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**ASSESSMENT OF CLIENTS' KNOWLEDGE CONCERNING
COVID 19 AT PRIMARY HEALTH CARE CENTERS IN
BAGHDAD CITY**

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Çankırı 2022

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COVID 19 AT PRIMARY HEALTH CARE CENTERS IN
BAGHDAD CITY**

BY

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ETHICS STATEMENT

The thesis entitled “Assessment of Clients' Knowledge Concerning COVID 19 at Primary Health Care Centers in Baghdad City” which was prepared and presented as a thesis, was written by myself and in accordance with the scientific, academic rules and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and to me. The research pertaining to the thesis was conducted by myself and therefore, all of the used sentences and interpretations within the work belongs to me.

I declare the aforementioned issues to be correct.

29 July 2022

Ammar Mohammed SABEEH SABEEH

ABSTRACT

ASSESSMENT OF CLIENTS' KNOWLEDGE CONCERNING COVID 19 AT PRIMARY HEALTH CARE CENTERS IN BAGHDAD CITY

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Master of Science in Nursing

Advisor: Asst. Prof. Dr. Yaşar Kemal YAZGAN

July 2022

Background: COVID-19 is a dangerous virus that affects the respiratory system and sometimes leads to death. And it appeared in the Chinese city of Wuhan, and soon infected millions around the world, especially in Iraq. It became necessary to conduct a study on the virus. **Objectives:** This study aims to assess customer knowledge about COVID-19 in primary health care centers and to know the relationship between customer knowledge regarding COVID-19 in primary health care centers. **Method:** The descriptive study was designed using a studied sample of (n = 200) clients. Rusafa Baghdad Health Departments. This sample was distributed to the health departments of Baghdad, Al-Rusafa, and Al-Karkh. The questionnaire includes a total of 16 cognitive items. Data were collected using self-report and questionnaire and analyzed using descriptive and inferential statistical methods. **Results:** Recent results indicate that more (90.5%) of clients have a good level of knowledge. When age is related to their knowledge, gender, education level, marital status, occupation, and economic status are not ranked according to their knowledge. **Conclusions and Recommendations:** The result appeared in the presence of good knowledge of the participants, while the relationship between age and knowledge of the participants was found only. Therefore, we recommend the Ministry of Health invests this knowledge from participants in reducing infection while urging them to get a vaccine. We also recommend researchers study the practical and psychological aspects of COVID-19 and its impact on clients.

2022, pages

Keywords: Clients' Knowledge, COVID 19, Primary Health Care Centers

ÖZET

BAĞDAT ŞEHRİNDE BİRİNCİ BASAMAK SAĞLIK MERKEZLERİNDE COVID 19 İLE İLGİLİ MÜŞTERİ BİLGİLERİNİN DEĞERLENDİRİLMESİ

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Giriş: COVID-19, solunum sistemini etkileyen ve bazen ölüme yol açan tehlikeli bir virüstür. Ve Çin'in Wuhan şehrinde ortaya çıktı ve kısa süre sonra özellikle Irak'ta dünya çapında milyonlarca kişiye bulaştı. Virüsle ilgili bir çalışma yapmak gerekli hale geldi. **Amac:** Bu çalışma, birinci basamak sağlık merkezlerinde müşterilerin COVID-19 hakkındaki bilgilerini değerlendirmeyi ve birinci basamak sağlık merkezlerindeki müşterilerin COVID-19 ile ilgili bilgileri arasındaki ilişkiyi bilmeyi amaçlamaktadır.

Yöntemler: Tanımlayıcı çalışma, üzerinde çalışılan (n = 200) danışan örneği kullanılarak tasarlanmıştır. Rusafa Bağdat Sağlık Müdürlükleri. Bu numune Bağdat, Al-Rusafa ve Al-Karkh sağlık departmanlarına dağıtıldı. Ankette toplam 16 bilişsel madde bulunmaktadır. Veriler, öz bildirim ve anket kullanılarak toplandı ve tanımlayıcı ve çıkarımsal istatistiksel yöntemler kullanılarak analiz edildi. **Bulgular:** Son sonuçlar, danışanların daha fazlasının (%90,5) iyi bir bilgi düzeyine sahip olduğunu göstermektedir. Yaş bilgilerine bağlı olduğunda cinsiyet, eğitim düzeyi, medeni durum, meslek ve ekonomik durum bilgilerine göre sıralanmaz. **Sonuç ve Öneriler:** Sonuç, katılımcıların iyi bilgisinin varlığında ortaya çıkarken, sadece katılımcıların yaşları ile bilgileri arasındaki ilişki bulunmuştur. Bu nedenle, Sağlık Bakanlığı'nın katılımcıları aşı yaptırmaya teşvik ederken bu bilgileri enfeksiyonu azaltmaya yatırım yapmasını tavsiye ediyoruz. Ayrıca araştırmacıların COVID-19'un pratik ve psikolojik yönlerini ve bunun müşteriler üzerindeki etkisini incelemelerini öneriyoruz.

