

The Review of Past Pandemics to Predict What to Expect after Covid-19

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ARTICLE INFO

REVIEW ARTICLE

Article History:

Received: 12 Aug 2020

Revised: 6 Sep 2020

Accepted: 9 Nov 2020

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Citation:

Oppong Peprah E. The Review of Past Pandemics to Predict What to Expect after Covid-19. *Social Behavior Research & Health (SBRH)*. 2020; 4(2): 506-518.

ABSTRACT

Several pandemics such as the Spanish flu; and Severe Acute Respiratory Syndrome have come and gone with similar consequences felt after they were contained. It can be suggested that a critical study of events after past pandemics can help one make an informed guess about what to expect after the current pandemic. Therefore, this paper aimed to examine the post-events of past pandemics to predict events after Covid-19. Published articles were collected and reviewed from scholarly literature, Web search engines, and citation databases such as Google Scholar, Web of Science, and Scopus. Information gathering for this study was largely done in the second quarter of 2020 on mainly Google Scholar with the final inclusion criteria word search being pandemic, epidemic, plague, disease, crises, infection, viral, and outbreak while the final exclusion criteria word search being science, scientific, environment, biology, chemistry, law, and political. Peer-reviewed articles were sorted and reviewed to contribute to understanding and developing a perspective in assessing past pandemics and Covid-19. Other authentic non-peer-reviewed online sources were also searched, and their required information was also considered. Literature was reviewed on historical pandemics, which killed many people up to percentages of the whole population. Although all of them were deadly, the three recent outbreaks were checked in-depth, namely the 1918 Spanish Flu, Ebola, and Severe Acute Respiratory Syndrome. The current pandemic, as declared by the World Health Organization, is Covid-19. This study makes several predictions under different categories including: social, psychological, economic, and global conditions, as well as the possible benefits of Covid-19. The findings encompass fear and paranoia among people, the psychological need of survivors, stigmatization, growth in religious fanaticism, stock market returns, increment in unemployment, higher cost of doing business, impact on the global financial system, temporary dysfunction of global supply chains, the cost to the world economy, increased interest in infectious disease prevention, stronger bonding between humans and nations, and advancement in clinical research.

Keywords: Covid-19, Disease, Infection, Outbreak, Pandemic



Introduction

Despite the world's breakthroughs in the medical field in recent times, infectious and viral diseases continue to pose a great threat to society (Kaur, 2018). While some diseases are limited to specific countries, others become pandemics and spread to other countries. Several pandemics have been experienced around the world, with dire consequences to the affected regions. Outbreaks such as the Spanish Flu, Ebola Virus Disease Outbreak, and Severe Acute Respiratory Syndrome (SARS) left their marks economically, socially, psychologically, and physically at the places they hit (Siu, 2008; Scully et al., 2014; Wnek, 2016). The devastating outlook months and few years after they run their course are similar and therefore leaves one an idea of how the general outlook will be after the current pandemic (Covid-19) has also run its course, and it has been contained or eradicated. This new kind of coronavirus named Covid-19, with China as the first place this virus was detected, has caused a significant disruption in the Chinese economy and is currently spreading very fast globally (McKibbin & Fernando, 2020). The degree of the devastating economic impact its spread is causing the affected countries is not fully known yet, thereby handicapping policymakers in the affected areas (Akbulaev et al., 2020).

A new viral infection such as Covid-19 is spreading quickly and infecting more people than existing viral diseases because people's immune systems can not recognize this new virus, and therefore, fighting it is difficult (Feng & Chen, 2020). Consequently, infected areas need huge supplies of antiviral drugs and vaccines to reduce illnesses and deaths caused by Covid-19, which currently does not exist, even though several pharmaceutical companies are still working on a vaccine (Zhu et al., 2020). It is recently witnessed that the antiviral drugs used to 'manage' Covid-19 patients in various countries are not enough. Undoubtedly, since Covid-19's outbreak in China, it has now spread to other countries previously thought they could resist this virus due to their

stronger research. However, medical institutions have now succumbed to this pandemic with increased daily death tolls (Achim & Vaidean, 2020). For instance, in March 2020, the Italian government could not contain the spread of Covid-19 and its devastating effects as over 900 people died in a single day (BBC News, 2020).

