

# Tracking the Corona virus: Build big data visualization dashboard to delivers real- time view of the deadly virus

Shashank Baranwal<sup>1</sup>, Sonia<sup>2</sup>, Deepika Sherawat<sup>3</sup>

<sup>1</sup>Student, School of Computer Science and Engineering, Galgotias University, Greater Noida, Uttar Pradesh 203201, India

<sup>2</sup>Assistant Professor, School of Computer Science and Engineering, Galgotias University, Greater Noida, Uttar Pradesh 203201, India

<sup>3</sup>Assistant Professor, School of Computer Science and Engineering, Galgotias University, Greater Noida, Uttar Pradesh 203201, India

\*\*\*

**Abstract** - In the last of 2019, a virus was identified which is made up of mammals and birds. In starting, the virus was named Navel nCoV-19, but later it was changed to nCoV-19 and renamed SARS-CoV-2. The virus was identified as a cluster of pneumonia cases in Wuhan, a city in Hubei province, China. In 2003 Covid-19 pandemic, influenza, geographic information systems and methods, time and other applications of online reality maps of diseases. and the spread of social media responses to diseases, population travel data And predictive trajectory using data and contact and mapping over space and time are proving to be further responses on time. This paper hints and "a series of practical GIS and procedures dashboards to track the 2019/2020 coronavirus epidemic. So many dashboards and applications can there update in on time, and one of individual users (in China) can check if the app user is confirmed to have contact with someone and suspect Whether it is infected with nCoV or not. SARS-cov-2.

**Key Words:** COVID-19, GIS, SARS-CoV-2.

## 1. INTRODUCTION ( Size 11 , cambria font)

A novel corona virus is human and animal pathogens. In late November 2016, a new virus was identified to cause cluster diseases in mammals and birds. It was initially called " nCoV" and was later renamed SARS-CoV-2. This virus was identified as a cluster of pneumonia cases in Wuhan, a city in Hubei province, as it did after an increasing number of cases in the world. In February 2020, The World Health Organization designed a disease called COVID-19 for corona virus disease 2019.

A novel coronavirus (SARS-CoV-2) has been reported from Wuhan, a city in Hubei province, China, with a total of 45171 confirmed cases.

"Information systems and methods that include online or timed diseases, including the new SARS-CoV disease and its influenza, are another possibility among these cases and social media. Due to disease outbreaks, procedure using universe change of location data"[1], and the detection and mapping of super spreader trajectories and contacts during space and time (e.g., the first diagram in),

our understanding of time Are unavoidable. "Sources of dynamics and epidemic disease, and its size - our effective response to it"[2].

In fact, Health has long considered tracking and sensitizing contact maps and more recently geographic analytics systems. The first map view between Place and Health was in Italy in 1694 on the prevention of plague. As a communication tool, maps have changed (and gotten better) over the next 225 years into disease (that can spread from person to person)s such as (dangerous disease spread by mosquitos), disease. From the 1960s, when the computerized geographic information stubble was born, the utility of visual and disease detection again increased[2].

Human transmission of coronavirus is thought to be between close contacts, mainly through respiratory droplets generated by sneezing, coughing, or respiration, which can infect another person "[4].

"This paper talks around GIS and function dashboards"[2] and is used worldwide as coronavirus epidemics and tracking related events. "Some of these dashboards and applications are really dropping a modify data"[1]. And one of them gives applications to individual users to check if a person is close to him or not., it has been confirmed to be SARS-CoV Infected with-2.

## 2. Johns Hopkins University Center for Systems Science and Engineering dashboard

While, The speed of diseases is increasing at such a rapid pace and their information is also increasing rapidly, this is where a map dashboard becomes very important. At the time of February 2020, seven dashboards were developed by some organizations and universities and Get more than 160 million Views of Esri Arcis online service's top ten requested applications. "It was published on 22 January 2020 in response to fears the pack was praised by a dashboard at the Johns Hopkins University Center, which was viewed 140 million times. "This dashboard was created by Lauren Garden and her team at

JHU. This dashboard is viral on social media in 100 new articles (Figure 1). JHU or another dashboard can be seen by people who want to

check their health issues. Anyone accessing online can study the COVID-19 virus from those resources within a few clicks and must be seen and heard"[1].

