Challenges and Opportunities of the Ambiguous Post-Pandemic World

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Edited by

Ahmet Gökbel, Erman Akıllı
and Burak Güneş

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Introduction

If one studies human history, it is not strange to see pandemics that caused significant casualties worldwide. However, compared to the COVID-19 pandemic, it should be stated that no former pandemics shaped the international system and the daily lives of common people in such a radical way. Starting in December 2019, the world transitioned into a pandemic shaped in many aspects: from social life to politics, from education to work life. In this book, the transition outcome of the COVID-19 pandemic is taken into consideration. Through twelve well-structured chapters of "Challenges and Opportunities of the Ambiguous Post-Pandemic World", the book aims to shed light on how the COVID-19 pandemic has changed the world we know in terms of health services, education, religion, daily life, and the globalisation perspective.

In their chapter entitled "The Effects of the COVID-19 Pandemic on the Health Sector from the Global and Turkish Perspectives", Harun Çiftçi and Özcan Özkan review the health service responses of countries regarding the COVID-19 pandemic through vaccines.

In his chapter "Drivers of Organisational Excellence in the Post-Pandemic World Order", Ali Alfarsi investigates the role that change reinforcement plays within UAE public sector organisations in establishing organisational excellence in a post-pandemic era. He takes a case study of the UAE public sector and claims that management's capacity to inspire staff members to adopt new behaviours and achieve organisational excellence is a crucial factor.

Hakan Aydin explores the pandemic's effect on Muslim groups in the case study of Germany in his chapter "The Effects of COVID-19 on Muslim Organisations and Their Umbrella Organisations in Germany".

During the pandemic, governments had to take precautions to control the spread of the virus within their borders, but in doing so they enforced rules to control their citizens to abide by curfews and other measures. In his chapter entitled "The Crime of Violating the Measures Related to Infectious Diseases in the Turkish Penal Code in the Context of Coronavirus", Hüseyin Ertuğrul investigates the law dimension of the pandemic and takes into

consideration the Turkiye case. He evaluates the extent to which provisions are applied, identifying any legal deficiencies and suggesting remedies.

Izabela Lipińska explores the practical aspects that can facilitate the process of law-making and the application of law in terms of implementing legal tools to mitigate the effects of the pandemic for food security in her chapter "Farmers in the Food Supply Chain Facing New, Post-Pandemic Challenges".

In their chapter entitled "Internationalisation in Higher Education in the Post-Pandemic World Order: Case Study of Kirşehir Ahi Evran University", Asli Akilli and Erman Akilli investigate the impact of the COVID-19 pandemic on international students' higher education experience and take the case study of Kirsehir Ahi Evran University.

In "International Security and Perceptions in the Aftermath of the COVID-19 Pandemic", Kürşat Kan analyses security in the post-pandemic world order by examining security concerns and strategies directly or indirectly related to COVID-19.

In their chapter entitled "Post-Pandemic Challenges for Aviation English Training", Nataliia Glushanytsia and Erman Akilli review how higher education is affected by the COVID-19 pandemic's effects and how it adapts to the new obstacles. The study's findings demonstrate that the modifications made to the teaching and learning process during the epidemic are permanent.

In their chapter "An Axiological Approach to the Implementation of Information Technology in Education", Tetyana Tarnavska and Erman Akilli explore the need to take into consideration the research results in the field of axiology and, in particular, the theory of value in the implementation of ICT in the educational process of higher education institutions during the COVID-19 pandemic.

Merve Suna Özel Özcan and Emine Erden Kaya envisage the changes in the policies of the great powers in the international arena during the pandemic period in their chapter, entitled "Great Powers and Nation-States in the Coronation Era".

Pandemics are as old as the humanity itself. Even centuries ago, people suffered from the aftermath of pandemics. In his chapter entitled "Early Modern Ottoman Legal Sources Concerning Diseases and Epidemics: Ibn Kemāl's (D. 940/1534) Fatwas", Abdullah Ridvan Gökbel investigates the pandemics in the Early Ottoman era through religious documents.

