

## **Procedures and methods for combating infectious diseases in Algerian society during the Corona pandemic, "COVID-19". - An analytical study-**

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### **Abstract**

Through this article, we aim to identify the procedures and methods of combating infectious diseases during the outbreak of the Corona pandemic, which societies faced, especially Algerian society. Where the patient becomes associated with taking antibiotics and medical drugs. These diseases include what is transmitted through the air, and some of them when contacting and shaking hands with the patient. In order to achieve the goals, we carried out an analytical follow-up study based on presenting the results of field studies, to show exposure to procedures and methods of infection prevention and infection, without forgetting the strategies used to prevent infectious diseases during the Corona Covid 19 pandemic. Followed by the Algerian health system.

**Keywords:** infectious diseases; injury; protection; the society; COVID-19.

### **- Introduction:**

Infectious diseases are among the factors that weaken the immune system of infected people, according to epidemic symptoms, so that this effect is clear and greatly affects the health of the infected person. Which results in a depletion of the patient's body's energy, and they are called infectious diseases because they are transmitted through infection from the body and from one infected person to another healthy person through several methods and mechanisms, including breathing, touching, shaking hands, and using other people's tools. Which leads to injury to a healthy person, no matter how strong he is, as it develops and changes its structure and shapes and spreads throughout the body in the form of small cells that cannot be seen with the naked eye. These are germs that the infected person's immune system fights and works to resist effectively and powerfully.

Infectious epidemic diseases such as “Covid-19”, otherwise known as Corona, disrupt public life in society. Infection with this epidemic can disrupt the family and the daily life of society, and affect its health, development, and protection. These infectious diseases may also cause complications, which requires individuals to take prevention and avoid infection with these epidemics in various ways and methods. Infectious diseases are medical conditions resulting from bacterial infection, and these germs can cause a set of symptoms of varying degrees and severity, and even lead to death. These diseases transmitted between people are also called infectious diseases, as a healthy and healthy person acquires the infection from another infected person, or even from infected animals, or through spoiled, expired, or contaminated food. We find that when a person is infected with the disease, viruses, bacteria, or parasites are transmitted within the body and begin their activity, which may cause the appearance of some symptoms on the infected person, and may cause damage to the body (Dweikat 2023).

These diseases may cause complications, aches, and pains. In some cases, a person may contract a serious infectious disease that inevitably leads to death. Such as high body temperature, pain, or vomiting, due to the nature of the virus or disease and the degree of infection, which requires the impact of these diseases on the immune system of the infected person, and works to weaken it significantly. It is transmitted within the body through very small cells that cannot be seen with the naked eye. In most cases, the infected person's body resists these cells through the immune system, and thus the patient recovers from them. So that these cells in the immune system resist these viruses and cleanse the body of them.

«But at another time, these viral cells are able to develop themselves so greatly that the immune system becomes unable to repel and resist them, and they bypass the immune system. At that stage, antibiotics that help resist these viruses must be taken, depending on the state of infection and the type of virus (Jibril 2023)».

Since infectious diseases take a large part in intervention operations to combat and reduce them, and require the availability of very advanced and sensitive technical, human and technological capabilities, we pose the following problem:

What are the procedures and methods for combating infectious diseases within Algerian society during the spread of the Corona “Covid-19” epidemic?

From this we have the following sub-questions:

- What is meant by infectious diseases?
- What are the procedures and methods for preventing infectious disease infection?
- What are the strategies used to prevent infectious diseases during the Corona “Covid-19” pandemic?

Therefore, we decided to address this problem according to the following axes:

- 1- The concept of infectious diseases and methods of preventing them:
- 2- The researcher in the field of epidemiological diseases finds that they have recently spread within Algerian society, such as colds, influenza, and others.
- 3- What is observed is that they develop on their own, resulting in very harmful and dangerous infectious diseases, some of which are transmitted through the air and through contact with, shaking hands with, or touching the patient, and some of them. It is transported via several methods.

#### **1-1- Definition of infectious diseases:**

Infectious diseases are among the first diseases that have an ancient epidemiological history, and which in general have been linked to the poor social and economic situation of societies. If we trace the epidemiological history of these diseases to Western developed societies (Boutfnoch 2014).

