

PREDISPOSING FACTORS FOR PHYSICAL INACTIVITY IN THE COVID-19 PANDEMIC CONTEXT

Gustavo Baroni Araujo¹

Jordane Gomes dos Santos²

Paloma Silva Pereira³

Júlio Cesar Pereira da Silva⁴

Anderson Fernandes de Carvalho Farias⁵

Paulo da Costa Araújo⁶

Joelma Maria dos Santos da Silva Apolinário⁷

Laura Guerra Lopes⁸

Maciélia Carvalho de Freitas⁹

Sabrina Pereira Barros¹⁰

Vanderleia Brito Gonçalves¹¹

Délio Guerra Drummond Júnior¹²

Abstract: Introduction: The -CoV-2 virus has been causing pandemic caused by the SARS- major impacts on public health.

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- 1 Universidade Estadual de Londrina
 - 2 Universidade Federal de Alagoas
 - 3 Universidade Ceuma
 - 4 Universidade Paulista
 - 5 Universidade Presidente Antônio Carlos
 - 6 Centro Universitário do Maranhão (UNICEUMA)
 - 7 Centro Universitário Maurício de Nassau
 - 8 Universidade Católica de Pernambuco
 - 9 Universidade Norte do Paraná (UNOPAR)
 - 10 Universidade Federal do Piauí
 - 11 Universidade Federal do Piauí
 - 12 Universidade Federal do Oeste da Bahia



The main risk factor for the development of comorbidities is a sedentary lifestyle, so, due to the readjustment of habits, the emergence of negative impacts from this process is noticeable, such as the increase in physical inactivity and the acquisition of habits harmful to health. In this way, several recommendations have been released drawing attention to the follow-up of physical activity during the pandemic. Objectives: To identify in the literature, scientific evidence about the predisposing factors for physical inactivity during the Covid-19 pandemic. Methodology: This is an integrative literature review, through a descriptive and exploratory effort, carried out in the scientific databases: MEDLINE, SCIELO, BRISA and LILACS. Results and Discussions: From the realization of the titles and abstracts of the articles, 15 stu-

dies were selected and after reading in full, 11 were left to compose the final sample. In view of the analysis of the literature, it was evidenced that the lack of adherence to programs for physical exercises at home, through new technologies, blocked the integral assistance to the citizen in the context of the promotion of physical activity, as well as pre-existing factors even before the pandemic, such as diseases non-communicable diseases, chronic degenerative diseases, long periods of physical immobility and social inequalities. Final considerations: The study showed that the difficulties in carrying out the practice exist, although there are paths that can be outlined to reverse this scenario. Therefore, public policies to promote physical activity are suggested, which are more consistent on the part of government agencies. In



addition, adherence to technological resources also becomes a relevant alternative, combined with health education actions, so that the population has knowledge about the benefits and correct guidelines on how to carry out the practices.

Keywords: Covid-19, Physical activity, Pandemic.

INTRODUCTION

The pandemic caused by the SARS-CoV-2 virus, called coronavirus, emerged in December 2019, in the city of Wuhan, China, and since then has been spreading across all continents, with unprecedented patterns. The World Health Organization, on March 11, 2020, designated COVID-19 (a disease caused by SARS-CoV-2) as a pandemic and a global health problem (COSTA

et al., 2020).

Between May and June 2020, the American continent became the epicenter of the pandemic, standing out for the large number of cases confirmed by the coronavirus. In order to control the spread of the virus, the World Health Organization, defined preventive measures related to isolation measures in periods of quarantine, social distance, personal hygiene with gel alcohol and use of mask, were the main preventive measures determined to reduce the spread of the disease (GUIMARÃES et al., 2020; SOUZA et al., 2020).

Until the arrival of vaccines, to immunize the population, several impacts were caused by social isolation and confinement measures. In this way, the physical and mental health of the population was seriously affected during the pandemic. Staying at



home without contact with the outside world was a predisposing factor for various psychological illnesses and physical comorbidities (SILVA et al., 2021).

