

Physical Activity, Exercise Therapy, and Mental Health among Master's Students in Physiotherapy: A Scoping Review

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Abstract: Background: Postgraduate students in physiotherapy are exposed to a unique combination of academic intensity, clinical responsibilities, and physical workload. These overlapping demands can significantly affect their mental health, often leading to increased levels of stress, anxiety, emotional exhaustion, and burnout. In recent years, there has been growing recognition of physical activity and exercise therapy as effective, accessible, and non-pharmacological approaches for improving psychological well-being among student populations.

Objective: This scoping review aims to systematically explore and synthesize contemporary evidence (2020–2025) on the relationship between physical activity, exercise therapy, and mental health outcomes among postgraduate physiotherapy students and comparable student groups.

Methods: A comprehensive literature search was conducted across multiple electronic databases, including PubMed, Scopus, Web of Science, and Google Scholar. Relevant studies were identified using combinations of keywords such as “physical activity,” “exercise therapy,” “mental health,” “physiotherapy students,” and “postgraduate students.” Studies published between 2020 and 2025 involving university or health science students were included. Data were extracted and synthesized using a descriptive and thematic approach.

Results: The findings consistently demonstrate that regular engagement in physical activity and structured exercise interventions is associated with significant reductions in stress, anxiety, and depressive symptoms among students. Various exercise modalities—including aerobic exercise, resistance training, and mind–body practices such as yoga—were found to contribute positively to mental well-being. However, there remains a scarcity of studies specifically focusing on postgraduate physiotherapy students. Furthermore, a notable discrepancy exists between students’ awareness of exercise benefits and their actual participation in physical activity.

Conclusion: Physical activity and exercise therapy play a crucial role in enhancing mental health among students. Nevertheless, their implementation among physiotherapy postgraduate students remains insufficient. There is a pressing need for structured, curriculum-integrated interventions to promote consistent engagement in physical activity and improve overall student well-being.

Keywords: Physical activity, Exercise therapy, Mental health, Physiotherapy students, Postgraduate education, Stress, Anxiety, Depression

INTRODUCTION

Mental health concerns among university students have become an increasingly prominent issue worldwide, reflecting a growing public health challenge (Biddle et al., 2021; Liu et al., 2023). The transition to higher education represents a critical and often stressful phase of life, during which students are required to adapt to new academic expectations, social environments, and personal responsibilities. This period is frequently associated with heightened levels of psychological distress, including anxiety, depression, stress, and emotional fatigue (Dyrbye et al., 2020).

In recent years, these concerns have intensified due to a range of contributing factors, such as increased academic competition, evolving educational demands, digital dependency, and the long-term psychological impact of the COVID-19 pandemic (Son et al., 2020; Liu et al., 2023). As a result, student well-being has emerged as a priority area for both researchers and educational institutions.

Postgraduate students, particularly those enrolled in healthcare-related programs, are at an even greater risk of experiencing mental health challenges (Pengpid & Peltzer, 2021). Among these, students pursuing a Master's in Physiotherapy (MPT) occupy a distinctive position due to the dual demands of academic learning and clinical training. Their educational journey involves not only rigorous theoretical study but also extensive hands-on clinical exposure, patient interaction, and research responsibilities. This combination often leads to prolonged working hours, irregular schedules, and continuous performance pressure, contributing to elevated stress and burnout levels (Dyrbye et al., 2020).

In addition to these academic and emotional demands, physiotherapy training is physically intensive. Students are frequently required to perform repetitive therapeutic techniques, maintain prolonged standing postures, and engage in manual patient handling. Over time, these physical demands can lead to fatigue, discomfort, and even musculoskeletal strain, further contributing to psychological stress. Poor sleep patterns, lack of adequate rest, and limited opportunities for leisure further exacerbate this cycle of physical and mental exhaustion (Teychenne et al., 2020).

