

## COVID-19 and influenza

Pérez-Riera, Andrés Ricardo; Barros, Raimundo Barbosa; Nikus, Kjell; Elmusharaf, Khalifa

DOI:

[10.36311/jhgd.v32.12968](https://doi.org/10.36311/jhgd.v32.12968)

License:

Creative Commons: Attribution (CC BY)

*Document Version*

Publisher's PDF, also known as Version of record

*Citation for published version (Harvard):*

Pérez-Riera, AR, Barros, RB, Nikus, K & Elmusharaf, K 2022, 'COVID-19 and influenza: implications in the public health context', *Journal of Human Growth and Development*, vol. 32, no. 1, pp. 6-9.  
<https://doi.org/10.36311/jhgd.v32.12968>

[Link to publication on Research at Birmingham portal](#)

### General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

### Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.

EDITORIAL

# COVID-19 and influenza: implications in the public health context

Andrés Ricardo Pérez-Riera<sup>a,b</sup>, Raimundo Barbosa Barros<sup>c</sup>, Kjell Nikus<sup>d</sup>, Khalifa Elmusharaf<sup>b,e</sup>



<sup>a</sup>Laboratório de Delineamento de Estudos e Escrita Científica, Centro Universitário FMABC, 09060-870 Santo André, SP, Brazil;

<sup>b</sup>Brazil and Ireland COVID-19 Observatory;

<sup>c</sup>Coronary Center of the Hospital de Messejana Dr. Carlos Alberto Studart Gomes, Fortaleza, Ceará, Brazil;

<sup>d</sup>Heart Center, Tampere University Hospital and Faculty of Medicine and Health Technology, Tampere University, Finland;

<sup>e</sup>School of Medicine, University of Limerick, V94 T9PX Limerick, Ireland.

**Corresponding author**

riera@uol.com.br

## Abstract

The COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 continues to have a major impact on health and social systems around the world. The COVID-19 and influenza manifest themselves in a similar way, causing respiratory diseases that can present asymptotically, as well as from the cold to severe respiratory problems until death. The form of transmission is similar, through contact with droplets or particles of saliva and secretions, which implies preventive actions that involve the same hygiene measures, use of masks and the need to cough using the elbow or disposable tissues. This characterizes a syndemic. It becomes necessary to monitor these diseases so that there are parameters for better decision-making on the appropriate clinical management of these respective diseases.

**Keywords:** COVID-19, lethality, mortality, Haemophilus influenzae

The COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 continues to have a major impact on health and social systems around the world. As the clinical and epidemiological features of COVID-19 have many parallels with influenza, it is important to ensure optimal management of both respiratory diseases<sup>1</sup>.

In this context, it is necessary to monitor these diseases in order to have parameters for better decision-making on the appropriate clinical management of these respective diseases. In addition, that the population continues with the prevention and health promotion measures that greatly contribute to the reduction of cases, as these are actions that must be carried out by the population in the long term that will provide an effective simultaneous control of respiratory infections and their complications.

Thus, when considering the two diseases, comparisons have been made between the SARS-CoV-2

virus, which causes COVID-19, with the Influenza virus, which causes influenza, as both cause respiratory diseases, however, the spread and existing differences deserve to be discussed and analyzed in order to provide prevention and promotion measures based on health decision-making.

The two viruses manifest themselves in a similar way, causing respiratory diseases that can present asymptotically, as well as from the cold to severe respiratory problems until death. Also, the form of transmission is similar, since they are transmitted by contact with droplets or particles of saliva and secretions, which implies in preventive actions that go through the same measures, such as the importance of hygiene, use of masks and the need to cough using the elbow or disposable tissues<sup>2</sup>.

On the other hand, how do these viruses differ? One of the main differences between the two viruses is in the speed of transmission. It is known that Influenza virus

**Suggested citation:** Pérez-Riera AR, Barros RB, Kjell N, Elmusharaf K. COVID-19 and influenza: implications in the public health context. *J Hum Growth Dev.* 2022; 32(1):06-09. DOI: 10.36311/jhgd.v32.12968

has a shorter incubation period and a shorter serial interval when compared to the virus that causes COVID-19, the serial interval of COVID-19 is 5 to 6 days, while that of the Influenza virus is 3 days. This difference indicates that the Influenza virus can spread faster than SARS-CoV-2. It still stands out that the transmission in the first 3 to 5 days of the disease or the potentially pre-symptomatic transmission, is one of the main factors of Influenza transmission. On the other hand, although still under review, there are indications that people can be contagious with COVID-19 24 to 48 hours before symptoms start. Currently, this does not seem to be the main transmission factor<sup>2</sup>.