In trying to predict what will happen after Covid-19, past pandemics such as the Spanish flu/influenza of 1918-19, which some scholars have designated as the 'deadliest plague in history' which came with life-threatening clinical symptoms, (McKibbin & Fernando, 2020) is worth examining and discussing its post-events. Similarly, in discussing the current pandemic, SARS, which just like Covid-19 was an unknown coronavirus detected in humans before its' outbreak (Parini, 2003) is also worth mentioning and examining. This research's central importance shall help all readers understand the effects of the Covid-19 that persist and what more to expect after it has been curbed.

Therefore, this paper seeks to recapture some previous pandemics, and based on their post-pandemic events, make predictions of the changes to be seen around the world in the coming months and years (short and medium terms) after the current Covid-19 outbreak has run its course. This study's predictions are based not only on past post-pandemic events but also on examining the current pandemic effects supported by literature and the author's perceptions.

From the main purpose as explained above, the objectives of this paper are: to bring into light past pandemics and review them; to get a brief introduction into what covid-19 is about; to use the effects that past pandemics brought to predict the social and psychological, economic and global effects to be expected during and after covid-19 has been contained; and find out if covid-19 will bring about some advantages to the world. This paper helps to explain some aspects of the phenomenon and what to be expected.



Methods

A well-structured literature review was undertaken to analyze past pandemics and also gain more information about covid-19. This study aimed to review articles that fell into the topic under research. Articles were searched from mainly Google Scholar with support from Scopus and Web of Science and a considerable extra backing from Emerald and Wiley Online. The search keywords which depending on the database were either paired up, put in combinations or all used were ‘pandemic’, ‘epidemic’, ‘plague’, ‘disease’, ‘crises’, ‘infection’, ‘viral’, and ‘outbreak’. These three main academic search engines and databases were selected due to their track record of being comprehensive citation trackers (Kloda, 2007), their impact in searching for articles from top-tier scientific journals (Delgado-López-Cózar & Repiso-Caballero, 2013), known to offer many articles published in top general medical journals (Kulkarni, 2009), proven to be credible search engines (Yang & Meho, 2007), and their extensive coverage (De Groote & Raszewski, 2012).

The main medium for getting information started with a search in Google Scholar. This citation database was the main portal for gathering articles for this research. The investigation began with personalizing scholar preferences by changing some information at the ‘settings’. Under ‘collections’, ‘search articles’ was chosen instead of ‘search case law’. ‘Results per page’ remained at 10 as the default. ‘Open each selected result in a new browser window’ was left unchecked under ‘where results open’. However, under ‘bibliography manager’, ‘show links to import citations into “endnote”’ was chosen. Still under settings, although ‘for google text’ under the “language” pane was left at ‘English’, ‘English’ was chosen under ‘search only for pages written in these languages’ under ‘for search results’ which made the total search to be solely an English-oriented one. With these settings personalized, the other pages were still under settings: ‘library

links’, ‘account’, and ‘button’ did not need any other alterations.

After personalizing the settings, Advanced Search was used to specify keywords and, therefore, narrow down the search results. In the Advanced Search page, after setting ‘where my words occur’ to ‘anywhere in the article’, leaving ‘return articles authored by’ and ‘return articles published in’ blank, while setting the ‘return articles dated between’ to 2000 to 2020, the rest of the search to filter the articles happened as presented in table 1

All the 4,910 supposed articles were carefully reviewed to remove all the none-peer-review articles (3,507 articles) from the list to bring the new total to 1,403: 42 were duplicates or revised articles; 137 articles were from predatory or non-credible journals; 1,012 were without needed information and therefore irrelevant to this study; leaving 212 relevant articles from credible journals (shown in figure1). All the other search engines were either used as reference points or used to download the google scholar’s chosen articles’ abstract or full manuscript. Therefore, absolute care was taken to waive out editorials, book chapters, encyclopedia, mini-reviews, news headlines, short communications, books, book reviews, conference information, correspondence, and discussions. After carefully and manually sorting out all the sieved articles so far to arrive at only peer-reviewed papers and articles highly relevant to the topic, a total of 212 articles were finally chosen, downloaded, and reviewed.

