COMPARATIVE ANALYSIS OF RESPONSES TO COVID 19 BETWEEN EUROPE, ASIA, AMERICA AND AFRICA-A LITERATURE REVIEW OF FOUR NATIONS

Abstract

The COVID-19 outbreak, which emerged in the early part of 2020 and spread across the world, exposed the governance and decision-making processes as well as structural flaws in the healthcare system, but it also sparked the spirit of man to survive. The pandemic posed significant challenges to lives, health systems, and the economies of even the giant economic powers. Governments across the globe responded and continue to respond in various ways to control the spread and mitigate the consequences as much as possible.

Differences exist across the regions regarding responses to the situation. Many countries have had different experiences and travelled on different and similar trajectories in the course of the pandemic. In this review, Europe, Asia, America, and Africa are compared and contrasted in their responses to the pandemic. The responses from France, India, the United States of America, and South Africa are analysed. The first cases that were recorded, the number of cases at lockdowns, the responses to the pandemic, and the leadership role of governments are all examined.

Although the world rose to the challenge of the pandemic, it is imperative to develop deliberate global health system collaborations in the health information sector where knowledge and data are shared regularly and capacities are built to be able to mitigate quickly any future outbreak. Although the worst prediction for the African nations did not come to pass, they should individually and collaboratively develop robust healthcare systems, that can detect, prevent and manage future pandemics and also complement the global health system. There is also the need for coordination of information by national leaders to avoid conflict information that creates doubts in the minds of the people.

Keywords: COVID-19, Pandemic, Response, Comparative analysis, Lockdown, Europe, Asia, Africa

Background

Coronavirus is one of the most common pathogens that attack the human respiratory system. COVID-19 is the third novel coronavirus to cause a large-scale epidemic in the twenty-first

century. The earliest symptom onset date was December 1, 2019. The causative agent was identified as a novel coronavirus using whole-genome sequencing (Liu et al., 2020). The first cases were reported in December 2019. On January 30, 2020, the first case of COVID-19 transmission from person to person was reported in the United States (Rothan & Byrareddy, 2020) which led to the description, identification, diagnosis, and management of COVID-19. On March 11, 2020, WHO declared COVID-19 a pandemic (Harapan et al., 2020).

COVID-19 is a global pandemic that has affected millions of people around the world. COVID-19 imposed economic stress on countries that retarded economic growth. With the onset of the COVID-19 pandemic, various country heads enforced lockdowns and other restrictions to stop the spread of the infection among the citizen. However, the impact and response of different countries vary widely depending on various factors. This paper aims to compare the covid-19 situation in four countries from different continents: South Africa, India, the USA, and France. The paper will examine the differences and variations of initial response, leadership and management, impact and control of the pandemic in these countries. The paper will also discuss the implications and recommendations for future pandemic preparedness and response.

METHOD

Published data on COVID-19 were obtained and reviewed to produce this article. The review analyzes the differences and variations of initial response, leadership and management, impact and control of the pandemic. The four continents were picked randomly for the review and the countries were purposefully selected because they are among the most hit countries by the pandemic from each of the continents.

First Case of COVID-19 Infection

France and the USA reported their first cases in January 2020, while South Africa and India reported theirs in March 2020. The source of infection for all four countries was travellers from other countries where the virus had already spread. The USA has the highest number (106,630,327) of cases among the four countries, followed by India, France, and South Africa. Specifically, the first case of COVID-19 infection was recorded in France, the USA, India, and South Africa on January 24, 2020 (Spiteri et al., 2020; Stoecklin et al., 2020; Wikipedia, 2023b), January 21, 2020 (Jeris & Nath, 2021), January 30, 2020 (Wikipedia, 2023a), and March 5, 2020 (Lone & Ahmad, 2020), respectively. In the case of India, the

traveller who was confirmed to be COVID-19 infected was a student who travelled from Wuhan, China (Saha & Chouhan, 2021). The first case of COVID-19 in South Africa was confirmed by a traveller from Italy (Remuzzi & Remuzzi, 2020). The cases from France and the USA were from travellers from China (Chowell & Mizumoto, 2020; Wikipedia, 2023b). Comparatively, the first cases of COVID-19 were mostly confirmed by individuals who had visited or travelled from highly COVID-19-infected countries. Except for South Africa which got its first from Italy, France, the USA, and India got their first cases from China. South Africa was the last to record a new case among these countries, and this can be attributed to the country being the least visited country across the globe (Broadbent et al., 2020). The USA and France had a similar date of first infection, and it may be due to the high volumes of people the two countries receive from other countries.

