

# A study of the epidemiology of Coronavirus 19 virus in Iran

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Review :

Introduction and Purpose: Coronavirus is a mutant RNA virus that has changed the biological life of the planet Earth in a short time. Since this disease has become pandemic (1) and our country is also one of the countries involved in this disease, and by observing the spread of the disease in Iran and the problems in dealing with it, we decided to present this article. .

Methods: First, we will briefly review the virus and its history, and then we will examine the epidemic of this disease from the initial stages until this time (2/10/98) and express the problems, then we will provide solutions.

Conclusion: In order to protect the people and their resources, which are the same people and equipment, the chain of infection should be cut off and the rate of infection should be reduced so that the treatment system has the ability to respond to patients. One way to prevent the spread of coronavirus is to quarantine cities and areas infected with the new coronavirus. The results of various studies show that quarantine people before the onset of symptoms, which can be useful and valuable for the widespread spread of this viral disease.

Keywords: coronavirus, epidemic, quarantine, transmission routes.

## Introduction

Coronavirus is a mutant RNA virus that has changed the biological life of the planet Earth in a short time. ACE2 levels in men are higher than in women. Asians have higher levels of ACE2 than whites and African Americans. New coronavirus binding increases ACE2 expression, which can lead to damage to alveolar cells. Injury to alveolar cells can in turn cause a series of systemic reactions and even death. As a result, Asian men are more likely to be infected with the new coronavirus infection (1). They are responsible for 15% of colds. In 2002, SARS was diagnosed in southern China, with 80,988 infected and 774 deaths across the country between November 2002 and January 2003. (3) and again in 2012, in Saudi Arabia, a disease called Mers, which lasted from September 2012 to September 2012. In September 2016, 1806 people were infected and 643 were killed (4), which had a mortality rate of 9.55 and 36.7 percent, respectively (3, 4).

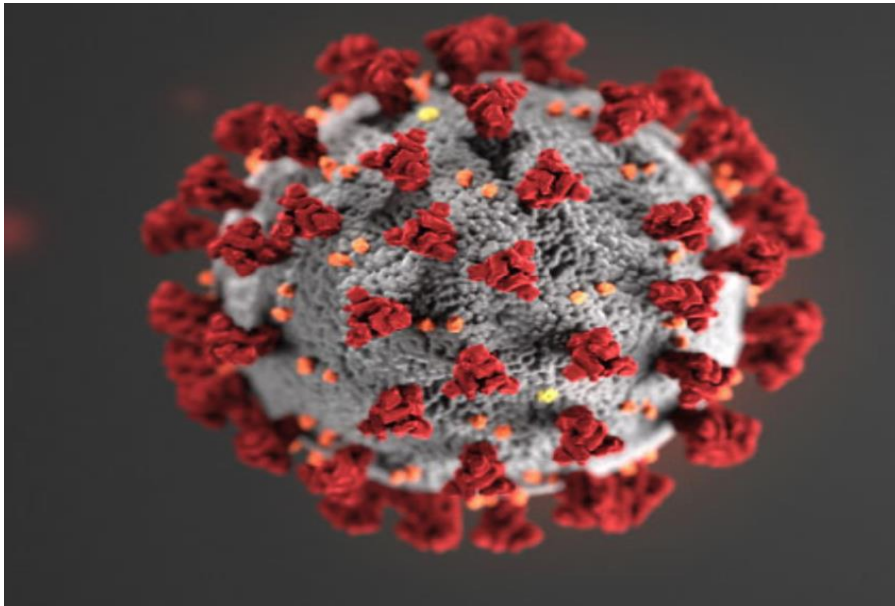


Figure No 1: 3D image of the virus Source: Queens University (5)