The main risk factor for the development of comorbidities is a sedentary lifestyle, so, due to the readjustment of habits, the emergence of negative impacts from this process is noticeable, such as the increase in physical inactivity and the acquisition of habits harmful to health. Thus, several recommendations have been made public, calling attention to the follow-up of physical activity during the pandemic (BOTERO et al., 2021; OLIVEIRA et al., 2021).

The practice of physical exercises is associated with acute and chronic responses in several components of the immune system, promoting the stimulation of parameters related to cellular

immunity and reducing the risk of infection by different agents. The practice of physical exercises is beneficial to health, as they have anti-inflammatory effects on the body, act to reduce visceral adipose tissue, in addition to being responsible for the release of pro-inflammatory adipokines (BECCHI et al., 2021; COSTA et al., 2020).

Exercises are also related to preventing diseases in the cardiovascular system, strengthening memory, reducing blood pressure, controlling the glyce-mic index, helping to strengthen muscles, bones and joints, improving self-esteem and controlling depression. In general, physical exercise combats physical inactivity and obesity, which is currently one of the biggest public health problems (COSTA et al., 2020).

According to the report



“World Health Statistics 2021”, released by the World Health Organization (WHO), in Brazil, more than a fifth (22%) of the adult population is obese; the rate is 10.8% among those aged between 5 and 19. Physical inactivity is associated with deleterious health effects, negatively influencing several cardiometabolic markers, increasing the risk of comorbidity or even worsening pre-existing conditions such as chronic diseases (WHO, 2021; GOMES, et al., 2020).

In addition, according to the study carried out in 2021 by the Oswaldo Cruz Foundation (Fiocruz) in partnership with the State University of Campinas (Unicamp) and the Federal University of Minas Gerais (UFMG), it was shown that 44,062 Brazilians, 62% of respondents stopped doing any kind of exercise during the pandemic. Thus, it

is clear how much physical inactivity is present during the pandemic, thus characterizing it as a threat to health (PITANGA et al., 2020).

Given the discussion, this study aims to identify in the literature, scientific evidence about the predisposing factors for physical inactivity during the Covid-19 pandemic.

METHODOLOGY

To carry out this study, the scientific research was carried out through an integrative literature review, through a descriptive and exploratory effort, whose purpose was to gather and synthesize results obtained in studies already published on the subject. To carry out this integrative review, the steps proposed by Mendes, Silveira and Galvão, (2008) in their methodology were



followed, which are:

1. Choice of topic and research question;
2. Delimitation of inclusion and exclusion criteria;
3. Extraction and limitation of information from selected studies;
4. Analysis of the studies included in the review;
5. Analysis and interpretation of results;
6. Presentation of the review or synthesis of knowledge.

The research problem was reformulated in the following guiding question: What are the predisposing factors for physical inactivity during the Covid-19 pandemic?

To identify the responses of this study, the research was carried out between March and April 2022, through electronic searches in the Virtual Health

Library (BVS), in scientific databases: Medical Literature Analysis and Retrieval System Online (MEDLINE)), Scientific Electronic Online Library (SCIELO), Regional Database of Health Technology Assessment Reports in the Americas (BRISA) and Latin American and Caribbean Literature on Health Sciences (LILACS), crisscrossing the keywords registered in the Descriptors in Health Sciences (DeCS): “COVID-19”, “Physical activity”, “Sedentary lifestyle”, “Pandemic” and “Motor activity”, intermediated by the Boolean operators ‘AND’ and ‘OR’.

For the selection of articles, complete, original, free and available studies published in the last 3 years, in English and Portuguese, were included. The exclusion criteria defined included: theses, monographs, duplicated works in more than one database,



review studies and those that did not correspond to the proposed objective.

With the accomplishment of the searches, the results of 58 articles were obtained, distributed respectively in the databases: 12 in MEDLINE, 25 in SCIELO, 8 in BRISA and 13 in LILACS. With the application of the established inclusion and exclusion criteria, this number reduced to 33, with 4 in MEDLINE, 16 in SCIELO, 4 in BRISA and 9 in LILACS.

authors, year of publication and objectives, structured according to chronological order of classification (from the most recent to the oldest).

