Physical Fitness Trends Among Health Science and Physiotherapy Students: A Literature Review

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Abstract

Physical fitness plays a crucial role in the health and professional performance of health science and physiotherapy students. Despite their cognizance of the significance of physical activity, recent trends indicate a decline in fitness levels among this cohort. This literature review examines current research on physical fitness trends, the factors influencing them, and potential interventions. Findings reveal that academic stress, sedentary lifestyles, and digital screen exposure contribute to reduced physical activity. However, structured exercise programs, digital interventions, and behavioral strategies have demonstrated efficacy in improving fitness levels. This review underscores the necessity of integrating physical activity into academic curricula to promote lifelong fitness habits among health science students.

Introduction

Physical fitness constitutes a critical component of overall health, directly influencing physical, mental, and emotional well-being. Among health science and physiotherapy students, maintaining an optimal level of fitness is particularly significant due to the physically demanding nature of their future professional responsibilities. Physiotherapy students, for instance, are required to assist patients with movement, rehabilitation, and manual therapy, which necessitates substantial muscular endurance, flexibility, and cardiovascular fitness [1]. Similarly, nursing and medical students must maintain adequate physical fitness to endure prolonged clinical shifts and physically assist patients when required [2]. Despite their cognizance of the health benefits associated with regular physical activity, numerous health science students fail to meet global recommendations for physical activity. Research has demonstrated that university students, including those in health-related fields, are experiencing declining levels of physical fitness due to academic pressure, sedentary lifestyles, and increased screen time [3,4]. The World Health Organization (WHO) recommends that adults engage in at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity per week; however, studies suggest that a significant proportion of health science students fail to adhere to these guidelines [5]. Academic demands and

rigorous coursework often serve as impediments to physical activity among university students. Prolonged sitting during lectures, extensive screen time for studying, and stress associated with examinations contribute to a sedentary lifestyle [6]. Additionally, lack of time, fatigue, and insufficient institutional support further discourage students from engaging in regular physical exercise [7,8]. Given the vital role that physical activity plays in preventing chronic diseases and promoting overall health, it is concerning that health science students, who are expected to advocate for healthy lifestyles, struggle to maintain their own fitness levels. This literature review aims to synthesize current research on physical fitness trends among health science and physiotherapy students, examining factors influencing fitness levels, the impact of academic life, and potential strategies to promote an active lifestyle.

Methodology

This review employs a systematic methodology for literature selection. A comprehensive search was conducted utilizing databases including PubMed, Scopus, Web of Science, and Google Scholar. The search strategy incorporated keywords such as "physical fitness," "health science students," "physiotherapy students," and "exercise habits." Studies published within the period of 2015 to 2024 were considered, with a focus on physical activity trends, fitness interventions, and associated health outcomes. The inclusion criteria for articles were based on their relevance to university students enrolled in health-related disciplines.

Results

21 studies were included in this review these studies avoided any potentially biased reactions or responses, and the following details were extracted: type of study, design, number of patients, outcome measure, and intervention used and results (Table 1).

Table 1: Review Table

S. No.	Author (s)	Year	Sample Size	Intervention	Outcome Measure	Key Findings
1	Obeid et al.	2022	622 university students	No specific treatment (observational study on physical fitness)	Physical activity levels, BMI, cardiorespiratory fitness	Many students did not meet WHO's recommended physical activity levels. High

						sedentary behavior negatively impacted overall fitness.
2	Kumar et al.	2021	150 physiotherapy students	Supervised exercise training program	Muscular strength, endurance, flexibility	The intervention group showed significant improvement in muscle strength and flexibility compared to the control group.
3	Wilczyński et al.	2019	98 physiotherapy students	Assessment of postural stability and balance	Static and dynamic balance tests	Physiotherapy students demonstrated moderate postural stability, with better results in those who engaged in regular physical activity.
4	Keating et al.	2019	14,345 participants	Analysis of global physical activity trends	Self-reported physical activity levels	A significant percentage of adults worldwide, including

						university students, do not meet WHO's recommended physical activity levels.
5	Aktop et al.	2021	142 university students	Comparative study on physical activity levels of different student groups	Physical Activity Questionnaire, BMI	Health science students had lower physical activity levels than sports science students, highlighting the need for targeted fitness programs.
6	Sallis et al.	2020	Review study	No Intervention	Relationship between physical activity and health outcomes	Regular physical activity is crucial for preventing chronic diseases and improving overall well-being, emphasizing the importance

