

Physical Exercise and Mental Health in College Students

¹Ruan Ziyang, ²Syed Kamaruzaman Syed Ali, ³Novri Gazali, ⁴M. Fransazeli

Makorohim

¹University of Malaya, Kuala Lumpur, Malaysia

²Riau Islamic University, Indonesia

ABSTRACT : This paper examines the growing mental health crisis among college students—marked by high rates of anxiety, depression, and stress—and advocates for the **integration of physical exercise as a core intervention strategy**. College years are a pivotal period where academic and social pressures, often coupled with sedentary lifestyles, significantly threaten psychological well-being. Empirical evidence consistently demonstrates that structured **physical exercise** (including aerobic, strength, and mind-body activities like yoga or tai chi) is a statistically significant and effective tool for promoting mental health promotion. Specifically, exercise interventions have been shown to **reduce anxiety and depression symptoms**, enhance **psychological resilience**, and improve **life satisfaction** and coping mechanisms among students. Studies in both Western and Malaysian contexts highlight the positive role of sports and recreational activities in mitigating psychological distress, including stress and anxiety. The paper notes particular vulnerabilities in certain groups, such as female students and men with lower educational attainment. Given these findings, the paper suggests that universities must move beyond mere encouragement and **proactively embed structured, moderate-intensity exercise programs** (2-4 times per week) into student life. The success of these interventions depends on employing **autonomy-supportive teaching approaches** and fostering **cross-departmental collaboration** between counseling and physical education services. Such holistic, integrative strategies are crucial for creating a supportive, wellness-oriented campus culture that strengthens emotional resilience and addresses the urgent, pervasive mental health challenges facing the student body.

KEYWORDS: College Student Mental Health, Physical Exercise, Anxiety, Depression, Resilience

I. INTRODUCTION

College years represent a pivotal period in which students encounter numerous academic, social, and emotional challenges. Throughout this transition phase, there has been a significant increase in concerns related to mental health, such as anxiety, depression, and stress, that are often worsened by sedentary lifestyles and a lack of physical activity. Empirical evidence illustrates that a lack of physical activity threatens not only physical health but also negatively impacts psychological well-being. Despite colleges and universities possibly providing services to develop academic success, they often fail to meet the emotional and psychosocial needs of their student body. Therefore, there is a growing recognition of the need for holistic approaches that combine physical exercise with mental health promotion programs to promote students' overall development and resilience (Herbert et al., 2020; Lin & Gao, 2023).

Physical Exercise : Physical exercise is a subcategory of physical activity characterized as planned, structured, and repetitive bodily movement with the specific purpose of improving or maintaining one or more components

of physical fitness, distinct from usual daily activities. Physical exercise is divided into several main types: Aerobic Exercise which focuses on heart and lung endurance (examples: running, swimming, cycling, and Zumba); Strength Training which aims to build strong muscles and bones (examples: weightlifting, push-ups, squats, and planks); Flexibility Training to increase joint range of motion and muscle elasticity (examples: yoga, Pilates, and static stretching); and Balance Training for stability (examples: Tai Chi and standing on one leg). By engaging in routine exercise, a person can achieve comprehensive physical and mental health benefits.

Mental Health : Mental health refers to a person's state of psychological, emotional, and social well-being (Shic Gautam, Akhilesh Jain, Jigneshchandra Chaudary, Manaswi Gautam, Manisha Gaur, Sandeep Grover, 2024), and is not merely the absence of mental illness. It is the foundation for an individual's well-being and the ability to function effectively in life. Individuals with good mental health are aware of their own potential, can cope with the normal stresses of life, can work productively, and are able to make a contribution to their community. Mental health exists on a complex continuum; a person may experience mental challenges like stress or sadness, yet still function well, while a serious mental health disorder can significantly interfere with daily functioning. The following are examples related to the various spectrums of mental health, including:

Good Mental Well-being: Someone who can adapt to work pressure, rationally seek solutions to problems, maintain positive relationships with those around them, and enjoy daily activities demonstrates a high level of mental well-being.

Mild/Moderate Mental Health Issues (Situational Stress/Anxiety): A student who experiences intense stress before an examination, feeling anxious, having disturbed sleep, and difficulty focusing, but is still able to manage their study schedule.

Mental Health Disorders (Mental Illness): This involves a significant and persistent pattern of symptoms and behavioral changes that interfere with daily functioning. Common examples of mental disorders include Depression, characterized by prolonged sadness, loss of interest, and lack of energy for at least two weeks; Generalized Anxiety Disorder (GAD), where an individual experiences excessive and uncontrollable worry and fear about various things; and Schizophrenia, characterized by serious delusions, hallucinations, and thought disorder."