Infectious diseases are also defined as diseases that quickly and strongly weaken the immune system within the infected person's body. They also affect the body gradually and destroy its strength and energy. It settles inside the body of the infected person and works to develop itself inside the body, regardless of its structural strength, so that the latter works to change its shapes. It spreads in the infected person's body in the form of small cells that are not visible to the naked eye, and the immune system often overcomes them and resists them quickly and effectively (Mustafa 2022).

Many microorganisms live in or on our bodies, and these organisms are usually harmful or beneficial. But under certain conditions, some of these tiny organisms may cause diseases (Mayo, Infectious Diseases 2022). Infectious diseases are diseases that can be caused by any type of microscopic (Abdel Moneim 1990) organisms that are widespread. In other words, infectious diseases are considered pathological conditions resulting from bacterial infection, as these microscopic organisms are transmitted to humans through several ways, and these germs can cause a wide range of diseases that vary in severity and severity from mild to severe or life-threatening (Faiq 2022).

When these microscopic germs and microbes can develop themselves, they become very powerful. So that the immune system is unable to confront it with the same strength, and therefore it is recommended to take antibiotics that consist of natural substances that work to support and help white blood cells increase their strength, strength, and energy. Thus, the process of completely eliminating these diseases and microscopic germs that cause infection occurs through several methods, including sweating, coughing, and runny nose.

#### **1-1- Causes and types of germs that cause the spread of infectious diseases:**

The researcher who searches for the causes of the spread of infectious diseases finds them represented by germs. The latter are living and minute microscopic organisms spread in all places

through the air, soil, surfaces, and even water. The infected person can be infected by touching, eating, and even drinking or inhaling polluted air.

These can Microbes from spread by animals infected with rabies. Infectious diseases may occur for the following reasons:

#### **1-2-1- Bacteria:**

They are single-celled bacteria that reproduce rapidly. So it secretes chemicals that can cause disease.

#### **1-2-2- Viruses:**

Viruses cause many diseases, ranging from the common cold to even AIDS.

#### **1-2-3- Fungi:**

They are plants, such as mushrooms or molds. Many skin diseases, such as ringworm and athlete's foot, occur due to the presence of these fungi. While other types of fungi can cause infections in the lungs or nervous system.

#### **1-2-4- Symptoms resulting from infectious diseases:**

We find that each of these infectious diseases has its own signs and symptoms, and the general signs and symptoms that are common among types of infectious diseases include feeling fever and diarrhea, feeling and feeling tired, muscle pain, and coughing. Some of these symptoms are mild, and are not felt. The patient is absolutely sick.

#### **The strongest symptoms of infectious diseases are as follows:**

Feeling severe, partial pain, or feeling a complete headache in the affected person's head, along with the appearance of a runny nose, tinnitus, and inflammation in the middle ear area, in addition to finding difficulty breathing and feeling nauseous. Also, loss of appetite, refusal of all types of foods, and a feeling of fatigue and exhaustion in all body movements, thus depriving the patient of performing all vital activities. There is also a feeling of strong pain in the chest area, a decrease in lung function, a feeling of laziness, lethargy, and sleepiness, and a rejection of all effective and strong smells.

#### **- 1-2- Types of infectious diseases:**

There are many infectious diseases, including the following:

#### **1-4-1- Cold:**

It is the occurrence of colds as a result of a viral infection. It affects the nose and throat. Upper respiratory infections are often harmless. It is also common and expected that healthy adults will get colds two or three times a year.

#### **1-4-2- Influenza:**

A contagious and acute viral disease that can infect any part of the respiratory system, from the nose and throat to the lungs. It came in the form of a deadly epidemic, and this is what happened in the years 1918-1919.

#### **1-4-3- Measles:**

Measles is an acute, contagious disease that occurs periodically and irregularly, with high fever, respiratory tract infections, and a pustular skin rash (Hassan and Ghassan 1998).

#### **1-4-4- Polio:**

It is a contagious and acute viral disease that affects the nervous system and leads to polio. It was discovered in 1840 AD by the German orthopedist Heni.

#### **1-4-5- Viral diarrhea:**

Known as infectious inflammation and viral enteritis, it is an intestinal infection that has symptoms such as watery diarrhea, stomach contractions, in addition to nausea or vomiting, with fever sometimes. It is also known as stomach flu. But in most cases, viral gastroenteritis can lead to death in young infants, elderly people, and people with weak immune systems (Mayo 2023). As for diarrhea resulting from a parasitic infection, we find that it is simple and is not accompanied by a high temperature or vomiting. It is diagnosed by conducting stool analyses (Bibi 2023).