First Date of Lockdown

France has experienced four major episodes of COVID-19 lockdown. The first lockdown was enforced between March 17, 2020, and May 11, 2020 (Ceylan, 2020; Pasquier et al., 2021; Shaman, 2021). This episode lasted for 55 days, after which guidelines were announced to ease the restrictions. People were required to stay inside during a rigorous statewide lockdown during this time, unless doing so was necessary, such as going out to buy food, going to work, or getting medical attention. All schools, non-essential businesses, and public places were closed, and people needed a written attestation to justify their movements outside their homes. Travel between regions and countries was also restricted or banned. France entered into other lockdown episodes that were similar to the first lockdown but had some easing of restrictions. The other lockdowns were enforced between November 2020 and August 2022 (Lambert et al., 2021).

In the USA, there was no nationwide lockdown, but states and cities imposed various restrictions starting in March 2020 (Schuchat et al., 2020). The first state to impose a lockdown in the USA was California on March 19, 2020, and New York on March 22, 2020 (Chowell & Mizumoto, 2020). California and New York were the first states to ease and lift most of the COVID-19-related restrictions on June 15, 2021 (Jernigan et al., 2020; Sansa, 2020). New York eased the restriction when the city attained a 70% vaccination rate. Huston and Seattle were the states that eased restrictions latest on March 10, 2021, and June 30, 2021, respectively (Press, 2021).

South Africa experienced its first nationwide lockdown on March 27, 2020. The lockdown came into effect on March 27, 2020, and was scheduled to last for 21 days until April 16, 2020 (Stiegler & Bouchard, 2020). However, it was later extended until May 1, 2020 (Schröder et al., 2021). The South African National Defence Force and the police were deployed to enforce the lockdown and ensure compliance.

In India, a nationwide lockdown was imposed for 21 days across the country to prevent the spread of COVID-19. The lockdown came into effect on March 25, 2020. The nationwide shutdown was prolonged by the Indian government on April 14 until May 3 (phase 2). Phase 3 of the shutdown began on May 1 and lasted an additional two weeks until May 17. The National Disaster Management Authority prolonged the lockdown on May 17 to May 31 (phase 4) (Lancet, 2021). The lockdown was one of the strictest in the world as it involved the closure of all services and shops except essential ones, the suspension of all public and private transport services, the prohibition of all social and religious gatherings, and requiring all residents to stay at home unless they had a valid reason or permission (Ghosh et al., 2020). The lockdown was followed by a series of phased relaxations called "Unlock", which began on June 1, 2020. The Unlock guidelines allowed for the gradual reopening of various activities and sectors with certain restrictions and safety measures. The Unlock phases continued until March 31, 2021, when a second wave of COVID-19 hit India and forced many states to reimpose lockdowns or curfews (Golechha, 2020; Visaria & Dharamdasani, 2021).

India had the longest COVID-19 lockdown (Murthy, 2020). This is attributable to the rate of infection in the countries. India was badly affected by the second wave of the COVID-19 infection, which necessitated an extension of the restriction and lockdown. France’s first lockdown lasted for 55 days, from March 17 to May 11, 2020 (Srivastava & Priyadarshini, 2020), and required people to have a written attestation to justify their movements outside their homes.