For Chotpitayasunandh *et al.*<sup>1</sup>, this difference in the transmission potential probably reflects years of previous exposure to influenza, as well as the implementation of public influenza vaccination policies that provide the population with a level of immunity, when compared to the lack of pre-existing immunity to SARS-CoV-2<sup>1</sup>.

Another point of discussion would be the evolution of diseases, since statistics show that this evolution seems to be different, although presenting similar symptoms. Most cases of COVID-19 present as asymptomatic or mild symptoms, with around 15% severe infections and 5% critical infections; different evolution of Influenza that serious and critical infection numbers would be lower than those observed for COVID-19<sup>3</sup> infection.

Finally, in relation to risk groups, in Influenza, the group with the highest risk are children, pregnant women, the elderly, people with chronic diseases and immunosuppressed. For COVID-19, the current understanding is that advanced age and pre-existing conditions increase the risk of serious infections<sup>3</sup>.

Understanding the differences in epidemiology in high-risk groups between COVID-19 and influenza is critical to ensure optimal clinical management of each of these diseases. Children are known to have significant morbidity due to influenza and are considered the main contributors to the transmission of the virus, while children infected with SARS-CoV-2 appear to be asymptomatic or have only mild symptoms<sup>4,5</sup>.

Thus, considering the evolution of diseases, it is clear that COVID-19 presents an evolution that stands out for more severe symptoms, which implies a potential higher mortality rate when compared to the mortality rate from Influenza, especially seasonal influenza.

Information technologies stand out in the context of health. For Chotpitayasunandh *et al.*<sup>1</sup>, public involvement in the notification of symptoms through mobile devices that can help to anticipate local or regional outbreaks, as well as surveillance data on the circulation of influenza viruses and/or SARS-CoV-2 and associated diseases, help in the decision-making process of diagnosis and treatment of these diseases.

## ■ REFERENCES

1. Chotpitayasunandh T, Fischer TK, Heraud J, Hurt AC, Monto AS, Osterhaus A, et al. Influenza and COVID-19: What does co-existence mean? *Influenza Other Respi Viruses* 2021; 15: 407–12. <https://doi.org/10.1111/irv.12824>
2. Doença coronavírus (COVID-19): Semelhanças e diferenças entre o COVID-19 e o N.D. influenza <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/coronavirus-disease-covid-19-similarities-and-differences-with-influenza>

As for medicines for COVID-19 and Influenza, although there are discussions regarding the treatment of COVID-19, with clinical trials, there are currently no licensed medicines for COVID-19 in Brazil. Drugs that fight the replication of the virus, such as Molnupiravir (from MSD) and Paxlovid (from Pfizer) can guarantee effectiveness against COVID.

On the other hand, there is a vaccine and antivirals for influenza, which despite not being effective for COVID-19, vaccination is highly recommended every year to prevent Influenza<sup>6</sup>.

Seasonal flu and the current COVID-19 pandemic are perceived to pose imminent global health challenges. Effective and safe vaccines remain front-line tools for mitigating illness induced by the influenza virus and SARS-CoV-2<sup>7</sup> severe acute respiratory syndrome.

Thus, it is observed that we are faced with two viral diseases with similarities, especially in symptomatology, but which differ in terms of transmissibility and evolution, which implies the need for actions that can empower the population in terms of prevention, promotion and control so that serious cases that can arise from COVID-19 are avoided. Such measures must increasingly be disseminated and necessary these days, as the world is currently experiencing two epidemics of respiratory viruses, COVID-19 and influenza.

Proper planning is essential to ensure that sufficient resources and strategies are available to meet peak capacity needs and meet additional demand.

It is everyone's responsibility not to let the current COVID-19 pandemic prevent them from properly dealing with the possibility of overlapping epidemics (seasonal flu and COVID-19). It will be more important than ever to reduce mortality rates with vaccination, antivirals, and implementing mitigation measures<sup>8</sup>.

In this approach, the Journal of Human Growth and development (JHGD) stands out, which brings to each edition discussions focusing on technologies, innovation and health, giving visibility to research that deals with the life cycle and health, epidemiology, law and health, public policies and other areas of knowledge<sup>9-25</sup>.

