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Long COVID-19 in Latin America: Low prevalence, high resilience or low surveillance and difficulties accessing health care?

According to the WHO, as of September 30, 2022, 614 385 693 cases of COVID-19 and 6 522 600 confirmed deaths from the disease have been reported, with associated excess mortality exceeding 15 million. Latin America has been one of the most affected regions [1]. The impact of COVID-19 on health and quality of life is even greater if the condition of long COVID is considered. The WHO in the Delphi consensus defines long COVID as an illness that occurs in people with a history of probable or confirmed SARS-CoV-2 infection, usually within three months from the onset of COVID-19, with symptoms for at least two months that an alternative diagnosis cannot explain [2]. Although there are differences in the prevalence of long COVID given the heterogeneity in the publications, it easily exceeds 10% at 12 months [3,4].

"The Lancet Commission on lessons for the future from the COVID-19 pandemic," published on September 14, 2022, highlighted the burdens of Long COVID and the importance of multidisciplinary and stigma-free care [5]. Despite this recognition and the burden of disease on health systems in Latin America, few publications make the impact of Long COVID visible [6]. At first glance, it seems that the population is more resilient. Given the high labour informality and the need to quickly return to the labour market, which has not recovered to prepandemic levels, the recovering population may not seek support for their rehabilitation processes [7]. In September, we conducted a structured survey in a population of 1.5 million adults in Bogotá, Colombia, with an initial qualifying question about the laboratory-confirmed SARS-CoV-2 diagnosis by real-time reverse transcription polymerase chain reaction (RT-PCR or antigen test). An affirmative response was obtained for SARS-CoV-2 infection in 33 555 people and was confirmed in the database of the reference laboratory. These respondents received a digital form sent by text message or email asking about the 13 main symptoms described in patients with long COVID. 3,6 A total of 21 312

Table 1Absolute number and percentage of the most frequent long COVID manifestations among the 21 312 patients who self-reported symptoms.

Symptom	Number of Patients	Percentage
Headache	13164	61.7
Fatigue	12963	60.8
Insomnia	12092	56.7
Weakness or muscular pain	11451	53.7
Dyspnoea	10944	51.3
Chest Pain	6480	30.4
brain fog	9999	46.9
Persistent Cough	4005	18.7
Dysphagia	1930	9.0
Physical Inability	285	1.3

(63%) reported at least one persistent symptom for more than three months from the onset of COVID-19 (Table 1). These preliminary self-reported data from a Latin American country are closer to what is described in other regions if we also consider that at least a third of the selected population had a laboratory-confirmed infection [3,4,8]. Nasserie et al. conducted a systematic review of studies published from January 1, 2020, to March 11, 2021, with 47 studies considered eligible for analysis. Eighty-four clinical signs or symptoms were included in the review. A total of 9751 patients were expected to have persistent symptoms of COVID-19, and 72.5% reported at least one symptom 60 days after COVID-19 onset [8] Our survey shows that in Latin America, there is an underreporting of the impact of long COVID, although our data may have a bias that those who have responded to our survey have been the people who feel sick. This could lead to governments and health authorities in the region not prioritizing the development and implementation of rehabilitation systems that facilitate the recovery of the affected population. Suppose there is a delay in implementing care for people suffering from long COVID-19. In that case, regional inequities might increase due to greater difficulty for the most vulnerable population in accessing early diagnosis and specialized care, enabling them to return more quickly to their day-to-day activities. The insufficient number of rehabilitation units and the absence of medical education programs on long COVID, especially for primary care physicians, may result in higher costs for health systems. We are beginning to observe that patients consult or are referred to clinical specialties without comprehensive care.

In conclusion, long COVID is a public health problem that affects a nonnegligible percentage of the population suffering from COVID-19, which should be considered within current health policies. This policy should be reflected with an increase in its active search and the implementation of rehabilitation care centres that allow adequate follow-up and a better characterization of patients to resolve or mitigate this new hidden pa complication of the COVID-19 pandemic. Health authorities, health personnel, and the community, in general, must act to prevent Latin America and other low-income and middle-income countries of the world from becoming prominent victims of COVID-19 again.

References

- [1] Coronavirus disease (COVID-19). World health organization [Internet]. [cited 2022 Oct 3]. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019
- [2] Soriano JB, Murthy S, Marshall JC, Relan P, Diaz JV. A clinical case definition of post-COVID-19 condition by a Delphi consensus. Lancet Infect Dis 2022 Apr;22(4): e102–7.
- [3] Wulf Hanson S, Abbafati C, Aerts JG, et al. medRxiv [Preprint]. A global systematic analysis of the occurrence, severity, and recovery pattern of long COVID in 2020 and

- 2021, vol. 26; 2022 May, 22275532. https://doi.org/10.1101/2022.05.26.22275532. 27:2022.05.
- [4] Thompson EJ, Williams DM, Walker AJ, Mitchell RE, Niedzwiedz CL, Yang TC, et al. Risk factors for long COVID: analyses of 10 longitudinal studies and electronic health records in the UK [Internet]. Cold Spring Harbor Laboratory; 2021 Jun. https://doi.org/10.1101/2021.06.24.21259277. Available from:.
- [5] Sachs JD, Karim SSA, Aknin L, Allen J, Brosbøl K, Colombo F, et al. The Lancet Commission on lessons for the future from the COVID-19 pandemic. The Lancet; 2022 Sep.
- [6] de Miranda DAP, Gomes SVC, Filgueiras PS, Corsini CA, Almeida NBF, Silva RA, et al. Long COVID-19 syndrome: a 14-months longitudinal study during the two first epidemic peaks in Southeast Brazil. Transactions of The Royal Society of Tropical Medicine and Hygiene; 2022 May 6.
- [7] The World Bank. Long COVID: the extended effects of the pandemic on labor markets in Latin America and the caribbean [Internet]. World Bank. [cited 2022 Oct 3]. Available from: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099900007072289098/p1758390cd83e707b0845f045093 6b8882b
- [8] Nasserie T, Hittle M, Goodman SN. Assessment of the frequency and variety of persistent symptoms among patients with COVID-19. JAMA Netw Open 2021 May 26;4(5):e2111417.

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