Number of cases before or at lockdown

France had 6,633 COVID-19 cases before the first lockdown (Wikipedia, 2023b). The lockdown was announced by President Emmanuel Macron on March 16, 2020, and took effect on March 17, 2020, at noon. India had reported 657 confirmed cases of COVID-19 and 10 deaths on the day the lockdown was imposed (Samarasekera, 2021). South Africa had 927 confirmed COVID-19 cases before the lockdown (Broadbent et al., 2020). The United States of America did not have a specific total number of confirmed cases before the lockdown. This is because different states and cities had different lockdowns and restrictions at different times. However, in California, which was the first state to impose a lockdown on March 19, 2020, the number of confirmed cases was 675 (Press, 2021). Generally, France had the highest number of cases before the lockdown among the four countries. This may stem from the high number of commercial activities and foreign visitors in France as compared to other countries. The country is a hub for tourism and trade, which may have increased the number of contacts and transmission of the COVID-19 infection among uninfected individuals.

Total Number of Cases So Far

The USA has the highest number of current COVID-19 cases among the four countries, followed by India, France, and South Africa. The USA and India have both experienced multiple waves of COVID-19 infections, while France and South Africa have managed to contain the virus to some extent. Despite the great efforts of France and South Africa to contain the virus, these countries have also suffered the negative impact of the infection in terms of mortality. As of July 28, 2023, the total number of confirmed COVID-19 cases in the USA stood at 107,505,311 with 1,167,770 deaths and 105,628,770 recoveries. In India, the total number of confirmed COVID-19 cases stood at 44,995,434 with 531,915 deaths and 44,462,067 recoveries. France currently has a total of 40,138,560 confirmed cases, with 167,642 deaths and 39,970,918 recoveries. South Africa, which is the least-hit country among the four countries, has 4,076,563 confirmed cases with 102,595 deaths and 3,912,506 recoveries (Worldometer, 2023).

Initial Response

The initial responses to COVID-19 cases in France, the USA, South Africa, and India varied in terms of timing, intensity, and effectiveness. France was one of the first European countries to be hit by the pandemic, and it imposed a nationwide lockdown on March 17, 2020, when it had 6,633 cases (Romain et al., 2023). The lockdown was strict and required people to have a written attestation to justify their movements outside their homes.

The French government declared a state of health emergency on March 23, 2020, allowing the government to take exceptional measures without parliamentary procedure. The emergency was repeatedly prolonged, and on November 10, 2021, a new law was passed that extended the capacity to declare a state of health emergency until July 31, 2022. (Stoecklin et al., 2020). France's health system was already under strain before the pandemic, and the government mobilised resources to increase intensive care beds, transfer patients, and recruit more health workers. The government also announced bonuses for health workers and plans to increase their salaries (Desson et al., 2020).

On March 16, 2020, France closed all educational institutions from ECEC to the tertiary level, launching a national online learning platform called Ma classe à la Maison (My Class at Home). The reopening of classes began on May 11, 2020, with nursery and primary schools reopening voluntarily, followed by secondary schools after May 18, and high schools remaining closed until the end of May (Garcia et al., 2021). Strict health and safety regulations, such as social isolation, mask wear, and sanitation, were in place before the reopening (Di Domenico et al., 2020).

The early state and local government responses to COVID-19 cases in the USA varied, but they typically included emergency declarations, the closure of schools and public gathering places, lockdowns, and other measures meant to slow the virus' spread. The United States failed to battle the epidemic quickly and effectively (Calfas et al., 2020; Schuchat et al., 2020). The alarmingly high number of illnesses and fatalities was mostly caused by critical delays and poorly executed basic public health initiatives, in addition to ongoing underinvestment in public health (Calfas et al., 2020; Pei et al., 2021). The USA did not have a nationwide lockdown, but some states and cities imposed various restrictions starting in March 2020 (Calfas et al., 2020; Chowell & Mizumoto, 2020). The federal government downplayed the threat of the virus and left most of the decisions to the state and local authorities. The USA also faced challenges in testing, tracing, and treating infected people (Barton et al., 2020; Chowell & Mizumoto, 2020; Team et al., 2020).

South Africa reacted early and imposed a countrywide lockdown on March 27, 2020, when it had 927 cases (Arndt et al., 2020; Schröder et al., 2021). The lockdown was one of the strictest in the world and also included a ban on the sale of alcohol and tobacco. The government also declared a state of disaster and implemented a comprehensive public health response. The country has faced challenges in its vaccination campaign due to delays in deliveries and concerns over the efficacy of some vaccines. However, it has also been selected to host the first COVID mRNA vaccine technology transfer hub in Africa, which is expected to boost production and access to vaccines (Broadbent et al., 2020; De Villiers et al., 2020).

