies
- Persistence in achieving goals

Review of Literature

1. Lubans et al. (2020)

Lubans et al. investigated the psychological benefits of regular physical activity among adolescents and young adults. The study reported that participation in regular exercise significantly reduced stress, anxiety, and depressive symptoms while improving emotional well-being, self-esteem, and cognitive functioning. The authors concluded that educational institutions should encourage students to engage in regular physical activity as part of health promotion programmes.

2. Biddle et al. (2021)

Biddle and colleagues examined the relationship between physical activity and mental health in young people. Their review found that students who regularly participated in moderate-to-vigorous physical activity demonstrated better emotional health, lower psychological distress, and improved quality of life. The study emphasized that physical activity is an effective intervention for preventing mental health problems among university students.

3. World Health Organization (2022)

The World Health Organization emphasized that adults should perform at least 150–300 minutes of moderate-intensity physical activity per week. The report highlighted that regular physical activity reduces stress, anxiety, and depression while improving cognitive function, sleep quality, and psychological well-being. The guidelines recommend integrating physical activity into daily routines to support overall health.

4. Singh et al. (2023)

Singh et al. examined the relationship between physical activity and mental health among university students. The findings indicated that students who engaged in regular physical exercise reported significantly lower levels of perceived stress and anxiety and higher levels of life satisfaction. The

study also found that physically active students demonstrated better concentration and academic engagement.

5. Bull et al. (2023)

Bull and colleagues reported that physically active individuals experience greater emotional stability and lower psychological distress than inactive individuals. The study highlighted that regular participation in sports and recreational activities enhances resilience, improves emotional regulation, and contributes to better academic productivity.

Research Problem

Many college students experience stress, anxiety, reduced physical activity, and declining academic performance due to sedentary lifestyles and academic pressure. There is a need to examine whether regular physical activity can improve students' mental health and academic outcomes.

Research Gap

Although numerous studies have examined physical activity and mental health, limited empirical research has focused specifically on college students in Davanagere. The combined relationship among physical activity, mental health, and academic performance requires further investigation in the local context.

Aim of the Study

To examine the impact of regular physical activity on mental health and academic performance among college students in Davanagere.

Objectives of the Study

1. To examine the level of physical activity among college students.
2. To evaluate the mental health status of college students.
3. To assess the academic performance of college students.
4. To analyse the relationship between regular physical activity and mental health.
5. To examine the impact of mental health on academic performance.
6. To provide recommendations for promoting physical activity among college students.

Below is the **Research Methodology to Findings of the Study** extracted from your uploaded paper.

Research Methodology

The present study adopts a descriptive and analytical research design to examine the relationship between physical activity, mental health, and academic performance among college students. A sample of 150 students was selected for the study to ensure adequate representation and reliability of results.

The data collection process involved both primary and secondary sources. Primary data were gathered through structured questionnaires designed to assess students' levels of physical activity, mental health status, and academic performance. In addition, students' academic performance was measured using self-reported scores such as GPA or percentage.

Secondary data were collected from various journals, research articles, and published reports to support and validate the findings of the study.

In this research, **physical activity** is considered the **independent variable**, while **mental health** and **academic performance** are treated as **dependent variables**, as they are influenced by the level of physical activity among students.

Table 1: Descriptive Statistics

Activity Level	Mean Mental Health Score	Mean Academic Score
High	82	78
Moderate	70	68
Low	58	60

Interpretation

The above table presents the mean mental health scores and academic performance scores of college students across three levels of physical activity: high, moderate and low.

It is evident that students with high levels of physical activity have the highest mean mental health score (82) and academic score (78). This indicates that regular engagement in physical activities is associated with better psychological well-being and improved academic outcomes.

Students with moderate physical activity show comparatively lower mean scores, with a mental health score of 70 and an academic score of 68. While these values are lower than those of highly active students, they still reflect a reasonably good level of mental health and academic performance.

In contrast, students with low physical activity levels have the lowest mean mental health score (58) and academic score (60). This suggests that a sedentary lifestyle may negatively affect both mental health and academic achievement.

Table 2: Correlation Analysis

Variables	Physical Activity	Mental Health	Academic Performance
Physical Activity	1.00	0.70	0.65
Mental Health	0.70	1.00	0.60
Academic Performance	0.65	0.60	1.00

Interpretation

The above correlation matrix presents the relationship among three key variables: physical activity, mental health and academic performance among college students.