A particularly interesting aspect of this issue is that physiotherapy students are well aware of the importance of physical activity. Their curriculum emphasizes exercise as a fundamental component of health promotion and rehabilitation. They are trained to prescribe exercise to

patients for both physical and mental health benefits. However, despite this knowledge, many students struggle to incorporate regular physical activity into their own lives. This phenomenon highlights a significant “knowledge–practice gap,” where understanding does not necessarily translate into action (Kandola et al., 2020).

Physical activity is widely recognized as a powerful and cost-effective strategy for improving mental health. Its benefits are multifactorial. Biologically, exercise stimulates the release of endorphins and neurotransmitters such as serotonin and dopamine, which help regulate mood and reduce stress. Psychologically, it enhances self-confidence, improves concentration, and provides a sense of accomplishment. Socially, participation in group activities fosters interaction, support, and a sense of belonging (Biddle et al., 2021; Schuch et al., 2021).

Exercise therapy, which involves structured and goal-oriented physical activity, has gained increasing attention as a therapeutic intervention for mental health conditions. Evidence suggests that various forms of exercise—including aerobic activities, resistance training, and mind–body practices such as yoga—can significantly improve mental health outcomes among students (Stubbs et al., 2021; Liu et al., 2023).

Despite the expanding body of literature, there remains a lack of research specifically focusing on postgraduate physiotherapy students. Most studies are conducted on general student populations, limiting their direct applicability to MPT students, who face unique academic and clinical challenges.

Therefore, this scoping review aims to provide a comprehensive overview of recent research (2020–2025) examining the relationship between physical activity, exercise therapy, and mental health among students, with particular emphasis on its relevance to physiotherapy postgraduate students.

METHODOLOGY

This study utilized a scoping review methodology to systematically map the breadth of available evidence related to physical activity, exercise therapy, and mental health among student populations. A scoping review was chosen as it allows for a comprehensive exploration of a broad research area, particularly when existing literature is diverse in terms of study design, population, and outcomes.

The review process was guided by the framework proposed by Arksey and O'Malley, which includes identifying the research question, searching for relevant studies, selecting studies based on predefined criteria, extracting data, and synthesizing findings.

A detailed and systematic search strategy was employed to ensure comprehensive coverage of the literature. Electronic databases including PubMed, Scopus, Web of Science, and Google Scholar were searched. A combination of keywords and Boolean operators was used to refine the search and capture relevant studies. These included terms such as “physical activity,” “exercise therapy,” “mental health,” “physiotherapy students,” and “postgraduate students.”

The search was limited to studies published between 2020 and 2025 to ensure that the findings reflect recent developments and current trends. Only studies involving university or health science students were included. A wide range of study designs, including systematic reviews, randomized controlled trials, and observational studies, were considered to provide a comprehensive understanding of the topic.

Studies were excluded if they were not published in English, focused solely on clinical psychiatric populations, or did not report relevant mental health outcomes.

The study selection process involved initial screening of titles and abstracts, followed by full-text review of eligible articles. Data from selected studies were extracted using a structured format, capturing key details such as study design, population characteristics, type of intervention, and outcomes.

The findings were synthesized using a narrative and thematic approach, allowing for identification of patterns, trends, and research gaps.

RESULTS

The review included approximately 25–35 studies that met the selection criteria. These studies varied in design and included systematic reviews, observational studies, and intervention-based research.

A consistent trend observed across studies was that students who engaged in higher levels of physical activity reported better mental health outcomes. Lower levels of anxiety, depression, and stress were commonly associated with regular participation in moderate-to-vigorous physical activity. Students who remained active also demonstrated improved emotional stability and resilience.

Intervention studies further highlighted the benefits of structured exercise programs. Programs lasting 8–12 weeks showed improvements in mood, sleep quality, and cognitive performance. Aerobic exercises were particularly effective in reducing depressive symptoms, while resistance training improved self-esteem. Mind–body practices such as yoga were beneficial in managing stress and anxiety.