2022,sayfa

Anahtar Kelimeler: Danışanların Bilgisi, COVID 19, Birinci Basamak Sağlık Merkezleri

PREFACE AND ACKNOWLEDGEMENTS

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INDEX OF ABBREVIATIONS AND SYMBOLS

WHO	: World Health Organization
COVID-19	: Coronavirus disease 2019
PHEIC	: Homocysteine Public Health Emergency of International Concern
rRT-PCR	: Real-time reverse transcription polymerase chain reaction
ICU	: Intensive care units
MERS	: Middle East respiratory syndrome
ECMO	: Extracorporeal membrane oxygenation
CDC	: Centers for Disease Control
TMA	: Transcription-mediated amplification
SARS-CoV	: Severe Acute Respiratory Syndrome coronavirus
FDA	: Food and Drug Administration
ICTV	: International Committee on Taxonomy of Viruses

LIST OF ABBREVIATIONS

SD : Standard Deviation.

NS : Non significantly

S : Significantly

HS : Highly significantly

Δ : Delta

Σ : Sigma



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1. INTRODUCTION

2019-nCov is the cause of the SARS epidemic, “which is a rapidly spreading pandemic caused by a novel human coronavirus (SARS-COV-2), also known as 2019-nCov (SARS-COV-2). The disease 2019-nCov is referred to as another name for the disease 2019”. 2019 is referred to as COVID-19, which is an abbreviation for COVID-2019 in some circles (WHO, 2020). In December of this year, a novel strain of COVID-19 was discovered in patients with signs of viral pneumonia in Wuhan, China. This was the first time this strain had been discovered. The strain was given the designation COVID-19. The strain was discovered in patients who were suffering from signs of viral pneumonia (Lu et al., 2020). The Huanan seafood market in Wuhan, China's Hubei region, was found to be linked to the outbreak following an investigation into its causes and scope. Aside from aquatic creatures, various non-aquatic species were also available for purchase at the area prior to the outbreak (Cascella et al, 2020)." Worldwide, more than 2.4 million diseases had been documented as of April 20, 2020, according to the World Health Organization, resulting in an estimated 165,000 deaths, according to the organization. When it comes to both the number of cases and the number of deaths, Europe has been the most badly hit, accounting for more than half of all cases and more than 60 percent of all fatalities. Six hundred ninety-five thousand three hundred fifty-five cases have been documented in the United States of America, with 32,427 deaths reported in that country. According to the Centers for Disease Control and Prevention (CDC), this is the case (WHO, 2020). While Africa has been the most severely hit, with 13,892 cases and 628 deaths, the number of cases and deaths continues to rise in other parts of the world, including the United States. The most recent available data indicates that as of the 20th of April 2020, 55 cases of COVID-19 had been confirmed in Uganda, according to the most recent available data" (WHO, 2020)

It is a type of virus known as a coronavirus that is responsible for the majority of gastrointestinal and respiratory infections. They can be divided into four basic types based on their natural characteristics: Coronaviruses are classified into four types: Gammacoronaviruses, Deltacoronaviruses, Betacoronaviruses, and Alphacoronaviruses (Ge XY, 2017) The first two categories of viruses are mostly responsible for infecting

birds, whereas the last two types are responsible for infecting animals. There are six basic types of human CoVs that have been formally recognized. "There are a number of viruses in this category, including the HCoVHKU1, HCoV-OC43, Middle East Respiratory Syndrome coronavirus (MERS-CoV), Severe Acute Respiratory Syndrome coronavirus (SARS-CoV), which is a type of Betacoronavirus, HCoV229E, and HCoV-NL63, which are members of the Alphacoronavirus." Prior to 2003's SARS pandemic, coronaviruses were not considered a major cause of concern. Hung (2003)

Based on the individual, the illness is defined by a wide range of symptoms that reveal itself between 2 and 14 days after the virus is first introduced to their body, depending on their health. Despite the fact that 97.5 percent of patients suffer symptoms within 11–12 days of infection (the vast majority of people do not), the great majority of patients do not exhibit any signs or symptoms throughout this time. While some people may have symptoms ranging from mild to severe when they are infected with the virus, others may experience no indications or symptoms at all when they are infected with it (Gandh et al., 2020). Most recent study indicates that the virus is transmitted via droplet transmission as well as fecal-oral transmission (Hindson, 2020).

High fever and coughing, as well as dyspnea, myalgia, and fatigue, are all prominent symptoms of dengue fever, with fever being the most prevalent symptom. Anorexia, nausea, and diarrhea are some of the other symptoms (Wang et al., 2019). The presence of high nasopharyngeal viral levels in patients who have been infected by the virus for around one week (Lescure, 2020), which occurs immediately before or shortly after the start of symptoms, has also been documented." The fact that pre-symptomatic and asymptomatic individuals are contagious makes preventing the transmission of the SARS-CoV-2 virus and, as a result, the COVID-19 disease one of the most difficult difficulties in the fight against the virus's spread, according to experts. People who are asymptomatic or presymptomatic are responsible for 40 percent to 50 percent of all cases, according to the Centers for Disease Control and Prevention (CDC)" (Loku et al., 2020).

Acute respiratory distress syndrome (ARDS), septic shock, as well as various metabolic and hemostasis issues, as well as death, are all possible risks of the procedure (Chen et al., 2020)

"According to the findings of the study, those over the age of 65, as well as those with underlying medical conditions such as diabetes and cancer, as well as hypertension and heart, lung, and kidney disease, were more likely to die or suffer from serious illnesses such as acute respiratory distress syndrome (ARDS), which is a life-threatening respiratory illness (ARDS)". After conducting a thorough analysis of COVID-19 patients, it was determined that those suffering from hypertension, diabetes, cardiovascular illness, and respiratory system disease were at the greatest risk of developing the condition." If individuals with chronic obstructive pulmonary disease (COPD) are compared to the general population, they have a five-fold increased risk of developing a severe COVID-19 infection, the researchers discovered." Yang and his associates have been arrested (Yang et al., 2020).