The most prominent feature of these viruses is that they have superficial spawning surfaces and 4 different families have been discovered, including alpha, beta, gamma, delta, which is the cause of Mord's disease in the beta family (6). From the genetic dimension of sars-cov-2, about 80% is similar. sars-cov (7) and 96% are similar to bat-like corona and are approximately 99.8% close to the sars-cov-like intermediate sample. The difference in the genome of the two includes 202 single nucleotides. (8 and 9) There is no logical reason to claim The new Kurdish corona is directly related to the bat corona, but there is evidence to suggest that this is a natural process in the evolution of the virus (9). Because the relationship between humans and bats is small, it is also necessary to find a closer animal corona (10). Since the SARS epidemic, the association of the sars\_cov virus with bats has been discussed (11). The relationship between humans and bats is small. In 2015, a report was published in the Chinese media claiming that the addition of the s-co-14 gene to sars-cov could infect humans in addition to mice, but no scientific source supported the report (8, 14 and 13), but Corona virus An animal with the help of an RNA genome has a high potential for mutation and transmission to humans (15). However, there is speculation that the sars-cov-2 virus is of laboratory origin and was released from a laboratory in Wuhan, China. However, this idea needs further study (9). Given China's limitations on information, it seems unlikely that further evidence will be obtained. Dr. Lee van Hong, an ophthalmologist from Wuhan, was the first to warn about the signs of the new coronavirus virus on December 30, 2019. He first reported seven cases of SARS in the Huana seafood market, along with CTscan examinations and images. It is a virus transmitted by Corona, but of a subtype that eventually led to warnings from Wuhan police to detain him for spreading lies in cyberspace (16, 17). They argued that we are in conflict with time, and that the epidemic is a major test of China's sovereignty, adding that we have acted at low levels. The World Health Organization has compared China's bureaucratic approach to the SARS epidemic. In an interview with The Independent, Dr. Johnson de Quick, an assistant professor of global health at Duke World Health Institute and author of The End of the Infectious Diseases, said: We have seen a different situation (18) However, the virus has spread and its transmission is possible through respiratory secretions and contact between people, and it is recommended that all people use a mask that varies according to the individual's condition. For normal people, a disposable medical mask for caregivers. Patients, staff, and long-term occupants should use a surgical mask or N95 mask (19). Also at the University of Nebraska Medical Center, 13 patients with covidase 19 whose disease was diagnosed by PCR were isolated. During the hospital stay, air and various surfaces were sampled in the rooms, sampling was performed from different levels, including the usual equipment in the room, personal belongings of patients and toilets, as well as the air in the rooms and corridors. These patients had a mild degree of illness. Examples of PCR-level surfaces and aerosols were

tested positive for patients' personal surfaces at 76.5%, indoor equipment levels at 80.4%, and bathroom surfaces at 81%. Room and corridor air samples provide information on viral inhalation in these areas. Room air samples at 63.2% and corridor air samples at 66.7% were positive. Recent findings indicate that the disease is also transmitted through respiratory secretions. It can be transmitted through the air, so it is important to use a mask (20).

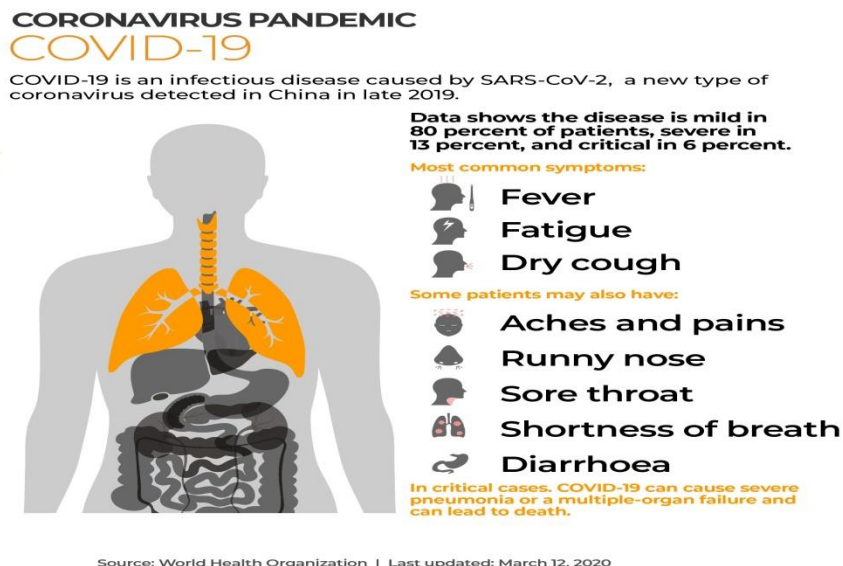
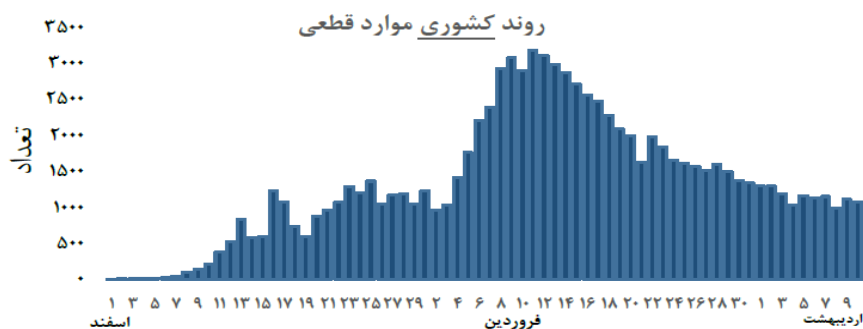