#### **1-4-6- Rabies “price”:**

Rabies is infection with a deadly virus, which is transmitted to an infected person through the saliva of infected animals. The rabies virus is most often transmitted through bites. The method of transmission to humans and animals is usually accompanied by saliva, through biting or scratching (World Health Organization 2023).

#### **1-4-7- Acute rheumatic fever:**

It is a fever that occurs when strep throat or “scarlet” fever is not treated properly. Rheumatic fever most often affects children between the ages of 5 and 15 years. It may sometimes affect younger children and adults alike. It is the occurrence of inflammation of the joints, heart, skin, and nervous system, caused by complications of an untreated streptococcal infection in the throat (Weinberg A 2023).

#### **1-4-8- Avian influenza:**

It is a virus that infects different types of birds, both domestic and migratory. It is especially common in chickens, ducks, and geese. And other birds, but in recent years we see that this strain of the virus is causing great concern, as many people from all over the world have been infected with it, leading to many deaths (Ministry of Health 2023).

#### **1-4-9- Boils and skin infections:**

Boils are considered a skin infection that occurs within skin follicles or sebaceous glands in the skin. Symptoms appear that begin with reddening of the skin, which results in the production of white pus materials called pus (Al-Tibbi 2023).

**1-4-10- Brucellosis:**

It is an infectious disease transmitted to humans through domestic animals: goats, sheep, cows...etc. The disease affects adults more than children. The disease manifests itself in the infectious-toxic syndrome, which mainly affects the lymphatic system, spleen, liver, and bone marrow, as well as the motor, nervous, and reproductive systems.

**1-4-11 - Cholera:**

It is a severe disease. This disease results in severe watery diarrhea. It takes a period of time ranging from 12 hours to 5 days for the symptoms of the disease to appear on the infected person, as a result of eating poisoned or not very fresh food. Or drinking unhealthy, contaminated water. Cholera infects children and adults alike and may lead to death if not treated (World Health Organization, Cholera 2023).

**1-4-12- Rickets:**

It is a disease resulting from a deficiency of “vitamin D” in the body. Which causes osteoporosis, and scientifically it is a deficiency of calcium and phosphate in the body, which results in a significant increase in the gland next to the thyroid gland.

**1-4-13- SARS:**

It is an infection that affects the respiratory system through the spread of viruses. Also known as respiratory syndrome, it causes damage to the alveoli, which are responsible for exchanging oxygen and carbon dioxide between the inside and outside the body. This syndrome ended in 2004, and no cases of SARS appeared after that (Medical 2023).

**1-4-14- Tetanus:**

It is caused by toxins from bacteria that result from wounds and have an effect on the nervous system. We also find that most cases affect people who have not completed vaccination against this condition or have not completed their vaccination schedule. Because these spores have a great ability to withstand temperature and most disinfectants, they may survive for several years (World Health Organization, Tetanus 2023).

**1-4-15- Tuberculosis:**

Tuberculosis is an infectious disease that a person becomes infected with as a result of a bacterial infection called “Mycobacterium,” which attacks the lungs. Tuberculosis is a disease caused by a bacterium called Mycobacterium negative. This disease most often affects the lungs, but it may also affect other parts of the body, as we mentioned (Cleveland 2023).

**1-4-16- Cough:**

An infectious disease that causes a catarrh in the upper respiratory tract. The cough resulting from the disease is intermittent, sharp, also called a cough, and ends with a sniffle, similar to a rooster's crow. This disease mainly affects children from one to six years of age and newborns, but it, it rarely affects children over ten years of age, and it is also rare for pertussis to affect adults, the elderly, and the elderly.

#### **1-4-17- Typhoid fever:**

A highly contagious disease whose occurrence is directly consistent with contamination of water, milk, and food. This disease, like cholera, is one of the endemic diseases in those countries of the globe where health awareness, hygiene, and other preventive applications are still primitive to a miserable degree.

### **1-5- Types of transmission and infection of infectious diseases:**

#### **1-5-1- Direct contact method:**

Among the methods of direct contact with infectious diseases we find the following:

##### **1-5-1-1- Between persons:**

It is known to doctors that the spread of infectious diseases occurs through the direct transmission of viruses, bacteria, and germs from one person to another. This happens when an infected person comes into contact with another healthy person. This can include shaking hands, hugging, kissing, sneezing, or coughing next to a healthy person.