Nevertheless, outbreaks of COVID-19 have been difficult to control. As Gardner explains, "Collecting data is challenging at a spatial resolution that most people want to understand, and without traveling in real time "data that changes these mobile patterns." [1]. Capture, make it geographic risk profile are going to be like moving forward, it's difficult to assess.

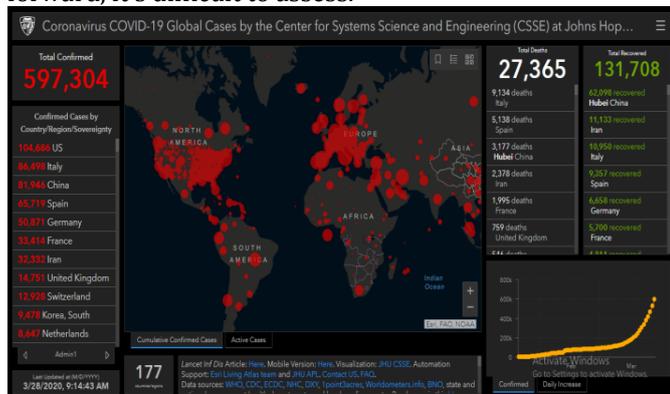


Fig.1: The JHU CSS COVID-19 Situation Dashboard

While writing, JHU dashboard lacks collection services for complete map visualization of data from day one. "As far as the latter is concerned, the dashboard provides charts of total confirmed cases "[1] and "total recovered cases. But the person is unable to acquire and display represented/explained map snapshots on time"[2], for instance, to ascertain how the CORONA VIRUS world distribution map would seem on a clearly stated/particular day Is, "By 25 January 2020". Dashboard provided to developers to compile such interactive daily maps and make them available permanently online for upcoming reference. After the pandemic, as a worldwide service for public health researchers and professionals[1]".

### 3. World Health Organization Dashboard

"WHO invest international direction and health; Combined disease through monitoring, preparation and result, and for this purpose uses GIS technology OGI."On 26 January 2020, WHO conceal its Arc GIS dashboard for COVID-19"[1].Which reports the entire deaths of corona virus cases by country and Chinese province, including a full informal panel "just about the map and its data imaginations"[1].

Before 18 February 2020, there are some interesting differences between WHO and the JHU CSSE

dashboard,Each had a different case as can be seen in fig. 1 and 2. The WHO dashboard shows all corona virus cases based on the laboratory., "Whereas in JHU CSSE, there were cases analyzed using Suppose Symptom"[2]. However, by 19 February 2020, both dashboard are sync and the total cases being the same.

"The WHO dashboard has an epidemic curve up upward, showing cases up to the reporting date"[2], by China 'Clinical 'Case after inclusion. 'Done and not only more than 15 cases were not added.

