Statistics Used In Medical Research

The outbreak of Coronavirus Disease [Covid-19] has caused a panic around the world. due to its fast spread. Using statistical data, each country is releasing its own recorded numbers on the amount of cases and deaths in their region related to Covid-19. We are currently seeing the disease spread like a ripple effect due to the number of people travelling around the world. The spreading of Covid-19 is a clear representation of how much western culture is connected with many other places around the world. Regardless of the disease being discovered in Wuhan, China in late December 2019, it spread like wildfire leading the WHO on March 11, 2019 to label it a pandemic (Roser, Ritchie and Ortiz-Ospina, 2020). As the disease spreads, we must keep in mind the different factors that impact the statistics being recorded. For one, they represent an abstraction and are by in no means 100 percent accurate (Roser, Ritchie and Ortiz-Ospina, 2020). Some countries have a limited amount of resources which severely impact the amount of people they can test, therefore their testing may not be as common as countries with more wealth. Many people with the disease will go unreported due to them not knowing they have it or other reasons that arise. Politics have had a significant impact on the way the disease has spread. Depending on the urgency of each government that assessed Covid-19 in its early stages, some world leaders decided to take immediate action while others were more passive than reactive. Despite of the USA being ranked by OECD as the number one country in terms of spending on healthcare per capita, it hasn't been able to manage the outbreak like other countries that are still developing (OECD, 2019).

The vaccination for Covid-19 could a significant period of time to develop as research groups around the world continue to work on a solution This means that mankind is facing a lot of uncertainty as there is very little information on how to contain the outbreak. Governments are enacting certain policies in order to help contain the spread of the outbreak. As the cases are spiking, the phrase "flattening the curve" is being thrown out a lot. The purpose of "flattening the curve" is to reduce as many cases from the spike as possible by setting out the necessary pre-cautions (Specktor, 2020). The concept of "flattening the curve" has worked effectively in the past based on the statistics that were recorded. The Spanish Flu impacted the lives of many when the outbreak occurred. In 1918, the Spanish Flu was labelled a global pandemic as it took the lives of many people. The "flattening the curve" strategy was taken into initiative by the St. Louis government which enacted policies to close of all schools and restricted the amount of travelling in order to encourage social distancing. On the other hand, Philadelphia city leaders, refused to take any pre-cautions despite given warnings regarding the Spanish flu outbreak and continued to have a large parade in the city that would have thousands in attendance. Philadelphia would then go on to lose 16 thousand people in the time span of six months while St. Louis would only lose about two thousand to the disease (Specktor, 2020). Both cities took different actions which led to a significant difference in the number of deaths. The enactment of "social distancing" is now being practiced by many as a way to slow the spread of the disease by lowering the exposure to it. In 2003, a similar protocol was enacted during the SARS outbreak which was turned out to be effective. Due to China's totalitarian government, it's possible for their government to enact policies that may infringe their populations' rights. In the case of Covid-19, western countries may have a harder time getting the population to self-isolate due to not being run be such a regime (Watkins, 2020). Without any vaccination out for Covid-19, statistics show the cases and deaths are only going to rise. "Flattening the curve" is

a method that has been brought back from the past as a way to reduce the number of cases and deaths since statistically that method has worked. If the peak started the descend and we start to take control of the contamination, we will be able to buy some extra time before a possible vaccination is released (Watkins, 2020).

As referenced in Stephen Jay Gould's Essay, Statistics aren't used to accurately predict the future but rather to understand the historic overview of past events (Gould, n.d). It's important to always keep in mind that statistics change on a constant basis and future projections change with them. Gould discusses how statistics can be interpreted in a negative way due to the way the median is presented. As Covid-19 broke out, many Americans started to stockpile up on hand sanitizers, canned goods and toilet paper as news about more and more cases were announced. This led to chaos in many places around the world as the survivalist instinct in humans kicked in (Winkie, 2020). However, the panic could have been avoided if the median was presented in a more "positive" manner. Although the government wanted to emphasize the importance of having everyone self-isolate and social distance from one another, they should have understood the aftermath of those announcements. As it's difficult at this point to know when Covid-19 will be contained as the vaccine will take some time. People are preparing to be able to live at home with the essentials they need. Without having any in depth knowledge of what is to come, many people started to panic which led to the chaos in grocery stores. However, the message was clear about the rapid number of cases increasing worldwide. As mentioned by Gould regarding the median, scientists may have looked at the sharp increase in the spread of Covid-19 in relation to past diseases as serious threat (Gould, n.d). Therefore, the sudden action to get the population to social distance would be the right thing to do. As the pandemic continues, the way the median is presented to the public will need to be in a more "positive" manner in order for no sudden panic to occur.