Despite the frantic effort to use peer-reviewed articles as much as possible, the study also added more information and contributed to current knowledge and numbers about the subject. Similarly, real-time information was also sourced from credible news outlets such as BBC to buttress the devastating effects of covid-19. Statistically, from a total of 4,910 narrowed down results from the advance search, a total of 1,403 articles were peer-reviewed, making it a 29% usage. Furthermore, from the 1,403 narrowed down, only



212 were seen as relevant for this research, bringing it to 15%.

Results

In literature, past outbreaks have been classified as either a pandemic or an epidemic. Hence the articles reviewed tried to distinguish between them. Although the various outbreaks described as either a pandemic or epidemic, all fall under this study's purview. According to Butler (2009), a pandemic is an epidemic outbreak across international boundaries over a wide area and often affects many people. The slight difference between an epidemic and a pandemic is that an epidemic is said to happen when many people become ill from a disease at the same time with the spread of the disease over a wider area space while a pandemic results if an epidemic escalates, widening infected areas much more and a lot more people were contracting the disease (Bossak & Welford, 2010).

Historically, several epidemics have escalated into full-blown pandemics dating back to Before Christ (B.C.). Some of the well documented ones include Plague of Athens happened around 430 B.C. with an estimated death toll of about 100,000 (Littman, 2009); Antonine Plague (A.D. 165-180), historians describing as a smallpox-kind of infection with an estimated death toll of over 5 million (Scheidel, 2009); Plague of Cyprian (A.D. 249-270), with an estimated death toll of 5,000 (Harper, 2015); Plague of Justinian (A.D. 541-542), with an estimated death toll of about 10% of the world's population, making some historians believe makes it the first real pandemic in history (Sang, 2020); the Black death (1347 – 1351), which went through Asia and further through Europe as well with some historians believing it wiped out over half of Europe's population (Welford & Bossak, 2010); Cocoliztli epidemic (1545-1548), killed about 15 million people from Mexico to Central America and which some believe was a form of viral hemorrhagic fever (Marr & Kiracofe, 2000); Great plague of London (1665), with death toll of from 100,000 up to 15% of London's population (Cummins et al., 2015);

Great plague of Marseille (1720-1723), killing as many as 100,000 up to 30% of Marseille's inhabitants and its surroundings (Devaux, 2013); Flu pandemic (1889-1890), killed 1 million people around the globe taking a few weeks to move from being an epidemic into a full blown global pandemic (Thomas, 2017); the Spanish Flu (1918-1920), one of the most notable and deadly pandemics the world has seen which had a global death toll in millions of people (Mikheiev, 2018; Szöcs, 2009); the Asian flu (1957-1958), being another global pandemic claimed over one million lives (Enami, 2016); the AIDS pandemic (1920s in Africa, 1981 to present day globally), it has claimed over 35 million lives since its identification (Susman, 2003; Valdiserri, 2018); Severe Acute Respiratory Syndrome, shortened as SARS (2003), infected over 8,000 people and officially killed almost 800 people (Verma, 2003); H1N1 swine flu pandemic (2009-2010), spread across the globe in a single year, killing in between 151,700 to 575,400 and infecting about 1.4 billion people (Rathore, 2017); Ebola epidemic (2014-2016), highly concentrated in West Africa, killed 8,000 people and infected more than 21,000 people (Anis, 2019); Zika virus epidemic (2015 to present day), impact most felt in south and central America and has affected thousands of people (Lim, 2018). The most current and arguably, the most widespread pandemic in all time is Covid-19 (Achim & Vaidean, 2020).

Regarding historical facts, pandemics' deaths have greatly varied due to four distinct factors: infected people, the severity and harmfulness of the viral disease; underlying characteristics and the affected populace's vulnerability; and preventive measures effectiveness (International Monetary Fund, 2006). Antiviral drugs and vaccines during previous pandemics were in short supply, and some affected regions went through the duration of the pandemic without vaccine while others suffered through since these drugs are supposed to act as the initial line of defense (Gellin & Ampofo, 2014).

Some of the deadliest outbreaks in modern times

The 1918 Spanish Flu: The ‘Spanish Flu’ experienced in 1918 to 1920 was by far one of the most fatal 20th century pandemic from influenza (Ash, 2014). According to WHO, about one-quarter of the world’s population was infected by this pandemic, which subsequently killed more than forty million people, which was equal to about 2% of the total world population. This figure made the Spanish flu the third deadliest pandemic in history after the sixth and fourteenth-century plague pandemics. Unlike past flu, this one killed not only the very old and the very young but even those in-between (Ash, 2014). Although this pandemic was named “Spanish”, with infections recorded in the United States of America, France, India, and a host of other nations, it was not first recorded in Spain (Honigsbaum, 2014).