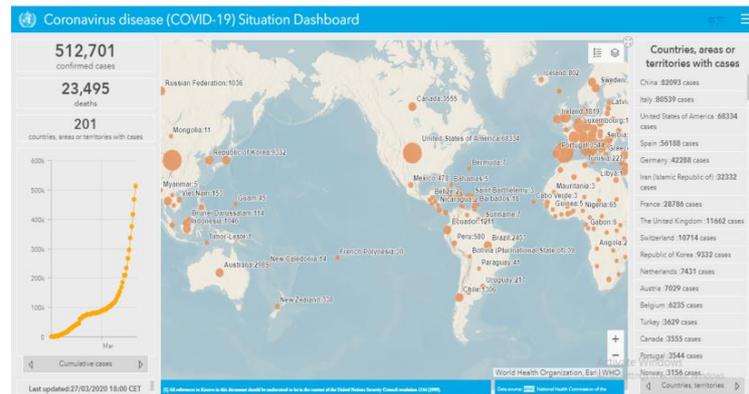


Fig. 2: The WHO COVID-19 Situation Dashboard

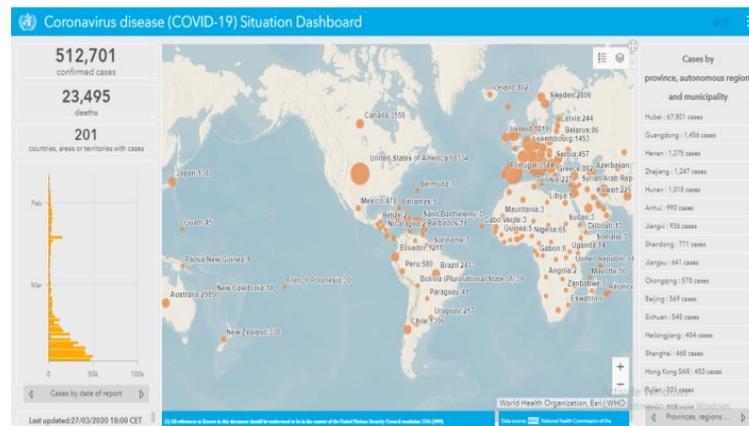


Fig. 3: The WHO COVID-19 Situation Dashboard

WHO is mechanically updating its dashboard, which uses the Arc GIS Geo Event server to push its updates to the same update service daily. WHO is optimizing dashboard and measurement includes transferring data from your server and benefits from online network.Allows good maps for display in 10–12 levels of zoom[1].

### 4. HEALTHMAP : Analyzing and Mapping Online Informal Sources Dashboard

"Based in 2006, Health Map is test by a team of (people who work to find information), (doctors that study the cause of disease) for watching/supervising of newly appearing national health declaration. "Health point conflicts happening data from many origins, regarding news media (via Google News), social media"[1], (checked for truth/proved true) "authorized alerts (from WHO) and

skillful-collected reports , Interactive function of the map for SARS-CoV-2, acquirable at Health, which provides real-time informs from these origins, so that the progress of PAN can be better comprehended (Figure 4)”[2].

Healthfare, BlueDot, (automatically focusing on doing one thing very well) (which can spread from one person to another) in the same way as survey-knives / topics similar to a Canadian firm, machine learning and Talking in 65 languages, forums and blog posts using natural language processing methods, via news reports in airlifting data. To do, animal disease network, etc., to collect unusual, revealing events and possible disease outbreak signs and news.(Fig. 4).

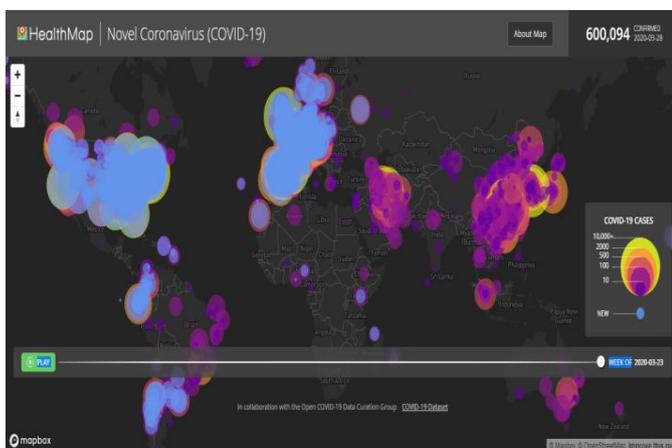


Fig.4: The HealthMap COVID-19 Situation Dashboard

### 5. Carnegie Mellon University dashboard

The health threat of COVID-19 has become one of the biggest threats to mankind ever faced. The total confirmed cases of COVID-19 around the world unit are now around 6,00,000 with 28,000 deaths. There are a lot of dashboards for tracking COVID-19. The CMU dashboard is coming up with maps and data about total deaths, recovery and confirmed cases worldwide.

This CMU dashboard is a simple interface that provides a 3D globe with vivid red and yellow colors that mark the difference of the areas most and least affected by COVID-19. This dashboard provides all the information about death, recovery and confirmation as a whole.

Founded in March 2020, it was developed at Carnegie Mellon University by two students Na'vid Mamoon and Gabriel Ruskin. This is to provide a simple, interactive way to visualize the effect of Covid-19.

We wanted people to see it as something that could bring all of us together. It is not just one country or another country; This is a planet — and this is what our planet looks like today (picture).

The data is from real time updates to the World Meter, which uses reliable sources around the world. Today's cases deaths are based on GMT (+0). The website draws new data every 2 minutes, refreshes to see any changes.



Fig. 4 : The CMU COVID-19 Situation Dashboard.

