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Commentary

Comentário

How to be Physically Active under Social Distancing? You Need to Exercise!

Como ser fisicamente ativo em período de distanciamento social? É preciso se exercitar!

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Abstract

Introduction: A coronavirus epidemic began in November 2019 (COVID-19) in the Chinese city of Wuhan. However, the current scenario shows the coexistence of other pandemics, the insufficient physical activity level and obesity, the effect of this combination tends to enhance the complications attributed to coronavirus infection. In this scenario, among other strategies to combat COVID-19, social distancing, and active lifestyle compatible with a healthy immune function are recommended.

Objective: The aim of this study was to analyse the impact of COVID-19 pandemic over the populational habitual physical activity and recommend the inclusion of a physical exercise routine in your daily life.

Conclusion: Moderate physical activity is indicated in order to meet the recent recommendations of the World Health Organization and to optimize the immune response. Therefore, the daily physical exercise should be included, especially at home in longer periods of social distancing.

Keywords: physical exercise, Covid-19; pandemic, health promotion.

Key points

- A large part of the population will have difficulties in achieving moderate physical exertion in a context of social distance.

- In an analysis of the Brazilian version of the physical activities' compendium, the performance of most physical activities with the potential to increase effort higher levels of intensity are limited in periods of social distancing.

- In this context, physical exercises are feasible possibilities for increasing habitual physical activity, as part of the routine of people during the COVID-19 pandemic, especially in the phases in which social distancing is more intense.

Resumo

Introdução: Uma epidemia por coronavírus começou em novembro de 2019 (COVID-19) na cidade chinesa de Wuhan. Contudo, o cenário atual evidencia a coexistência de outras pandemias: da prática insuficiente de atividade física e da obesidade. E o efeito desta combinação tende

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a potencializar as complicações atribuídas à infecção por coronavírus. Diante deste cenário, dentre outras estratégias de combate ao COVID-19, recomenda-se o distanciamento social e a adoção de um estilo de vida compatível com uma boa saúde imunológica.

Objetivo: O presente comentário teve como objetivo considerar o impacto da pandemia do COVID-19 sobre o nível de atividade física da população e recomendar a prática de exercícios físicos.

Conclusão: A atividade física para atender às recomendações recentes da Organização Mundial da Saúde e otimizar a resposta imune deve ser de intensidade moderada, logo, deve-se incluir a prática dos exercícios físicos no cotidiano, principalmente com possibilidades de realização em domicílio, particularmente em períodos de maior distanciamento social.

Palavras-chave: exercício físico, Covid-19, pandemia, promoção da saúde.

Pontos-Chave

- Grande parte da população terá dificuldade em realizar esforços físicos moderados em um contexto de distanciamento social.

- Na análise da versão brasileira do compêndio de atividades físicas, fica claro que a realização da maioria das atividades físicas com potencial para aumentar o esforço níveis mais elevados de intensidade são limitados em períodos de distanciamento social.

- Nesse contexto, os exercícios físicos são possibilidades viáveis para o aumento da atividade física habitual, como parte do cotidiano das pessoas durante a pandemia de COVID-19, principalmente nas fases em que o distanciamento social é mais intenso.

How to be Physically Active under Social Distancing? You Need to Exercise!

Coronavirus (Sars-CoV-2) is part of a group of viruses responsible for seasonally triggering acute respiratory syndromes in both humans and animals(1). The Sars-CoV-2 infection was first identified in the Chinese city of Wuhan by November 2019 and the disease was named COVID-19, which quickly crossed Chinese borders, and the state of a global pandemic was declared on March 11, 2020 by World Health Organization (WHO)(2). Because of the faster dissemination on global scale, the issue gained prominence for the scientific community. Data released on June 11, 2021 recorded approximately 174,502,686 confirmed cases worldwide, including 3,770,361 deaths(3). In Brazil, the total number of cases reached 17,122,877 with 479,515 deaths(3).

In times of COVID-19 pandemic, in addition to vaccination, there are two other mitigation actions stand out to reduce the risk of infection and disease complications: (a) social distancing and (b) the adoption of active lifestyle compatible with good immune health(4). Social distancing implies the extension of time at home, which, in turn, may be associated with negative eating behaviours such the increased consumption of comforting foods, eating in response to stress and boredom, in addition to possible changes in alcohol consumption, which may impact the body composition and physical fitness

level(5). In general population, more time at home results in less habitual physical activity(6), and more time devoted to sedentary behaviour (long time lying down and sitting) as well.

The moderate physical exercise as an important routine element during the COVID-19 pandemic

Caspersen et al.(7) define physical activity as any body movement produced by skeletal muscles that results in energy expenditure above resting values. The authors define physical exercise as a subgroup of physical activities, which is planned, structured and repetitive, with the purpose of maintaining or optimizing physical fitness(7). There is scientific evidence to conclude that a higher level of habitual physical activity or good physical fitness can reduce the probability of developing COVID-19 or minimize the severity of it(8,9). Zbinden-Foncea et al.(10) suggested that individuals with good cardiorespiratory fitness, induced by previous physical training, may present some innate immunological protection against COVID-19. The authors stated that higher cardiorespiratory fitness and moderate aerobic physical activities improve the immune response to vaccination, reduce chronic inflammation and improve several markers in problems such as cancer, HIV, cardiovascular disease, diabetes, cognitive impairment and obesity.