Coughing and sneezing should be covered in order to protect others, and if one follows the recommended rules, one should avoid touching one's mouth, nose, or eyes with one's hands. Hand washing with soap or the use of an alcohol-based hand sanitizer on a regular basis can assist to prevent the spread of illnesses on the hands. The World Health Organization (WHO) is a non-governmental organization that promotes health worldwide (World Health Organization, 2020)

"It is expected that the vast majority of persons who become unwell as a result of COVID-19 will be able to recuperate at home for the foreseeable future, according to the organization. The same actions that you take to feel better when you have the flu — getting enough rest, staying hydrated, taking medications to reduce fever and aches and pains — are also beneficial when you have COVID-19. Get plenty of rest, stay hydrated, and take medications to decrease fever and aches and pains. In addition, the Food and Drug Administration (FDA) has approved drugs that can be used to treat people who have been hospitalized with COVID-19, according to their guidelines. A number of medications have been licensed by the Food and Drug Administration (FDA)

to reduce the progression of COVID-19 in people who are not hospitalized but are at danger of developing a life-threatening disease." The scientific community is continuing to put up significant effort in the pursuit of the development of new and effective medications. Brunilda is a woman who lives in Brazil (Brunilda, 2021)

"According to the World Health Organization (WHO), a Public Health Emergency of International Concern (PHEIC) has been declared in response to the outbreak of the Coronavirus, which is projected to spread to the rest of the world by the 11th of March 2020. Internationally) and a country with a high population density (1,169 inhabitants per square kilometer)". Manage such a large population, especially in the event of a disease outbreak such as influenza, is extremely difficult. 330 people have been infected with MERS-CoV by April 9, 2020, resulting in seventeen deaths. The first MERS-CoV infection was found on March 7, 2020, and by April 9, 2020, 330 people had been infected with the virus. Apart from a few emergency services personnel who have been told to remain at home in order to avoid contact with the general public, the Iraqi government has imposed statewide closures. Those who are affected or suspected of being infected have been isolated and cared for while public transportation has been suspended," public areas have been closed, and communities have been closely monitored. According to the KAP theory (Ajilore et al., 2012). It is vital for the long-term success of these control measures that citizens are committed to them, which is generally influenced by their comprehension (KAP) of COVID-19". It appears, based on past research and lessons acquired from the global pandemic, that awareness of infectious diseases is connected with levels of sentiment in the general public, which can hamper efforts to control the disease's spread even more (Person et al., 2004).

When it comes to understanding civilian awareness of COVID-19 in Iraq, there is an urgent need to do so in the context of the country's complex political environment. In this study, an online survey was used to gather information about the appearance of COVID-19 (KAP) within the Bangladeshi community, as well as the risks associated with it (Zhu et al., 2020)

"According to the Food and Drug Administration (FDA), two monoclonal antibody medicines will be awarded emergency use authorizations throughout the month of November 2020, according to the agency. Now approved treatments for this problem include a combination of basiliximab and imdevimab (made by Regeneron) and bamlanivimab (manufactured by Eli Lilly), which are two of the most successful combinations currently available." It has been determined that both therapies are appropriate for use in adults and children over the age of 12 who do not require hospitalization but who are experiencing mild to moderate COVID-19 symptoms and who are at risk of developing severe COVID-19 symptoms or being admitted to the hospital as a result of their symptoms. Patients who receive the approved therapies are less likely to require hospitalization or to attend the emergency room, which is a positive development in the field of healthcare.

It is essential that these medications are taken intravenously as soon as possible after the onset of symptoms (through IV).

"If you are recuperating at home, the following measures may be beneficial in reducing symptoms:

- Even though you are not required to remain in bed, you should get enough rest.
- Drink plenty of fluids.
- Acetaminophen can be used to lower fever and alleviate aches and pains. Make certain you adhere to the instructions. When using a combination cold or flu drug, keep track of all the substances and doses that you are taking at any given time. The total daily dose of acetaminophen from all products should not exceed 3,000 mg in the case of this medication" (WHO, 2020)

1.1. Significance of the study

"The primary objectives of this study were to determine whether participants had a satisfactory level of knowledge about COVID-19, to identify sociodemographic factors associated with having a satisfactory level of knowledge, and to determine whether participants were aware of or engaged in health behaviors related to the prevention of Coronavirus infection". The secondary objectives of this study were to determine whether participants had a satisfactory level of knowledge about COVID-19, to identify sociodemographic factors associated with having a satisfactory level of knowledge, and to determine whether participants were aware of or engaged in

A broad category of viruses," coroviruses infect humans and cause a wide range of diseases, ranging from a mild cold to a severe acute respiratory syndrome (ARDS) (SARS). Coronaviruses are a type of virus that can infect humans and cause a variety of health problems as a result of the infection. Coronaviruses are spread through the air and on surfaces. Coronaviruses are distributed through the air and on surfaces, and they are contagious".

Furthermore, viruses belonging to this group are responsible for a number of animal ailments (World Health Organization, 2020).

Coronavirus, which causes respiratory illness in the Middle East, is a virus that causes the respiratory syndrome.

