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HEROISM OR VULNERABILITY? CULTURE TO THE BODY AND CHRONIC FATIGUE IN THE AGE OF STRESS

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ABSTRACT

The advancement of social media has transformed the way information about physical activity and health is disseminated, creating a scenario where unrealistic standards of body and performance often lead to the adoption of inappropriate and potentially dangerous practices. The absence of qualified supervision and the proliferation of misinformation content intensify the risk of conditions such as overtraining syndrome and chronic fatigue, especially among beginners or recreational practitioners. This essay seeks to explore the cultural, social, and physiological impacts of these issues, proposing accessible technological tools and the guidance of trained professionals as strategies to promote safe and evidence-based practices. With this, it is expected to contribute to a more ethical and informed debate on the role of technical supervision in the preservation of population health and well-being.

Keywords: Misinformation. Social media. Overtraining syndrome. Chronic fatigue. Professional follow-up.

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INTRODUCTION

Nowadays there is no longer any doubt about the positive effects of physical activity on the body and mind of human beings. More and more science is showing us the power of being physically active not only on the health, but also on the well-being of the general population. The positive correlation between higher levels of physical activity, quality of life and longevity[1] is undeniable, in addition to its effects on reducing the risk of diseases and even improving the prognosis of individuals who already have them[2]. The level of physical activity is also capable of modulating mental health through the self-esteem of its practitioners, due to the beneficial effects that it can cause on body composition, an objective that is highly desired by fitness practitioners[3].

From a social perspective, an athletic body has always been synonymous with health for all peoples, associated with discipline, strength and endurance. When observing an athlete, the population tends to idealize a perfect life, governed by healthy habits and a balance between body and mind. However, this representation rarely reflects reality, especially in the context of high-performance sport. The life of a professional athlete often involves extreme levels of training, use of ergogenic substances, intense psychological pressures, and social limitations that compromise physical and mental health4,5.

Since the earliest civilizations, physical activity has been celebrated as a powerful tool for promoting physical and mental well-being. Practices such as the Olympic games in Ancient Greece and the martial art in the East not only strengthened the body but also cultivated discipline, resilience, and integral health. However, just like any other element, the search for physical excellence in excess can lead to deleterious effects on both the body and the mind. Ancient Greek philosophers often warned against the dangers of excess in various areas of life. Aristotle, in his Nicomachean Ethics (350 B.C.), introduced the doctrine of the middle ground, stating that "virtue is a disposition that chooses the middle ground between two extremes, excess and deficiency" (Book II, 1106b). He stressed that balance was the key to a virtuous and happy life. Socrates, as described by Plato in Gorgias (380 B.C.), emphasized the importance of self-control by declaring that "unruly life is not worth living" (467e), warning against the dangers of indulging in uncontrolled impulses. These reflections remain relevant when we address the extremes of athletic performance and obsession with the perfect body, especially in non-athletes.

EPIDEMIOLOGY OF PHYSICAL INACTIVITY IN BRAZIL

Brazil currently has about 26.4% (95%CI 25.9; 27.1) of physically active Brazilian adults, 14.0% (95%CI 13.5; 14.4) insufficiently physically active and 59.5% (95%CI 58.8;

60.2) physically inactive. Sedentary behavior ≥ 6 hours a day was reported by 30.1% (95%CI 29.5; 30.8) of the population and only 8.6% (95%CI 8.2; 8.9) met the recommendations for muscle strengthening activities according to the sample selected by Arão Belitardo et al. (2019). These data reinforce an eminent concern about the health of the Brazilian people, mainly because sedentary behavior is more strongly associated with mortality risk than obesity17. Sedentary behavior can influence health by affecting the body in many ways. Including changes in metabolism, weight gain, weakened muscles, weaker bones, poor circulation, and increased inflammation. These factors contribute to an increased risk of developing diseases, especially those most strongly associated with mortality today, such as cardiovascular diseases, type 2 diabetes, certain types of cancer, including colon, breast and uterine cancer, as well as osteoporosis and falls20. Armed with this data, the population has increasingly searched for health and wellness content on social media, especially after the COVID 1919 pandemic.