### 6. Microsoft COVID-19 tracking web portal

“Microsoft has officially launched its own Corona virus tracking web portal, which will show the number of people affected by the virus worldwide. In this, country and state wise reports will give the total confirmed cases, active cases, death cases and recovery cases”[4].

Presently, this web portal will show that there are 100 confirmed, 2 fatalities, 95 active and 13 recorded cases. On this, you can get the latest information, news about this virus.

“In addition, the report suggests that the data available on the website is drawn from sources such as the World Health Organization (WHO), the US Center for Disease Control and Prevention (CDC) and the European Center for Disease Prevention and Control (ECDC)”[4]

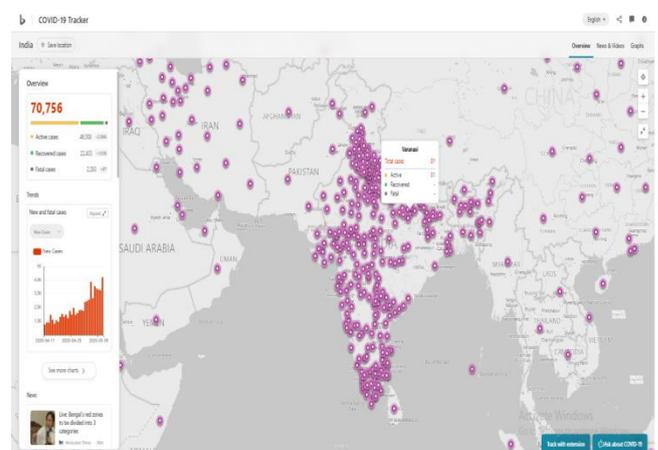
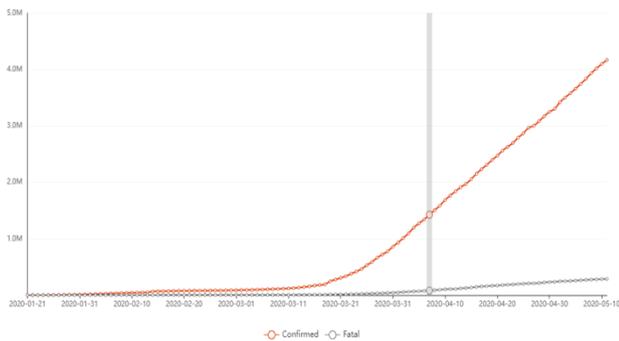
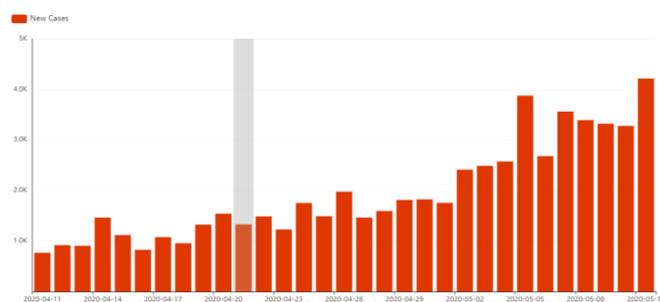


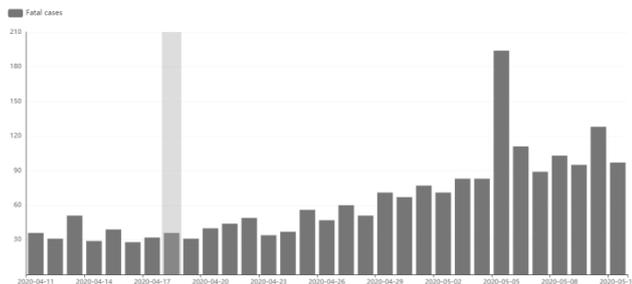
Fig.5 The Microsoft COVID-19 situation dashboard