RESULTS AND DISCUSSION

From the realization of the titles and abstracts of the articles, 15 studies were selected and with the reading in full, 11 were left to compose the final sample. The selected articles were organized in Table 1, with the respective information: titles,



Table 1. Articles selected for sample.

Nº	TITLE	AUTHOR	YEAR	GOALS
1	Impacts of social isolation on physical exercise during the coronavirus pandemic.	Oliveira et al.,	2021	Identify the impacts and main consequences of social isolation in the practice of physical exercises during the Covid-19 pandemic.
2	Changes in the prevalence of physical inactivity and sedentary behavior during the COVID-19 pandemic: a survey of 39,693 Brazilian adults.	Silva et al.,	2021	To analyze changes in the prevalence of physical inactivity and sedentary behavior according to correlates during the COVID-19 pandemic among Brazilian adults.
3	Encouraging physical activity: NASF strategies amid the Covid-19 Pandemic.	Becchi et al.,	2021	Establish a remote service plan providing guidance and prescriptions for physical exercises through digital platforms, ensuring the continuity of the work of professionals to encourage physical activity.
4	Impact of staying at home and social isolation, due to COVID-19, on the level of physical activity and sedentary behavior in Brazilian adults.	Botero et al.,	2021	To investigate the impact of the 2019 coronavirus pandemic on the level of physical activity and sedentary behavior among Brazilians aged ≥ 18 years.
5	General recommendations for health care and physical activity vs. COVID-19 pandemic.	Vancini et al.,	2021	Provide information and recommendations related to the practice of physical activity (PA) for the clarification of health professionals and people related to sport and PA. We therefore intend to assist in health education and promotion



through prevention strategies related to the pandemic and the practice of physical activity.

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| 6 | Impacts of COVID-19 on cardiorespiratory fitness: functional exercises and physical activity. | Souza et al., | 2020 | Understand the impacts of COVID-19 on cardiorespiratory functionality, performing ADL, in addition to presenting a look at the benefits of pre- and post-pandemic physical activity. |
| 7 | Physical inactivity, chronic diseases, immunity and covid-19. | Guimarães et al., | 2020 | To invite health professionals, their respective regulatory councils, universities, research support foundations, media, political authorities and lay citizens to raise awareness of immunity and health in the medium to long term control of the current pandemic. |
| 8 | Discourses of Brazilian health institutions on physical activity at the beginning of the COVID-19 pandemic. | Knuth & Freitas | 2020 | To analyze the discourses produced by health institutions on physical activity at the beginning of the COVID-19 pandemic (March and beginning of April) in Brazil. |
| 9 | Practice of physical activity in the midst of the COVID-19 pandemic: a population-based study in a city in southern Brazil. | Crochemore et al., | 2020 | To describe the practice of leisure-time physical activity (AFL) amid the COVID-19 pandemic in the city of Rio Grande do Sul, evaluating inequalities between the sexes and educational groups and differences according to the level of social distance. |
| 10 | Influence of social distancing on the level of physical activity during the COVID-19 pandemic. | Costa et al., | 2020 | To investigate how social distancing measures to combat COVID-19 have influenced the level of physical activity of Brazilian adults. |



- 11 Physical inactivity, obesity and COVID-19: perspectives across multiple pandemics. Pitanga et al., 2020
- To analyze the interface between the physical inactivity, obesity and COVID-19 pandemics, drawing attention to the importance of continuing and/or increasing the practice of physical activity as a strategy to minimize the adverse effects of the current and possible future pandemics, which may require social distancing.

Source: Authors, 2022.

With the analysis of the literature, some outcomes of physical inactivity associated with Covid-19 were evidenced. According to Oliveira et al., (2021), in their study, the author points out the systemic consequences related to the reduction of people's mobility in general, highlighting that social isolation allows the growth of risks related to metabolic diseases, a since, people tend to spend most of their time in sedentary behavior. These behaviors, in addition to having a harmful effect on physical and mental health, also harm undue

people who already have comorbidities.