##### **1-5-1-2- Between animals and humans:**

This incidence occurs as a result of the victim being bitten or scratched by an animal infected with rabies. Despite the infected animal. The seriousness of such an injury can lead to death, without forgetting cases of exposure to the droppings of these animals because they pose a great danger.

##### **1-5-1-3- From the mother to her fetus during the operations and stages of pregnancy:**

Among the causes of transmission of infectious diseases, we find that a pregnant woman transmits germs to the fetus. These germs can be transmitted through the placenta or breast milk. These germs present in the vagina may also be transmitted to the newborn during birth.

#### **1-5-2- Indirect communication method:**

In this indirect way, organisms that cause disease and live in inanimate media, such as table tops, door handles, or faucets, are transmitted. Infections may be contracted if eyes, mouth or nose are touched before washing hands.

### **1-6- The development of infectious diseases within Algerian society:**

Algeria is not immune to infectious diseases and their spread in society. Consequently, like other countries across the world, it was known for many deadly infectious diseases that swept through societies, affecting different age groups, as a result of many factors such as poor living conditions, lack of hygiene, lack of health awareness, etc., so intervention in these factors was for the purpose of

reducing or finally getting rid of them. One of the ways to preserve human life and increase the hope of life in society. Numbers come as significant and effective indicators to know the trend of the disease's development within Algerian society.

## **2- Procedures and methods to prevent infection with infectious diseases:**

There are main procedures and steps that can be followed in order to maintain good health and reduce the risk of infection and its spread, which are as follows:

### **2-1- Basic steps to maintain good health and prevent the spread of infectious diseases.**

#### **2-1-1- Use medications and antibiotics correctly.**

- Use and maintain antibiotics on time, and follow recommended vaccinations and instructions.
- Use antibiotics exactly according to the program prescribed by the doctor.
- When taking antibiotics and side effects appear, you must consult a specialist doctor.
- When a person travels from one country to another, he must have taken the necessary vaccinations, while using and taking preventive medications for travel.

#### **2-1-2- Maintain cleanliness:**

- You must wash your hands several times a day, especially when there is a cold or the spread of influenza.
- Prepare and cook food well.
- Take caution, adhere to protection, and stay away from people infected with the disease.

#### **2-1-3- Take caution with all wild animals and poultry:**

- After being bitten by an animal infected with the disease, the affected area must be cleaned with soap and water immediately, and one must go to the nearest health center to receive medical care immediately.
- Stay away from places where there are ticks.
- Fighting mosquitoes. And work to protect the skin.

#### **2-1-4- Striving to prevent the spread of infection:**

- When suffering from a severe cold or influenza, one must stay home and avoid contact with the general public.
- Do not move through the rooms of the house, because it is considered the best way to avoid the spread of infection.
- A condom must be used during sexual intercourse.
- In the event that one of the spouses suffers from a specific disease, condoms must be used by both parties.

## **2-2- Ways to prevent the spread of infectious diseases:**

The following tips must be followed to reduce the risk of infection:

#### **2-2-1- Washing hands:**

Handwashing is very important, especially before and after eating, and after using the toilet. Do not touch the eyes and nose with your hands because they cause the spread of germs inside the body.

#### **2-2-2- Receiving vaccinations.**

When we take the vaccination against a certain disease, we have acquired immunity against the disease, so the vaccination must be taken according to what is recommended.

#### **2-2-3- Stay at home in case of illness.**

If the infected person is vomiting, has diarrhea, or shows signs of fever, we advise him not to go to work. Likewise, for children, if these symptoms appear, they must be prevented from going to school.

#### **2-2-4- Prepare food in safe ways and keep tables and surfaces clean.**

When preparing or eating meals, tables and kitchen surfaces must be kept clean. First of all, you must cook the food well, using a food thermometer to ensure its doneness. As for most meat, its temperature must be at least 145 Fahrenheit (ca. 63 °C) (meaning 63% Celsius).

#### **2-2-5- Practice safe intimate relationships.**

You must use a condom if you or your partner has a certain disease to avoid sexually transmitted infections.

#### **2-2-6- Do not share personal tools with others.**

When brushing your teeth after eating, you must brush your teeth, use a comb and razor blade for each person, and do not mix in the use of these tools. Refrain from sharing drinking glasses or utensils.