The Issues of Mental Health in College Students : College students often report high levels of psychological distress, stemming from academic demands, poor sleep habits, and a lack of coping strategies (Ghrouz et al., 2019). Gender differences are prominent, with female students showing higher vulnerability to anxiety and body dissatisfaction (Qureshi et al., 2019). Self-reliance in handling emotional issues often delays treatment-seeking behavior (Harrer et al., 2019). The COVID-19 pandemic further worsened mental well-being due to isolation and inactivity (Pereira et al., 2020).

In the United States, there are two major crises related to mental health. The first is a sharp increase in anxiety and depression among the millennial generation. The second is deaths of despair among middle-aged adults without a college degree (Jason Schnittker, 2024).

In Malaysia, the issue of mental health stigma is prevalent. This issue acts as a major barrier preventing adolescents from seeking timely mental care. This negative perception is embedded in social norms, cultural beliefs, religious interpretations, and existing institutional practices. Consequently, adolescents consistently internalize these negative attitudes. Ultimately, this leads to emotional distress, social isolation, and reluctance to seek help. Furthermore, there is a rising trend in cases of depression, anxiety, and suicidal ideation among Malaysian adolescents (Norbaidurah Ithnain, Maizatul Alya Jeffri-Din, Nur Aina Ezzaty Mohd Rafee, Nur Sofea Hazeera Johari, & Manimaran Krishnan, 2025).

Overall, mental health issues among university students are pervasive, persistent, and urgently require practical, accessible intervention strategies (Auerbach et al., 2018; Blasco et al., 2019). Based on a study by Yeshambel T. Nigatu, Christine M. Wickens & Hayley A. Hamilton (2024), psychological distress significantly increased in the group of men with less than college level education. This distress level increased over time from 2020 to 2023. However, for the group of men with college and university level education, psychological distress remained stable. This indicates that academic background plays a crucial role in overcoming stress problems. Referring to the study by Noraznida Husin, Marhaini Abd Ghani, & Haliyani Tonot (2022) at the Selangor Islamic University College (Kolej Universiti Islam Selangor), 13.33% of students had experienced depression, 26.67% had experienced anxiety, and 2.22% had experienced stress.

Evidence of Exercise Effects on Mental Health : Physical exercise has demonstrated statistically significant positive effects on various mental health outcomes. Lin and Gao (2023) conducted a meta-analysis that showed exercise interventions significantly reduce anxiety symptoms in college students ($SMD = -0.55$, $p < 0.001$). Aerobic exercise and yoga were particularly effective. Other studies support these findings, showing that structured physical activity enhances resilience, promotes life meaning, and fosters healthy coping styles. Yoga, Tai chi, and mindfulness-based movement are increasingly used to treat symptoms of anxiety and depression. Noraznida Husin, Marhaini Abd Ghani, & Haliyani Tonot (2022) conducted a study on students at the Kolej Universiti Islam, Selangor. Based on the findings of this study, it was found that physical and recreational activities play a significant role in reducing the levels of stress, depression, and anxiety. Mohamad Hanif Mohamad Salleh, Erwin Mohd Rapi & Mohliayarni Jaling (2025) conducted a study at a polytechnic involving 185 students. The results of the study found that 95.7% of students stated that sports activities can reduce stress, 93.5% found that sports activities can increase self-confidence, 90% stated that sports activities can help reduce anxiety, and 98.4% felt that sports activities have a very positive effect on overall mental health. This study concluded that active participation in sports has a positive effect on students' mental health. Sports activities help reduce stress and anxiety, increase self-confidence, and improve focus, energy, and discipline.

Meanwhile, Prabhua/l Ragawan, Ruaibah Yazani Tengah, & Nelfianty Mohd Rasyid (2024) conducted a study on the effect of plyometric training and climbing training on stress among athletes. The research method used was a true experimental method. A total of 30 students aged between 14 and 17 years were involved in this study. The results of the study found that the stress levels of students undergoing plyometric training and climbing training were lower than those in the control group. Overall, the study indicated that engaging in planned training and physical activities (such as plyometrics and climbing) can help control mental and physical stress.

II. SUGGESTION

Considering the growing body of evidence linking physical activity to improved mental health, I believe universities must go beyond mere encouragement and proactively embed exercise-based interventions into student life. Rather than generic fitness programs, institutions should offer structured, moderate-intensity activities—such as yoga or group aerobic sessions—two to four times a week, guided by trained professionals who can tailor routines to individual student needs (Biddle, 2016; Chekroud et al., 2018). However, the success of these programs hinges on cultivating an environment where students feel supported, not judged. I strongly advocate for staff training in autonomy-supportive teaching approaches, which research has shown to significantly improve students' psychological well-being and intrinsic motivation (Leo et al., 2020). Equally important is fostering cross-departmental collaboration: partnerships between counselling services and physical education units could enable early detection of students at risk and ensure swift support. Barriers like time constraints or lack of motivation must also be acknowledged. In my view, flexible schedules, peer-led initiatives, and health literacy campaigns are vital components in creating an inclusive, wellness-oriented campus culture. Ultimately, such integrative strategies not only increase participation but also strengthen emotional resilience and community belonging.