In addition, the JHGD has been providing a broad debate on the different areas of knowledge, enabling the development of critical thinking for the community, contributing to scientific dissemination at national and international levels.

The COVID-19 pandemic is not over. It remains for us to make efforts to ensure that we do not miss opportunities to fill the inequality gap. The use of face masking<sup>26</sup>, social distancing and mass vaccination of children and adults is the scientific evidence we have for reducing the transmission of the SARS-Cov2 virus and its implications for global public health.

3. Doença coronavírus (COVID-19): Semelhanças e diferenças entre o COVID-19 e o N.D. influenza <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/coronavirus-disease-covid-19-similarities-and-differences-with-influenza>
4. OMS: perguntas e respostas sobre o coronavírus. ONU News 2020. <https://news.un.org/pt/story/2020/01/1702002> (acesso em 21 de janeiro de 2022).
5. Ludvigsson JF. Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatr* 2020; 109: 1088–95. <https://doi.org/10.1111/apa.15270>
6. Tamiflu, INN-oseltamivir phosphate n.d. [https://www.ema.europa.eu/en/documents/product-information/tamiflu-epar-product-information\\_en.pdf](https://www.ema.europa.eu/en/documents/product-information/tamiflu-epar-product-information_en.pdf).
7. Sandor AM, Sturdivant MS, Ting JPY. Influenza Virus and SARS-CoV-2 Vaccines. *Jl* 2021; 206: 2509–20. <https://doi.org/10.4049/jimmunol.2001287>
8. Atallah F, Minkoff H. During the second wave of COVID-19, don't forget about influenza: a call to action. *BJOG: Int J Obstet Gy* 2021; 128: 12–3. <https://doi.org/10.1111/1471-0528.16551>
9. Laurentino SG, Boxwell SF. Fetal psychism: neurodynamic and psychoanalytic bases. *J Hum Growth Dev.* 2022; 32 (1): 10-20. DOI: 10.36311/jhgd.v32.12655
10. Parra CM, Ribeiro MAL, Bezerra IMP, Ribeiro MR, Abreu LC. Vaccine coverage and measles incidence in Northern Brazil. *J Hum Growth Dev.* 2022; 32 (1): 21-29. DOI: 10.36311/jhgd.v32.12617
11. dos Santos JLG, Pardo DWA, Messetti PAS, de Araujo Moraes SDT, Silva AP, Leitão FNC, Daboin BEG, Bezerra IMP, Abreu LC. Judicialization of health care in the Western Amazon: collective decisions of the jurisdictional court of justice in the State of Acre, Brazil. *J Hum Growth Dev.* 2022; 32 (1): 30-42. DOI: 10.36311/jhgd.v32.12615
12. Ferreira CRT, de Deus MBB, Morais MJD, Silva RPM, Schirmer J. Sleep quality of urban public transport drivers in a city in the Western Amazon, Brazil. *J Hum Growth Dev.* 2022; 32 (1): 43-54. DOI: 10.36311/jhgd.v32.12613
13. Relvas AP, Aranha Camargo JSA, Basano SA, Aranha Camargo LM. Prevalence of chronic noncommunicable diseases and their associated factors in adults over 39 years in riverside population in the western Brazilian amazon region. *J Hum Growth Dev.* 2022; 32 (1): 55-63. DOI:10.36311/jhgd.v32.11323
14. Pinto MMPS, Lima LMM, Soares RAS, Coutinho SED, Medeiros AT, Moraes RM. Spatial Clusters of Chronic Childhood Conditions in the State of Paraíba, Brazil. *J Hum Growth Dev.* 2022; 32 (1): 64-71. DOI: 10.36311/jhgd.v32.12618
15. Leitão FNC, Bezerra IMP, Pimentel RMM, Pereira GAV, Monteiro A, Silva AP, Bebiano BC, Riera ARP. Factors associated with incidence and mortality by road accidents involving motorcyclists and pedestrians: a rapid systematic review. *J Hum Growth Dev.* 2022; 32 (1): 72-82. DOI: 10.36311/jhgd.v32.12614
16. Muniz VM, Netto AL, Salaroli LB, Zandonade E. Gastroschisis in Brazil within a Global Context. *J Hum Growth Dev.* 2022; 32 (1): 83-91. DOI: 10.36311/jhgd.v32.11796
17. Costa VDE, Bezerra IMP, Siqueira CE, Leitão FNC, Silva LG, Daboin BEG, Elmusharaf K, Abreu LC. Outcome Measure Epidemiological of Female Inmates in West Amazon, Brazil. *J Hum Growth Dev.* 2022; 32 (1): 92-100. DOI: 10.36311/jhgd.v32.12616
18. Carvalho AAS, Silva VG, Silva AP, Corazzini R, Lacene E. New insights about myofibrillar myopathies: the role of metalloproteinases 2 and 9 in the pathogenesis. *J Hum Growth Dev.* 2022; 32 (1): 101-107. DOI: 10.36311/jhgd.v32.12913
19. Freitas ACS, Gaspar JF, de Souza GCRM, Inamonico JH, Bachur CK, Coelho-Oliveira AC, de Sá Caputo DC, Taiar R, Filho MB, Sonza A, Bachur JA. The effects of whole-body vibration on cognition: a systematic review. *J Hum Growth Dev.* 2022; 32 (1): 108-119. DOI: <http://doi.org/10.36311/jhgd.v32.12864>
20. Santiago LN, Martins PC, Silva DAS. Association between excess peripheral, central and general adiposity with high blood pressure in adolescents in southern Brazil. *J Hum Growth Dev.* 2022; 32 (1): 120-128. DOI: <http://doi.org/10.36311/jhgd.v32.0000>
21. de Paula Sena R, Santos IC, de Oliveira FM, Acencio FR, Franco CB, Branco BHM. Establishing a normative table for classifying body fat percentage in adolescents. *J Hum Growth Dev.* 2022; 32 (1): 129-135. DOI: <http://doi.org/10.36311/jhgd.v32.11542>