Figure No 2: Symptoms of Quaid-19 disease Producer: Al Jazeera based on WHO report (22)  
Corona epidemic in Iran

On February 20, 2017, we witnessed the first official confirmation of Coronavirus in Iran, which was related to the suspicious death of two people in Qom (23). After the experiment, it was determined that Coronavirus was a new virus and the president of Qom University of Medical Sciences said on the same day. : In the past few days, we have witnessed an increase in respiratory diseases in Qom and two deaths due to respiratory problems (24). It was announced on March 8, 2017 that almost all provinces have been affected by corona (25) despite the advice of Chinese officials. And the action of all countries involved with Corona in quarantining different regions of Iran (19) to quarantine the primary areas of pollution such as Qom, which was the primary source of pollution, and even President Hassan Rouhani said we will never have something called quarantine (26) Iraj Haririchi also said that he did not believe in quarantine and called quarantine related to before the World War, and the next day he went to quarantine with a positive Corona test (27). And it is possible that I have problems, such as the simplification of events in society Due to the lack of quarantine in the Corona Emergence Centers in Iran, the closure of universities and seminaries and the departure of students and scholars to their cities, as well as the failure to close transportation routes between cities, spread pollution until social interventions prevented inter-provincial traffic. 28) However, according to China's experience, quarantine of cities and, of course, strict curfews have been recommended. The same distribution areas do not have pollution, and through intra-provincial trips it is possible to transmit the pollution to areas that are not polluted or less polluted. In this regard, transport drivers who are constantly moving around the country can be considered as a potential source of pollution. He considered that they should be monitored. This plan could have been effective if it had been implemented before people left for other regions, including northern Iran.

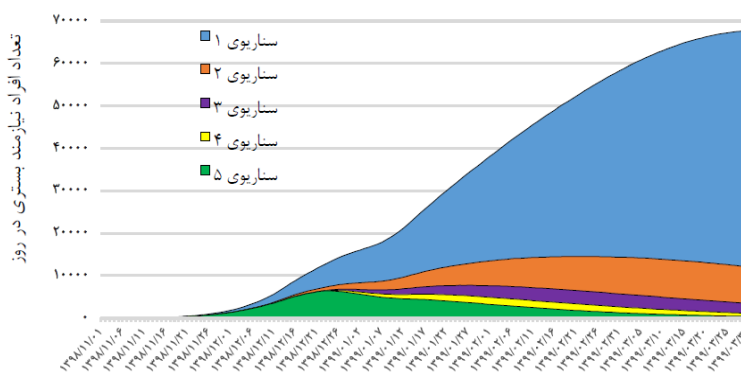
In the Corona Countermeasures Plan, in the context of the Corona Basij Plan, it should be noted that the disease divides people into three groups: healthy, sick, and carriers. Carriers are generally asymptomatic or have no mild symptoms. Sampling People We have virtually left the carrier section unrecognized (19), which can infect many people until the disease is identified, so full quarantine has been put on China's agenda so that carriers can have minimal contact with healthy people. (19) The distancing plan was also implemented on April 30, 1991 (28) at which time all the provinces have been polluted and will not be effective in practice (25). Also, the closure of religious places that are the gathering places took place on March 16, 2017 (30) As