Studies have shown that periods with a decrease in habitual physical activity are typically associated to 7 to 15% in maximum oxygen consumption (VO2 max) and 6 to 8% in muscle volume reduction(11). In addition, they contribute to body weight increase(5,12), worsen insulin sensitivity, lipid metabolism and visceral fatness(13,14). If social distancing represents an effective strategy for mitigating the COVID-19 pandemic, it also tends to aggravate a global scenario of insufficient physical activity(15). Epidemiological data show that 1/3 of the global adult population and 80% of the adolescent population did not reach the minimum of the recommendations for physical activity(16). In Brazil, 44.8% of the adult population (≥ 18 years) in 2019, had insufficient physical activity(17). Such evidence emphasizes the need to strategies that provide the population less time on sedentary behaviour and greater engagement in daily physical activities(18-20).

The recent WHO weekly physical activity recommendations are: for adults, at least 150 minutes/week of moderate physical activity, and for young people, at least 60 minutes/day of moderate physical activity(21). Based on evidence that the intensity of physical efforts is associated with the increase in the immune response in times of COVID-19(8), the need to perform physical efforts with moderate intensity (50% to 74% VO_2max)(22) is relevant.

Given the above reasons and based on the expected values of VO_2max, by sex and age(23), it is evident that in non-pathological conditions, even for those with lower values of VO_2max, a large part of the population will have difficulties in achieving moderate physical exertion in a context of social distancing(24,25), by the reduction in active commuting and a longer time at home. In an analysis of the Brazilian version of the physical activities' compendium(25), it is clear that the majority of higher levels of physical activities performance are limited in periods of social distancing. Additionally, the increase in time at home contributes to an increase in the household physical activities(25), which have lower potential for increasing the intensity, with an average value of 3.3 metabolic equivalents (METs).

Therefore, there is a need to include physical activities that can be done at home with the potential to increase the workload to moderate levels. In this context, physical exercises, presented as conditioning exercises in the Brazilian version of the compendium(25), are feasible possibilities for increasing habitual physical activity, as part of the routine of people during the COVID-19 pandemic, especially when social distancing is harder. The characteristics of the prescription of physical exercises during the COVID-19

pandemic follow the same recommendations regarding types, frequency and duration(22), with special attention to the physical effort that should be moderate(10,19,20).

Recommendations for physical activity in times of COVID-19 pandemic

Already announced by the scientific community, the pandemic of insufficient physical activity and obesity receive today, with wide arms open, the pandemic of COVID-19, and the effect of this combination tends to potentiate the complications attributed to infection by Sars-CoV-2. In view of this scenario, the scientific literature has suggested as one of the strategies to combat the pandemic of COVID-19 the adoption of a healthy lifestyle. But that it is not enough only to increase the habitual physical activity level, regardless of its main context(25). In addition to attend the recent WHO recommendations on physical activities(21) and optimizing the immune response(20,26), it should be included a daily moderate physical exercise at home, especially in periods of greater social distancing.

Conflict of Interest Statement

There is no conflict of interest regarding this study.

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References

1. Fehr AR, Perlman S. Coronaviruses: an overview of their replication and pathogenesis. *Methods in Molecular Biology*. [Online] 2015;1282:1-23. Available from: doi:10.1007/978-1-4939-2438-7_1.
2. *World Health Organization*. Available from: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020. [Accessed: 11th June 2021].
3. *World Health Organization. Coronavirus disease (COVID-19). Situation dashboard*. Available from: https://covid19.who.int/. [Accessed: 11th June 2021].
4. Nieman DC. Coronavirus disease-2019: A tocsin to our aging, unfit, corpulent, and immunodeficient society. *Journal of Sport and Health Science*. [Online] 2020;9(4): 293–301. Available from: doi: 10.1016/j.jshs.2020.05.001.
5. Martinez-Ferran M, de la Guía-Galipienso F, Sanchis-Gomar F, Pareja-Galeano H. Metabolic Impacts of Confinement during the COVID-19 Pandemic Due to Modified Diet and Physical Activity Habits. *Nutrients*. [Online] 2020;12(6):1549. Available from: doi:10.3390/nu12061549.
6. Schwendinger F, Pocecco E. Counteracting Physical Inactivity during the COVID-19 Pandemic: Evidence-Based Recommendations for Home-Based Exercise. *International Journal of Environmental Research and Public Health*. [Online] 2020;17(11):3909. Available from: doi:10.3390/ijerph17113909.
7. Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Reports*. [Online] 1985;100(2):126-131.
8. Filgueira TO, Castoldi A, Santos LER, et al. The Relevance of a Physical Active Lifestyle and Physical Fitness on Immune Defense: Mitigating Disease Burden, With Focus on COVID-19 Consequences. *Frontiers in Immunology*. [Online] 2021;12:587146. Available from: doi:10.3389/fimmu.2021.587146.
9. Sallis R, Young DR, Tartof SY, et al. Physical inactivity is associated with a higher risk for severe COVID-19 outcomes: a study in 48 440 adult patients [published online ahead of print, 2021 Apr 13]. *British Journal of Sports Medicine*. [Online] 2021;bjsports-2021-104080. Available from: doi:10.1136/bjsports-2021-104080
10. Zbinden-Foncea H, Francaux M, Deldicque L, Hawley JA. Does High Cardiorespiratory Fitness Confer Some Protection Against Proinflammatory Responses After Infection by SARS-CoV-2?. *Obesity* (Silver Spring). [Online] 2020;28(8):1378-1381. Available from: doi:10.1002/oby.22849.