This particular strain of coronavirus has never been previously discovered in people before this outbreak occurred. Despite the vast number of recorded cases, there is a paucity of knowledge accessible about the virus's transmission, severity, and clinical impact. As a result of the paucity of available information, The virus spread from the Chinese city of Wuhan in large and terrifying numbers, reaching a quarter of a million in the first instance, then spread to all continents, increasing the proportions, in the beginning, spreading in the countries of America, Italy, and Iran, after which it spread

throughout the world, reaching 261 million cases, with two-thirds of them recovering, or 74.5 million, and 5,19 million dying, a relative increase in numbers until it reached 131 million cases, with two-thirds of them recovering,

On March 17, 2020, the city of Najaf was declared the epicenter of the epidemic in Iraq, and the virus quickly spread throughout the population, reaching an estimated 2.08 million cases today, with 1,750 million cases in a condition of recovery and 24,000 deaths, according to official figures. Because of the high prevalence of the Coronavirus in my country and throughout the world, I want to conduct an important study about clients' knowledge of Covid 19 in Iraq (Baghdad), because the disease can be controlled once a high percentage of the population is aware of the signs and symptoms of the disease. The patient will benefit from having sufficient information about their sickness because it will speed up treatment, prevent the spread of infection to others, and provide prevention. Therefore, it is important to measure consumers' knowledge of the disease. Visitors to primary health care centers are extremely valuable and beneficial (Hu, 2021)

1.2. Objectives of the study

- "To assess the clients' knowledge concerning COVID 19 at primary health care centers".
- To find out the association between clients' knowledge concerning COVID 19 at primary health care centers and their demographic characteristics.

1.3. Hypothesis

There is no association between clients' knowledge concerning COVID 19 at primary health care centers and their demographic characteristics.

1.4. Limitation

- Difficulty in navigating to collect information from clients in light of the spread of the virus.
- "The difficulty of obtaining ordinary people who are not infected with the virus in order to obtain information from it."
- The difficulty of convincing some clients, especially the elderly, to conduct a sample and take information for the thesis

2. GENERAL INFORMATION

2.1. Background coronavirus disease 2019 (COVID-19)

"Acute respiratory distress syndrome (ARDS) is a medical illness that happens when the body's respiratory system gets overworked. It is caused by a variety of factors. Coronavirus 2 (COVID), also known as the coronavirus and the severe acute respiratory syndrome coronavirus 2, is an infectious disease caused by the coronavirus that causes the severe acute respiratory syndrome. Coronavirus 2 (COVID) is also known as the coronavirus and the severe acute respiratory syndrome coronavirus 2". Coronavirus 2 is also referred to as the coronavirus and the coronavirus associated with severe acute respiratory syndrome. (SARS-CoV-2), In "December of this year, experts in the Chinese city of Wuhan reported discovering the first known case of the illness, which they believe occurred in December of last year. A consequence of this is that the disease has spread over the world, resulting in a global pandemic that is still ongoing today" (Zimmer, 2021)

Coughing, weariness, breathing difficulties, and loss of smell and taste are some of the symptoms associated with COVID-19 infection. These symptoms might manifest themselves in any combination and can linger for many days or longer. COVID-19, according to current thinking, is transferred through the air." Once infected with the virus, symptoms may occur anywhere between one and fourteen days after the virus has been infected with the host. According to the Centers for Disease Control and Prevention, it is estimated that at least one-third of persons who are infected do not exhibit any symptoms of sickness. Among those who develop symptoms obvious enough to be classified as patients, one hundred and eighty-one percent have mild to moderate symptoms (up to mild pneumonia), fourteen percent have severe symptoms (including dyspnea, hypoxia, and more than 50 percent lung involvement on imaging), and five percent have critical symptoms (which include death) (respiratory failure, shock, or multiorgan failure)".

A higher proportion of people over the age of 65 are at risk of experiencing severe symptoms. People who have experienced a variety of symptoms (long COVID) for months after they have recovered have been reported to have suffered organ damage in some cases. Studies spanning several years are currently being done to gain a better understanding of the condition's long-term implications (CDC, 2020).

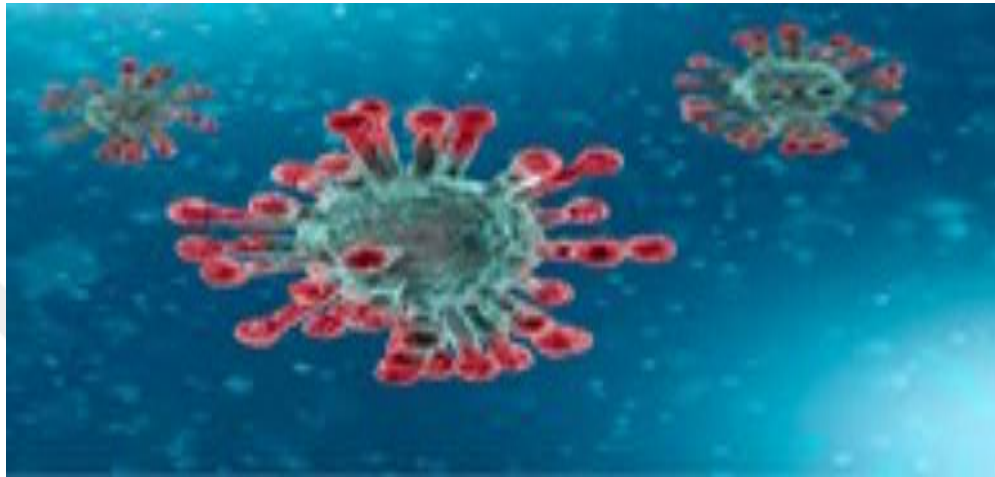


Figure 2.1 Coronavirus disease 2019 (Zimmer, 2021).