India also acted early and imposed a nationwide lockdown on March 25, 2020, when it had 657 cases (Gettleman & Schultz, 2020). The lockdown was sudden and harsh, and it caused severe economic and social disruption, especially for the millions of migrant workers who lost their livelihoods. India faced a shortage of testing kits and personal protective equipment at the beginning of the pandemic and relied on imported supplies (Grover et al., 2020). India also faced challenges in scaling up its testing capacity and implementing effective contact tracing due to its large population and limited resources (Visaria & Dharamdasani, 2021; Wikipedia, 2023a). India adopted a strategy of testing only symptomatic individuals or those with a travel history or contact with confirmed cases. India also launched a contact-tracing app called Aarogya Setu in April 2020 (Murthy, 2020; Wikipedia, 2023a).

India’s health system was already underfunded and overstretched before the pandemic due to a lack of infrastructure, human resources, and equipment (Samarasekera, 2021). The government mobilised additional resources to increase the number of isolation wards, intensive care units, ventilators, and health workers. The government also announced financial incentives and insurance schemes for health workers. The government also collaborated with private hospitals and laboratories to augment its health system capacity (Dev & Sengupta, 2020).

The lockdown severely impacted the economy, particularly the informal sector, which employs about 90% of the workforce (Saha & Chouhan, 2021). Millions of migrant workers lost jobs and livelihoods and faced food insecurity. The government announced relief packages, including food grains, cash transfers, loans, subsidies, and tax exemptions. Additionally, restrictions on certain sectors were relaxed to revive the economy (Golechha, 2020; Saha & Chouhan, 2021).

First vaccine Date

The USA was the first country among the four to start vaccinating its population against COVID-19, followed by France, India, and South Africa. The USA and France used the Pfizer-BioNTech vaccine, while India and South Africa used the Oxford-AstraZeneca vaccine (manufactured under licence by the Serum Institute of India and called Covishield) and the Johnson & Johnson vaccine, respectively.

Following more than 62,000 COVID-19 deaths in France, the first doses of the Pfizer-BioNTech coronavirus vaccine were shipped early on December 26, 2020, to the central pharmacy of the Paris hospital system outside of Paris. On Sunday, December 27, 2020, shots of the vaccine were delivered to two elderly residents. (Wikipedia, 2023b).

The first COVID-19 vaccination was administered in India on January 16, 2021. On that day, India launched its COVID-19 vaccination campaign with two vaccines: Covishield (the Serum Institute of India's local manufacture of the Oxford-AstraZeneca vaccine) and Covaxin (a locally produced vaccine developed by Bharat Biotech in collaboration with the Indian Council of Medical Research and the National Institute of Virology) (Golechha, 2020).

The vaccination programme started with the priority groups of healthcare workers and frontline workers, followed by people above 60 years of age and those with comorbidities above 45 years of age. India has since approved other vaccines for emergency use, such as Sputnik V (manufactured under licence by Dr. Reddy’s Laboratories), Moderna, Johnson & Johnson, ZyCoV-D (developed by Zydus Cadila), and Corbevax (developed by Biological E) (Lancet, 2021).

The first date of COVID-19 vaccination in South Africa was February 17, 2021, when the nation began its countrywide vaccination campaign utilizing the Johnson & Johnson vaccine (De Villiers et al., 2020). The Pfizer-BioNTech vaccine was first given to nursing home residents and healthcare personnel on December 14, 2020, marking the start of the COVID-19 vaccination campaign in the United States. Along with the UK, Canada, Russia, and China, the USA was one of the first nations in the world to begin immunizing its citizens against COVID-19. (Remuzzi & Remuzzi, 2020).