Abdulhalim Inam investigates the challenges in education and teaching during the COVID-19 pandemic in the case study of Belgium and religious schools in Belgium in his chapter titled “Religious Education and Teaching During the Pandemic in Belgium”.

Challenges and Opportunities of the Ambiguous Post-Pandemic World is focused on a more human perspective of the COVID-19 pandemic rather than high politics. We sincerely hope this book will contribute to the social science literature and pave the way for further academic research on the post-pandemic world order.

Editors,
Ahmet GÖKBEL, Erman AKILLI, and Burak GÜNEŞ

Kırşehir
2023

Chapter I

The Effects of the COVID-19 Pandemic on the Health Sector from the Global and Turkish Perspectives

Harun Çiftçi & Özcan Özkan

Overview of World Epidemic History and Its Effects

The concept of disease in modern medicine has gained its present significance through several stages when the historical record was reviewed. Before modern medicine, it was believed that illnesses were caused by sinful behaviour, by the gods, by certain spiritual forces, or by the effects of magic. However, since the end of the 19th century, with the discovery of many microorganisms, germ theory has been developed and the view that microbes are the only cause of disease has been defended (Tecim, 2018).

Advances in medicine, technology, and research show that diseases are not caused by a single microbe, and a theory of three approaches has been developed: microbe, vector, and environment. However, the theory only manages to explain and prevent infectious diseases. This limitation of the theory has led to the emergence of the causal approach, which states that disease can be caused by social and psychological factors as well as biological factors. In the 20th century, general susceptibility theories emerged that explored the effects of changing conditions from society to society or country to country, such as why diseases affect societies at different levels or cause different numbers of deaths, as well as the causes of disease (Tecim, 2018).

When the historical record is examined, the belief that diseases are caused by some supernatural origin or environmental and non-human factors has made it difficult to cope with diseases, causing them to affect more people or resulting in large numbers of deaths. In addition to these beliefs, factors such as people's living conditions, non-compliance with hygiene rules, the

deterioration of the natural balance, drought, famine, demographic changes, and the destruction of habitats have prepared the ground for the emergence of different epidemic diseases at various stages of history. In addition, the gradual increase in the world population, the increase in population density in cities with the acceleration of urbanisation, and climate change are the global ecologies that affect the possibility of transmission of infectious organisms (Morganstein, 2017). The emergence of these unfavourable conditions leads to the propagation of pathogenic microorganisms and the reinforcement of their mechanisms of action. This situation, combined with the negativities in the biological, physical, and mental structure of people, has caused the emergence of health problems and the rapid spread of infectious diseases with the widespread use of transportation channels. These factors, which are effective in the formation and spread of disease, have led to the emergence of many pandemics that have seriously affected societies throughout history (Table 1).

Table 1. Historical pandemics (Piret, 2021).

YEAR	PANDEMIC	PATHOGEN	VECTOR
541–543	Justinianic plague	Yersinia pestis	Fleas associated with wild rodents
1347–1351	Black Death	Yersinia pestis	Fleas associated with wild rodents
1817–1824	1st Cholera epidemic	Cholera bacteria	Contaminated water
1827–1935	2nd Cholera epidemic	Cholera bacteria	Contaminated water
1839–1856	3rd Cholera epidemic	Cholera bacteria	Contaminated water
1863–1875	4th Cholera epidemic	Cholera bacteria	Contaminated water
1881–1886	5th Cholera epidemic	Cholera bacteria	Contaminated water
1885–ongoing	3rd Plague	Yersinia pestis	Fleas associated with wild rodents
1889–1893	Russian Flu	Influenza A / H3N8 (?)	Birds (?)
1899–1923	6th Cholera epidemic	Cholera bacteria	Contaminated water

1918–1919	Spanish Flu	Influenza A / H1N1	Birds
1957–1959	Asian Flu	Influenza A / H2N2	Birds
1961–ongoing	7th Cholera epidemic	Cholera bacteria	Contaminated water
1968–1970	Hong Kong Flu	Influenza A / H3N2	Birds
2002–2003	Severe Acute Respiratory Syndrome (SARS)	SARS-CoV	Bats, palm civets
2009–2010	Swine Flu	Influenza A / H1N1	Swine
2015–ongoing	Middle East Respiratory Syndrome (MERS)	MERS-CoV	Bats, dromedary camels
2019–ongoing	COVID-19	SARS-CoV-2	Bats, pangolins (?)