The results indicate a **strong positive correlation** between physical activity and mental health ($r = 0.70$). This suggests that students who engage in higher levels of physical activity tend to experience better mental health, including lower stress, anxiety and depression levels.

Similarly, there is a **moderate to strong positive correlation** between physical activity and academic performance ($r = 0.65$). This implies that physically active students are more likely to achieve better academic results, possibly due to improved concentration, memory and cognitive functioning.

Furthermore, the table shows a **moderate positive correlation** between mental health and academic performance ($r = 0.60$). This indicates that students with better mental health tend to perform better academically, highlighting the importance of psychological well-being in educational achievement.

Table 3: Regression Analysis

Model	R	R ²	Adjusted R ²	Std. Error
1	0.65	0.42	0.40	4.25

Interpretation

The regression analysis table presents the relationship between physical activity (independent variable) and academic performance (dependent variable).

The value of **R = 0.65** indicates a moderate positive relationship between physical activity and academic performance. This suggests that as the level of physical activity increases, academic performance also tends to improve.

The coefficient of determination (**R² = 0.42**) shows that **42% of the variation in academic performance is explained by physical activity**. This is a substantial proportion, indicating that physical activity is an important predictor of academic success among college students.

The **Adjusted R² value (0.40)** further confirms the model's reliability after adjusting for sample size and variables. It suggests that approximately **40% of the variance in academic performance** can be explained by physical activity, making the model reasonably strong.

The **standard error of estimate (4.25)** indicates the average deviation of the observed values from the predicted values. A relatively low standard error suggests that the regression model provides a fairly accurate prediction.

Findings of the Study

- Variation in Physical Activity Levels:** The study categorizes students into high, moderate and low physical activity groups. It is observed that students with higher levels of physical activity demonstrate better outcomes in both mental health and academic performance.
- Impact on Mental Health:** The descriptive statistics indicate that students with high physical activity levels have the highest mean mental health score (82), followed by moderate (70) and low activity groups (58). This clearly shows that increased physical activity is associated with improved psychological well-being.
- Impact on Academic Performance:** A similar trend is observed in academic performance, where highly active students score higher (mean = 78) compared to moderately active (68) and low active students (60). This suggests that physical activity positively influences academic achievement.
- Relationship between Physical Activity and Mental Health:** The correlation analysis reveals a strong positive relationship between physical activity and mental health ($r = 0.70$). This indicates that increased physical activity leads to better mental health outcomes among students.
- Relationship between Physical Activity and Academic Performance:** A moderate to strong positive correlation ($r = 0.65$) exists between physical activity and academic performance, indicating that physically active students tend to perform better academically.
- Relationship between Mental Health and Academic Performance:** The correlation coefficient ($r = 0.60$) shows a moderate positive relationship, suggesting that students with better mental health are more likely to achieve higher academic performance.
- Predictive Role of Physical Activity:** The regression analysis shows that physical activity explains **42% of the variation in academic performance (R² = 0.42)**. This confirms that physical activity is a significant predictor of academic success.
- Overall Trend:** The results consistently indicate that higher physical activity levels lead to better mental health and improved academic performance among college students.

Conclusion

The present study concludes that regular physical activity has a significant and positive impact on both

the mental health and academic performance of college students. The findings indicate that students who actively participate in physical activities experience lower levels of stress and anxiety, greater emotional well-being, higher self-confidence, and stronger psychological resilience compared to those with lower levels of physical activity. Regular exercise also contributes to improved concentration, memory, cognitive functioning, and classroom engagement, which collectively enhance academic achievement.

The statistical analysis further demonstrates a strong positive relationship between physical activity and mental health, as well as between physical activity and academic performance. Moreover, mental health plays an important role in influencing students' academic success, suggesting that psychologically healthy students are more likely to perform better in their studies. The regression analysis confirms that physical activity is a significant predictor of academic performance, highlighting its contribution to students' overall educational development.

Therefore, the study emphasizes the importance of promoting regular physical activity within higher education institutions. Colleges and universities should encourage students to participate in sports, fitness programmes, yoga, and recreational activities by providing adequate infrastructure, awareness programmes, and institutional support. Integrating physical activity into students' daily routines can significantly improve their mental health, enhance academic performance, and contribute to their overall quality of life. The findings of this study provide valuable implications for educators, policymakers, physical education professionals, and student welfare departments in designing comprehensive health promotion initiatives that foster holistic student development.

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