As a result of individuals inhaling air that has been polluted by droplets and minute airborne particles that contain the virus, COVID-19 spreads throughout the environment, killing those who are exposed to it. Individuals who are in close proximity to one another are more at danger of inhaling these compounds," but they can also be inhaled over longer distances, which is particularly true when people are in close quarters with one another". If a person's eyes, nose, or mouth are exposed to contaminated fluids, they can contract the infection by touching contaminated surfaces following the exposure. The spread of infected fluids can also occur by the direct contact of infected fluids with the eyes, nose, or mouth of a person. A transmission of the virus can also occur as a result of coming into contact with contaminated surfaces. It is possible to be contagious for up to 20 days after a person contracts the virus, and they can transfer the infection even if they are not sick themselves (CDC, 2020).

There have been a range of different diagnostic approaches created to aid in the diagnosis of the disease." A real-time reverse transcription polymerase chain reaction

(RT-PCR), transcription-mediated amplification (TMA), or reverse transcription loop-mediated isothermal amplification are all methods that can be used to detect the virus' nucleic acid in order to diagnose the infection" (RT-LAMP). An extensive range of COVID-19 vaccines has been approved and is now being distributed in a number of countries, with a number of them having launched significant immunization efforts against the virus. Physical or social separations, quarantines, ventilation of indoor spaces, cough and sneeze prevention, handwashing, and keeping filthy hands away from the face are just a few of the additional precautions that can be implemented. It has been recommended that people wear face masks or other protective covers throughout their visit to public places in order to reduce the likelihood of virus transmission in these settings. At this moment, the primary treatment is symptomatic in nature, while efforts are being made to create medications that will prevent the virus from replicating itself. A patient's overall management strategy for schizophrenia includes symptom management, supportive care, isolation, and use of experimental techniques, all of which are components of a patient's overall management strategy (NPR, 2020).

For much of the original outbreak in Wuhan, the virus was referred to as a "coronavirus" and a "Wuhan coronavirus," and for much of the initial outbreak, the illness was referred to as "Wuhan pneumonia." Past and present history has seen a number of diseases named after specific geographical locations, and this is still the case today. Examples include the Spanish influenza virus," Middle East respiratory sickness (also known as Middle East respiratory syndrome), and the Zika virus, all of which are named after geographical locations. For the purpose of complying with international guidelines prohibiting the use of geographical locations (e.g. Wuhan, China), animal species, or groups of people in the names of diseases and viruses, the World Health Organization has recommended the interim names 2019-nCoV and 2019-nCoV acute respiratory disease as names for the virus and disease, respectively, for the virus and disease. As a result of the 2015 advise and worldwide rules banning the use of geographical locations, animal species, or groups of people in disease and viral names, this recommendation was made. It is possible that the decision to do so was inspired in part by the wish to avoid societal stigmatization. According to a news release, the World Health Organization (WHO) declared COVID-19 and SARS-CoV-2 as pandemic

viruses on February 11, 2020, officially designating them as such. The corona is represented by CO, the virus is represented by VI, the disease is represented by D, and the year 2019 is represented by 19. Tedros Adhanom and colleagues (the year in which the outbreak was first identified)"

"World Health Organization public communications also use the terms "COVID-19 virus" and "the virus responsible for COVID-19," which are both scientific designations that refer to the same virus but are used to refer to it in different ways (WHO, 2020).

2.2. Anatomy of COVID-19

The unique virus was initially labeled as 2019-nCoV (2019 Novel Co-infection Virus)." The virus was subsequently designated SARS-CoV-2 by specialists from the International Committee on Taxonomy of Viruses" (ICTV) when it was confirmed to be genetically identical to the virus that was responsible for the SARS outbreak (SARS-CoVs).

Clostridium difficile (CoV) has emerged as the most significant bacterial pathogen associated with the increase in respiratory infections in recent years." It is believed that CoVs are a vast family of singlestranded RNA viruses (+ssRNA) that have been isolated from a number of animal species and have also been discovered in a variety of other animal species. Their presence in the body has the potential to induce illnesses ranging from the common cold to more serious infections such as MERS and SARS, among others. Both MERS-CoV and SARS-CoV are believed to have originated in bats and subsequently spread to other mammalian hosts, such as the Himalayan palm civet for SARS-CoV and the dromedary camel for MERS-CoV, before eventually infecting and infecting humans" (Khaykelson et al., 2020).

2.3. Epidemiology Of COVID-19

When discovering a new infectious disease in partnership with other scientists in order to establish the reasons for the spread of disease, it is vital to perform certain responsibilities. For the first time, epidemiologists were present at the virus observation location, which was a first for the field (Wuhan, China) Afterwards, they looked into the causes of the outbreak, the control of the disease, and the follow-up of the disease (including new cases, hospitalizations, and deaths, demographic information (including symptoms, age and gender, race/ethnicity, and treatment procedures), among other things. In addition, they conducted clinical investigations (which included information from antibody testing, risk factors for severe sickness, and effective medical therapies) to supplement their research. Finally, it takes the required steps to slow the spread of the disease (such as supporting and assisting persons in high-risk groups such as health care professionals or the elderly to remain safe in places such as grocery stores, their homes, or schools). The study provides a summary of the numerous epidemiological statistics connected with seasonal influenza, SARS, MERS, and COVID-19 outbreaks, as well as other infectious diseases. According to clinical study, COVID-19 is toxic to people of all ages and at all stages of life. It should be emphasized that people who are symptomatic as well as those who are asymptomatic might spread the disease. It has been demonstrated in studies that the viral load does not differ considerably between symptomatic and asymptomatic people (Zou and Ruan, 2020).