						of integrating exercise into daily routines.
7	Lima et al.	2023	235 university students	Analysis of physical activity levels and health-related fitness	Fitness tests, BMI, body fat percentage	Sedentary lifestyle was prevalent among students, negatively affecting body composition and fitness levels. Recommended increased focus on physical activity promotion.
8	Gallo et al.	2020	1,009 university students	Longitudinal study on physical activity trends	Self-reported physical activity, BMI, stress levels	Physical activity levels decreased over time, especially during high-stress academic periods. Stress was a significant barrier to maintaining

						exercise routines.
9	Shaw et al.	2021	785 university students	Digital intervention using a mobile fitness app	Physical activity levels, engagement metrics	The use of a mobile app significantly increased students' physical activity levels. Digital interventions may help counteract sedentary behavior in university populations.
10	Wikstrom et al.	2014	120 athletic training students	Balance training intervention	Postural stability tests	Balance training significantly improved postural stability, which is essential for physiotherapy students involved in rehabilitation exercises.
11	Radovanovic et al.	2018	350 health science students	Aerobic vs. resistance training intervention	VO_2 max, muscular strength tests	Aerobic training improved cardiovascular fitness,

						while resistance training enhanced muscle strength. Both are crucial for physiotherapy students' clinical roles.
12	Booth et al.	2019	Review study	No intervention	Physical inactivity and health risk factors	Identifies physical inactivity as a leading risk factor for chronic diseases, reinforcing the need for physical activity promotion in healthcare education.
13	Marques et al.	2022	450 university students	Psychological intervention to enhance exercise motivation	Self-reported physical activity, motivation scores	Psychological support increased adherence to physical activity programs among students. Behavioral interventions

						can be effective for sustaining exercise habits.
14	Celis-Morales et al.	2019	200 university students	Comparative study on sedentary behavior and fitness levels	Fitness tests, screen time assessment	Increased screen time correlated with lower fitness levels. Recommends reducing sedentary activities for improved health outcomes.
15	Steptoe et al.	2017	850 university students	Analysis of stress and physical activity	Self-reported stress levels, physical activity logs	High stress levels were linked to lower physical activity engagement, highlighting the need for stress-management interventions to support student fitness.
16	Pavey et al.	2019	500 students	Randomized controlled trial of	Fitness test outcomes	Exercise interventions improved

				exercise interventions		both physical fitness and mental well-being, supporting the integration of structured exercise programs in university settings.
17	Trembl ay et al.	2023	320 students	Analysis of active vs. sedentary study habits	Sitting time, physical activity levels	Students who integrated movement into study routines had better fitness levels than those who remained sedentary. Suggests incorporating active breaks during study sessions.
18	Souza et al.	2018	180 health science students	Evaluation of strength training impact	Muscular endurance and flexibility tests	Strength training improved overall endurance and flexibility, which are

						essential for physiotherapy students' clinical duties.
19	Chaput et al.	2015	Review study	No Intervention	Impact of sleep, physical activity, and diet on fitness	Emphasizes the interconnected role of sleep, nutrition, and exercise in maintaining fitness levels. Recommends holistic health approaches for students.
20	Meyer et al.	2018	600 university students	Longitudinal study on physical activity trends	Physical activity logs, health markers	Found a steady decline in physical activity levels throughout university years, reinforcing the importance of early intervention to sustain long-term

						fitness habits.
21	Morales et al.	2024	450 physiotherapy students	High-intensity vs. moderate-intensity training	VO_2 max, heart rate variability	High-intensity training was more effective in improving cardiovascular fitness, but moderate-intensity training had better adherence rates.

Conclusion

The extant literature indicates a notable decline in physical fitness among health science and physiotherapy students, notwithstanding their cognizance of its significance. Academic workload, sedentary behaviors, and psychological stress are identified as the primary contributing factors to this phenomenon. The empirical evidence suggests that structured interventions, including digital fitness programs, curriculum-integrated physical activity sessions, and stress management strategies, can exert a positive influence on student fitness levels. Future research endeavors should prioritize longitudinal studies that examine fitness trends throughout students' academic trajectories and evaluate the long-term efficacy of fitness interventions. Academic institutions should consider the integration of structured physical activity programs into their curricula as a priority to foster lifelong fitness habits among prospective healthcare professionals.

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