22. Nazario PF, Ferreira L, Caruzzo NM, dos Santos VAP, Vieira JLL. Psychometric properties of the Movement Assessment Battery for Children (MABC-2): an analysis based on the Item Response Theory. *J Hum Growth Dev.* 2022; 32 (1): 136-144. DOI: 10.36311/jhgd.v32.11041
23. Fava MC, Tonello MGM, Rosa RM, Crocetta TB, Moraes IAP, Monteiro CBMM, Silva TD, Santos D. Motor learning in visual impaired individuals during a coincident timing task in a non-immersive virtual reality. *J Hum Growth Dev.* 2022; 32 (1): 145-154. DOI: 10.36311/jhgd.v32.12675
24. Alves Junior CAS, Silva AF, Pereira EV, Farias JM, Santos Silva DA. Characteristics associated with sport practice among adolescents from a city in Southern Brazil. *J Hum Growth Dev.* 2022; 32(1):155-164. DOI: <http://doi.org/10.36311/jhgd.v32.10262>
25. Barcelos MRB, Lima EFA, Dutra AF, Comerio T, Primo CC. Congenital syphilis: epidemiological analysis and sentinel event of the quality of care for the mother/newborn binomium. *J Hum Growth Dev.* 2022; 32(1):165-175. DOI: 10.36311/jhgd.v32.12513
26. Abreu LC. The Path Of Humanity In The Pandemic Of Covid-19: The Choice Of The Realistic, Optimist Or Pessimist Scenario. *J Hum Growth Dev* 2021; 31(1): 05–8. <https://doi.org/10.36311/Jhgd.V31.11683>

### Resumo

A pandemia de COVID-19 causada pelo novo coronavírus SARS-CoV-2 continua a ter um grande impacto nos sistemas de saúde e sociais em todo o mundo. torna-se necessário que haja monitoramento dessas doenças para que assim, tenha-se parâmetros para melhor tomada de decisão sobre a gestão clínica adequada sobre essas respectivas doenças. Os dois vírus se manifestam de forma semelhante, ao causarem doenças respiratórias que podem se apresentar de forma assintomáticas, assim como do resfriado a problemas respiratórios graves até a morte. A forma de transmissão são parecidas, por contato com gotículas ou partículas de saliva e secreções, o que implica nas ações de prevenção que perpassam pelas mesmas medidas higienização, uso de máscaras e a necessidade de tossir usando o cotovelo ou lenções descartáveis. Isto caracteriza uma sindemia.

**Palavras-chave:** COVID-19, letalidade, mortalidade, *Haemophilus influenzae*.

©The authors (2022), this article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.