The Spanish flu affected supply of goods, transportation disruptions, payment systems, trading, and utilities, which further led to many firms laying workers off and becoming bankrupt (Cortiñas-Rovira et al., 2014). However, once the Spanish flu ran its course, economic activities recovered, and things got back to normal in a relatively shorter time (García Velasco, 2011).

Ebola Virus Disease Outbreak: In 2014, the worst ever Ebola Virus Disease (EVD) outbreak became a major challenge of the West Africa region, which caused a disastrous loss of life and harmed the affected countries’ economies (Pavlik et al., 2018). While businesses and governmental agencies struggled to prevent its spread and eradicate the disease, the affected populace’s way of life became unbearable (Polz-Dacewicz, 2015). This unprecedented outbreak, which happened in Liberia, Sierra Leone and Guinea, caused a substantial crisis in the affected countries’ socioeconomic and public health systems starting from 2014 and continued to have long-term consequences in the countries’ rural settings (Anis, 2019).

According to the spread of viral diseases, the three countries’ EVD outbreak was primarily due to the constant and consistent movement of people

and goods within these connected three countries, making its human-to-human transmission very viable. According to WHO, as cited in the Food and Agriculture Organization of the United Nations (2016), by January 21, 2015, the EVD outbreak had recorded over 21,600 cases, with more than 8,600 recorded deaths.

Severe Acute Respiratory Syndrome (SARS): According to JSM et al. (2003), Severe Acute Respiratory Syndrome (SARS) was caused by a new kind of coronavirus which left behind its trail over 8400 reported cases in 29 countries in 2003. The World Health Organization (WHO), as cited in JSM et al. (2003), depicts the first case to be recorded in China’s Guangdong Province in mid-November 2002. While schools in the affected regions were closed and public health education intensified, and community encouragement to practice protective measures, quarantine measures unknown to several generations were implemented. With the acute phase coming with symptoms such as dizziness, influenza-like chills, malaise, diarrhea, loss of appetite, myalgia, and soreness of the throat (Lee et al., 2003), the rapid loss of respiratory functioning made it necessary for victims to be placed at the Intensive Care Unit of health facilities while been put on ventilators as well.

Covid-19: According to McKibbin and Fernando (2020), the current outbreak, named Covid-19 is caused by the SARS-CoV-2 virus. First detected in China’s Hubei province, specifically in Wuhan’s city in December 2019, the outbreak has now spread to most countries globally, killing thousands of people at the time of writing this paper. Although the epicenter was initially China, several states have now been designated as epicenters and people migrating from such countries as high-risk carriers. Currently, the outbreak’s impact in countries worldwide is extremely devastating with very high numbers in death toll and the United States of America, leading the chart of infected cases (Worldometers.info., 2020).

With cases increasing day by day, spreading to other countries, and already affected countries not



knowing when and where new cases will surface, the World Health Organization has declared the Covid-19 outbreak as a global pandemic (Cherian, 2020). The outbreak has increased mortality and

increased morbidity, including several affected people either becoming incapacitated or becoming caregivers to the incapacitated and, therefore, their inability to work (McKibbin & Fernando, 2020).

Table 1. Search guidelines under advanced search (Google Scholar)

Stage	Advanced Search Inputs	No. of Results
1	With all the words = With the exact phrase = With at least one of the words = pandemic, epidemic, plague, disease, crises, infection viral outbreak Without the words =	667,000
2	With all the words = pandemic With the exact phrase = With at least one of the words = pandemic, epidemic, plague, disease, crises, infection viral outbreak Without the words =	393,000
3	With all the words = Pandemic With the exact phrase = Global pandemic With at least one of the words = pandemic, epidemic, plague, disease, crises, infection viral outbreak Without the words =	19,300
4	With all the words = pandemic With the exact phrase = Global pandemic With at least one of the words = pandemic, epidemic, plague, disease, crises, infection viral outbreak Without the words = science, scientific environment, biology, chemistry, law, political	4,910