III. CONCLUSION

This synthesis highlights the many benefits of exercise for college students' mental health. Structured aerobic and mind-body activities reduce anxiety and depression symptoms. These interventions also help students build emotional resilience. Additionally, they improve social functioning. Several factors shape these outcomes. Teacher behavior plays a key role. Exercise intensity matters as well. Psychological support also influences results. Colleges should act. They should integrate exercise programs designed to support mental health. Supportive teaching styles should accompany these programs. Together, these steps can create a well-rounded well-being environment for students.

REFERENCE

1. **Grasdalsmoen, M.**, Eriksen, H. R., Lønning, K. J., & Sivertsen, B. (2020). Physical exercise, mental health problems, and suicide attempts in university students. *BMC psychiatry*, 20, 1-11.
2. **Huang, X.**, Wang, X., Hu, J., Xue, Y., Wei, Y., Wan, Y., ... & Zhang, S. (2021). Inadequate mental health literacy and insufficient physical activity potentially increase the risks of anxiety and depressive symptoms in Chinese college students. *Frontiers in psychiatry*, 12, 753695.
3. **Jiang, Y.**, Zhang, B., & Zhao, H. (2025). Analysing the effect of physical exercise on social anxiety in college students using a chained mediation model. *Scientific Reports*, 15(1), 2475.
4. **Lin, J.**, Gao, Y. F., Guo, Y., Li, M., Zhu, Y., You, R., ... & Wang, S. (2022). Effects of qigong exercise on the physical and mental health of college students: a systematic review and Meta-analysis. *BMC Complementary Medicine and Therapies*, 22(1), 287.
5. **Lin, Y.**, & Gao, W. (2023). The effects of physical exercise on anxiety symptoms of college students: A meta-analysis. *Frontiers in Psychology*, 14, 1136900.
6. **Liu, F.**, Zhu, Z., & Jiang, B. (2021). The influence of Chinese college students' physical exercise on life satisfaction: the chain mediation effect of Core self-evaluation and positive emotion. *Frontiers in Psychology*, 12, 763046.

7. **Ma, D.**, Fang, H., Li, Y., Sun, Y., & Wang, S. (2024). The Association Study on Physical Activity Intensity, Sleep Quality, and Depression among College Students in the Central Plains Region. *Acta Psychologica*, 250, 104497.
8. **Nigatu, Y. T.**, Wickens, C. M., & Hamilton, H. A. (2024). Changes in sex differences in mental health over time: the moderating effects of educational status and loneliness. *Journal of Mental Health*, 34, (5).
9. **Noraznida Husin**, Marhaini Abd Ghani, & Haliyani Tonot (2022), Physical Activity and Mental Health levels during Covid-19 pandemic: A Prelimeniry Review. *Journal of Management and Muamalah*. 12, (2), 12-21.
10. **Norbaidurah Ithnain**, Maizatul Alya Jeffri-Din, Nur Aina Ezzaty Mohd Rafee, Nur Sofea Hazeera Johari, & Manimaran Krishnan, (2025). A review of mental health stigma among adolescents in Malaysia: Understanding and Addressing key Issues. *Malaysian Mental Health Journal*. 4, (1).
11. **Qiu, W.**, Wang, X., Cui, H., Ma, W., Xiao, H., Qu, G., ... & Liu, C. (2025). The Impact of Physical Exercise on College Students' Physical Self-Efficacy: The Mediating Role of Psychological Resilience. *Behavioral Sciences*, 15(4), 541.
12. **Rodríguez-Romo, G.**, Acebes-Sánchez, J., García-Merino, S., Garrido-Muñoz, M., Blanco-García, C., & Díez-Vega, I. (2022). Physical activity and mental health in undergraduate students. *International Journal of Environmental Research and Public Health*, 20(1), 195.
13. **Schnittker, J.** (2024). The sociology of mental health and the twenty-first-century Mental Health crisis. *Society and Mental Health*, 15, (1), 1-16.
14. **Shic Gautam**, Akhilesh Jain, Jigneshchandra Chaudary, Manaswi Gautam, Manisha Gaur, Sandeep Grover, (2024). Concept of Mental Health and mental well-being. It's determinants and coping strategies. *Indian Journal of Psychiatry*. 24;66(Suppl 2): S231-S244
15. **Wu, J.**, Shao, Y., Zang, W., & Hu, J. (2025). Is physical exercise associated with reduced adolescent social anxiety mediated by psychological resilience?: evidence from a longitudinal multi-wave study in China. *Child and Adolescent Psychiatry and Mental Health*, 19(1), 17.