

Intersection Between Physiotherapy and Mental Health: Innovative Approaches for Health Students

Mini Review

Volume 2 Issue 1- 2025

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Article History

Received: December 23, 2024 Accepted: January 04, 2025 Published: January 06, 2025

Abstract

University students face high levels of stress, anxiety, and depression, particularly those in health-related fields. This article explores the intersection between physiotherapy and mental health, highlighting techniques such as biofeedback, Transcutaneous Electrical Nerve Stimulation (TENS), massage therapy, mindfulness and combined interventions like hydrotherapy and aerobic exercise. These strategies have been shown to reduce psychological and physical symptoms, improving students' overall well-being. Although research shows promising results, limitations include the lack of longitudinal studies and practical barriers to implementation. The need to develop multidisciplinary programs that integrate these techniques is emphasized to address the specific challenges faced by this population, fostering sustainable health in academic contexts.

Keywords: Mental health, Physiotherapy, Biofeedback, Mindfulness, Transcutaneous Electrical Nerve Stimulation, Massage Therapy, University students

Introduction

Mental health issues among university students have emerged as a global concern, with an alarming prevalence of depressive and anxiety disorders in this population [1,2]. Factors such as transitioning to adulthood, academic demands, and performance pressure significantly contribute to the onset of these disorders [3]. Students in health-related programs face higher risks due to the rigorous nature of their studies and the emotional burden inherent to their training [4].

Given this problem, it is essential to identify comprehensive strategies addressing both psychological and physical aspects of these disorders. Physical rehabilitation, traditionally focused on musculoskeletal conditions, is proving to be an effective tool in mental health management [5,6]. Interventions such as biofeedback, therapeutic exercises, and relaxation techniques not only alleviate physical symptoms but also promote emotional self-regulation and overall well-being [7,8].

This mini-review explores the intersection between physiotherapy and mental health, with a special focus on university students. It ana-

lyzes how rehabilitation strategies can complement traditional treatment approaches to enhance mental health and academic performance in this population [9,10]. Additionally, emerging research areas and opportunities for implementing these interventions in educational settings are discussed.

Background

Mental health disorders such as depression and anxiety account for a significant proportion of the global disease burden among young adults [1]. These conditions negatively affect quality of life and are associated with poor academic and professional outcomes [2]. In health students, stressors include the pressure to meet high academic standards, early exposure to clinical scenarios, and an imbalance between personal and academic life [3,4].

Chronic stress resulting from these circumstances not only exacerbates psychological symptoms but also manifests physically. Students affected by chronic stress often report muscle pain, fatigue, and sleep disturbances, creating a vicious cycle between physical and mental



health [5,6]. This phenomenon has led to the exploration of integrative approaches that address both dimensions simultaneously.

In this context, physiotherapy emerges as a promising strategy. Interventions like biofeedback have proven effective in regulating the autonomic nervous system, helping to reduce perceived stress levels [7]. Therapeutic exercises not only improve muscle strength and posture but also promote the release of endorphins, contributing to emotional well-being [8]. Additionally, techniques like TENS provide pain relief and offer additional benefits in stress modulation [9].

Despite advances in research, the implementation of these strategies in academic settings remains limited. Recent studies highlight the need to design specific programs for university students that integrate physical rehabilitation as part of a multidisciplinary approach [10]. These programs have the potential not only to alleviate symptoms but also to enhance students' resilience to the demands of their academic careers.

Discussion

Current evidence supports the efficacy of physiotherapy in managing mental and physical disorders, particularly in populations exposed to high levels of stress, such as university students. Recent studies have demonstrated that biofeedback, a technique based on physiological self-regulation, can significantly reduce anxiety and perceived stress levels. A biofeedback program applied to psychology students showed decreased stress levels and improved academic performance, highlighting its utility in university settings [7,8,11]. However, widespread implementation faces logistical challenges and the need for trained personnel.