When epidemics that have left a significant mark on the history of mankind are discussed, the epidemics that are mentioned the most and have the greatest impact are the plague epidemics. Three plague epidemics, which mostly affected the European continent, also caused the highest number of human deaths in history. The first of these three important plague epidemics was the Plague of Justinian, which appeared in the 6th century. The second was the plague commonly known as the Black Death, which was experienced in the 14th century, and finally, the third plague epidemic emerged in the 19th century (Artvinli, 2020). The first plague epidemic, the Justinian plague, originating in China and India, was mainly seen in Europe and caused the deaths of 30–50 million people. The Black Death, which was the second plague epidemic, caused great destruction in Europe and about a third of the European population died due to the epidemic. This epidemic, which is called the Black Death due to subcutaneous haemorrhages and the black death of the skin, caused the death of approximately 75 million people with a large impact in China, India, and the Middle East. The third plague epidemic, which has been prevalent in China, India, Asia, Europe, and America, has resulted in 12 million deaths (Tapisiz, 2020).

Epidemics have been a cause of massive human mortality at every stage of human history. Other important epidemics that come to mind after the plague are cholera epidemics. There have been seven cholera epidemics in history, the first of which was in 1817, and the last one started in 1961 and is still in effect. Cholera, which was seen mainly in India until the 19th century and was regarded as a region-specific disease, spread to other countries outside India at the beginning of this century, causing the deaths of many people in pandemic waves (Yılmaz, 2017).

Another serious pandemic in recent history was the Spanish influenza pandemic, which first appeared in 1918. The Spanish flu is believed to have been caused by the H1N1 bird virus. There is no universal consensus on the exact source of the virus, but the virus spread around the world between 1918 and 1919. An estimated 500 million people, or one-third of the world's population, were affected by this disease. At least 50 million people lost their lives due to the Spanish flu, and these deaths mostly consisted of people under the age of 5, between the ages of 20 and 40, and over the age of 65. The most important feature of Spanish flu that distinguishes it from other epidemic diseases is that it causes a high death rate in healthy people between the ages of 20 and 40 (CDC, 2018).

From the Spanish flu to today, people around the world have experienced a number of epidemics, including Hong Kong flu, Asian flu, HIV/AIDS, swine flu, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, and COVID-19. Some of these epidemics have completely ceased to impact world health for a certain period of time, while others continue to have a significant impact today. In particular, the COVID-19 pandemic has had a distinct impact on humans as today's societies have not previously experienced a pandemic that has had such an impact.

The large-scale migration of animals and humans raises an increasing public health concern regarding the risk of an epidemic. The global mobility of humans and various disease vectors are the primary mechanisms by which new infectious agents rapidly spread into a previously unexposed and immunocompromised population and bring disease vectors into new environments (Morganstein, 2017).

COVID-19 Pandemics

The coronaviruses that emerged at the end of 2019 and caused the epidemic are single-stranded, positive polarity, enveloped RNA viruses with rod-like extensions on their surface. These rod-like extensions are interpreted as corona in Latin, the Turkish equivalent of a crown, and because of this feature they are called coronavirus (crown virus). Coronavirus can evolve in people in a variety of ways, from colds to severe respiratory syndrome. In addition to its effects on the respiratory system, it can also cause clinical presentations with hepatic, enteric, nephrotic, and neurological impairment (SB, 2020). The virus can cause diseases of the digestive system, liver, nervous system, and, most notably, the respiratory system in animals and humans. The virus that causes COVID-19 is under the subgenus Sarbecovirus within the genus Betacoronavirus, including SARS-CoV and MERS-CoV. The new nomenclature of the virus has been accepted as SARS-CoV-2 (SB, 2020).