Drops infected with the SARS-CoV-2 virus have the potential to spread up to one to two meters and can remain on surfaces for several days in good weather conditions. Despite this, it is swiftly destroyed when exposed to standard disinfectants such as sodium hypochlorite, hydrogen peroxide, and other similar substances. According to a study on other COVID-19 characteristics, the disease's sensitivity in humans is determined by their age, physical health, and biological characteristics.. According to statistics, the majority of adult patients are between the ages of 35 and 55, with infants and children being a smaller proportion of the population. A higher risk and greater likelihood of exposure to the virus exist among people with weakened immune systems, such as the elderly (with an average age of 60 years and older), those suffering from

kidney and liver dysfunction and hypertension, as well as heart patients, smokers, pregnant women, and people with disabilities. The potential for epidemics among humans is currently very high; in other words, persons of any age can become infected with the coronavirus illness. The average mortality rate associated with the diseases was higher in older people than it was in younger people. The authors (Lai and Shih, 2020) describe a formalized formalized formalized formalized formalized formalized formalized (Lai and Shih, 2020)

2.4. Symptoms of COVID-19

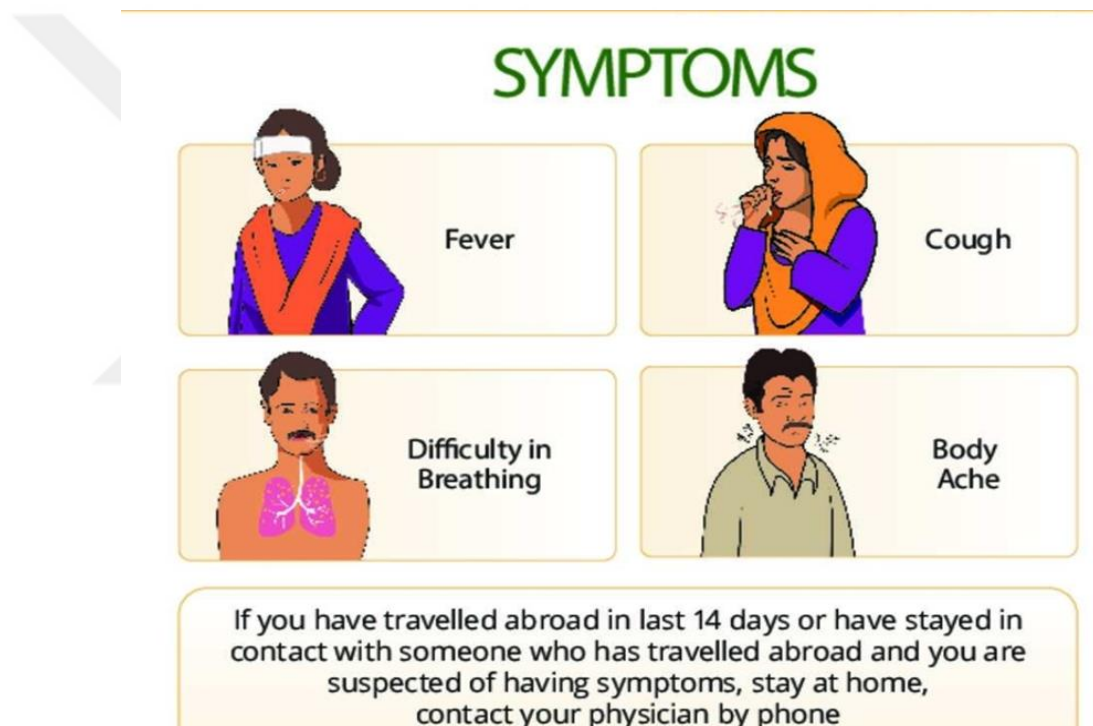


Figure 2.2 Symptoms of COVID-19 (WHO, 2020)

"It is not known what causes the symptoms of COVID-19, however they can range from mild to severe sickness in certain individuals". In addition to headaches and loss of smell and taste, coughing, muscle soreness, a sore throat and fever are also frequent symptoms. Other symptoms include nausea and vomiting, diarrhea, and respiratory issues. The same virus can cause a variety of symptoms in different people, and the symptoms can change as the infection progresses. Infected individuals who have the same virus may suffer a variety of symptom manifestations. Symptoms have been

classified into three categories based on their severity. The presence of three respiratory symptom clusters, including coughing, sputum production," shortness of breath, and fever; one musculoskeletal symptom cluster, including muscle and joint pain, headache, and fatigue; and one digestive symptom cluster, including nausea, vomiting, and diarrhea, is a commonality among the symptoms. People who have never had any ear, nose, or throat illnesses in the past are more likely to develop COVID-19", which is associated with a loss of taste that is accompanied by a loss of smell (Niazkar, 2020)