#### **2-2-7- See a doctor when traveling.**

If it is planned to travel outside the country, a doctor must be consulted about vaccines that can be used to avoid infection with diseases such as yellow fever, cholera, hepatitis A or B, or typhoid fever.

### **2-3- Activating methods of preventing infectious diseases:**

- Taking vaccines and inoculations, which are considered a means of protection against many diseases. Which works to significantly reduce people's incidence of many diseases, so all individuals must take and receive the latest medically recommended vaccinations. You must wash your hands with soap and water before and after performing the following tasks:
- Before preparing or eating food.
- After using the bathroom.

- After coughing, sneezing, and nose blowing movements.
- After a clinic or caring for a sick person.
- After feeding and playing with pets.
- You must use tissues for the nose and mouth when sneezing or coughing, or use your elbows when not using tissues.
- Not using toothbrushes, shaving tools, and combs belonging to foreigners and infected people, and not having direct contact with them.
- View homes for ventilation operations.
- The possibility of preventing infections resulting from germs transmitted through food, such as washing all types of meat, fish, vegetables, and fruits with running water, and adding some drops of Javal water before cooking or eating them.
- Stay at home and place of residence for people infected with infectious diseases.
- Taking the necessary vaccinations when traveling to foreign countries, and it is recommended to conduct investigations about the epidemiological situation. Such as viral hepatitis, yellow fever, typhoid, or cholera.
- While traveling to affected areas, avoid going out during times when mosquitoes and flies are most active.

## **2-2- How to practice prevention of infectious diseases.**

- Taking antibiotics and vaccines, and following the vaccinations designated for children, adults, and even pets.
- Use of antibiotics according to pre-prepared programs and plans.
- When traveling outside the national territory, all recognized vaccinations must be taken.
- Avoid people infected with infectious diseases and their carriers.
- When exposed to an animal bite, you must clean the bite site with soap and water and use Javel water, and then go to the nearest health center.

## **2-3- Evaluation of the World Health Organization's programs to prevent infectious diseases.**

The activities undertaken by the World Health Organization to prevent and reduce infectious diseases in order to guide countries and provide advice and guidance with guidance in order to build their policies and programs to prevent and limit the spread of infectious diseases, we find the following:

- Strengthening human resources to prevent, reduce and control infectious diseases in the field of health care.

- Follow ideal policies and strategies regarding taking measures to protect medical staff and health care providers.
- Striving and working to determine monitoring methods and techniques for infectious diseases associated with health care.
- Preparing recommendations regarding best practices for the prevention and control of infectious diseases, related to health care for patients most at risk of hospital infections (World Health Organization 2023).

#### **2-4- Effective ways to devote prevention of the spread of infection.**

In order to fight infectious diseases, the immune system must be strengthened, in order to confront colds, influenza, coughs, etc., especially in light of the spread of epidemics and viruses. Therefore, it is important to take all preventive measures to avoid contracting these diseases ( Haridi 2022). This is according to what was reported by the “On Hilt” website. Below:

- Ways to prevent infectious diseases:

**2-4-1- Apply a balanced diet.** Make sure to eat foods rich in nutrients and stay away from processed meats so that the immune system remains at its best.

#### **2-4-2- Maintaining the immune system with good sleep.**

It helps maintain the strength of the immune system, as the body produces proteins called cytokines during sleep, which help you fight inflammation and diseases.

**2-2-1- Taking the vaccine** We find that medically, vaccines have proven their effective role in combating infectious diseases such as hepatitis A and B, polio, measles, and influenza, but this is linked to consulting a doctor.

**2-2-2- Cleaning and disinfecting surfaces** Keep surfaces and rooms clean, such as kitchens and bathrooms, because they are more susceptible to the transmission of germs and bacteria.

#### **2-2-3- Washing hands.**

Unclean places often carry viruses, because by simply touching these non-sterile and unclean surfaces and tools, such as door handles, faucets, and counters, this can be avoided by repeatedly washing hands with soap and water.

#### **2-2-4- Use hand sanitizer In the absence of soap and water, alcohol-based sanitizer can be used.**

We found that the sanitizer contains at least 60% alcohol. It does not contain methanol.

