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Author (s):	Munazza Qureshi[1], Noman Ahmed[1], Zeeshan Siddique[1], Musa Ali Irfani[2], Masood Ur Rehman[1], Adil Sanan[3], Usman Ayub Awan[1]
Affiliation (s):	[1]Department of Medical Laboratory Technology, The University of Haripur, Khyber Pakhtunkhwa, Pakistan [2]Community Health, Margalla Hospital, Taxila, Punjab, Pakistan [3]Department of Oral and Maxillofacial Surgery, Khyber College of Dentistry, Peshawar, Khyber Pakhtunkhwa, Pakistan
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Re-emergence of the SARS-CoV-2 Omicron Variant in Pakistan: Learning from the Past

Munazza Qureshi[1], Noman Ahmed[1], Zeeshan Siddique[1], Musa Ali Irfani[2], Masood Ur Rehman[1], Adil Sanan[3], Usman Ayub Awan[1*]

[1]Department of Medical Laboratory Technology, The University of Haripur, Pakistan
[2]Community Health, Margalla Hospital, Taxila, Pakistan
[3]Department of Oral and Maxillofacial Surgery, Khyber College of Dentistry, Peshawar, Khyber Pakhtunkhwa, Pakistan

DEAR EDITOR

The disastrous condition of the healthcare sector in Pakistan was highlighted in a recent article titled "COVID-19 and alarming dengue co-epidemics in the dilapidated healthcare system in Pakistan: Where to focus!" by Khurram et al. [1]. Additionally, the rising cases of SARS-CoV-2 Omicron variant have also had a severe economic impact on the country, which has put additional pressure on the healthcare system. Therefore, this study spotlights potential challenges and also the way forward for Pakistan to safeguard the general population against COVID-19.

Since January 2020, the World Health Organization (WHO) has been intensively surveilling and investigating the emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in coordination with competent authorities, public health agencies, and researchers. Even though the epidemic began more than two years ago, the whole world remains on a high alert for COVID-19. Dreadfully, on Friday, November 26, 2021, WHO reported that a new SARS-CoV-2 variant of concern, namely Omicron (formerly designated B.1.1.529), appeared to be propagating in nearly all provinces of South Africa, most notably Gauteng [2]. The rapid spread in Gauteng, South Africa put the WHO and global health agencies on high alert – especially with reference to the younger age groups. Afterwards, South African scientists announced the finding of a new and "heavily mutated" strain of coronavirus, sparking a public outcry. Consequently, countries immediately enacted travel bans and restricted their borders, although this variant has been identified in at least 23 countries since then, including the United States of America [3].

Scientists have warned that the public should be concerned about two particularly hazardous strains, that is, BF.7 and BA.5.1.7. These have been found recently in China, are extremely infectious, and exhibit an extremely high risk of transmission [4]. Furthermore, Chinese health authorities have issued an advisory against BF.7 and BA.5.1.7 due to the increasing number of instances of COVID-19. The increasing occurrence of BF.7 infections have led the WHO to speculate that this strain may soon replace all others as the most common, worldwide [5]. The Omicron variant has been reported as the most frequent strain of SARS-CoV-2. It has predominant S mutations and leads to the

* Corresponding Author: usman.ayub111@gmail.com

emergence of new recombinant lineages, including BA.5, BA.2.75, BA.2.75.2, BQ.1, BQ.1.1, BA.4.6, BF.7, and XBB [6].

In comparison to the reference genome, the Omicron variant has a total of 60 mutations including fifty nonsynonymous mutations, eight synonymous mutations, and two non-coding mutations [7]. Additionally, around thirty-two mutations in spike protein have been found, resulting in 30 amino acid alterations, including three deletions and one insertion. Moreover, three mutations have been identified in the furin cleavage site, which may play a role in the enhanced infectivity rate of SARS-CoV-2 [8].

After the emergence of Omicron, between 10-16 January 2022, the incidence rate of COVID-19 grew substantially, whereas the number of new deaths remained steady. About 347 million confirmed cases and 5.6 million fatalities were documented globally on January 23, 2022. Alarmingly, during the period of 28 days (December 12, 2022 to January 28, 2023), there have been 13.9 million new cases and over 49,000 fatalities reported globally, with an exponential rise of 10–22% in comparison to the prior week [9]. Pakistan, a lower-middle-income nation, has also experienced a dramatic increase in COVID-19 infections, with 1.5 million active cases and a death toll of over 30 thousand [10, 11].

The COVID-19 pandemic has put the world on edge, yet Pakistan's health budget for 2020 does not anticipate anything extraordinary. When it comes to the pandemic's yearly budget for 2020–2021, $44 billion was planned to be dedicated to the health sector. Astonishingly, only a fraction of this amount comprising $155 million was budgeted for a population of 220 million [12]. Pakistan has previously been ravaged by several natural calamities, notably earthquakes, flooding, heatwaves, droughts, and tropical storms, aggravating economic devastation. Moreover, if the capacity of the healthcare systems is surpassed, the consequences of this deadly disease might be felt far and wide. While Omicron is less lethal than the delta variant of SARS-CoV-2, its high transmission rate as well as the capacity to defy both vaccination and the immune system means that the overall proportion of persons requiring hospital care at any particular point in time remains a severe challenge. Regrettably, medical services have become fragmented and dispersed as the death toll continues to climb and the unrest escalates. Being a low-income country, Pakistan is ill-equipped to deal with the Omicron disaster due to a lack of medical facilities, personnel shortages, escalating medical costs, and a scarcity of medical equipment [13].

Given the infection's high transmissibility and mild nature, policymakers should not wait for the country to establish herd immunity. Pakistani government and public health officials should instead view this as an opportunity and a wake-up call to tighten existing preventative measures and adopt various non-pharmaceutical interventions (NPIs), such as social distancing and closing public venues, while also speeding up the immunization rate. Existing education campaigns should be reintroduced to educate the public on wearing masks, avoiding handshaking, staying at home, and following quarantine measures. If public health measures are followed in their entirety, we may see an end to the pandemic, shortly. Otherwise, new varieties will emerge periodically and pandemic control will become an unrealized dream.

A list of policies and public health measures that need to be implemented for the control of VOC's spread is as follows:

1. Coughing or sneezing into a bowed elbow.
2. Hands should be washed often.
3. Maintaining a one-meter distance even if others do not appear to be unwell.
4. In public, wearing a properly fitted mask over the mouth and nose, especially if physical distance is not available.
5. Open, well-ventilated environments are preferable to closed ones.
6. Seeking medical treatment in case of a fever, cough, or difficulty in breathing.
7. Implementing contact-tracing measures to halt the virus's spread.
8. Surveillance and genotyping initiatives should be stepped up to understand the circulating SARS-CoV-2 variants better.
9. Equitable vaccine distribution should be ensured to provide vaccines to underprivileged communities.
10. To raise awareness about vaccination and infection prevention measures, educational workshops should be arranged at the community level.
11. Unvaccinated persons should be followed up regularly. If they refuse to get vaccinated, minor penalties can also be imposed on them.
12. Preventive measures should be implemented in schools, colleges, universities, shopping malls, tourist attractions, public areas, industries, and businesses, among other places.

AUTHORS' CONTRIBUTION

MQ, NA, MR, and AS conceived and designed the study and also analysed and interpreted the data. MR, NA, and ZS were involved in writing the first draft, as well as the statistical analysis of the manuscript and the interpretation of results. UAA and MSI supervised and did the final correction of the manuscript. All authors approved the final version of the manuscript.

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