When it comes to developing symptoms," the vast majority of those who do so develop only mild to moderate symptoms (up to mild pneumonia), but 14% of those who do so have severe symptoms (dyspnea, hypoxia, or more than 50% lung involvement on imaging), and 5% acquire critical symptoms (death) (respiratory failure, shock, or multiorgan dysfunction)". According to current estimations," a minimum of one-third of those infected with the virus will never show any signs or symptoms of sickness at any point in time". In addition to being less likely to get tested, these asymptomatic carriers have the potential to infect others in the community with the disease. The virus can be transmitted to others by contact with infected individuals who will acquire symptoms later on, which is referred to as "pre-symptomatic," or will only have very little symptoms, and they will be able to transfer the virus to others (Furukawa et al., 2020) Unlike other illnesses, the time between when a person becomes infected and when they exhibit the first signs of infection is usually significantly longer in the case of HIV. COVID-19 is expected to arrive in the United States in four to five days on average, depending on your location. The vast majority of symptomatic persons will exhibit symptoms after being exposed for two to seven days, and almost all of them will suffer at least one symptom within 12 days of being exposed (Gandhi et al., 2020)

The vast majority of patients will be able to recover entirely from their illness while it is still in its acute stage. In chronic COVID, a high proportion of home-isolated young patients suffer from a variety of side effects that last for months after they have healed, including tiredness and other symptoms of exhaustion. Individuals with this condition have also been shown to suffer organ damage over an extended period of time. A number of years will be spent conducting the current research in order to obtain a better

grasp of the disease's long-term ramifications for those who take part in it." Following a recent report from the Centers for Disease Control and Prevention, it is predicted that the number of cases of hepatitis C would increase in the year" 2020. (CDC).

2.5. Cause

Covivirus 19 "(COVID-19) is caused by infection with the coronavirus 2 (SARS-CoV-2) virus strain, which has been linked to severe acute respiratory syndrome (Hu et al., 2021)".

2.6. Transmission

COVID-19 is distributed through the respiratory system, which is why larger droplets and aerosols are used in its dissemination. A majority of cases of the disease are acquired through the respiratory route," with individuals inhaling droplets and minute airborne particles (which combine to form an aerosol) that are released by infected individuals while they breathe or talk, cough, sneeze or sing, and then passing the aerosol on to themselves or others. People who are infected with COVID-19 who are in close physical proximity to one another are more prone to spread the virus among themselves". However, infection, particularly within the body, has the ability to spread over longer distances than disease (Miller et al., 2021).

"In accordance with the Centers for Disease Control and Prevention, individuals are at their most contagious shortly before and during the development of symptoms". "According to the Centers for Disease Control and Prevention, infectivity can begin as early as three days before symptoms manifest, and persons are at their most infectious right before and during the onset of symptoms. Despite the fact that the infection rate decreases dramatically after the first week", individuals who are infected may stay contagious for up to 20 days after becoming infected. It is possible for people to transfer sickness even if they are not experiencing any symptoms of illness themselves (CDAN, 2021).



Figure 2.3 : Transmission (CDAN, 2021).

Particles of varied sizes," ranging from small aerosols that remain suspended in the air for extended periods of time to bigger droplets that either remain airborne or fall to the ground, are all instances of virus-carrying particles of varying sizes". Aerosols are the most common type of infectious particle found in the environment, accounting for approximately 80% of all infectious particles. The phrases "airborne" and "droplet" are commonly used by a wide range of organizations in both technical and popular contexts, which can lead to confusion in the field of medicine and science. In addition," the COVID-19 study has completely rewritten the conventional understanding of how respiratory viruses spread". Small droplets of respiratory fluid can be inhaled or land on mucous membranes in the eyes, nose, or mouth, allowing them to infect those who are exposed to them. Small droplets of respiratory fluid can infect those who are exposed to them. Small droplets of respiratory fluid have the potential to infect anyone who come into contact with them. When people are physically close to one another, the concentration of aerosols is at its peak, making it simpler for viruses to spread when people are physically close together. Transmission by airborne mechanisms, on the other hand, has the potential to spread over wider distances, particularly in poorly ventilated environments. Because of these conditions, little particles can float around in the air for a period of few minutes to many hours, depending on how large they are (CDC, 2020).

"The number of people infected by a single sick person varies from person to person, according to the individual". because just 10 to 20% of the population is directly responsible for the disease's transmission, A single index case or a specific geographic region is usually responsible for a cluster of infections, indicating that the virus is spreading throughout the community. It is normal in these types of situations for superspreading events to occur, where a large number of people become infected by a single individual; nevertheless, these events are potentially fatal (Meyerowitz et al., 2021).

2.7. Virology

"The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as the severe acute respiratory syndrome coronavirus 2, is a coronavirus that causes the severe acute respiratory syndrome. It is the second coronavirus to be connected to the severe acute respiratory syndrome. It was detected in three people who were suffering from pneumonia for the first time, and they were later linked to a cluster of cases of acute respiratory illness in the Chinese city of Wuhan, where they were discovered". A total of three people who had been exposed to the virus were later identified, and the virus was isolated from one of these individuals. Because there are several closely related coronaviruses in nature that have all of the structural characteristics of the unique SARS-CoV-2 virus particle, it is reasonable to conclude that the viral particle is not a completely novel entity (Andersen et al., 2020).