The COVID-19 pandemic is one of the epidemics that is still being felt today. The first cases of the virus were reported on 31 December 2019 in the city of Wuhan, in the Hubei province of China. In the following days, the World Health Organization (WHO) announced this new disease as “COVID-19” on 11 February 2020, following guidelines developed by the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO) (WHO, 2020).

Subsequently, COVID-19 reached epidemic levels in a short period of time with effects felt around the world (WHO, 2022a). In the evaluation of the disease, according to the number of cases and deaths, it can be seen that the number of cases is quite high, especially in the period from December 2021 to April 2022. During this period, mid-January 2022 was the period when the highest number of cases emerged all over the world. However, factors such as the success of treatment services, vaccination studies, and the number of people vaccinated prevent a similar increase in the number of deaths, despite the high number of cases. The period with the highest number of deaths globally was January to February 2021. The fact that the disease spread very rapidly during this period and effective treatment and preventive measures were not taken quickly were evaluated as the reason for the high number of deaths (WHO, 2022b).

It is thought that COVID-19 was first transmitted from animals to humans and is believed to be of bat or pangolin origin. However, COVID-19 is mostly transmitted from person to person by respiratory droplets, similar to

the spread of influenza. The virus, which is released when a sick person coughs, sneezes, or talks with droplet transmission, is transmitted to the person by direct contact with the mucous membranes of another person. The disease is also spread through contact with an infected surface and subsequent contact with the mouth, nose, and eyes (Işsever et al., 2000; Türken, 2020).

The average incubation period for COVID-19 is 5.84 days and, in general, the incubation period varies between 2 and 14 days. The duration of the contagiousness of COVID-19 is not known precisely; however, it is considered to start 1–2 days before the symptomatic period and end with the cessation of these symptoms (SB, 2020). Coronaviruses are generally less resistant to the external environment. Factors such as the type of external environment where viruses are found, humidity, and temperature of the environment affect the survival of the virus and can change its residence time (Türken, 2020). Studies have shown that SARS-CoV-2 is more stable on plastic and stainless steel than copper and cardboard, and a live virus is detected 72 hours after application to these surfaces, although the virus titer is greatly reduced (van Doremalen, 2020). It is also stated that coronaviruses can be activate on metal, glass, or plastic surfaces for up to nine days, but it is stated that viruses on these surfaces can be deactivated within one minute through the use of disinfectants (Kampf, 2020).

COVID-19 Variants

Many mutations take place during virus replication. When mutations accumulate in the virus genome and become meaningful, a virus different from the original virus emerges. Mutated viruses are called “variants”. If these mutations in the virus genome do not help the virus replicate and continue, the virus disappears on its own. Some variant viruses, on the other hand, can become more dominant and permanent in society over time through mutations that make them more easily transmitted. Variants formed as a result of mutations in the gene encoding the S protein binding to ACE2 receptors of the RNA virus COVID-19 in susceptible cells (Tables 2 and 3) have been reported all over the world since the onset of the disease (Firat et al., 2021).

Table 2. Variants of concern (VOC) (WHO, 2022b).

WHO Label	Pango lineage	GISAID Clade	Earliest documented samples
Omicron*	B.1.1.529	GR/484A	Multiple countries, Nov 2021
Alpha**	B.1.1.7	Gri	United Kingdom, Sep 2020
Beta**	B.1.351	GH/501Y.V2	South Africa, May 2020
Gamma**	S.1	GR/501Y.V3	Brazil, Nov 2020
Delta**	B.1.617.2	G/478K.V1	India, Oct 2020
*** Variant of concern currently active in circulation** **** Variants of concern already in circulation**			

Table 3. Variants of interest (VOI) (WHO, 2022b).