a place with high population density, these centers were closed 26 days after the proof of the virus in Iran. It can be said that it is too late to reduce the working hours of the offices due to the issues related to Corona, although they are facing instability. 31 (31) But this trend also caused a lot of traffic in the city, including Arbab Raj According to the Ministry of Health, 99,970 cases and 6,340 deaths have been recorded (32), but the closeness of individuals in the offices is another factor that increases the risk. We need to keep an eye on the daily sickness chart, because increasing the number of patients means increasing the demand for services and getting closer to the saturation point of the health system, which can greatly increase the volume of casualties in countries such as Italy and the United States.



Figur No. 3: Chart of New Patients by May 29 Source: Daily Epidemiology Report No. 34 (32)

On 10 May 1323, a new case was registered in one day (32). Considering the fact that many people are also carriers and without symptoms, it can be concluded that the patient's population is higher than this number (19). According to the head of the Pasteur Institute, we are able to perform 10,000 tests a day (33). What should be considered and changed in the adopted method is the limited capacity of the health system when we reach the maximum capacity and are forced to choose between people's lives. What happened in Italy (34), however, is a more fundamental problem before the epidemic and in the identification of the virus, because the first announcement of corona in Iran was with two deaths (23), so it can be said that this virus entered Iran at least 3 to 14 days ago. But it has not been identified (19), which, according to Deputy Health Minister Dr. Malekzadeh: We confused it with the flu, which we should have been aware of before (35). It was gloves that, given that there is a crisis around the world, you have to deal with that For future epidemics, these items should be considered by the government and relevant organizations in advance Finally, we address the issue of modeling, which can be a guide for future forecasting and policy making



Figur No. 4: Chart for the various scenarios of the Quaid-19 epidemic Source: Iranian Journal of Epidemiology No. 16 (36)

In the first scenario, it is assumed that the government and the people will not interfere and that there will be no care, which will increase with increasing inclination and 65,000 items per day

The second scenario assumes public intervention and 10% isolation, with 12,000 new cases per day.

The third scenario is the assumption of minimum intervention and a maximum of 20% isolation that we will have about 3,500 infected per day.

The fourth scenario is the assumption of moderate intervention and ejaculation of a maximum of 30%, which includes the possibility of 1200 daily infections.

The fifth scenario assumes high and intense level intervention, which is a maximum of 40% isolation and is likely to have about 450 cases per day (37 and 36). Infection will be slower as a result of life-threatening injuries due to the lack of patient density in hospitals, which can be hoped that the vaccine will be detected in a longer period of time or effective treatment will be introduced, or even the pathogenesis of the virus will change. Of course, the direction is not clear, but now that there is no cure for it, we can only focus on reducing the cost of life to achieve safety, and due to the lack of vaccines, the only way to get sick and create immunity is to stop it. The epidemic is 63% in the cold season and 37% in the summer. On the other hand, with the resumption of the cold season, more interventions are needed, so you should try to stop the disease in the hot season, because in the cold season the slope of the chart increases. The courier gives us the disease well used because in the fall as well Corona and influenza outbreaks, especially if no effective drug is detected, will make things very difficult (37). However, as of mid-April, the virus is infected with all the health, economic, social, cultural, and mortal lesions that lead to It has left the virus to be largely controlled by measures taken sooner or later in the country, such as adhering to health principles, social distance and quarantine. And this path has been and is the only way available until an effective vaccine or drug can be achieved with the efforts of all the world's scientific researchers around the clock.

And it is hoped that the lesson will be a great lesson for all humanity in Iran and the world that encroaching on the environment and destroying it and not observing the principles of health and eating every animal in a corner of the world.

