

POINT OF VIEW

Back Health in Health Education: reflections on Musculoskeletal Fitness

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Abstract

Background: this document emphasizes the importance of physical activity (PA) and active lifestyle habits in improving health and preventing chronic diseases. While PA's role in preventing cardiovascular diseases, obesity, and mental health issues is well-researched, this note highlights an underrepresented area: musculoskeletal health, particularly back health. Musculoskeletal disorders (MD), especially low back pain, are the leading cause of disability globally. Despite this, MD research remains insufficient compared to other health concerns. This reflection calls for more studies and educational interventions to promote musculoskeletal health, advocating for a holistic approach that integrates physical, psychological, and social well-being. Activities such as yoga, Pilates, and Tai Chi, which emphasize body awareness and postural control, are suggested as effective strategies for maintaining musculoskeletal health.

Keywords: physical education research, health research, wellbeing, fitness.

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Authors summary

Why was this study done?

This reflection emphasizes the importance of musculoskeletal health, particularly back health, in physical activity and health education

What did the researchers do and find?

The editorial seeks to show that current research on physical activity often overlooks musculoskeletal health, particularly in educational contexts, and calls for more focus on this area.

What do these findings mean?

It highlights the need for a holistic approach to health education, integrating musculoskeletal health into physical education to improve overall well-being and prevent long-term disability

INTRODUCTION

Health Education through Physical Activity

Health, understood as physical, psychological, emotional, and social well-being, occupies a central place in scientific research in the medical, social, and psychological fields. Research studies that assess health through complex concepts such as well-being and quality of life, which are constantly being redefined and debated¹⁻³, face the challenge of a wide range of perspectives and means. Today, we know that both the concept of quality of life and its measurement are analyzed from different perspectives and methodologies depending on the objectives and interests of each study^{3,4}. Recent studies introduce the concept of human flourishing, which refers to a broader perspective of health that goes beyond physical and mental health^{5,6}. This concept includes more subtle health aspects such as happiness, life satisfaction, purpose and meaning in life, character, virtue, and close social relationships⁵.

This diversity of criteria is the first challenge that science must consider when attempting to relate any variable to health. We must be cautious when analyzing some of the factors that research has identified as the most important for health, such as physical activity (PA) and active lifestyle habits (ALH). These are widely recognized in the scientific community as the best way to preserve health and quality of life and prevent chronic disease^{7,8}. Research studies highlight the direct relationship between PA and health-related quality of life (HRQoL) and the inverse relationship between sedentary behavior^{7,9,10}. Although this relationship is well-established¹¹, the considerable heterogeneity of the studies analyzed in reviews and meta-analyses, both in the concepts and measurement tools analyzed and in the type of physical activity assessed, suggests that these results should be interpreted with caution², considering the nuances reflected in the different studies.

We would like to highlight some of the limitations of current health studies here. Studies analyzing the beneficial effects of PA focus on the factors with the greatest public health impact, such as coronary heart disease, cardiovascular disease, diabetes, obesity, metabolic syndrome, cancer, arthritis, osteoporosis, sarcopenia, and sexual dysfunction disorders. In the last decade, mental illnesses such as depression, schizophrenia, and other serious mental disorders¹² and psychosocial aspects of health, such as self-esteem, self-confidence, stress, and anxiety reduction¹², or mood¹³, have also been added. While all the aforementioned factors are critical for improving

public health, we can now say that when addressing the effects of PA and exercise on health, there is an urgent need to also consider the most significant factor affecting the health of developed societies, musculoskeletal problems. The World Health Organization (WHO) has recognized musculoskeletal disorders (MD) as the leading cause of sick leave and health care costs due to physical disability in developed countries¹⁴. Specifically, the most prevalent MD are nonspecific back problems, especially low back pain¹⁵⁻¹⁷.

