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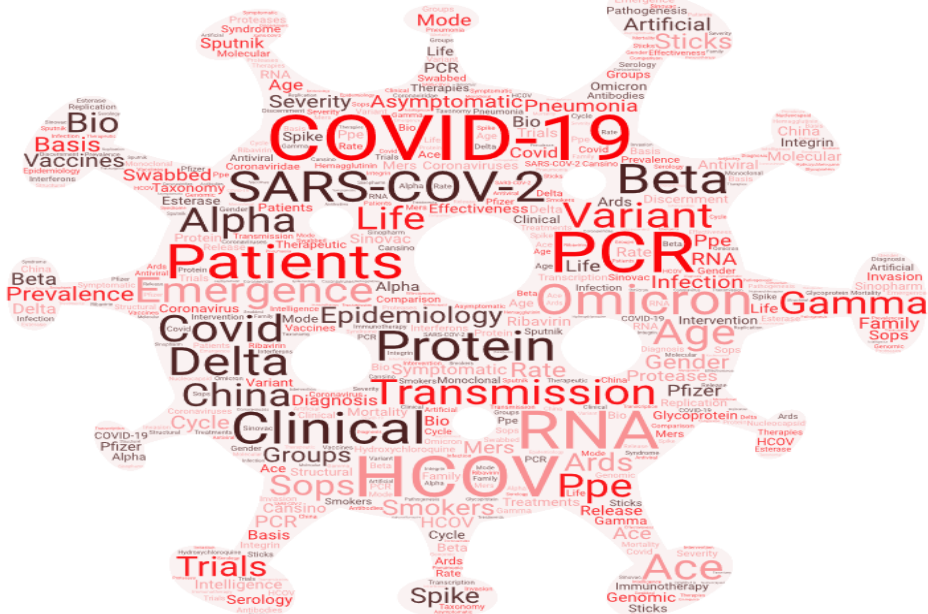[2]Department of Medical Laboratory Technology, National Skills University, Islamabad

The global epidemic of coronavirus disease 2019 (COVID-19) has presented a major threat to public health worldwide. The causal agent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [a member of *Severe acute respiratory syndrome-related coronavirus*] that was first isolated and identified in patients who were exposed at a seafood market in Wuhan City, Hubei Province, China on December 2019. The COVID-19 epidemic represents a substantial challenge for governments, individuals, and society as a whole. The most common symptom of COVID-19 are fever, chills, and sore throat. Globally, as of 9 April 2023, over 762 million confirmed cases and over 6.8 million deaths have been reported [1]. For the thematic issue, a total of 22 manuscripts were submitted, out of which 11 articles were considered that were contributed by a total of 53 international and local authors. The selected manuscripts were of different article types - two Letters-to-Editor [2-3], four original research, one short communication, and four review articles (Figure 1).

The articles contributed to the thematic issue could be summarized as: Habib and colleagues [4] examined illness trends, smoking-related aggressiveness, and COVID-19 prevalence among various age and gender categories. A total of 60% of patients (mainly men) tested positive for COVID-19, and smokers had a greater rate of positive results (7%). The majority of positive cases (70%) occurred in people between the ages of 40 and 60, and asymptomatic persons were shown to be more vulnerable to the virus. Another study [5] examined symptoms and recurrence rates, a retrospective study, evaluated the efficacy

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of COVID-19 vaccinations. According to the findings, only 9.21% (93 out of 1010) were infected with SARS-CoV-2.

Tahir and collages [6] conducted study on the clinical and epidemiological COVID-19 variant presentations in the Punjabi tertiary care facilities. They collected swab samples from hospitals and conducted a survey to determine the prevalence and distribution of COVID-19. According to data analysis, individuals' symptoms varied in intensity, with some needing hospitalization and others being secluded at home. The study also emphasized the benefits of vaccination, even if many people were still reluctant to get it.

Another retrospective study [7] carried out covering different hospitals in Islamabad and Rawalpindi, Pakistan, sought to investigate the relationship between patient outcomes (recovery or death) and elements including age, gender, and COVID-19 treatment. The age was shown to be correlated with the degree of recovery, however, they found no correlation between gender and the patient outcomes. Whereas, patients' recovery and the treatments were found as correlated parameters. In order to evaluate human factors and ergonomics during the COVID-19 lockdown in Pakistan, Naveed and colleagues [8] conducted an online survey. A total of 421 respondents were surveyed using a variety of scales to gather the data. According to the findings, the lockdown caused a number of health problems, including Post-traumatic stress disorder, insomnia, anxiety, depression, and hypertension. Furthermore, exercise and ergonomics were found to be important in managing health difficulties.

The effects of coronaviruses on the welfare and agricultural sectors of pigs and poultry

were analyzed in the study of Iswadi [9]. The majority of coronaviruses in these animals were known to cause respiratory or enteric diseases, other strains could also cause extra-pulmonary and extra-intestinal ailments. Furthermore, it was found that understanding the biology and behavior of pathogenic coronaviruses is essential for maintaining animal health with an impact on veterinary treatment and financial losses.

Naz and colleagues [10] reiterated the effect of genesis, transmission, mechanisms of replication, diagnosis, and immunization approaches considering SARS-CoV and MERS-CoV diseases. The molecular basis of the virus's pathogenesis, the role of bats as primary hosts, and the challenges of therapeutic interventions were analyzed in another study [11]. Furthermore, the virus diagnostic strategies, including but not limited to, utilizing artificial intelligence were studied. Lastly, the disease symptoms and their control measures, therapeutic trials, and vaccine status were studied [12]. Conclusively, the impact of vaccines like Pfizer, Moderna, Johnson and Johnson, Sinopharm, Sinovac, CanSino-Bio, and Sputnik were evaluated.

The purpose of this thematic issue was to provide a platform for the researchers and experts working with COVID-19 to raise a broader discussion to share their findings and insights on the virus, its transmission, prevention, and treatment. Additionally, it could serve as a resource for policymakers, healthcare professionals, and the general public to stay informed and up-to-date on the latest developments related to COVID-19.

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