These vaccines were also resisted by some populations for reasons such as mistrust of health workers, uncertainty about the efficacy and safety of the vaccine, individual preference for vaccines and other myths. Other issues such as the problem of equitable and fair distribution of the vaccines as well as manufacturing capability played a key role in the distribution and administration of the vaccines. Despite challenges and barriers that hindered the global distribution and uptake of the vaccine, WHO and other stakeholders took various actions and measures to address these challenges and ensure vaccine equity and safety for all. WHO and its regional branches launched campaigns and interventions to increase awareness and acceptance of COVID-19 vaccines among various groups (Alhassan et al., 2021; Gallè et al., 2021). They also provided reliable and updated information on the benefits and risks of different COVID-19 vaccines through their websites, social media platforms, and media outlets.

The WHO initiated COVAX, a global initiative that aimed to provide fair and equitable access to COVID-19 vaccines for all countries (Eccleston-Turner & Upton, 2021), especially those with low and middle incomes. COVAX pooled funds from donors and countries to support the research, development, and manufacturing of a portfolio of safe and effective COVID-19 vaccines (Eccleston-Turner & Upton, 2021; Nhamo et al., 2021).

Furthermore, the challenge of the safety and effectiveness of COVID-19 vaccines was resolved by WHO through the use of its Emergency Use Listing (EUL) procedure and its Global Advisory Committee on Vaccine Safety (GACVS) (mondiale de la Santé & Organization, 2022; Roshchina et al., 2022). The EUL procedure assessed the quality, safety, and efficacy of COVID-19 vaccines based on rigorous standards and criteria. The WHO encourages countries to continue implementing public health measures to prevent and control COVID-19 transmission even after vaccination. The WHO also urges individuals to take all recommended doses of COVID-19 vaccines, including booster doses if needed.

Leadership impact during the pandemic

Leadership impact during the pandemic in the USA, France, India, and South Africa is complex and multifaceted.

The **timeliness and effectiveness** of the interventions implemented by the leaders, such as lockdowns, testing, tracing, and vaccination, were very important during the COVID-19 pandemic. An immediate COVID-19 Economic Response Task Force was announced by the Indian government. To stop the spread of the coronavirus, the government also manufactures and distributes hand sanitiser (Visaria & Dharamdasani, 2021). The government in South Africa imposed on the country one of the strictest lockdowns to stop the spread of the coronavirus. (Samarasekera, 2021). The French government also placed restrictions and lockdowns to curb the spread of the coronavirus in the country. The United States failed to battle the pandemic swiftly and forcefully. As Watkins and Clevenger put it 'Instead, the U.S. federal government's response to COVID-19 highlighted divisions within the Coronavirus Task Force between politicians and scientists on the nature of the threat. Furthermore, federal and state responses exacerbated these divisions. The Trump administration differed with governors over personal protective equipment, reporting, analytics, essential businesses and services, and ultimate re-opening authority'(Watkins & Clevenger, 2021). Despite the delay, the nation topped the 2019 Global Health Security Index for pandemic readiness (Jernigan et al., 2020).

The **impact of** the leaders' actions on the health, economic, social, and environmental outcomes of their countries. In France, the government promised to support the French economy and people during the crisis at the same time as the first restrictions in March 2020. Whatever the cost, the president promised that no one would be left behind and that no company would fail as a result of the restrictive measures (Lambert et al., 2021). The most important change was the expansion of a temporary "partial unemployment allowance" funded solely by the government, which is now available to anyone who can't or won't work full-time.

The **alignment of** the leaders with their subnational counterparts, such as state or provincial governments, as well as with regional and global partners. The governments of the USA, France, India, and South Africa cooperated with other countries in other regions to aid in the supply of vaccines and personal protective equipment.

The **rhetoric used** by the leaders to communicate the threat of the virus and the measures taken to contain it: The governments of the countries faced problems enforcing the restrictions and lockdown. Although the steps adopted by the French government to encourage employment, to some extent, reduced the harshest effects of the economic recession on families, the French attitude to lockdown was among the strictest. In its COVID-19 response at the federal level, the United States lacked strong political leadership. Subnational leadership exhibited a great deal of variation.

CONCLUSION

The COVID-19 pandemic was a global crisis that exposed the strengths and weaknesses of different countries' responses to various health threats. All four countries implemented similar measures such as lockdowns and travel restrictions, however, there were differences in the timing and severity of these measures. The pandemic has shown that there is no one-size-fits-all approach to dealing with the virus, as different countries have different political, economic, social, and cultural contexts.