The Global Burden of Disease (GBD) study¹⁸, conducted since 1990 by the Institute for Health Metrics and Evaluation at the University of Washington, shows that MD represent the largest burden of disease worldwide, expressed in years lived with disability (YLD)¹⁵. Back pain accounts for 7.41% (6.16%-8.74%) of YLD, with an average risk factor percentage of 39.77% (36.08%-43.57%). This percentage exceeds that of other conditions such as depression (5.45%) or diabetes (4.25%). This trend has been confirmed in subsequent GBD reviews^{19,20,21}.

Musculoskeletal health and back health in scientific literature

The demonstrated importance of these conditions at a global level should be accompanied by a scientific push in these fields. However, it is not easy to determine how much attention the scientific community has given to this problem. To address this, bibliometrics is emerging as a tool that allows us to extract information about the efforts made by scientific literature in the field of health²².

Focusing on research on MD, which have the greatest impact on people's lives and countries' economies²³, the scientific literature shows that these issues are underrepresented in general and specialized health publications²⁴. In 2016, research on MD accounted for 7% of all publications across various disease areas, ranking it 13th out of 25 topics. These figures do not reflect the importance of MD in scientific studies. Initially, this phenomenon was justified by the low association of these conditions with mortality. However, recent research has highlighted how the reduction in mobility caused by MD could become a significant comorbidity factor due to its relationship with diseases such as diabetes, obesity, and coronary problems^{21,25}, and mental health problems²⁶. Physical deterioration and immobility due to MD, especially back problems, are a critical factor in the reduction of quality of life from adolescence²⁷. This evidence is a clear call to bring the issue of musculoskeletal

health, particularly back health, to the forefront of scientific debate.

Bibliometric studies related to back health have increased significantly in recent decades²⁸, indicating that the scientific community is responding to this need. Their objectives were mainly oriented to the analysis of the low back pain factor and non-specific low back pain related to surgery, rehabilitation, adulthood or work environment²⁸⁻³¹ and many other areas, among which we highlight the review on exercise and low back pain of studies published between 1980 and 2018³². This study graphically shows how the different keywords associated with the topic have become more important in different time periods. It is clear that the concern for back health has been exclusively oriented to a perspective of health understood as disease from fields such as medicine, surgery, rehabilitation, or physical therapy. All the studies try to find the possible causes of the pathology or the means to improve it, using key words such as muscular activity, stabilization exercises, functional rehabilitation. However, few studies analyze how to preserve and strengthen back health in healthy people³³ through educational interventions. The keyword education appears for the first time in 2016 as an aspect included in the studies and is one of the least cited in this type of studies, and the studies included are mostly studies on patients with previous pathology³². Few studies are dedicated to the analysis of back health in the healthy population through socioeducational interventions. One of the few review studies on this aspect³⁴ highlights the lack of studies applied in the educational setting and their rigor. In this sense, it is also noticeable that one of the fields of knowledge present in the educational curricula of most developed countries, physical education, and the high-impact scientific journals specialising in this field, do not pay attention to the problems of the musculoskeletal system and back health.

Musculoskeletal fitness in health education

Studies on health education primarily focus on highlighting the benefits of PA and making recommendations about the type and amount of exercise needed to achieve a good quality of life and increase adherence to physical activity. These studies examine variables such as intensity, duration, and type of physical activity^{35,36}, as well as time spent in sedentary postures³⁷. Consequently, professional organizations, government bodies, and the World Health Organization (WHO) promote health education by recommending physical activities that develop aerobic endurance, such as walking or running for at least 30 to 60 minutes a day, with moderate to vigorous intensity^{35,38}. Additionally, physical activities that develop strength, flexibility, balance, and coordination are recommended^{39,40}, while reducing sedentary behaviors like watching television as much as possible⁸. However, despite their value, these recommendations do not specifically address the factors related to musculoskeletal health, and particularly, back health⁴¹. This is a crucial aspect that requires greater attention in health education.