11. Pišot R, Marusic U, Biolo G, et al. Greater loss in muscle mass and function but smaller metabolic alterations in older compared with younger men following 2 week of bed rest and recovery. *Journal of Applied Physiology* (Bethesda, Md. : 1985). [Online] 2016;120(8):922-929. Available from: doi:10.1152/japplphysiol.00858.2015.

12. Bhutani S, Cooper JA. COVID-19-Related Home Confinement in Adults: Weight Gain Risks and Opportunities. *Obesity* (Silver Spring). [Online] 2020;28(9):1576-1577. Available from: doi:10.1002/oby.22904.

13. Krogh-Madsen R, Thyfault JP, Broholm C, et al. A 2-wk reduction of ambulatory activity attenuates peripheral insulin sensitivity [published correction appears in Journal of Applied Physiology. 2010;108(5):1034]. *Journal of Applied Physiology* (Bethesda, Md. : 1985). [Online] 2010;108(5):1034-1040. Available from: doi:10.1152/japplphysiol.00977.2009.

14. Pedersen BK. Muscles and their myokines. *The Journal of Experimental Biology*. [Online] 2011;214(Pt 2):337-346. Available from: doi:10.1242/jeb.048074.

15. Kohl HW 3rd, Craig CL, Lambert EV, et al. The pandemic of physical inactivity: global action for public health. *Lancet* (London, England). [Online] 2012;380(9838):294-305. Available from: doi:10.1016/S0140-6736(12)60898-8.

16. Hallal PC, Andersen LB, Bull FC, et al. Global physical activity levels: surveillance progress, pitfalls, and prospects. *Lancet* (London, England). [Online] 2012;380(9838):247-257. Available from: doi:10.1016/S0140-6736(12)60646-1.

17. Ministry of Health. *Vigitel Brazil 2019: surveillance of risk and protective factors for chronic diseases by telephone survey: estimates of frequency and sociodemographic distribution of risk and protective factors for chronic diseases in the capitals of the 26 Brazilian states and the Federal District in 2019*. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/vigitel_brasil_2019_vigilancia_fatores_risco.pdf. [Accessed: 11th June 2021].

18. Souza Filho BAB, Tritany ÉF. COVID-19: the importance of new technologies for physical activity as a public health strategy. COVID-19: importância das novas tecnologias para a prática de atividades físicas como estratégia de saúde pública. *Cadernos de Saude Pública*. [Online] 2020;36(5):e00054420. Available from: doi:10.1590/0102-311x00054420.

19. Costa RF. Can physical activity help in the fight against CoViD-19? *Revista de Educação Física / Journal of Physical Education*. [Online] 2020;89(4): 224–227.

20. Martins L, Soeiro R. Exercise and CoViD-19: Health, Prevention and Recovery Aspects: A Brief Narrative Review. *Revista de Educação Física / Journal of Physical Education*. [Online] 2020;89(4): 240–250.

21. *World Health Organization. WHO guidelines on physical activity and sedentary behaviour*. Available from: https://apps.who.int/iris/handle/10665/336656. [Accessed: 11th June 2021].

22. American College of Sports Medicine; Riebe D, Ehrman JK, Liguori G, Magal M, organizadores. *ACSM's guidelines for exercise testing and prescription*. 10th ed. Philadelphia - USA: Wolters Kluwer; 2018.

23. Pollock ML, Wilmore JH. *Exercícios na saúde e na doença: avaliação e prescrição para prevenção e reabilitação*. São Paulo: Medsi; 1993. 718 p.

24. Ainsworth BE, Haskell WL, Whitt MC, et al. Compendium of physical activities: an update of activity codes and MET intensities. *Medicine and Science in Sports and Exercise*. [Online] 2000;32(9 Suppl):S498-S504. Available from: doi:10.1097/00005768-200009001-00009.

25. Farinatti PTV. Apresentação de uma versão em português do compêndio de atividades físicas: uma contribuição aos pesquisadores e profissionais em fisiologia do exercício. *Revista Brasileira de Fisiologia do Exercício* (Rio de Janeiro). 2003;2(2): 177-208.

26. Corpo Editorial REF/JPE. Physical Exercise and Covid-19 – The Role of Physical Exercise for Health and Recovery: An Article View Presenting the work of Silveira et al. *Revista de Educação*

Física / Journal of Physical Education.
[Online] 2020;89(3): 184–188.