WHO Label	Pango lineage	GISAID Clade	Earliest documented samples
Epsilon	B.1.427 B.1429	GH/425R.V1	USA, Mar 2020
Zeta	S.2	GR/484K.V2	Brazil, Apr 2020
Eta	B.1.525	G/484K.V3	Multiple countries, Dec 2020
Theta	S.3	GR/1092K.V1	Philippines, Jan 2021
Iota	B.1.526	GH/253G.V1	USA, Nov 2020
Kappa	B.1.617.1	G/425R.V3	India, Oct 2020
Lambda	C.37	GR/452Q.V1	Peru, Dec 2020
Mu	B.1.621	GH	Colombia, Jan 2021

COVID-19 in Turkiye

In Turkiye, the first COVID-19 case was detected on 11 March 2020. The National Health Authority introduced a number of measures to prevent the spread of the disease. Among these measures, firstly, schools were closed and the activities of barbers, hairdressers, restaurants, shopping centres, theatres, and cinemas where people could be in close contact were stopped. In addition, measures such as curfews, travel restrictions, flight bans, and

flexible work practices in the public sector were put in place. In addition to these measures taken for social life, measures were also taken to support the health system and service units, such as establishing specialist COVID-19 clinics; increasing the number of tests; producing test kits; producing PPE such as respirators, masks, and gloves; assigning health personnel specifically to COVID-19 duties; and establishing field hospitals. After the detection of the first case, protective and preventative measures taken for social life were applied intensively in March, April, and May of 2020, and people remained in their homes for a long period of time (Bulut, 2020).

COVID-19 Measures of the Ministry of Health

The COVID-19 pandemic has impacted many countries in areas such as production, consumption, transportation, economy, trade, industry, tourism, and, in particular, their health systems, which have faced a heavy burden with increasing demand for services and inadequate diagnosis and treatment methods during the epidemic. This burden of the epidemic on the health system has been greater for underdeveloped countries and has pushed countries into challenging processes in public health and other areas. Countries are using suppression and pacification strategies in the fight against the coronavirus. In Turkiye, the suppression strategy, which is the strategy of taking decisions with a centralised approach from the top levels of management and implementing them at the lower levels, has been used (Duran, 2020; Türkoğu, 2021).

After the first cases were seen in Turkiye, the Ministry of Health established the Coronavirus Scientific Committee in order to prevent the spread of the epidemic, prevent disruptions in health services, and manage the epidemic, and a series of decisions were taken in line with the recommendations of the scientific committee (Table 4).

Table 4. Measures taken within the scope of COVID-19 (Budak, 2020).

DATE	MEASURE
10 January 2020	Establishment of the Ministry of Health Coronavirus Scientific Committee
14 January 2020	Preparation of the COVID-19 guide
23 January 2020	Taking precautions for passengers coming from China, quarantine application
31 January 2020	Providing medical supplies to China
4 February 2020	Monitoring of entries from abroad with thermal camera
5 February 2020	Suspension of flights to China
23 February 2020	Closure of Turkiye–Iran highway entrances
11 March 2020	Detection of the first case of COVID-19
12 March 2020	Suspension of education in schools
13 March 2020	Decision not to perform Friday prayers in mosques
15 March 2020	Suspension of activities of entertainment venues
15 March 2020	Suspension of flights to many countries in Europe
16 March 2020	Playing sports matches without spectators
16 March 2020	Suspension of congregational prayers in mosques
17 March 2020	First death from COVID-19
17 March 2020	Suspension of flights to European and Middle Eastern countries
20 March 2020	All kinds of scientific, cultural, artistic, and similar activities postponed
20 March 2020	Announcement of hospitals of pandemic by the Ministry of Health
21 March 2020	The start of curfews with the HES application
21 March 2020	Barbers, hairdressers, etc. cessation of business activities
22 March 2020	Initiation of flexible working practices in the public sector
23 March 2020	Transitioning to distance education in educational institutions