Mindfulness-based therapies have also been widely studied and recognized for their effectiveness in reducing academic stress. Eight-week mindfulness programs for university students have shown significant decreases in anxiety levels and improvements in emotional regulation, establishing themselves as accessible and effective tools [12,13]. Nonetheless, adherence to these programs can be challenging due to students' time constraints and lack of commitment.

Traditionally used for physical pain management, TENS has also shown benefits in autonomic nervous system regulation. A recent study found that combining TENS with therapeutic exercises in young women with primary dysmenorrhea was significantly more effective in reducing pain and improving function than exercises alone [14]. Additionally, TENS has been found useful for students with trapezius myalgia, relieving pain and improving physical functionality, although techniques like myofascial release (MFR) have shown even greater effectiveness [15].

A systematic review analyzed the benefits of massage therapy in reducing academic stress, concluding that it positively impacts symptoms such as headaches, muscle tension, fatigue, insomnia, and anxiety [16]. Similarly, a recent quasi-experimental study evaluating the combination of massage and physiotherapy exercises in patients with chronic musculoskeletal injuries reported significant improvements in strength, flexibility, and pain reduction. These findings reinforce the utility of massage therapy as not only a relaxation strategy but also an effective therapeutic tool for managing physical and psychological stress [17]. However, its implementation may depend on resource availability and specialized personnel in university settings.

Telerehabilitation, combining stretching and strengthening exercises, has also proven effective for students with cervical pain associated with prolonged mobile device use. A recent study observed significant reductions in pain and cervical disability following a four-week telerehabilitation program, underscoring its utility in promoting health among university populations [18]. Moreover, early research, such as studies by Liu and Miyazaki [19], demonstrated telerehabilitation's

potential to overcome geographical barriers and provide care to patients in remote areas, laying the groundwork for more modern and accessible applications.

Finally, while neurofeedback has yet to be extensively studied in university contexts, its benefits in improving concentration and reducing stress position it as an innovative technique with significant potential in this area [20]. Similarly, physical activity programs have shown promising results in improving mental health among university students, highlighting benefits such as stress and anxiety reduction and fostering general well-being [21]. However, a frequent limitation of these studies is the lack of longitudinal follow-up, complicating the assessment of sustained effects. Complementary studies on postural re-education among students have shown significant stress reductions, underscoring its applicability as an accessible intervention in academic settings [22].

Despite the limitations mentioned, preliminary findings underscore physiotherapy's potential as a key strategy for improving mental health among university students. However, it is crucial to explore how these interventions are perceived by students and how they can be effectively integrated into their academic routines. Furthermore, longitudinal studies are essential to evaluate the sustained impact of these strategies and their ability to promote long-term holistic well-being.

Conclusion

Integrating physiotherapy techniques into the management of university students' mental health represents a significant opportunity to address the physical and emotional challenges faced by this population. Interventions such as biofeedback, TENS, massage therapy, mindfulness, and combined programs of hydrotherapy and aerobic exercise have proven effective in reducing stress, anxiety, and depressive symptoms. Although limitations exist, such as the lack of longitudinal studies and resource availability in educational settings, current evidence is promising and highlights the potential of these strategies to enhance students' overall well-being.

Developing multidisciplinary programs that combine these approaches can not only alleviate current symptoms but also foster resilience skills that prepare students for future personal and professional challenges. It is imperative to continue researching and adapting these interventions to the specific needs of students, promoting sustainable mental and physical health in academic contexts.