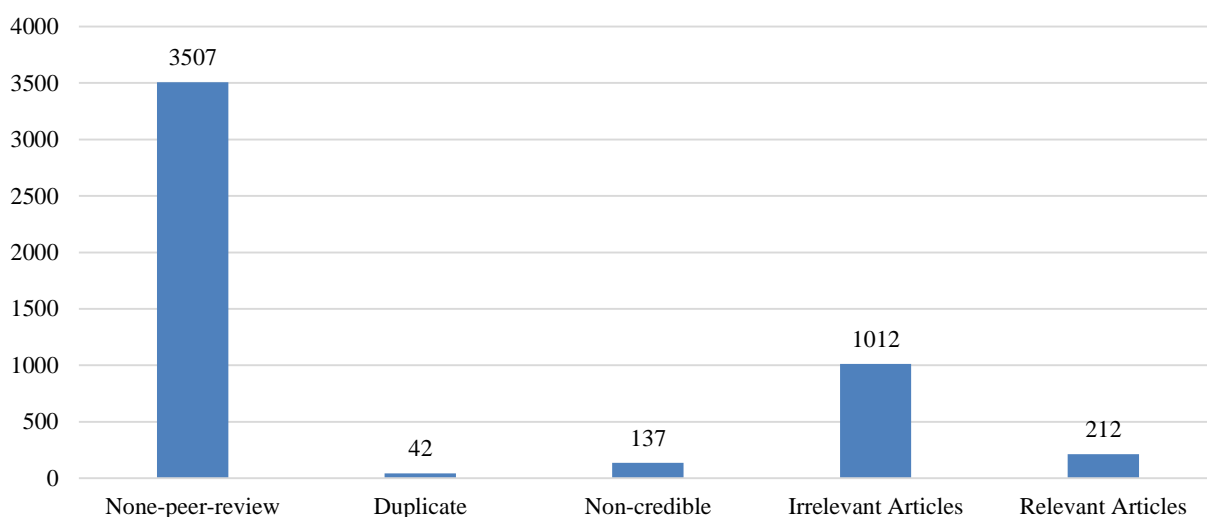


Figure 1. Choosing Relevant Articles

Discussion

Post- Covid- 19 predictions: social and psychological

Fear and paranoia among people: According to Ammon (2002), the Spanish flu as felt in Geneva, which affected more than 50% of the population, brought utter fear, which was seen throughout the country. In finding the reasons for its prevalence and how to treat it, there was frequent misinformation in both the daily and the scientific press. This study suggests that similar fear will be felt worldwide due to covid-19 because many publications have been made on the issue. These varied public recommendations to keep one's hygiene to prevent infection, for example, will bring much paranoia among the world's populace. A person coughing continuously in public should be shunned and stigmatized due to the paranoia of being infected.

Psychological Need of Survivors: After the SARS outbreak, several studies have depicted the psychological impact on the epidemic's sufferers. According to JSM et al. (2003), contracting SARS alone was a traumatic experience. Also, due to the massive doses of steroids used to combat the cytokine storm to reduce the inflammatory responses when treating SARS, it could cause a variety of psychiatric complications as stressed by Sirois (2003). Furthermore, a study done by Sheng et al. (2005) on survivors of the SARS found neuropsychiatric symptoms among them. According to Hyams et al. (2002), even the fear that comes with a deadly unknown virus (such as SARS and Covid-19) has a significant long-term psychological effect on people. Similarly, due to social isolation and drugs administered to victims of Covid-19 and especially those who had to go through a prolonged quarantine period, they will have some neuropsychiatric challenges, and some will even suffer from depression and anxiety. This paper predicts these challenges to be witnessed on affected victims after Covid-19 has run its course and will need support from family, friends, and

governments to combat this post-pandemic adverse effect.