25 March 2020	Announcement of economic support packages for COVID-19
27 March 2020	Start of publishing daily COVID-19 data by the Ministry of Health
30 March 2020	Launching the *We Are Enough for Us* campaign against COVID-19
1 April 2020	Providing medical supplies to Spain and Italy
3 April 2020	Entries and exits to metropolitan cities and Zonguldak province stopped for 15 days
3 April 2020	Turkish Airlines suspension of domestic flights
4 April 2020	Beginning of the curfew for those under 20
5 April 2020	Distribution of free masks for citizens aged 20–65
9 April 2020	Ensuring that private hospitals do not charge additional fees for the treatment of COVID-19
10 April 2020	Declaring a two-day curfew in metropolitan cities and Zonguldak province
10 April 2020	Providing medical supplies to the UK
14 April 2020	Temporary suspension of Turkish Airlines international flights
15 April 2020	Starting the release of ninety thousand detainees and convicts due to COVID-19
16 April 2020	Making a regulation that the private sector cannot dismiss its employees for three months
17 April 2020	Suspension of entrances and exits to Istanbul by sea
28 April 2020	Providing medical supplies to the USA
4 May 2020	Extension of entrance and exit to metropolitan cities and Zonguldak province until 19 May
19 May 2020	Extension of entrance and exit to metropolitan cities and Zonguldak province until 03 June
7 July 2020	Sending the circular on “Inspections within the Scope of COVID-19 Measures” to 81 provincial governorships
8 September 2020	Obligation to wear masks without exception in all areas of the country (except for residences)
12 September 2020	Bringing the HES Code Obligation to the 81 provincial governorships in intercity buses
23 September 2020	Introducing the HES code requirement at entrances to all public institutions and organisations

30 September 2020	Making HES code obligatory in all accommodation facilities
2 December 2020	Determining the daily working start and end times of public institutions and organisations to be between 10:00 and 16:00
2 March 2021	Beginning of the curfew in Turkiye between 21.00 and 05.00 on weekdays
16 May 2021	Publication of the gradual normalisation circular
3 March 2022	Removal of the obligation to use masks
3 March 2022	End of HES code inquiry application
3 March 2022	Removal of PCR test results submission application

In addition to all implementations under the coordination of the Ministry of Health, written, visual, and audio broadcasts that informed society, health personnel, and various sectors about the COVID-19 epidemic were made (SB, 2022b). In addition, the Hayat Eve Sığar (HES) application, which allows sharing between individuals or institutions where there is a risk or disease carrier in terms of COVID-19 in transactions such as transportation and visits within the scope of the control of social life, was launched by the Ministry of Health. Using the code obtained with the application, the risk to individuals was identified and their travel was prevented, thereby preventing the spread of the disease (SB, 2022c).

A great deal of money, work, and time has been spent on fighting COVID-19, both in Turkiye and in many other countries. Although the epidemic is expressed as a situation that mostly affects the health sector and threatens human health, the impacts of the epidemic affect countries in many ways, such as stopping production, changing consumer behaviours, and economic and financial aspects such as unemployment, the interruption of education, and the cessation of tourism (Eşsiz, 2020).

Current COVID-19 Situation

The COVID-19 epidemic, which started in China in December 2019, had infected 575,887,049 people globally by 3 August 2022, resulting in the deaths of 6,398,412 people (Figure 1). As part of the pandemic response, 12,248,795,623 doses of vaccine were administered globally up to 3 August 2022 (WHO, 2022c). The weekly number of cases (Figure 2), the number of deaths (Figure 3), and the current data of the countries with the most cases/deaths and the countries with the least cases/deaths in the world by region are summarised in Tables 5 and 6 (WHO, 2022c).

Figure 1. Distribution of cases globally (3 Aug 2022) (WHO, 2022c).