#### **2-2-5- Do not touch the face.**

There are people who usually touch their faces more than once. One study showed that people touch their faces an average of 23 times an hour. This allows germs to enter through the eyes, nose, or mouth.

#### **2-2-6- Spacing.**

It is necessary to maintain a distance of no less than 6 feet from people outside the home, as this helps prevent any infection from the person opposite you.

#### **2-2-7- Keep personal tools.**

Do not share your personal tools with others, as this may be a source of transmission of infection and germs, especially those that contain saliva, such as toothbrushes and lip gloss, or blood, such as razors and nail clippers.

#### **2-2-8- Use a face mask.**

In order to combat the spread of infectious diseases that are transmitted through several ways, such as the Coronavirus, we find that the Center for Disease Control (CDC) recommends covering your face when you are in public places or near anyone who does not live with you.

#### **Seventh: Coronavirus “Covid-19” infection.**

Until now, the mechanisms behind the main cause of the spread of the “Covid-19” epidemic remain subject to in-depth studies, and this indicates that effective treatment for this virus is still largely unavailable up to the present time. The ideal solution lies in preventing the transmission of infection, and this strategy is effective, until an international laboratory finds an effective antidote to this virus. The virus is also transmitted through the secretion of secretions from the respiratory system in the form of droplet particles (5-10 micrometers), or droplet nuclei (less than 5 micrometers) after coughing, sneezing or speaking movements (Dayan and et al 2023). When inhaling this spray inevitably leads to transmission of infection. In the event that the spread of the Corona pandemic continues, more studies must be conducted to examine the short, medium, and long-term consequences of infection with “Covid-19”. In the meantime, taking strict preventive measures is very important for protection.

### **3- Strategies used to prevent infectious diseases during the Corona “Covid-19” pandemic:**

The spread of so-called infectious diseases, and the resulting measures to address them, are among the most prominent obstacles facing health systems in the world. As for combating infectious diseases, which is among the most prominent steps in implementing the strategy of combating diseases and striving to prevent their spread.

#### **3-1 Medical prescriptions to prevent infectious diseases during the Corona pandemic:**

There are many ways to prevent exposure to infectious diseases, the most important and prominent of which is adherence to personal and public hygiene, and not being physically exposed to anyone infected with the disease.

In addition to healthy nutrition. Among the ways and methods that must be adhered to in order to be protected and not exposed to infectious diseases, we find the following:

##### **3-1-1- Healthy nutrition:**

To eliminate infectious diseases, the immune system must be strengthened, and this can only be done through a healthy, balanced diet program. This nutrition must be rich in nutritious and beneficial elements for the body, while refraining from eating unhealthy foods with preservatives and manufactured substances. Good nutrition habits can help you maintain a healthy weight, which in turn helps support your natural immune system ( Nazi 2023). Get enough sleep:

### **3-1-2- Receiving vaccines:**

Vaccines are among the necessary mechanisms to combat infectious diseases such as hepatitis A and B, polio, measles, whooping cough, and influenza. Therefore, the necessary vaccines must be received according to age groups.

### **3-1-3- Cleaning and disinfection of floors:**

Houses must be completely clean, especially bathrooms, and all corners and areas inside the house that may be susceptible to the spread of germs and bacteria. This is done with known cleaning materials and disinfectants in order to eliminate viruses.

### **3-1-4- Washing hands:**

Infection can be prevented by washing hands with soap and water. Among the tools that can transmit infection are door handles, tables, kitchens, and “plasma” touch screens. And remote controls for electronic devices.

### **3-1-5- Hand disinfection:**

If soap and water are not available, you must use sanitizer since it contains 70% alcohol. But in most cases, you should not rely on sanitizer as an alternative to washing hands. Because it is an exceptional measure until soap and water are available. Because the sanitizer does not kill all types of germs, and it does not have a strong effectiveness if the hands are oily.

### **3-1-6- Try to avoid touching the face:**

Touching the face leads to the entry of germs into the body through the eyes, nose, or mouth. These behaviors give a great reason for the necessity of maintaining hand hygiene. One study showed that people touch their faces at a rate of 23 times per hour.

### **3-1-7- Personal tools:**

Germs and pathogens of infectious diseases are present and accumulate on each person's personal tools. This is through saliva, such as using a toothbrush, or through blood, such as using men's razors, or nail clippers.