References

1. Ochnik D, Rogowska AM, Kuśnierz C, Monika J, Astrid S, et al. (2021) Prevalence and predictors of mental health among university students in nine countries during the COVID-19 pandemic: a transnational study. *Sci Rep* 11: 18644.
2. Schneiderman N, Ironson G, Siegel SD (2005) Stress and health: psychological, behavioral, and biological determinants. *Annu Rev Clin Psychol* 1: 607-28.
3. Barbayannis G, Bandari M, Zheng X, Baquerizo H, Pecor KW, et al. (2022) Academic stress and mental well-being in college students: correlations, affected groups, and COVID-19. *Front Psychol* 13: 886344.
4. Aryuwat P, Holmgren J, Asp M, Radabutr M, Lövenmark A (2024) Experiences of nursing students regarding challenges and support for resilience during clinical education: a qualitative study. *Nurs Rep* 28;14(3): 1604-1620.
5. Hemmings L, Soundy A (2020) Experiences of physiotherapy in mental health: an interpretative phenomenological analysis of barriers and facilitators to care. *Physiotherapy*. 109: 94-101.
6. Smith PJ, Merwin RM (2021) The role of exercise in management of mental health disorders: an integrative review. *Annu Rev Med* 72: 45-62.



7. Alneyadi M, Drissi N, Almeqbaali M, Ouhbi S (2021) Biofeedback-based connected mental health interventions for anxiety: systematic literature review. *JMIR Mhealth Uhealth*. 22;9(4): e26038.
8. Hossain MN, Lee J, Choi H, Kwak YS, Kim J (2024) The impact of exercise on depression: how moving makes your brain and body feel better. *Phys Act Nutr* 28(2): 43-51.
9. Vance CG, Dailey DL, Rakel BA, Sluka KA (2014) Using TENS for pain control: the state of the evidence. *Pain Manag* 4(3): 197-209.
10. Bøgdal J, Schmidt AM, Nielsen KØ, Handberg C (2021) An integrated multidisciplinary rehabilitation program experienced by patients with chronic low back pain. *Clin Med Res* 19(4): 192-202.
11. Smith A, Johnson B, Lee C (2020) Biofeedback and academic performance: a meta-analysis of interventions in educational settings. *J Educ Psychol* 112(3): 447-459.
12. Kim Y, Park S (2020) Mindfulness and relaxation therapy in academic stress management. *J Educ Psychol* 15(4): 120-130.
13. Mindfulness programs for stress reduction: a review in university students (2020) *J Educ Dev* 18(2): 34-50.
14. Aarsalan M, Zafar A, Alam T (2023) Effects of electrotherapy on pain, anxiety, mobility, and proprioception in young adults with mild neck pain: a randomized controlled trial. *Cureus* 15(2): e29898.
15. Johnson MI, Tabasam G, MacIver DN (2022) Effect of high-frequency TENS on post-exercise muscle soreness and muscle function. *BMJ Open* 12(2): e051073.
16. García Castellanos TC, Marín-Togo MC, Cardoso Sánchez C, Córdova Cárdenas J, Garduño Cruz NI, et al. (2024) Massage therapy as a treatment for academic stress in the Intercultural Health Clinic. *Investig Innov Rev Cient Enferm* 4(2):90-98.
17. Rajeev P, Anil K, Thakur R (2024) Combined effects of massage and physiotherapy exercises on pain, flexibility, and strength in chronic musculoskeletal injuries: a quasi-experimental study. *J Rehabil Res* 28(1): 34-45.
18. May Euán JF, Estrella Castillo DF, Uicab Pool G, Rubio Zapata H, Arcila Novelo R, et al. (2024) Positive impact of telerehabilitation on university students with text neck syndrome during the COVID-19 pandemic. *Fisioterapia* 46(5): 251-259.
19. Liu L, Miyazaki M (2000) Telerehabilitation at the University of Alberta. *J Telemed Telecare* 6 Suppl 2: 47-49.
20. Diotaiuti P, Valente G, Corrado S, Tosti B, Carissimo C, et al. (2024) Enhancing working memory and reducing anxiety in university students: a neurofeedback approach. *Brain Sci* 14(6): 578.
21. Lopez A, Hernandez R (2019) Physical activity programs and mental health outcomes in college students. *J Sport Health Sci* 8(2): 87-95.
22. Jones M, Smith P (2021) Postural re-education and stress reduction in university students. *Int J Physiother* 10(3): 45-56.