Epistemology of Ignorance

Statistical errors cannot be ruled out due to the complexity of analyzing data that is changing on a constant basis. There aren't high standards placed on statistical use due to the fact that they often contain errors and shortcomings. Statistical errors can lead to severe repercussions that can be costly in the long term, therefore it's important to use statistics early on in order to catch an error (Strasak, 2007). Although doctors are the ones working upfront with patients, it's the medical researchers that are collecting the data in order to come up with a solution. This can be characterized as the Epistemology of Ignorance around healthcare. We highly depend on our frontline doctors to give us the advice we need, however they're getting their information off of research done by scientists. As doctors are the ones assessing patients, it may make more sense for the doctor to understand the severity of a problem, however we depend on the research done by medical researchers that use statistics to piece things together. As the healthcare sector advances, it's important to understand the perspective of both the medial researchers as well as the doctors. Statistics can help paint a picture, but the face to face contact with a patient can tell another story. Not everyone may be suitable for medication and the results of errors from statistics can put others at harm by being treated with the wrong medication. Therefore, we must never lose in touch with the element of face to face medical care by doctors as it's one of the most effective ways to understand a problem underlying with the patient.

The Role of Scientism

Covid-19 is a new disease that has come across the human race. Many scientists are working to find a vaccination as doctors continue working to treat patients. Without having much knowledge of the virus, doctors must work with what their training and expertise can do for them. In order for science to exist and prosper, it needs to be funded. These funds help scientists work with the proper resources they need in order to fulfill the requests. As the role of science and research is a job, governments are funding not only to protect their population but to win the race for the cure. As countries like the United States of America and China are strong nationalists, they would prefer to look like the “hero’s” when the pandemic comes to a close. This competition for the cure will only help society, as the public wants a cure to this disease as fast as possible so they could return back to their normal lives. The countries with more stable governments and funds should more likely be able to handle this pandemic better due to their resources available, however politics will play a big role and leaders will have to act. Governments will need to work with many different sectors ranging from transportation to healthcare in order to find a balance between maintaining the outbreak in the country and keeping the economy afloat. All of these initiatives require funds, the countries who have more funds will have a less difficult time in managing the Covid-19 outbreak.

Science has become very dependent upon in the western culture. It was not until after the Scientific Revolution and the Age of Enlightenment where science was understood and accepted by many over religions as a way to make sense of the world. Although religion still plays a big part in people’s lives today, science is the reason for what we believe as “true”. As discussed in the Grobstein reading, science is more about narrating a story. It is viewed differently from religious philosopher to political philosophers. Each scientist comes up with their own version of the “truth”. Overtime old versions of the “truth” get replaced by newer observations done by modern scientists which then go on the get replaced again (Grobstein, 2005). Grobstein’s point is that, science is forever evolving and there is no one version of it. The western culture depends on science and in this case is hoping it will resolve the covid-19 crisis. It’s important not to rule out other possible perspectives from different philosophers since what scientists discover today could change tomorrow. For example, if a vaccination was released today to help the population build immunity to the virus, it may be replaced by a better one tomorrow. As information changes, scientists are able to debunk old theories and it’s important for the western culture to recognize that.

Conclusion

Statistics play a big part in the way our lives are shaped. As society continues to advance, we continue to depend more and more on statistics. But is the dependency on statistics affecting the way we react to events? The Covid-19 outbreak did not make a lot of headlines until after it was discovered outside of China and that’s only when WHO declared a global public health emergency. Many countries like the USA, had the resources and information to prepare but were not able to in an efficient way. Despite, USA having a well-established health care system, where were they not able to better prepare for Covid-19 compared to other countries?

As discussed, Statistics can be interpreted in all sorts of different ways. They can help us understand and manage things we didn’t know before. Statistics are a record of information that can be tracked and compared with other data. Statistics are used to help build a case into something we didn’t understand before. We know we have not seen the last of a disease outbreak due to the many diseases we have learned about from our past. With that said, do we

continue to use statistics in the same manner when different individuals interpret them differently. As we are seeing, through the use of many historic tactics, the curve is being flattened in many countries. However, the question lingers if we are being too dependent on statistical use when they’re only effectively working for some and not others.