### **3-1-8- Cleaning food:**

Food can be cleaned in the following ways:

- Hands must be washed before and after preparing and eating food.
- Wash fruits and vegetables before eating them.
- You must ensure that all foods are cooked to the appropriate temperature.

- After finishing eating meals, leftover food must be placed in the refrigerator.

### **3-1-9- Physical distancing:**

Physical distancing means staying at least 2 meters away from infected people and others who do not live in the same place.

### **3-1-10- Wearing masks:**

In order to prevent infection with airborne infectious diseases such as “Covid-19”, it is necessary to use a mask to cover the face when in public places, or near anyone who does not live with the person in the same house. Also, protective masks can only be worn once for about 4–5 hours. Because some masks with multiple layers prevent up to 70% of infection.

### **2-2- Voluntary and encouraged participation in monitoring protective measures to combat “Covid-19”:**

In order to combat and prevent infectious diseases, the World Health Organization sought to name the new infectious disease “Covid-19”. Since the spread of the virus as a pandemic, this World Health Organization has worked to mobilize international institutions, people, financial resources, and tools to confront “Covid-19” through the following:

- Building relationships and companies in the fields of medical research, science, industry, and volunteer work to combat the spread of this virus.
- Paying attention to medical research and health development.
- Paying attention to countries and societies that do not have the capabilities and measures to combat this epidemic.
- Updating the database of information on infection with the “Covid-19” epidemic. - Community volunteer neglect in nursing operations, by carrying out support operations such as hygiene, wearing masks, and applying social distancing.
- Providing guidance on specific issues such as those related to dealing with wet markets (Swadesh 2023).

### **2-3- Initial advice to prevent infection with Corona “Covid-19”:**

The following points must be followed:

- Commitment to applying physical and social distancing rules.
- Maintaining the specified social distancing distance of “02 metres”.
- Clean hands and wash them with soap and water for at least twenty seconds.
- When soap and water are missing, hands can be disinfected with an alcohol-based sanitizer.
- Wearing masks in public places.
- Avoid shaking hands, approaching, and hugging, and just pointing.
- Refrain from touching the face, especially the eyes, nose, and mouth.

### **2-2- The suffering of the group of people with chronic diseases during the Corona pandemic:**

We find that a certain group of people with chronic diseases, especially the elderly, since the beginning of the spread of the Corona pandemic, have sought and worked to implement health instructions, adhere to physical and social distancing, and wear masks...etc. The health protocol procedures for the “Covid-19” epidemic also affected patient appointments across all health institutions, and led to the suspension of some others. People with chronic diseases who are most vulnerable to infection with the virus are receiving treatment, according to health reports (Gharsa 2022).

#### **2-3- Ensuring the continued provision of necessary health services to people with chronic diseases:**

In order to ensure the continued provision of necessary health services to people with chronic diseases, even during the spread of “Covid-19”. The World Health Organization and some countries have sought to provide health services and the medicine that this category of infected people needs, since the spread of the Covid-19 pandemic. “All we know so far is that people sick with non-communicable diseases are the most vulnerable to the severity of the disease, and many of them do not receive treatment”.

#### **2-4- The impact of the new Coronavirus on patients with chronic diseases is greater than on healthy people:**

Studies have confirmed that the Coronavirus affects patients with chronic diseases more than healthy people, as many of them have special health conditions, and their needs and circumstances may differ in this aspect. Also, the group of people with chronic diseases are not more susceptible to infection with the Coronavirus, but they are more vulnerable to developing complications once they are infected with the virus.

#### **2-5- Strategies taken to care for people with chronic diseases:**

Alternative strategies have been developed to support the most vulnerable people in continuing to access treatment for chronic diseases. About 58% of the world's countries use telemedicine as advice provided via telephone or electronic means as an alternative to face-to-face consultation. In low-income countries, this percentage reached 42%. Screening for prioritization was widely used in two-thirds of reporting countries. What is also encouraging is that 70% of countries reported that they have collected data on the number of Covid-19 patients who also have non-communicable diseases.

Through the policies followed by the Algerian government, this type of disease was controlled and most of them were eliminated through vaccine policies. The country found itself facing a type of disease represented by chronic diseases, and a number of circumstances contributed to their spread (Bin Mansour and Bakay 2020).

#### **2-6- Strategies to combat chronic diseases:**

There are many strategies to combat chronic diseases, including the following:

- Striving to reduce the risk factors that affect people with chronic diseases.