TOPICALITY: BEHAVIORAL PATTERN IN SOCIAL MEDIA

All this scope of information leads us to believe that the promotion of physical activity should be a very powerful weapon so that we can reverse this situation. Therefore, any type of fitness-related advertising would be unrestrictedly welcome, with the aim of promoting the health and well-being of the population.

However, more is not always better. If, on the one hand, we are concerned about the low level of physical activity, on the other hand, we are bombarded day after day on social media with misinformation and anti-scientific content. Kamida et al. (2021) discuss in their critical review how social networks often become a space for the dissemination of false information, promoted by digital influencers who use persuasive speeches without scientific basis to attract engagement and sales of products and services. This practice creates an environment where miraculous solutions, devoid of evidence, are marketed as shortcuts to an idealized body, neglecting biological diversity and ethical principles18. This large amount of low-quality content exposed on social media every day represents a danger to physical activity consumers and highlights the importance of a careful and sensible explanation, bringing a cautious approach, based, above all, on scientific evidence and personalized care.

In the age of utilitarianism and "high performance," the culture of "maximum effort" is amplified by social media, where digital influencers promote an idealized narrative about the athletic body. Campaigns often show only a select small portion of these creators' day,

suggesting that extraordinary results can be achieved with "quick tips," "miracle products," and the "right guidance" offered by their own teams' courses and consultancies.

Studies indicate that excessive consumption of this type of content can be mentally deleterious, especially for beginners in physical activity or for those who have recently abandoned sedentary behavior, a population that generally has low education on the subject. Guimarães (2018) points out that excessive training without moderation promotes damage to health similar to that caused by a sedentary lifestyle, being a factor that can lead to physical exhaustion and chronic injuries in athletes and recreational practitioners. In addition, the search for quick results, often driven by social influences, contributes to the perpetuation of the culture of "pain without moderation", which is rooted in the sports world13.

The use of social networks is associated with body dissatisfaction and the increase in unhealthy behaviors, such as restrictive diets and excessive exercise, in search of unrealistic standards of beauty5. In addition, Tiggemann and Anderberg (2020) point out that continuous exposure to edited or highly produced images can generate anxiety and frustration, exacerbating social comparison and leading to a cycle of unattainable expectations and personal dissatisfaction6.

These psychological effects highlight the imminent danger of consuming content without authenticity and with low scientific quality on the journey to athletic performance, whether from the perspective of body composition or sports performance. In addition to the irresponsibility of aggressive marketing driven by social media that has highlighted the need for an intervention made by qualified professionals in the area of training, a population that has been losing more and more space to influencers without technical training.

AFTER ALL, ONLY DO PHYSICAL ACTIVITY WITH PROFESSIONAL MONITORING?

In a country where physical activity levels are insufficient, segregating the practice of fitness only for individuals who can have professional monitoring seems like a cruel discourse, especially taking into account the socioeconomic reality of the population. However, it is possible to circumvent this barrier through the strategic use of social networks by Physical Education professionals and related areas. The role of influencers with academic training becomes, therefore, indispensable. Professionals in Physical Education, nutrition and related areas have the opportunity to occupy this digital space to promote science-based content, with an accessible and ethical approach. The publication of clear, personalized information anchored in solid studies can counterbalance aggressive marketing strategies and irresponsible speeches. This reinforces the importance of good

guidance for physical activity practitioners, especially beginners, who are often the most susceptible to following generalist content that ignores biological individuality and the risks of extreme practices.

By offering accessible, science-based content with common sense and responsibility, they can play a crucial role in democratizing information about health and physical activity. Qualified professionals have the opportunity to use their networks to provide guidance that respects individuality, promoting safe and effective practices for the general public. This approach not only demystifies fitness as a privilege, but also combats aggressive and generalist marketing, offering an alternative for consuming content with higher quality and the certification of an expert's word, which has positive effects when compared to practicing without professional advice/monitoring10.