Stigmatization, Racism, and National Protectionism Agenda: Survivors of previous pandemics suffered from societal stigma and social discrimination after the pandemic (McCauley et al., 2013) while countries for some time-restricted movement of others from other geographical locations into their territories. This paper predicts that after the Covid-19 pandemic, victims of the virus shall not only be stigmatized, shunned, and socially discriminated against, but racism should abound as well, as a result of citizens of certain countries trying to protect themselves from others. For example, McCauley et al. (2013) said in their paper at the height of the H1N1 pandemic, some talk show hosts in the USA portrayed immigrants from Mexico to the USA as disease vectors made Mexican nationals and goods from Mexico to be rejected for some time. This study predicts that similar treatment will be meted out to residents and products from countries deemed to have higher cases of covid-19. Countries, especially developed ones, will also enact stricter immigration policies to make it difficult for people of certain nationalities to enter their borders. However, this study also predicts that countries will lose many professionals to the outbreak and write up their immigration policies on working visas to contract professionals from other countries.

Growth in Religious Fanaticism: In the quest to seek an explanation for catastrophic events, in circumstances where science is not able to provide convincing explanations, humans are known to resort to "higher superpowers" as guides and sources of reasoning. Thus, this paper predicts that those who were already religious before the Covid-19 hit will certainly find reasons such as humans' sins, explanations, and links to end-time biblical prophecies and the like. Additionally, people who did not believe in any god might become believers overnight, all in the attempt to find peace and calm within to cater to the 'whys' ringing in them.



Post-Covid-19 predictions: Economically

Stock Markets Returns: Previous pandemics have affected stock market returns in short to medium terms. History on stock-market behavior during previous pandemics have shown adverse reaction from investors. The Spanish Influenza, which is classified as one of the biggest catastrophic pandemics in history (Szócs, 2009), immensely affected stock returns although the First World War might have also contributed to the stock markets' behavior in 1918 and 1919. According to Fidelity International Limited (2006), the S&P 500 index traced to as far back as 1871 fell significantly by 24.7% in 1918 and rose by 8.9% in 1919. Similarly, in 2003, a year after the SARS epidemic episode, the MSCI Pacific ex-Japan Index between January 14 and March 13 fell by 12.8% and bounced back strongly at the end of the year (Fidelity International Limited, 2006). As already seen in the decline of share prices in all the leading stock exchanges worldwide, a continuous disruption in the trading infrastructure might even lead to some stock exchange breakdown or dysfunction (Sabzeparvar & Khosravi, 2014). It is therefore predicted that in some months after the Covid-19 pandemic has been contained, the various big stock markets such as the New York Stock Exchange, Nasdaq, Japan Exchange Group, Shanghai Stock Exchange, Hong Kong Stock Exchange, London Stock Exchange, and the Shenzhen Stock Exchange will perform very poorly but will bounce back after some few months but would not recover fully in the short-term.

Increment in Unemployment Rate: The current pandemic will see many former and informer workforce being laid off (Arndt & Lewis, 2001). Before the end of this pandemic, many developed nations have a higher number of unemployed people due to Covid-19 pandemic. For instance, the Labor Department of the United States of America has reported an unprecedented record of 3.3million Americans filing for unemployment (Rushe & Holpuch, 2020), an economist at New Zealand have already predicted the country's

unemployment rate to have escalated to in between 15% and 30% and expecting to go higher as the pandemic progresses (NZ Herald, 2020). Hence, just as past pandemics saw a rise in the unemployment rate, the trend will be continued while Covid-19 rages on and after it has been contained.

Increased Risk Premiums and Higher Cost of Doing Business: Studies done to examine the macroeconomic effects on the SARS epidemic such as Siu and Wong (2004) for Hong Kong, Hai et al. (2004) for China, and Chou et al. (2004) for Taiwan all found effects to the affected nation's economy in terms of increased risk premiums and increased cost of operating a business. Subsequently, it is also predicted that risk premiums will be increased, and the cost of doing business henceforth will be increased after the Covid-19 pandemic in short to medium terms.

Post-Covid-19 Predictions: Global

Impact on global financial system: Post Covid-19 months could see a rise in demand for liquidity (most likely for cash and assets that are low in risk) due to a short-term increment in risk-averse financial instruments just as felt after a global crisis (Royo, 2012). It might result in a momentary decrease in asset prices and an increment in credit spreads for companies and other developing markets. Even though this situation will likely be shorter, declines in asset pricing will put a considerable amount of pressure on some financial corporations (Ahrend & Goujard, 2015). Consequently, in terms of resident companies in search of a haven, capital flights should be expected. Foreign direct investment plans for pre-Covid-19 will certainly change after the pandemic, while major investments both in-country and abroad may also be postponed just as witnessed after past major pandemics.