**Fig.6** The Microsoft COVID-19 Spread Over Time Graph

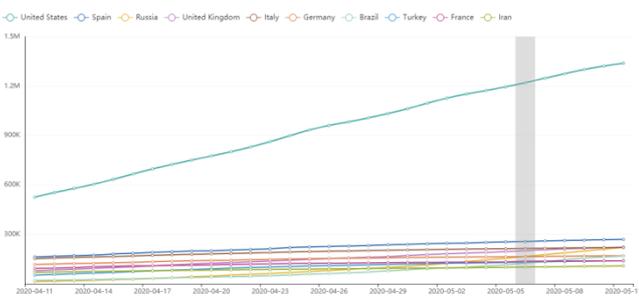


**Fig.7** The Microsoft COVID-19 New Cases Graph

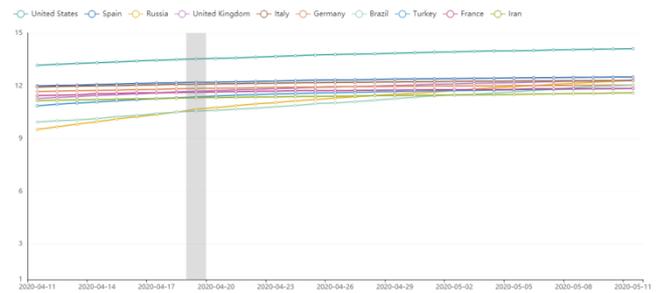


**Fig.8** The Microsoft COVID-19 Fatal Cases Graph

● Compare cases by regions



**Fig.9** The Microsoft COVID-19 Linear Scale Graph



**Fig.10** The Microsoft COVID-19 Log Scale Graph

### 7. Mapping the Worldwide Spread of Misinformation about COVID-19

His account on Twitter shows the prevalence of actual cases (in red) of the hashtag # coronavirus in the world (in green) between January 24 and 31, 2020. (Fig. 8). “Of course, all tweets and wrong tweet notifications with the hashtag #coronavirus are swirling around, and many of them start with bodies”[2] and organizations like Lego-Mate, like WHO, but Map on Twitter and other social media its' Viral 'help. Nature '.Is it a good illustration. An extended map set includes other coronavirus hashtags, and social media companies and organizations are screened against inaccurate information before mapping them to guide them in their battle for information on whether they are correct.

In fact, it has been said that WHO is fighting a similar disease other than Covid-19. “WHO has worked with social media such as Facebook, Twitter, YouTube (Google) and Pinterest to deal with misinformation and notifications”[2].

### 8. Other ways GIS technologies can help in combat infectious disease outbreaks and epidemics

During the outbreak of COVID-19, maps focused “dashboards, such as JHU, WHO and Advance Alert Inc., person themselves went viral, making known both the national and national Health practitioner. Just dashboard is the happening of how GIS and location technologies can assist the fight against diseases”[2]. “Following are some examples. Outbreak origin John Snow (1813-1858) was capable to locate the source of a disease outbreak in 1854”[1]. Following are some more examples.

● **Outbreak Source**

“John Snow (1813–1858) was capable to locate the source of outbreak”[1] in 1854 by using his famous paper maps of disease (that causes diarrhea) cases in Soho, London, and water pumps or hand pumps of water companies. Thanks for the manual (related to space or existing in space) analysis practice. Supply them with water. Today, more advanced computerized (related to space or existing in space) analysis is used to (combine different things together so they work as one unit) phyloepidemiological

methods to identify possible sources of new outbreaks; For example, See a map of possible sources of COVID-19.

### ● Public Events

It is an important calendar influencing the epidemic of diseases such as coronavirus. Hey guys consider myself canceled during 2014 Ebola and MER rate scare, campaign made by more than two million Muslims in Mecca every year in a pilgrimage to the Hajj. Equipped with figures and rumors of the olden days, many of the faithful went ahead "Along his journey, when he returned home, there was a risk of spreading the virus and disease"[2].

In the outbreak of the corona virus, "Chinese government extended Lunar New Year holiday to reduce mass celebrations (which were to take place on return to work and schools), Any public health that is known only when there is social disturbance. Later travelers from all over the world were denied entry into China. With right to actual data, officials successful Beijing, Macao and Hong Kong canceled several major celebrations"[1].

### ● Site Selection

Facing a lack of treatment facilities in Wuhan, China, in late January, commissioned officials began emergency construction of two new hospitals, which together would provide 264 beds. The construction teams completed the first hospital on "February 2, 2020, honorable 10 days later breaking the ground"[1].