To refer to physical activity for musculoskeletal health, the term musculoskeletal fitness (MSF) has been coined in the scientific literature^{42,43}. This is a necessary

concept, although there are large gaps in its development. Research clearly demonstrates the health benefits of developing the skills related with MSF⁴⁴. The problem with using and defining MSF solely in terms of strength, power, endurance and flexibility is that it gives a mechanistic view of the concept that limits its potential. Increasing strength, power, endurance or flexibility has led to research that evaluates these qualities and provides information from a quantitative perspective of movement⁴⁵ of great interest, but has not considered the qualitative factors of movement⁴⁶. It is precisely the physical activities that combine these physical qualities with qualitative aspects of movement related to the requirement of body awareness⁴⁷ and postural control in situations of balance control, activities in which the mechanical and neurological system of our body is predominantly developed in an integral way, that have an effect on the musculoskeletal system from a holistic and integral vision⁴⁰. Review studies of activities such as Pilates⁴⁸, Yoga^{49,50} and Tai Chi^{51,52} show that these types of activities, based on mindfulness for action and movement control, have positive effects on the physical and neuromuscular functions of practitioners.

Research on balance, postural control and body awareness has been developed in elderly populations for its effect on falls, which have become one of the most important causes of mortality in this age⁵³. However, its potential in the educational context and its role in health-related physical activity has not been investigated.

Perspectives

The use of activities that encourage physical activity habits developed through body awareness should be on the research and health education agenda. Physical education and the world of physical activity and sport sciences, among others, need to embrace this vision and investigate how to access knowledge about the body and movement that promotes its holistic and meaningful development, and study its impact on health and human development⁶. We need to research the role of a physical activity practice from the experience of the body itself and from a deep knowledge of how it works⁵⁵.

Pedagogical models based on health education⁵⁴ state that the purpose of physical education is to promote and value active lifestyles and the learning of appropriate physical activity practices to improve health and well-being throughout life. From our point of view, the development of physical education for the health of the future should make a new effort to broaden its focus and promote a more holistic perspective of health, including, among other aspects, the musculoskeletal system and back health as a central element. We should deepen our knowledge of the impact of interventions that promote physical activity based practice related to body awareness, and that integrate cognitive, psychological and socio-emotional development as a strategy for effective lifelong education.

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Resumo

Introdução: este artigo enfatiza a importância da atividade física (AF) e dos hábitos de vida ativos na melhoria da saúde e na prevenção de doenças crônicas. Embora o papel da AF na prevenção de doenças cardiovasculares, obesidade e problemas de saúde mental seja amplamente estudado, esta nota destaca uma área sub-representada: a saúde musculoesquelética, especialmente a saúde da coluna. Os distúrbios musculoesqueléticos (DM), em particular a dor lombar, são a principal causa de incapacidade em todo o mundo. Apesar disso, a pesquisa sobre DM ainda é insuficiente em comparação com outras questões de saúde. Esta reflexão reforça a necessidade de mais estudos e intervenções educacionais para promover a saúde musculoesquelética, defendendo uma abordagem holística que integre o bem-estar físico, psicológico e social. Atividades como ioga, Pilates e Tai Chi, que enfatizam a consciência corporal e o controle postural, são sugeridas como estratégias eficazes para a manutenção da saúde musculoesquelética.

Palavras-chave: pesquisa em educação física, pesquisa em saúde, bem-estar, condicionamento físico.

Resumen

Este documento refuerza la importancia de la actividad física y los hábitos de vida activos para mejorar la salud y prevenir enfermedades crónicas. Si bien el papel de la actividad física en la prevención de enfermedades cardiovasculares, obesidad y problemas de salud mental está bien investigado, esta nota destaca un área infrarepresentada: la salud musculoesquelética, en particular la salud de la espalda. Los trastornos musculoesqueléticos, especialmente el dolor lumbar, son la principal causa de discapacidad a nivel mundial. A pesar de esto, la investigación sobre los problemas musculoesqueléticos sigue siendo insuficiente en comparación con otros problemas de salud. Esta reflexión exige más estudios e intervenciones educativas para promover la salud musculoesquelética, abogando por un enfoque holístico que integre el bienestar físico, psicológico y social. Actividades como el yoga, el pilates y el thai chi, que enfatizan la conciencia corporal y el control postural, se sugieren como estrategias efectivas para mantener la salud musculoesquelética.

Palabras clave: investigación en educación física, investigación en salud, bienestar, fitness.