



# The possibility and challenge evaluation about the declaration of end of the pandemic phase of Covid-19

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Dear Editor,

Coronaviruses, belonging to the Coronaviridae family, is a diversified set of enveloped, positive-sense RNA viruses with a broad spectrum of tropism. It can cause respiratory infections in mammals. Their genome sequence consists of 26–32 kb, and 5′–3′ poly A-tail is the most extended genome among known viruses<sup>1,2</sup>. Covid-19, primarily a respiratory system infection, is a manifestation of SARS-COV-2 viral infection. Airborne residues from the respiratory system spread by sneezing and coughing are the main route of transmission from an infected person to a healthy person. Most transmission happens when people are near asymptomatic, symptomatic, or pre-symptomatic carriers. In most cases of Covid-19 infection, it is associated with fever, cough, and shortness of breath. Less prevalent symptoms like sore throat, anosmia, dysgeusia, anorexia, nausea, malaise, myalgias, and diarrhoea have also been seen<sup>3</sup>. In December 2019, Covid-19 was first tested in a hospital in Wuhan, China. After further reported cases of Covid-19, on 30 January 2020, a global emergency was declared by the WHO because of the rapid outbreak of that virus throughout Wuhan. It acknowledged that this virus has the potential to spread globally on 24 February 2020, and WHO declared that Covid-19 as a pandemic on 11 March 2020<sup>2,4</sup>. As of 7 March 2023, over 759 million people were reported Covid-19 positive with the death of over 6.8 million people. However, over 13 billion people were vaccinated till 11 March 2023<sup>5</sup>. At this point, here we aim to evaluate the possibility and challenges to declare that the pandemic phase of Covid-19 should be ended after almost 3 years of continuation.

Since the declaration of the Covid-19 pandemic by WHO, various SARS-CoV-2 virus variants have had a significant

negative influence on world health, and they were regarded as variants of concern (VOCs). Alpha (B.1.1.7) was described as the first VOC in September 2020 in England and has spread across at least 119 countries in just a few months<sup>3,6</sup>. Meanwhile, another strain was identified in South Africa, named Beta (B.1.351 lineage), around October 2020 and caused a second wave of infection<sup>3,7</sup>. This strain had an elevated transmission rate than the previous one. Third variant of concern was the Gamma variant (P.1 lineage). It was detected in Latin America in January 2020 with decreased neutralization by monoclonal antibody therapies<sup>8,9</sup>. Delta Variant (B.1.617.2 lineage) caused a catastrophic second wave across India in April 2021. This strain spread across the globe very rapidly<sup>3</sup>. The fifth VOC, Omicron (B.1.1.529 lineage), has a very rapid transmission rate, having a 2.8-fold infection rate than B.1.617.2 lineage, and its viral infectivity increased 13-fold<sup>10</sup>. According to CDC, Omicron is the dominant VOC in numerous countries having several sub-variants: BA.1, BA.2, BA.3, BA.4, and BA.5. During this period, this virus changed its infectivity; as a result, the transmission rate and morbidity rate also altered. According to the WHO report, the rate of both infections and deaths is decreasing. When Previous VOCs (Delta, Beta, Gamma) were dominant, as of mid-2020, the number of infected cases found was 11 318 270, and 551 063 were dead, where the ratio was 0.049. The high infection rate resulted in a massive number of 183 546 739 after 1 year. Nevertheless, the death rate was reduced, and at a case-death ratio of 0.022, the death number was 396 695. As of June 2022, the ratio decreased to 0.012 with case number 547 880 428 and death 6 340 908. As of December 2022, the ratio was the least, with a case-death ratio of 0.01; although the latest variant of Omicron BF.7 has shown the highest infectivity rate in China, no case of severe mortality has been found<sup>11</sup>. Vaccination and a well-equipped health sector decreased the rate of death in Covid-19<sup>12</sup>.

This pandemic had a substantial negative influence on the global financial system and the daily life of people<sup>13–22</sup>. Diagnosing, quarantining, and treating suspected or confirmed Covid-19 cases were a great challenge for the healthcare system with the existing high burden in the medical system<sup>21,23</sup>. The most distressing situation was people who were being disregarded while suffering from other illnesses and health issues. The slowing of manufacturing essential goods and revenue growth with a disrupted supply chain of products hampers the global economy<sup>24</sup>. Cash flow in the market is feeble, and national and international businesses are undergoing huge losses. The service sector was unable to provide optimum service for social aspects—disruption of sports tournaments, international travelling, cultural along with religious events, and examination systems. Covid-19 has impeded both the distribution streams of foods and

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resources and the global financial system. There were strict limits on travelling between countries<sup>[25]</sup>.

In the beginning phase of Covid-19, the death toll was very high; the finance and education sectors were slowed down, and borders were shut down. Social life nearly stopped, and mental breakdown started due to social isolation and quarantine<sup>[26,27]</sup>. Moreover, this monopolized news media, social media, public health, and science. In 2020–2022 more than 550 000 articles related to Covid-19 were published in the “WHO Covid-19 research database”<sup>[28]</sup>. To fight the pandemic, different measures were taken, and the mortality rate was reduced despite the high infection rate of the latest variants<sup>[29]</sup>. WHO approved 11 vaccines as emergency use listed vaccines. More than 4.8 million people in 203 countries were vaccinated with at least one dose<sup>[30,31]</sup>. Numerous seminars, webinars, bulletins, and mass awareness-raising programs developed our knowledge, maintaining social hygiene and perception towards Covid-19, a powerful defense against the Covid-19 pandemic. In addition, we have developed a treatment procedure to achieve symptomatic relief from corona infection. All these steps helped us to “flatten the curve” and reduce the health sector burden. For further management of Covid-19, vaccine customization is a must as a preventive measure<sup>[32]</sup>. The virus has shown a repeated mutation history, and the marketed vaccine has proven weaker against new mutated strains. Research should continue to monitor viral mutation and associated infection symptoms. Various generic drug trials should be conducted to cure symptomatic discomfort caused by infection of mutated strains. In places where the spread is high, precautionary measures should be taken, and all people must obey the guidelines for preventing the crisis. Various organizations can do seminars to fight the post-Covid-19 syndrome.

Vaccination of two-thirds of the global population is completed, which includes 75% of health workers and the elderly population<sup>[5]</sup>. Since the pandemic’s declaration, the number of weekly reported deaths has been almost at an all-time low. We have several effective vaccines and antiviral agents to fight coronavirus. Healthcare authorities and people are now more aware and trained about Covid-19, its preventive measures, and therapeutic interventions. However, scientists should keep their eyes on the future mutation of coronavirus and associated health hazards. With all our lessons, learnings, and Covid-19 response tools, we can say that we are now in a better position to declare that the pandemic phase of Covid-19 should end; however, as an infectious disease, Covid-19 will continue. Countries will be able to manage it alongside other respiratory infections. Therefore, it is time for the global healthcare authorities to critically evaluate the Covid-19 situation for the declaration of the ending of the crisis phase and going back to everyday life.

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### Author contribution

A.S.M.R., R.S., and M.R.I.: conceptualization, data curation, and writing the original draft. N. and M.R.I.: conceptualization, supervision, and review and editing the manuscript. All authors reviewed and approved the final submission.

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The authors do not have any conflict of interest to declare.

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