Temporary dysfunctional Global Supply Chains: With past pandemics, production in affected countries slowed down significantly, and this situation will not be different from that of covid-

19. Hence, the production disruption that Covid-19 has had on industrialized countries such as Germany, China, Japan, Russia, the United Kingdom, and India means the supply of goods in other nations is greatly affected. Subsequently, at the tail end of this current pandemic and the short time after its eradication, the global supply chain will not function properly, but it will bounce back eventually in the medium to long term.

Cost to the World Economic: Until Covid-19, researchers have always believed a pandemic much worse than the previous pandemics was on how to plague the whole world. The World Bank, as cited in Garrett (2007), estimated that the next global pandemic will cost the world economy about 800 billion dollars and will kill tens-of-millions of people. This amount translates to a significant part of each affected country's GDP to be spent to fight a global pandemic like the Covid-19. With some developing countries in Africa and South America that are already struggling to keep their economy afloat, the additional burden to fight Covid-19 technically means aid from western countries (who are also battling with the viral spread), world health organization, and loans from other countries. Therefore, it is predicted that the fight against Covid-19 will cost both human resources and financial resources greatly, leaving weaker economies with a big hole in their resource baskets.

Post-Covid-19 predictions: Advantages

Increased interest in infectious disease control and prevention: According to Wilson et al. (2010), the H1N1 pandemic stimulated national and global interest in the control of pandemic influenza. From this, an advantage that this research is predicting is that Covid-19 will similarly stimulate every country's interest in not only disease control but prevention as well. Countries henceforth allocating lots of funds to disease and outbreaks prevention should be expected to serve their citizens and the global populace as the whole. There will also be revisions on pandemic and epidemic plans of countries with such instituted

plans, while those without one will make efforts to have a plan.

Stronger Bonding between the Human Race and Collaborations between Nations: Covid-19 has clearly highlighted the need for peaceful coexistence between humans on this planet. Unlike other pandemics that spread rapidly in certain developing countries due to their limited resources to fight the virus (Pavlik et al., 2018), Covid-19 has shown the world that it is no respecter of persons or nations. From infecting high-borns such as Prince Charles of England (The Daily Beast, 2020) to the societal unknowns in South Africa, from a highly infected rich nation like the United States of America to a relatively-poorer nation like Uganda, the Covid-19 virus has made its way through any barrier. This paper predicts that in as much as there could be immigration restrictions in some countries, the world as a whole will come together to find solutions to problems, collaborate more between nations, and more unity conferences to be held in the quest to come together to fight common viral enemies as was witnessed in past pandemics.

Advancement in clinical research: In the quest to find a cure to past pandemics, clinical research increased greatly. For example, SARS and H1N1 did not just see the increment in clinical research but also technological advancement. Hence, the study predicts that Covid-19 will see a lot of technological advancement in clinical research which will include new ways of conducting clinical trials, novel effective laboratory equipment and devices, introduction of university programs to do advanced studies in clinical research, and most importantly, the collaboration of corporation to make clinical research more efficient and done in record times.

Conclusion

This study recalled some past pandemics and epidemics and, after examining their post-event conditions, some predictions of things to expect after Covid-19. The author also used literature and personal perspectives to support some predictions



being made in this paper. This study makes these predictions under social and psychological, economic, and global. The study also predicts some advantages that this current pandemic will bring. Therefore, it is predicted that the world will experience the following situations after the Covid-19, with some occurring in the short-term and others will be seen in the medium term. Socially and psychologically, predictions made include fear and paranoia among people, the psychological need, stigmatization, racism, national protectionism agenda, and finally, growth in religious fanaticism. Economically, predictions were made: stock market returns, increment in the unemployment rate, increased risk premiums, and higher cost of doing business. Globally, predictions made were in the global financial system, temporary dysfunctional global supply chains, and cost to the world economy. Subsequently, the predicted advantages include increased interest in infectious disease control and prevention, stronger bonding between the human race and collaborations between nations, and advancement in clinical research.

Conflicts of Interest

In this study, was not reported any potential conflicts of interest by the author.

Acknowledgments

We appreciate the University of Economics and Business, Beijing, China.

Authors' Contribution

This article has one author.

The author read and approved the final manuscript and is responsible about any question related to article.

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