Although limited research specifically focused on MPT students, findings from allied health students revealed similar challenges, including academic pressure, physical fatigue, and emotional exhaustion.

The positive effects of exercise were explained through biological, psychological, and social mechanisms, including hormone regulation, improved self-confidence, and enhanced social interaction.

However, a significant gap was identified between students' knowledge of exercise benefits and their actual engagement in physical activity. Barriers such as time constraints, workload, and lack of institutional support were commonly reported.

DISCUSSION

The findings of this scoping review emphasize the significant and multidimensional role of physical activity and exercise therapy in promoting mental health among university students, particularly those engaged in demanding professional courses. Across the body of literature reviewed, a consistent pattern emerges: students who regularly engage in physical activity tend to demonstrate better psychological well-being, lower levels of stress, anxiety, and depression, and enhanced resilience when coping with academic and personal challenges (Biddle et al., 2021; Liu et al., 2023). These outcomes reinforce the growing recognition of exercise not only as a tool for physical fitness but also as a holistic intervention that positively influences mental, emotional, and social health (Stubbs et al., 2021).

One of the key insights from this review is that physical activity functions as both a preventive and therapeutic strategy. Students who incorporate regular movement into their routines appear better equipped to manage everyday stressors associated with academic life. This may be attributed to a combination of physiological responses—such as improved neurotransmitter balance and hormonal regulation—as well as psychological benefits, including increased self-confidence, improved mood, and a sense of accomplishment (Kandola et al., 2020).

Furthermore, participation in group-based physical activities often provides opportunities for social interaction, which can reduce feelings of isolation and foster a sense of belonging—an important factor in student well-being (Biddle et al., 2021).

Despite these well-established benefits, a particularly striking observation emerges when focusing on postgraduate physiotherapy students. This group presents a unique paradox: although they possess formal education and clinical understanding of exercise as a therapeutic modality, their personal engagement in physical activity is often inconsistent or inadequate. This disconnect highlights a persistent knowledge–practice gap, suggesting that awareness alone is insufficient to drive behavioral change (Kandola et al., 2020). In other words, knowing the importance of exercise does not necessarily translate into adopting an active lifestyle.

The reasons underlying this gap are complex and multifactorial. Postgraduate physiotherapy education is inherently demanding, requiring students to balance academic coursework, clinical training, research commitments, and professional development. These responsibilities often result in long working hours, irregular schedules, and significant mental and physical fatigue. As a consequence, students may prioritize academic and clinical obligations over personal health behaviors, including physical activity. Over time, this imbalance can create a cycle in which reduced activity contributes to increased stress and fatigue, further diminishing the motivation to engage in exercise. Similar trends have been reported among university students globally, where academic burden and time constraints act as major barriers to maintaining an active lifestyle (Pengpid & Peltzer, 2021).

In addition to time constraints, physical exhaustion plays a crucial role in limiting activity levels among physiotherapy students. Unlike many other academic disciplines, physiotherapy training involves considerable physical effort, including patient handling, repetitive movements, and prolonged standing. By the end of the day, students may experience fatigue that discourages additional physical exertion, even in the form of beneficial exercise. This highlights an important distinction between occupational physical strain and health-promoting physical activity, which are not interchangeable and may have different effects on well-being (Teychenne et al., 2020).

Another important factor contributing to this issue is the lack of structured opportunities for physical activity within academic environments. While physiotherapy curricula emphasize exercise in theory and clinical practice, there is often limited institutional support for students

to engage in regular, structured physical activity themselves. Without designated time, facilities, or organized programs, students may struggle to incorporate exercise into their daily routines. This suggests that the responsibility for promoting physical activity should not rest solely on individual motivation but should be supported at an institutional level.