1. What has made the Corona Crisis a huge problem is its breadth and prevalence, which can be traced back to the statistics of the Ministry of Health and Who, so what can be done until a complete cure is found to prevent hospital saturation and protect capital. This is the same equipment and personnel, and this will not be achieved except by cutting the chain of infection, which is the same as quarantine and social distance, and in this way it is possible to reduce mortality by providing better care to patients, and currently 188 countries use this method. Have used

2. The next issue is to provide psychological security by taking the right measures away from any consideration, both for not spreading the crisis and for meeting the demands of the people, which in the quarantine issue, unfortunately, we are far behind compared to other countries such as Germany.

3. Unfortunately, what has plagued China and left us unharmed is the lack of speed of action. As mentioned, China has done better than SARS, but overall it still has problems. We must also work harder to make the current crisis worse. Let's prepare for the next crisis, because Kerna will not be leaving any time soon

4. Governments should provide the necessary infrastructure for such situations to run administrative affairs through the Internet so that in such cases all offices can be physically closed, but using this possibility, all affairs can proceed without interruption.

5. What is on the epidemiological diary is that 24.5% of people are advised to take care at home, which is a remarkable thing that if we had the capacity to do a large-scale test and these people would go home with a definite negative, it would be very effective. On the other hand, the quality of home care and infection control is also important

6- Governments should be able to set up field hospitals equipped with faster response, which requires equipment in warehouses. What is set up in the country by the armed forces is not a hospital, but a recovery point.

7. Governments need to invest in advancing the study of organisms and finding a cure for them

8. The biological life of the planet changed by the disease, but with all the economic and human losses that the virus left, it led man to respect the planet and reconsider his behavior and to know what is in it. It is the planet that is trying to do that because these unknowns may one day threaten human life.

9- What is certain is that strict measures are taken by all countries of the world and Iran in accordance with the principles of health, quarantine, mask use and social distance. They managed to control this deadly virus to some extent, so it can be said that the way to save human beings is always to respect scientific principles and the environment, and if we started with scientific principles from the beginning, we could have overcome the crisis more easily.

#### The effect of coronavirus on the future of the world

In short, the world will face global and unprecedented health, medical, economic, social and cultural challenges after Corona's disease. Removing these very important challenges can be solved by increasing public confidence and global cohesion. All countries in the world have two missions ahead of them. The first is to control the spread of the virus and the second is to solve the economic crisis caused by the virus. Some countries have quarantined cities and areas infected with the new coronavirus. The results of all research show that timely tests and quarantine tests on this disease and other diseases. Similarly, the only way to control and prevent the widespread spread of these diseases.

#### Future suggestions and solutions for coronavirus

Since there is no vaccine or drug against coronavirus, the only effective way to control and spread the disease is the following methods:

- 1- Quick detection of this virus by reliable kits.
- 2- Providing appropriate infrastructure to respond to the increase in cases of Quaid 19 disease.
- 3- Separation of patients and their exposure at home and appropriate environments for patients.
- 4- Increasing the level of information of the society in the field of keeping patients at home and increasing the quality level of this field of care by specialized forces.
- 5- Teaching health principles and trying to increase the level of general information of the society in the field of infectious diseases.
- 6- Observance of the principles of social distance and prohibition of gathering and health principles.
- 7- Quarantine of polluted cities and areas.
- 8- Proper use of masks for patients and medical and medical staff in medical centers.

#### thanking:

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# Investigation of the prevalence and epidemiology of Coronavirus in Iran

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## Abstract:

**Background and Objectives:** SARS Cov-2 the enveloped, non-segmented, positive sense *RNA virus* has changed the biological life of the planet Earth in a short time. Since COVID-19 is now considered a pandemic disease and COVID-19 is now spread in all regions of this country, the goal of present study was to observe the spread of the disease in Iran and the problems in treating the disease.

**Methods:** First, the virus and its history was reviewed, and then the epidemic of this disease from the initial stages to present time (1/18/98) was examined and the problems were expressed, then solutions were proposed.

**Conclusion:** In order to protect the people and their resources (the same people and equipment), the chain of infection should be cut off and the rate of infection should be reduced so that the treatment system can respond to patients. A method to prevent the spread of SARS Cov-2 is to quarantine cities and areas infected with the virus. Quarantine should be started before the initiation of symptoms.

**Keywords:** new coronavirus, epidemic, SARS Cov-2, quarantine, and transmission routes.