According to Silva et al., (2021), the prevalence of physical inactivity and sedentary behavior have been identified as consequences of technological developments, practicality and long working hours, in addition to the increase in screen times (Television, computer/tablet), both in children and adolescents and in adults, thus, it was pointed out that sedentary behavior has been frequently observed in all age groups of the Brazilian population during the COVID-19



pandemic.

For Becchi et al., (2021), the lack of adherence to programs for physical exercise at home, through new technologies, has blocked comprehensive care for citizens in the context of promoting physical activity, which is one of the greatest needs of Brazilian cities, given that the lack of commitment of health services in relation to the incorporation of technologies to offer physical health promotion, leave the population more vulnerable and lead to a sedentary lifestyle.

In this same line of thought, Vancini et al., (2021), reinforces that for the reduction of sedentary behavior to occur, the practice of physical activities needs to be stimulated by public authorities. Therefore, health education is the main means of mitigating the problems associated with this problem, although it

is still a precarious assistance in public services.

According to Botero et al., 2021, the author demonstrates in his study that some factors that already existed before social isolation caused a greater risk of impact on the reduction of the level of physical activity, being influenced by issues of age and the presence of chronic diseases. Physical inactivity before social isolation had a greater risk of impact on reducing the level of exercise, since self-indulgence is already persistent and negatively influenced physical and psychological well-being.

On the other hand, Souza et al., 2020 highlights an important point that is about social inequalities, showing that this factor directly reflects on the low adherence to performing functional exercises at home during COVID-19, since the low social



class is the one that is being most affected and often has no guarantee of instrumentation and access to knowledge or how to seek assistance or professional guidance to encourage the practice.

Mental problems developed during confinement measures were addressed by Guimarães et al., (2020) and Knuth & Freitas (2020), as threats to self-esteem, self-confidence and physical self-care, compromising a healthy lifestyle, with no desire to perform exercises and facilitating the triggering of lowering of mood, such as depression or bipolar disorder.

Inequalities between gender and level of education were pointed out by Crochemore et al., (2020), problematizing that there are sociocultural impediments that play a central role in the lives of Brazilians, while the greater visibility of this scenario

in the practice of activities is concentrated for a minimal portion of the population. social, highlighting a dilemma that had already come even before the pandemic.

In the wake of this discussion, Costa et al., (2020) also finds that these factors already influenced the level of physical activity before the pandemic, the results of their study indicated that during Covid-19, in cases of chronic degenerative diseases, of the circulatory system (CADs), cancer and osteoporosis showed reductions in their predictive power.

In summary, Pitanga et al., (2020) state that physical inactivity, also considered a pandemic, is a serious public health problem in the world. we problematize the government's speeches for the conduct of physical activity, where individuals and



families were asked to practice exercises at home, without guarantee of instrumentalization or access to the knowledge of professionals in this area. In other words, it is not enough just to propagate them, the investment also needs to be made to guarantee systematic and comprehensive assistance.

FINAL CONSIDERATIONS

In the course of this research, it was evidenced by the scientific literature, some factors that make it difficult to practice physical exercises at home during the pandemic. This field of investigation was prioritized due to the fact that there are difficulties and gaps in knowledge about the consequences of physical inactivity. The study showed that the difficulties in carrying out the practice of physical activity exist,

although there are ways that can be outlined to reverse this scenario.

Therefore, public policies to promote physical activity are suggested, which are more consistent on the part of government agencies. In addition, adherence to technological resources also becomes a relevant alternative, combined with health education actions, so that the population has knowledge about the benefits and correct guidelines on how to carry out the practices.