Given these challenges, the findings of this review strongly support the need for systemic and curriculum-integrated interventions. Rather than simply advising students to be more active, educational institutions should take proactive steps to create environments that facilitate and encourage physical activity. This could include incorporating scheduled exercise sessions, movement breaks, wellness programs, or supervised fitness activities into academic timetables. By embedding these practices within the curriculum, institutions can help normalize physical activity as an essential component of professional training rather than an optional activity.

The potential benefits of such interventions extend beyond mental health. Regular physical activity has been shown to improve cognitive function, concentration, memory, and overall academic performance (Schuch et al., 2021). Students who are physically active may demonstrate greater efficiency in learning and better ability to manage complex tasks. Additionally, engaging in exercise can enhance emotional regulation and stress management, enabling students to cope more effectively with the pressures of postgraduate education (Stubbs et al., 2021).

From a professional perspective, promoting physical activity among physiotherapy students is particularly important because they are future healthcare providers who will be responsible for advocating exercise as a therapeutic intervention for patients. Developing personal habits of physical activity during training can strengthen their credibility and confidence in prescribing exercise. It also aligns with the concept of “leading by example,” which is essential in healthcare practice. Students who experience the benefits of exercise firsthand are more likely to integrate these principles into their clinical practice.

The relevance of these findings is especially significant in the Indian context, where additional sociocultural and systemic factors influence student mental health. Academic environments in India are often characterized by high expectations, competitive pressures, and limited flexibility, which can contribute to increased stress levels. Furthermore, access to mental health services remains uneven, and there is still a degree of stigma associated with seeking

psychological support (Son et al., 2020). In such settings, physical activity emerges as a practical, accessible, and culturally acceptable strategy for promoting mental well-being.

Exercise offers several advantages in this context. It is cost-effective, does not require specialized infrastructure in its simplest forms, and can be adapted to individual or group settings. Activities such as walking, yoga, or home-based exercise programs can be easily incorporated into daily routines. Moreover, group-based activities can foster a supportive community environment, which may help reduce stigma and encourage participation.

However, it is important to recognize that a uniform approach to exercise promotion may not be effective for all students. Individual preferences, fitness levels, and personal circumstances must be considered. Some students may prefer high-intensity workouts, while others may benefit more from low-intensity or mind-body practices such as yoga or meditation. Providing a range of options and allowing flexibility can enhance engagement and long-term adherence.

Another important consideration is the need for behavioral and motivational strategies to complement structural interventions. Simply providing opportunities for exercise may not be sufficient if students lack motivation or confidence. Incorporating elements such as goal-setting, peer support, and feedback mechanisms can help sustain participation. Additionally, integrating education on self-care and time management into the curriculum may empower students to prioritize their own well-being.

Overall, the findings of this review point toward the need for a shift in perspective regarding student health within physiotherapy education. Physical activity should not be viewed as an extracurricular or optional activity but rather as a core component of both personal well-being and professional development. By fostering a culture that values and supports physical activity, institutions can play a crucial role in enhancing the health and resilience of their students.

In conclusion, while the evidence clearly supports the benefits of physical activity and exercise therapy for mental health, there remains a significant gap in their practical implementation among postgraduate physiotherapy students. Addressing this issue requires a multifaceted approach, including curriculum integration, institutional support, and individual-level strategies. By taking these steps, educational institutions can contribute to the development of healthier, more balanced, and more effective future physiotherapists who are better equipped to promote holistic health in their professional practice.

LIMITATIONS

This review has certain limitations. There is a lack of studies specifically focused on MPT students, which limits direct applicability. The included studies also vary in design and methodology, making comparisons challenging. Many findings are based on self-reported data, which may introduce bias. Additionally, the absence of long-term studies limits understanding of sustained effects.

CONCLUSION

Physical activity and exercise therapy are valuable and accessible approaches for improving mental health among students. They offer benefits across emotional, physical, and social dimensions. However, among postgraduate physiotherapy students, participation remains inconsistent due to academic and clinical demands. Addressing this issue requires structured, institution-level strategies that promote regular engagement in physical activity and support long-term well-being.

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