On the other hand, without adequate guidance, many individuals, driven by the search for athletic bodies or the improvement of physical capabilities, may adopt excessive physical exercise practices and addictive behavior, common among recreational practitioners and beginners looking for quick results. This can lead to significant risks such as injury, chronic physical stress, and even more severe conditions such as rhabdomyolysis8. In addition, the lack of follow-up can intensify vulnerability to mental health problems, such as vigorexy and performance anxiety9 and be the precursor to a clinical condition that affects many high-performance athletes, the overtraining syndrome.

OVER-EXERCISE AND OVERTRAINING SYNDROME

Broadly speaking, athletes train to increase performance. Performance increases are achieved through increased training loads. Increased loads are tolerated only through interspersed periods of rest and recovery (commonly referred to as periodization of training). Overreaching is considered an accumulation of training load that leads to performance decreases that require days or weeks to recover. Overreaching followed by appropriate rest can ultimately lead to performance increases. However, if the overreaching is extreme and combined with an additional stressor (such as everyday factors to which the population is normally exposed), overtraining syndrome (SOT) can occur. SOT can be caused by systemic inflammation and subsequent effects on the central nervous system, including depressed mood, central fatigue, and resulting neurohormonal changes15.

The overtraining syndrome, which has been referred to as "obsolete", "exaggeration" and "chronic fatigue" in the literature, can result in mental laxity and/or physical injury and, therefore, in performance decline11. Although it is well cataloged in the literature, there is no knowledge of a single objective biomarker to characterize SOT due to its multifactorial

nature. This makes this disease difficult to screen, as it requires careful analysis12. Of the few sports that usually report SOT, most are endurance sports. This shows the gap in the literature regarding the responses that SOT can provoke in athletes in sports where energy metabolism is predominantly glycolytic or in intermittent modalities, in addition to amateur and/or recreational sports practices.

Overtraining, characterized by the imbalance between effort and recovery, can result in significant psychological disorders such as depression, irritability, anxiety, and disorders such as vigorexy. The latter, in particular, is associated with an obsession with the perfect body, leading to anabolic steroid use and unsustainable eating patterns. These factors illustrate the importance of balance in sports practice and adequate professional follow-up, aiming at the integral health of practitioners14.

In this way, it is evident that continuous professional monitoring is essential to ensure that the practice of physical activity is safe, efficient and adapted to individual needs. Guidance by trained physical educators, as highlighted by Curcio et al. (2024) in modalities such as cross-training, significantly improves the execution of movements, promotes adequate adjustments in load and intensity, and reduces the risk of musculoskeletal injuries14. Additionally, studies show that professionally supervised programs increase practitioner buy-in and provide additional benefits such as increased motivation and social cohesion, creating an environment that fosters commitment and well-being.

With supervised practices, there is an ideal balance between training and recovery, preventing overload and its negative effects, such as overtraining syndrome (SOT). This is especially important in contexts where enthusiasm for the activity can lead to overeating, putting both physical and mental health at risk. Proper prescription and monitoring ensure that practitioners achieve their goals in a healthy and sustainable way, highlighting the importance of continuous technical-professional monitoring.

CONCLUSIONS AND FUTURE PROSPECTS

Observing the data, it is clear the importance of physical activity in promoting health and well-being in the population, but especially when it is promoted and/or monitored by a physical education professional. Good physical activity practices must be carefully structured to meet individual needs, promoting physical and mental health. The adoption of accessible and reproducible technologies may represent a practical solution to democratize the monitoring of stress and fatigue among practitioners of different levels with the objective of indicating balance or risk as a function of variables such as recovery, stress and

performance, providing simple and understandable feedback for both professionals and laypeople16.

At the same time, the presence of qualified professionals is indispensable for the interpretation of data and the prescription of individualized strategies. The literature shows that supervised programs result in greater benefits compared to autonomous practice, including improvements in technique, lower incidence of injuries, and prolonged adherence to exercise programs4,16. Regardless of the objective, whether aesthetic or performance-oriented, technical monitoring ensures that limits are respected, preventing the negative effects of excess, such as overtraining syndrome and associated disorders. Looking ahead, the integration of technological tools with career guidance has the potential to expand access to safe and effective practice, reinforcing the central role of physical education as a mediator of population health and well-being.

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