The pandemic showed that infectious diseases can pose a serious threat to human lives, economies, and social stability. There should be a well-planned preparedness for global and national security by investing more in early detection, containment, and response systems, as well as in strengthening the health systems and resilience of vulnerable populations. The various heads of countries should combat misinformation and disinformation, as well as promote public awareness and education on the benefits of preventive measures such as masks, social distancing, testing, tracing, and vaccination. Quick notice and response to cases reduce the risk of spreading disease. Establish communication across necessary platforms to strengthen, identify and report outbreaks.

African nations were predicted to be worse hit by the pandemic. Although the prediction did not come to pass, African nations should individually and collaboratively develop robust healthcare systems, that can detect, prevent and manage future pandemics. There is a need for continuous training of healthcare professionals for emergencies. Doctors, nurses and paramedics should be trained and equipped for future pandemics. Lastly, there is a need to develop and use new technology for the preparedness and distribution of new vaccines globally.

REFERENCE

Alhassan, R. K., Owusu-Agyei, S., Ansah, E. K., & Gyapong, M. (2021). COVID-19 vaccine uptake among health care workers in Ghana: a case for targeted vaccine deployment campaigns in the global south. *Human resources for health*, *19*(1), 1-12.

Arndt, C., Davies, R., Gabriel, S., Harris, L., Makrelov, K., Robinson, S., Levy, S., Simbanegavi, W., Van Seventer, D., & Anderson, L. (2020). Covid-19 lockdowns, income distribution, and food security: An analysis for South Africa. *Global food security*, *26*, 100410.

Barton, L. M., Duval, E. J., Stroberg, E., Ghosh, S., & Mukhopadhyay, S. (2020). Covid-19 autopsies, oklahoma, usa. *American journal of clinical pathology*, *153*(6), 725-733.

Broadbent, A., Combrink, H., & Smart, B. (2020). COVID-19 in South Africa. *Global Epidemiology*, *2*, 100034.

Calfas, J., Stancati, M., & Yap, C. (2020). California orders lockdown for state's 40 million residents. *Wall Str J*.

Ceylan, Z. (2020). Estimation of COVID-19 prevalence in Italy, Spain, and France. *Science of The Total Environment*, *729*, 138817.

Chowell, G., & Mizumoto, K. (2020). The COVID-19 pandemic in the USA: what might we expect? *The lancet*, *395*(10230), 1093-1094.

De Villiers, C., Cerbone, D., & Van Zijl, W. (2020). The South African government's response to COVID-19. *Journal of Public Budgeting, Accounting & Financial Management*, *32*(5), 797-811.

Desson, Z., Weller, E., McMeekin, P., & Ammi, M. (2020). An analysis of the policy responses to the COVID-19 pandemic in France, Belgium, and Canada. *Health Policy and Technology*, *9*(4), 430-446.

Dev, S. M., & Sengupta, R. (2020). Covid-19: Impact on the Indian economy. *Indira Gandhi Institute of Development Research, Mumbai April*.

Di Domenico, L., Pullano, G., Sabbatini, C. E., Boëlle, P.-Y., & Colizza, V. (2020). Impact of lockdown on COVID-19 epidemic in Île-de-France and possible exit strategies. *BMC medicine*, *18*(1), 1-13.

Eccleston-Turner, M., & Upton, H. (2021). International collaboration to ensure equitable access to vaccines for COVID-19: the ACT-Accelerator and the COVAX facility. *The Milbank Quarterly*, *99*(2), 426-449.

Gallè, F., Sabella, E. A., Roma, P., De Giglio, O., Caggiano, G., Tafuri, S., Da Molin, G., Ferracuti, S., Montagna, M. T., & Liguori, G. (2021). Knowledge and acceptance of COVID-19 vaccination among undergraduate students from central and southern Italy. *Vaccines*, *9*(6), 638.