### ● Supply chain

During international conn's public health emergencies, we often see a shortage of drugs and supplies. Reductions such as holding and price measuring by distributors can have significant consequences. Sometimes, there are manufacturing centers to supply the affected locations, causing a steady decline in production. Digital supply chain maps (land-area-based / location) (many different types of people or things) prove basic to ensure and supply and ensure delivery requirements.

### ● Resource locator

Affected region-wise may use publicly available applications to help residents find resources and resources. And applications and maps can see available beds as well as information and navigation for beds in hospitals, current waiting times, clinics with "grocery stores and pharmacies providing medical support, places to buy personal protective equipment and much more can provide things. In highly affected cities, this information can severely improve outcomes and save lives"[2].

### ● The Drone

"In China, unmanned vehicles (UAVs) provide important therapies and provide laboratory examples to patients. And heavily affected areas, drone laboratory examples"[2] help bring down human exposure to goods and personnel. Drones have also been used for many operations in China for a long time. Integrated drones and GIS technologies can assist reference and speed try at the locations they most need.

## 9. Conclusion

"But the person is incapable to recover and display represented/explained map functions snapshots on time"[1], for example, to see how the corona virus world distribution map would appear on a clearly stated/particular day Is, as of 25 January 2020 Web GAS technologies are the basis of web-based tools, which improve data sharing and (happening or viewable immediately, without any delay) information to support critical decision making. Dashboard (permission to not do something) -- confirms those thinking and has been "very popular in mutuality and knowing the spread of SARS-CoV-2 corona viruses"[1]. Communication through a map-based dashboard gives people around the world sharp/eager/ well-developed information to assist themselves. This tool type improves data clearness/open honesty and helps spread around information to the people in charge.

Certainly, the dashboard has taken center stage in COVID-19 outbreak (knowing about something). But we hope readers to think about how a complete and thorough GIS (raised, flat supporting surface) can influence the whole procedure of disease, response, as one puts it, " Kind should be expected to move forward ".In other words, it is not a question of whether there will be another outbreak.

## 10. References

- [1] Maged N. Kamel Boulos and Estella M. Geraghty Researchpaper.<https://link.springer.com/article/10.1186%2Fs12942-020-00202-8>
- [2] Maged N. Kamel Boulos and Estella M. Geraghty Paper Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: how 21st century GIS technologies are supporting the global fight against outbreaks and epidemics. <https://ijhealthgeographics.biomedcentral.com/articles/10.1186/s12942-020-00202-8>
- [3] H.C. Yashavantha Rao, Chelliah Jayabaskaran. "The emergence of a novel coronavirus (SARS- CoV-2) disease and their neuroinvasive propensity may affect in COVID-19 patients", Journal of Medical Virology, 2020.

<https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.25918>

[4] Microsoft tracking web portal.

<https://www.bing.com/covid/local/india>

[5] Catrin Sohrabi, Zaid Alsafi, Niamh O'Neill, Mehdi Khan, Ahmed Kerwan, Ahmed Al-Jabir, Christos Iosifidis, Riaz Agha. "World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID- 19)", International Journal of Surgery, 2020. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7105032/>

[6] WHO , Novel Coronavirus (COVID-19) situation. [http://healthcybermap.org/WHO\\_COVID19/](http://healthcybermap.org/WHO_COVID19/).

[7] Health Map Novel Coronavirus 2019 nCov. <http://Healthmap.org/wuhan/>

[8] Maged N. Kamel Boulos, Estella M. Geraghty. "Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2) epidemic and associated events around the world: how 21st century GIS technologies are supporting the global fight against outbreaks and epidemics", International Journal of Health Geographics, 2020 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7065369/>

[9] H.C.Yashavantha Rao, Chelliah Jayabaskaran. "The emergence of a novel coronavirus (SARS- CoV-2) disease and their neuroinvasive propensity may affect in COVID-19 patients", Journal of Medical Virology, 2020. [https://www.researchgate.net/publication/340853825\\_The\\_emergence\\_of\\_a\\_novel\\_coronavirus\\_SARS-CoV\\_2\\_disease\\_and\\_their\\_neuroinvasive\\_propensity\\_may\\_affect\\_in\\_COVID-19\\_patients](https://www.researchgate.net/publication/340853825_The_emergence_of_a_novel_coronavirus_SARS-CoV_2_disease_and_their_neuroinvasive_propensity_may_affect_in_COVID-19_patients).