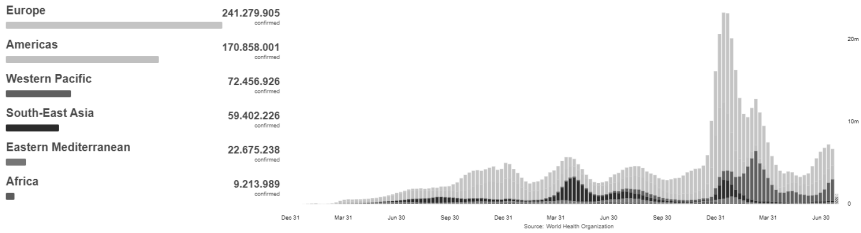

Figure 2. Weekly case numbers by region (25 Jul 2022) (WHO, 2022c).

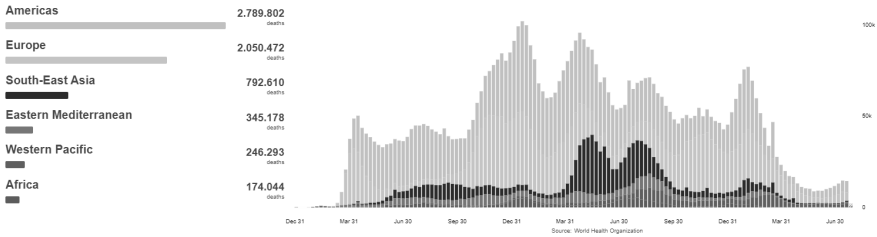

Figure 3. Weekly deaths by region (25 Jul 2022) (WHO, 2022c).

Table 5. Countries with the most cases/deaths in the world (WHO, 2022c).

Country	Total Number of Cases	Total Number of Deaths	Mortality Rate (%)
United States of America	88,920,929	1,015,897	1.14
India	43,905,621	526,074	1.19
Brazil	33,454,294	676,217	2.02
France	32,499,518	147,938	0.45
Germany	30,331,133	143,177	0.47
United Kingdom	23,213,017	182,727	0.78
Italy	20,660,065	170,875	0.82
South Korea	19,247,496	24,890	0.12
Russian Federation	18,538,826	382,189	2.06
Turkiye	15,524,071	99,184	0.63
Spain	13,204,863	110,187	0.83
Japan	11,346,584	31,885	0.28
Vietnam	10,767,948	43,092	0.40
Argentina	9,465,827	129,202	1.36
Australia	9,019,965	11,032	0.12

Table 6. Countries with the least cases/deaths in the world (WHO, 2022c).

Country	Total Number of Cases	Total Number of Deaths	Mortality Rate (%)
North Korea	Undeclared	Undeclared	0
Saint Helena	Undeclared	Undeclared	0
Tokelau	Undeclared	Undeclared	0
Turkmenistan	Undeclared	Undeclared	0
Pitcairn Islands	4	Undeclared	0
Tuvalu	8	Undeclared	0
Vatican City	26	Undeclared	0
Niue	29	Undeclared	0
Marshall Islands	59	Undeclared	0
Wallis and Futuna	533	7	1.31
Saba	645	2	0.31
Micronesia	1,022	Undeclared	0
Montserrat	1,032	8	0.77
Saint Eustatius	1,092	5	0.45
Malvinas	1,835	Undeclared	0

Current Situation in Turkiye

During the period from the notification of the first COVID-19 case in Turkiye to 2 August 2022, a total of 15,889,495 cases were seen, and 99,341 people who contracted the disease lost their lives (Figure 4). During the pandemic, the first spike in Turkiye happened on 30 November 2020, with 219,546 cases. The second peak occurred on 12 April 2021, with 414,312 cases, and the third peak occurred on 31 January 2022, with 712,091 cases (Figure 4). The daily caseload decreased to 2,747 on 30 May 2022 and increased again thereafter. The first mortality peak occurred on 20 April 2020, with 816 deaths. Later peaks included: 21 December 2020 with 1,773 deaths, 26 April 2021 with 2,493 deaths, 16 August 2021 with 1,332 deaths (Figure 4), and 14 February 2022 with 1,922 deaths (WHO, 2022c). A total of 149,779,979 COVID-19 vaccines were delivered at the first, second, and third doses in Turkiye. Vaccination rates by provinces are given in Figure 5.