Garcia, A., Higgs, S., Lluch, A., Darcel, N., & Davidenko, O. (2021). Associations between Perceived Social Eating Norms and Initiation and Maintenance of Changes in Dietary Habits during the First COVID-19 Lockdown in France. *Foods*, *10*(11), 2745.

Gettleman, J., & Schultz, K. (2020). Modi Orders 3-Week Total Lockdown for All 1.3 Billion Indians. *The New York Times*. https://www.nytimes.com/2020/03/24/world/asia/india-coronavirus-lockdown.html

Ghosh, A., Nundy, S., & Mallick, T. K. (2020). How India is dealing with COVID-19 pandemic. *Sensors International*, *1*, 100021.

Golechha, M. (2020). COVID-19, India, lockdown and psychosocial challenges: What next? *International Journal of Social Psychiatry*, *66*(8), 830-832.

Grover, S., Mehra, A., Sahoo, S., Avasthi, A., Tripathi, A., D'Souza, A., Saha, G., Jagadhisha, A., Gowda, M., & Vaishnav, M. (2020). Impact of COVID-19 pandemic

and lockdown on the state of mental health services in the private sector in India. *Indian Journal of Psychiatry*, *62*(5), 488.

Harapan, H., Itoh, N., Yufika, A., Winardi, W., Keam, S., Te, H., Megawati, D., Hayati, Z., Wagner, A.L. & Mudatsir, M., (2020). Coronavirus disease 2019 (COVID-19): A literature review.*Journal of infection and public health*, *13*(5), 667-673.

Jeris, S. S., & Nath, R. D. (2021). US banks in the time of COVID-19: Fresh insights from the wavelet approach. *Eurasian Economic Review*, *11*(2), 349-361.

Jernigan, D. B., COVID, C., & Team, R. (2020). Update: public health response to the coronavirus disease 2019 outbreak—United States, February 24, 2020. *Morbidity and mortality weekly report*, *69*(8), 216.

Lambert, A., Girard, V., & Guéraut, E. (2021). Socio-economic impacts of COVID-19 on working mothers in France. *Frontiers in Sociology*, *6*, 732580.

Lancet, T. (2021). India's COVID-19 emergency. *Lancet (London, England)*, *397*(10286), 1683.

Lone, S. A., & Ahmad, A. (2020). COVID-19 pandemic–an African perspective. *Emerging microbes & infections*, *9*(1), 1300-1308.

mondiale de la Santé, O., & Organization, W. H. (2022). Global Advisory Committee on Vaccine Safety, 17 September 2021–Progrès accomplis vers l'éradication de la poliomyélite–Comité consultatif mondial pour la sécurité des vaccins, 17 septembre 2021. *Weekly Epidemiological Record= Relevé épidémiologique hebdomadaire*, *97*(04), 17-24.

Murthy, R. S. (2020). COVID-19 pandemic and emotional health: Social psychiatry perspective. *Indian Journal of Social Psychiatry*, *36*(Suppl 1), S24-S42.

Nhamo, G., Chikodzi, D., Kunene, H. P., & Mashula, N. (2021). COVID-19 vaccines and treatments nationalism: Challenges for low-income countries and the attainment of the SDGs. *Global public health*, *16*(3), 319-339.

Pasquier, P., Luft, A., Gillard, J., Boutonnet, M., Vallet, C., Pontier, J., Duron-Martinaud, S., Dia, A., Puyeo, L., & Debrus, F. (2021). How do we fight COVID-19? Military medical actions in the war against the COVID-19 pandemic in France. In (Vol. 167, pp. 269-274): British Medical Journal Publishing Group.

Pei, S., Yamana, T. K., Kandula, S., Galanti, M., & Shaman, J. (2021). Burden and characteristics of COVID-19 in the United States during 2020. *Nature*, *598*(7880), 338-341.

Press, G. (2021). *Governor Cuomo Announces COVID-19 Restrictions Lifted as 70% of Adult New Yorkers Have Received First Dose of COVID-19 Vaccine*. Retrieved 28/07/2023 from https://www.governor.ny.gov/news/governor-cuomo-announces-covid-19-restrictions-lifted-70-adult-new-yorkers-have-received-first

Remuzzi, A., & Remuzzi, G. (2020). COVID-19 and Italy: what next? *The lancet*, *395*(10231), 1225-1228.