- Commitment to providing and providing primary health care to detect chronic diseases in their early stages.

- Improving the quality of life of infected people, and working to reduce the cost of treatment, especially in the late stages of the disease.

- Working to expand health insurance to include chronic diseases. Therefore, health insurance in developed countries of the world covers chronic diseases to a greater extent and better than poor countries. And developing countries by four times, and this explains the low rates of deaths resulting from these diseases in them and their high rates in poor countries (Al Jazeera website, 2022).

## **2-2- Prevention and control of chronic diseases.**

Among the methods to combat chronic diseases, we must focus on reducing the risk factors associated with them, which are as follows:

- Reducing common risk factors that can be changed.

- Reducing the spread of the effects of chronic diseases on the affected group and society.

- Striving to reduce the risks associated with chronic diseases.

- Promoting interventions aimed at preventing, treating and managing chronic diseases.

- Researching and detecting chronic diseases, examining and treating those infected with them.

- Working to conduct early detection of chronic diseases and treat the affected group before it is too late. Interventions for therapeutic measures for chronic diseases are among the essential matters to achieve the global goal of achieving a relative reduction in the rate of premature deaths resulting from chronic diseases by 25% by 2025 (World Health Organization 2022).

### **- Conclusion:**

Finally, we conclude that chronic diseases remain an epidemiological problem at the global level in general. Especially on Algerian society, as we find that Algeria has not been stingy in addressing it and working to reduce it and its effects, with the cooperation of all sensitive sectors. This will only be achieved by joining forces and unifying the efforts of all concerned, including social workers and doctors. Adopting the principle of prevention is better than cure, and taking related measures as a first and urgent solution. The Algerian health system has done what it has to do, in acceptable and varying proportions, in order to limit and reduce health problems among those suffering from chronic diseases in Algeria, especially during the period of the spread of the Corona “Covid-19” epidemic. In order for us to take measures to reduce the effects of chronic diseases on individuals and the local community, we must adopt a comprehensive strategy that requires the participation of all health and other sectors, including health, financial, transportation, higher education, and planning bodies. There are already measures and methods taken by the health system

in Algeria to combat infectious diseases in Algerian society during the period of the Corona “Covid-19” pandemic. To reduce the spread of infectious diseases that affect humans. Everyone should preserve it, be careful, and take all precautions. This is done by staying away from pathogens, and not being in unclean and polluted places, so that we have a healthy society, enjoy good health, and a healthy life, away from diseases. Therefore, the proposed and planned programs to combat infectious diseases remain among the most important efforts that the health system and concerned parties strive to support, implement and embody on the ground to achieve the desired results.

### **Recommendations:**

From this standpoint, some recommendations can be proposed that guarantee a strategy to prevent the spread of infectious diseases, which are as follows:

- Launching vaccination operations against the spread of infectious diseases within the national vaccination calendar.
- With the embodiment of the communication space represented by advertisements, posters through billboards for hospital institutions, and through the media.
- Organizing additional vaccination days for diseases targeted by the broad vaccination program, “national and semi-national days”.
- Organizing national days for vaccination against infectious diseases, and semi-national days for areas exposed to dangers and neighboring states.
- Establishing regional and reference national laboratories for viruses, such as “Algiers Constantine - Ouargla - Oran - Setif” in order to reduce pressure and speed up the reporting of laboratory results.
- Obligating doctors and specialists to do their part to find a cure for this dangerous virus, in the absence of a treatment or vaccine for this epidemic that has afflicted the entire world and infections and deaths continue to increase recently.
- Holding national seminars and international conferences that include doctors and specialists to study the status of infectious diseases, and the conditions and various aspects of this dangerous virus.
- Participation of civil society organizations in nursing operations, especially through self-support measures such as improving and activating personal hygiene. - Establishing research centers and institutes specializing in the study of infectious diseases to treat emerging cases, and adapting them according to the nature of the disease.
- Performing database updates for general information.

- Activating and dedicating the local and international media in order to carry out their professional and humanitarian role in order to raise awareness of the local and national community.
- Activating strategies and preventive measures in order to preserve the health and safety of citizens.
- Establishing and implementing a national reference laboratory for viruses.
- Working to encourage new partnerships between the fields of medicine and science, and volunteer charitable work to confront viruses.
- Paying attention to the processes of developing scientific research.

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