International Journal of Scientific Research & Engineering Trends
Volume 12, Issue 4, July-Aug-2026, ISSN (Online): 2395-566X

Physical Activity, Physical Fitness, and Psychological Well-Being among University Students: Implications for Physical Education and Health Promotion

Y. Joe Henry Singh
IInd Year, B.Sc [Physical Education, Health Education and Sports]
Madras Christian College
Tambaram
Chennai

Abstract — University life is a formative but demanding period during which many students experience declining levels of physical activity alongside rising academic and social pressures. This article synthesises current research on the relationships among physical activity, physical fitness, and psychological well-being in university student populations. Evidence consistently shows that higher levels of physical activity and better physical fitness are associated with lower perceived stress, reduced symptoms of anxiety and depression, higher self-esteem, and greater life satisfaction. Mechanisms underlying these associations include neurobiological pathways such as endorphin and monoamine release, improved sleep and stress regulation, and psychosocial pathways such as enhanced self-efficacy, social connection, and body image. Despite this evidence, global data indicate that a large proportion of university students fail to meet recommended physical activity guidelines. The article discusses implications for university physical education curricula and campus-based health promotion programmes, arguing for structured, enjoyable, and accessible opportunities for movement as a means of simultaneously supporting fitness and mental health outcomes. Recommendations are offered for institutions seeking to design evidence-informed, sustainable interventions.

Keywords— Physical Activity; Physical Fitness; Psychological well-being; University Students; Physical Education; Health Promotion.

I. INTRODUCTION

Entering university marks a major life transition characterised by new academic demands, changing social networks, and, for many students, reduced parental oversight of daily routines. These changes often coincide with a decline in habitual physical activity and an increase in sedentary behaviour, at precisely the point in the lifespan when mental health difficulties such as anxiety and depression tend to emerge or intensify. University students are therefore widely recognised as a population at heightened risk for both physical inactivity and psychological distress.

Physical activity, physical fitness, and psychological well-being are related but distinct constructs. Physical activity refers to any bodily movement produced by skeletal muscles that results in energy expenditure, physical fitness refers to a set of attributes—such as cardiorespiratory endurance, muscular strength, and flexibility—that reflect the body's capacity to perform activity, and psychological well-being encompasses dimensions such as life satisfaction, self-esteem, positive affect, and the absence of significant emotional distress. A growing body of research suggests that these three constructs are meaningfully interconnected: students who are more physically active and physically fit tend to report better psychological outcomes than their less active and less fit peers. Understanding this relationship is important not only for individual student welfare but also for informing how universities design physical education programmes and broader health promotion strategies.

This article reviews the evidence linking physical activity and fitness to psychological well-being among university students, considers the mechanisms that may explain these associations, and discusses practical implications for physical education curricula and campus health promotion initiatives.

II. PHYSICAL ACTIVITY AND FITNESS AMONG UNIVERSITY STUDENTS

1. Global Trends in Student Activity Levels

International surveillance data indicate that a substantial share of the global adult population, including university-aged young adults, does not meet recommended physical activity thresholds. Recent pooled analyses of population-based surveys report that insufficient physical activity remains common worldwide and has increased in some regions in recent years. University students face particular barriers to

© 2026 IJSRET

maintaining active lifestyles, including long hours of sedentary study, examination pressure, part-time employment, and the availability of digital entertainment that displaces active leisure time.

2. Barriers and Enablers of Activity

Commonly reported barriers to physical activity among university students include lack of time, fatigue, limited access to affordable facilities, and low motivation, while enablers include social support from peers, enjoyment of activity, and structured opportunities such as timetabled physical education classes or organised sport. These findings suggest that institutional structures—rather than individual willpower alone—play an important role in shaping whether students remain physically active during their studies.

III. THE LINK BETWEEN PHYSICAL ACTIVITY, FITNESS, AND PSYCHOLOGICAL WELL-BEING

1. Empirical Evidence

Studies conducted with university student samples across different countries converge on a similar pattern of findings. A large cross-sectional study of Spanish university students found that higher physical activity was associated with lower perceived stress, fewer emotional difficulties, higher self-esteem, and greater life satisfaction, with some differences between men and women. A study of Chinese undergraduates using a self-determination theory framework found that autonomous motivation for physical activity, such as intrinsic motivation, most strongly predicted psychological well-being, while amotivation predicted poorer outcomes. Other work combining online survey and laboratory methods has shown that both regular activity and short bouts of aerobic exercise can improve mood and reduce stress and depressive symptoms among students. A related systematic review concluded that physical activity, psychological stress, and academic performance are interrelated, with activity helping buffer the effects of academic stress and, in turn, supporting academic functioning.

2. Underlying Mechanisms

Several mechanisms have been proposed to explain this association. Neurobiological explanations point to exercise-induced release of endorphins and monoamines such as serotonin and dopamine, along with improvements in sleep quality and regulation of the body's stress response system. Psychosocial explanations emphasise the role of physical activity in building self-efficacy and mastery, providing positive social interaction, and improving body image and physical self-concept. Reviews synthesising this evidence note that such mechanisms likely operate together rather than in isolation, with benefits observed across diverse populations and activity types.