Romain, C., François, B., Aude, J., Valentin, L., Ferré, V. M., Maria, F. Y. A., Léna, D., Charpentier, C., Lebourgeois, S., & Zafilaza, K. (2023). Phylodynamics of SARS-CoV-2 in France, Europe, and the world in 2020. *eLife*, *12*.

Roshchina, Y., Roshchin, S., & Rozhkova, K. (2022). Determinants of COVID-19 vaccine hesitancy and resistance in Russia. *Vaccine*, *40*(39), 5739-5747.

Rothan, H. A., & Byrareddy, S. N. (2020). The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *Journal of autoimmunity*, *109*, 102433.

Saha, J., & Chouhan, P. (2021). Lockdown and unlock for the COVID-19 pandemic and associated residential mobility in India. *International Journal of Infectious Diseases, 104*, 382-389.

Samarasekera, U. (2021). India grapples with second wave of COVID-19. *The Lancet Microbe*, *2*(6), e238.

Sansa, N. A. (2020). The Impact of the COVID-19 on the Financial Markets: Evidence from China and USA. *Electronic Research Journal of Social Sciences and Humanities*, *2*.

Schröder, M., Bossert, A., Kersting, M., Aeffner, S., Coetzee, J., Timme, M., & Schlüter, J. (2021). COVID-19 in South Africa: Outbreak despite interventions. *Scientific reports*, *11*(1), 4956.

Schuchat, A., Covid, C., & Team, R. (2020). Public health response to the initiation and spread of pandemic COVID-19 in the United States, February 24–April 21, 2020. *Morbidity and mortality weekly report*, *69*(18), 551.

Shaman, J. (2021). An estimation of undetected COVID cases in France. In: Nature Publishing Group UK London.

Spiteri, G., Fielding, J., Diercke, M., Campese, C., Enouf, V., Gaymard, A., Bella, A., Sognamiglio, P., Moros, M. J. S., & Riutort, A. N. (2020). First cases of coronavirus disease 2019 (COVID-19) in the WHO European Region, 24 January to 21 February 2020. *Eurosurveillance*, *25*(9), 2000178.

Srivastava, V., & Priyadarshini, S. (2020). India reports first case of novel coronavirus. *Nature India*.

Stiegler, N., & Bouchard, J.-P. (2020). South Africa: Challenges and successes of the COVID-19 lockdown. Annales Médico-psychologiques, revue psychiatrique,

Stoecklin, S. B., Rolland, P., Silue, Y., Mailles, A., Campese, C., Simondon, A., Mechain, M., Meurice, L., Nguyen, M., & Bassi, C. (2020). First cases of coronavirus disease

2019 (COVID-19) in France: surveillance, investigations and control measures, January 2020. *Eurosurveillance*, *25*(6), 2000094.

Team, C. C.-R., Team, C. C.-R., Team, C. C.-R., Burrer, S. L., de Perio, M. A., Hughes, M. M., Kuhar, D. T., Luckhaupt, S. E., McDaniel, C. J., & Porter, R. M. (2020). Characteristics of health care personnel with COVID-19—United States, February 12–April 9, 2020. *Morbidity and mortality weekly report*, *69*(15), 477-481.

Visaria, A., & Dharamdasani, T. (2021). The complex causes of India's 2021 COVID-19 surge. *The lancet*, *397*(10293), 2464.

Wikipedia. (2023a, 20th July, 2023). *COVID-19 lockdown in India*. Wikipedia Organisation. Retrieved 25/07/2023 from https://en.wikipedia.org/wiki/COVID-19_lockdown_in_India#References

Wikipedia. (2023b). *COVID-19 pandemic in France*. Retrieved 25/07/2023 from https://en.wikipedia.org/wiki/COVID-19_pandemic_in_France#:~:text=On%2031%20March%202021%2C%20Macron,nationwide%20curfew%20from%207pm%2D6am.

Worldometer. (2023). *Coronavirus Cases*. Retrieved 28/07/2028 from https://www.worldometers.info/coronavirus/country/