REFERENCES

Botero, J. P., Farah, B. Q., Correia, M. D. A., Lofrano-Prado, M. C., Cucato, G. G., Shumate, G., ... & Prado, W. L. D. (2021). Impacto da permanência em casa e do isolamento social, em função da COVID-19, sobre o nível de atividade física e o comporta-



- mento sedentário em adultos brasileiros. *Einstein* (São Paulo), 19.
- Becchi, A. C., Moisés, S. C. C., Lovato, N. S., Harami, G. H., da Silva Alcântara, V. C., de Azevedo Barbosa, V. C. A., & Machado, R. A. (2021). Incentivo a prática da atividade física: estratégias do NASF em meio à Pandemia de Covid-19. *APS EM REVISTA*, 3(3), 176-181.
- Costa, C. L. A., Costa, T. M., Barbosa Filho, V. C., Bandeira, P. F. R., & Siqueira, R. C. L. (2020). Influência do distanciamento social no nível de atividade física durante a pandemia do COVID-19. *Revista brasileira de atividade física & saúde*, 25, 1-6.
- Crochemore-Silva, I., Knuth, A. G., Wendt, A., Nunes, B. P., Hallal, P. C., Santos, L. P., ... & Pellegrini, D. D. C. P. (2020). Prática de atividade física em meio à pandemia da COVID-19: estudo de base populacional em cidade do sul do Brasil. *Ciência & Saúde Coletiva*, 25, 4249-4258.
- Ferreira, J. S., Cruz, R. P. V., de Assis, T. C., & Dellagrana, R. A. (2021). Comportamento sedentário de adultos e idosos durante a pandemia de COVID-19. *Journal of Health & Biological Sciences*, 9(1), 1-5.
- Guimarães, T. T., Santos, H. M. B. D., & Sanctos, R. T. M. (2020). INATIVIDADE FÍSICA, DOENÇAS CRÔNICAS, IMUNIDADE E COVID-19. *Revista Brasileira de Medicina do Esporte*, 26, 378-381.
- Knuth, A. G., de Carvalho, F. F. B., & Freitas, D. D. (2020). Discursos de instituições de saúde brasileiras sobre atividade física



no início da pandemia de COVID-19. *Revista Brasileira de Atividade Física & Saúde*, 25, 1-9.

Oliveira, V. V., Rocha, M. R., Lisboa, R. S., & da Silva Santos, S. K. L. (2021). IMPACTOS DO ISOLAMENTO SOCIAL NA PRÁTICA DE EXERCÍCIOS FÍSICOS DURANTE A PANDEMIA POR CORONAVÍRUS. *Gep News*, 5(1), 95-98.

Pitanga, F. J. G., Beck, C. C., & Pitanga, C. P. S. (2020). Inatividade física, obesidade e COVID-19: perspectivas entre múltiplas pandemias. *Revista Brasileira de Atividade Física & Saúde*, 25, 1-4.

Souza Filho, B. A. B. D., & Tritany, É. F. (2020). COVID-19: importância das novas tecnologias para a prática de atividades

físicas como estratégia de saúde pública. *Cadernos de Saúde Pública*, 36, e00054420.

Silva, D. R. P. D., Werneck, A. O., Malta, D. C., Souza Júnior, P. R. B. D., Azevedo, L. O., Barros, M. B. D. A., & Szwarcwald, C. L. (2021). Mudanças na prevalência de inatividade física e comportamento sedentário durante a pandemia da COVID-19: um inquérito com 39.693 adultos brasileiros. *Cadernos de Saúde Pública*, 37.

Vancini, R. L., Leopoldo, A. P. L., Carletti, L., Guimarães-Ferreira, L., Leopoldo, A. S., Leite, R. D., ... & Bocalini, D. S. (2021). Recomendações gerais de cuidado à saúde e de prática de atividade física vs. pandemia da COVID-19. *Revista Brasileira de Fisiologia do Exercício*, 20(1), 3-16.



Souza, Breno Augusto Bormann de e Tritany, Érika Fernandes COVID-19: importância das novas tecnologias para a prática de atividades físicas como estratégia de saúde pública. Cadernos de Saúde Pública [online]. v. 36, n. 5 [Acessado 7 Abril 2022] , e00054420. Disponível em: <<https://doi.org/10.1590/0102-311X00054420>>. ISSN 1678-4464. <https://doi.org/10.1590/0102-311X00054420>.