3. The Role of Physical Fitness

While physical activity refers to behaviour, physical fitness reflects a more stable physiological capacity that develops as a result of sustained activity. Some evidence suggests that fitter students not only engage in more activity but may also derive additional psychological benefit from it, potentially because higher fitness supports more sustained and enjoyable participation in exercise, reducing the perceived effort associated with physical activity and reinforcing continued engagement. This suggests a potentially reinforcing cycle in which activity builds fitness, fitness makes activity more sustainable and enjoyable, and both together support psychological well-being.

Implications for Physical Education

These findings carry direct implications for how physical education is structured at the university level. First, physical education programmes should move beyond a narrow focus on physical performance outcomes and explicitly incorporate psychological well-being as a programme goal, given the documented links between activity, fitness, and mental health. Second, because autonomous motivation appears to be a particularly strong predictor of well-being benefits, curricula should offer students meaningful choice among activities, opportunities for skill mastery, and a supportive rather than purely evaluative atmosphere, consistent with self-determination theory. Third, given that enjoyment and fitness level both appear to influence sustained participation, physical education classes should be designed to build competence gradually and emphasise enjoyable, socially engaging forms of movement rather than solely competitive or high-intensity formats that may discourage less-fit students. Finally, integrating brief activity breaks or movement-based pedagogy into otherwise sedentary academic schedules may provide immediate stress-reducing benefits alongside longer-term fitness gains.

Implications for Health Promotion

Beyond formal physical education, universities are well positioned to act as health-promoting settings. Institutional strategies might include expanding access to low-cost or free recreational facilities, offering a wide variety of structured group activities to suit different interests and fitness levels, and embedding physical activity messaging within broader mental health and wellness services so that students recognise activity as a legitimate and accessible tool for managing stress. Given

© 2026 IJSRET

that many students report time pressure as a key barrier, promotion efforts may be more effective when they highlight the immediate mood and stress-relief benefits of even brief activity, rather than focusing exclusively on long-term physical health outcomes. Health promotion strategies should also account for gender and cultural differences noted in the literature, tailoring messaging and programme design so that they are relevant and appealing across diverse student subgroups. Finally, cross-campus collaboration between physical education departments, student wellness or counselling services, and student unions could support more coordinated and sustained institutional efforts to promote both physical fitness and psychological well-being.

IV. CONCLUSION

The available evidence indicates that physical activity and physical fitness are meaningfully associated with better psychological well-being among university students, including lower stress and emotional difficulties and higher self-esteem and life satisfaction. These associations appear to operate through a combination of neurobiological and psychosocial mechanisms, and the type of motivation driving activity engagement matters for the size of the psychological benefit obtained. Given persistently high rates of physical inactivity in this population, universities have both an opportunity and a responsibility to design physical education curricula and campus-wide health promotion initiatives that make enjoyable, autonomy-supportive physical activity more accessible. Doing so has the potential to support not only students' physical fitness but also their broader mental health and capacity to thrive during a demanding stage of life. Future research using longitudinal and intervention designs would help clarify causal pathways and identify which specific programme features most effectively translate into lasting improvements in student well-being.

REFERENCES

1. Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., ... & Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. British Journal of Sports Medicine, 54(24), 1451–1462. https://doi.org/10.1136/bjsports-2020-102955
2. Gallego, G. T., Ibort, E. G., Torres, J. M. D., Ortuño-Sierra, J., & Boraita, R. J. (2026). Physical activity and psychological well-being in university students: Differences based on level of physical activity and gender. Journal of Public Health. https://doi.org/10.1007/s10389-026-02708-0
3. Herbert, C., Meixner, F., Wiebking, C., & Gilg, V. (2020). Regular physical activity, short-term exercise, mental health, and well-being among university students: The results of an online and a laboratory study. Frontiers in Psychology, 11, 509. https://doi.org/10.3389/fpsyg.2020.00509
4. White, R. L., Vella, S., Biddle, S., Sutcliffe, J., Guagliano, J. M., Uddin, R., ... & Teychenne, M. (2024). Physical activity and mental health: A systematic review and best-evidence synthesis of mediation and moderation studies. International Journal of Behavioral Nutrition and Physical Activity, 21(1), 134. https://doi.org/10.1186/s12966-024-01676-6
5. World Health Organization. (2022). Physical activity. https://www.who.int/news-room/fact-sheets/detail/physical-activity
6. Wunsch, K., Fiedler, J., Bachert, P., & Woll, A. (2021). The tridirectional relationship among physical activity, stress, and academic performance in university students: A systematic review and meta-analysis. International Journal of Environmental Research and Public Health, 18(2), 739. https://doi.org/10.3390/ijerph18020739
7. Zhong, T. (2024). Physical activity motivations and psychological well-being among university students: A canonical correlation analysis. Frontiers in Public Health, 12, 1442632. https://doi.org/10.3389/fpubh.2024.1442632

© 2026 IJSRET