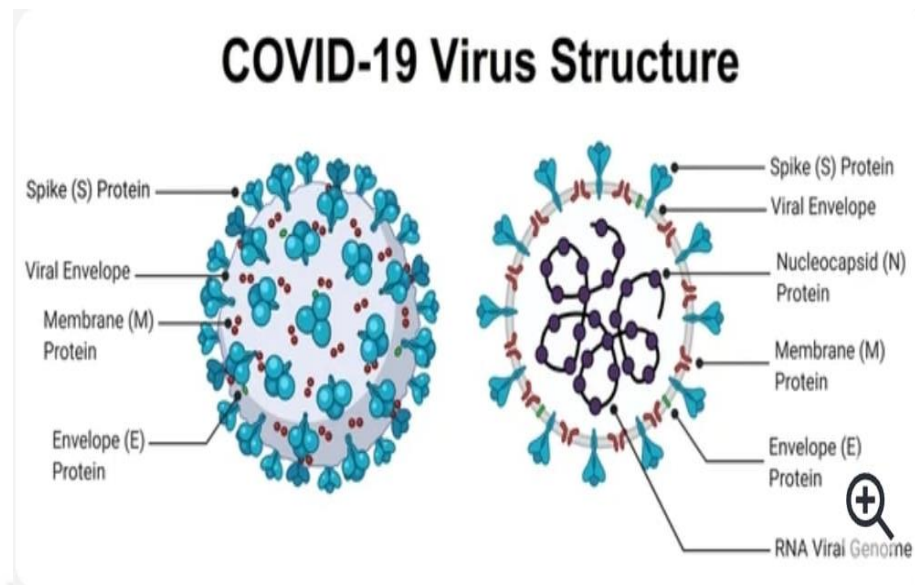


Figure 2.4 Virology (Andersen et al., 2020).

"SARS-CoV-2 is a virus that is genetically similar to the original SARS-CoV in terms of its replication patterns".

According to the latest information, the virus is believed to have originated from a zoonotic (animal-borne) source." As a result of a genomic analysis, scientists discovered that the coronavirus genetically clusters with the genus Betacoronavirus, in the subgenus Sarbecovirus (lineage B), as well as with two bat-derived varieties." When compared to other bat coronavirus isolates at the full genome level, it is shown to be 96 percent identical to them. (BatCov RaTG13 / BatCov)" The structural proteins discovered in the SARS-CoV-2 virus are listed in the following section. Among the proteins involved are the membrane glycoprotein (M), the envelope protein (E), the nucleocapsid protein (N), and the spike protein (SP) (S). SARS-M CoV-2's protein has been assessed to have around 98% similarity to bat SARS-CoV, approximately 98% similarity to pangolin SARS-CoV, and approximately 90% similarity to the M protein of SARS-CoV; however, it only has approximately 38% similarity to the M protein of MERS-CoV. The M protein is structurally similar to the sugar transporter SemiSWEET, which is similar to the M protein in terms of overall structure" (Thomas, 2020).

There are various strains of the SARS-CoV-2 virus, the most prevalent of which are as follows: It has been found that there are tens of thousands of different SARS-CoV-2 variations, which have been classified into clades and lineages for further investigation." With the help of partners, expert networks, national authorities, institutions, and academics, the World Health Organization (WHO) has developed a number of nomenclature systems for naming and tracking SARS-CoV-2 genetic lineages. Among other systems, the WHO has developed a number of nomenclature systems for naming and tracking SARS-CoV-2 genetic lineages". The GISAID, Nextstrain, and Pango systems are some of the systems that fall under this classification. In accordance with the current guidelines of an expert panel organized by the World Health Organization (WHO), variants represented by letters from the Greek alphabet, such as the Greek letters Alpha, Beta, Delta, and Gamma, should be classified as such.

In the words of the group, the justification for this recommendation is that they "will be easier and more practical to debate by non-scientific audiences" because they are "less technical and more practical," and thus "less technical and more practical." In terms of cladistic categorization," Nextstrain separates the variants into five clades (19A through 19B, 20A through 20B, and 20C), whereas GISAID divides them into seven clades (A through C) based on their amino acid sequences (L, O, V, S, G, GH, and GR). According to the Pango tool, mutations are grouped into lineages, with many of the circulating lineages belonging to the B.1 lineage, which is the most prevalent of the mutation types" (Alm et al., 2020).

There will be a significant number of major mutations in SARS-CoV-2 at some point during the year 2020.

It is important to offer a citation for this statement.] Cluster 5 is a group of minks and mink farmers from Denmark that have banded together to create a cohesive voice for the industry. Because of the implementation of rigorous quarantines and the implementation of a comprehensive mink extermination campaign, it is now deemed to have been fully eliminated from the area. It is critical to have a doctor referral before proceeding with the procedure." The Alpha Variant (formerly known as the United

Kingdom Variant and officially referred to as B.1.1.7), which was discovered in London and Kent in 2003, is one of four dominant SARS-Co variants. The other three are the Beta Variant (formerly known as the South Africa Variant and officially referred to as B.1.351), the Gamma Variant (formerly known as the Brazil Variant and officially referred to as P.1), and the Delta Variant (formerly known as the Philippines Variant and officially (formerly called the India Variant and officially referred to as B.1.617.2). Together with data from other studies, the findings of this study support the hypothesis, which has been previously established, that the Alpha variant VUI-202012/01 (the original variant under investigation in December 2020) of the B.1.1.7 lineage transmitting more easily than some other strains is consistent with this hypothesis. The year 2020 is a leap year" (Mahasse and colleagues, 2020)

2.8. Pathophysiology

When viruses infect a person's body," they can infect a wide variety of cells and organ systems. Viruses such as the SARS-CoV-2 virus are particularly dangerous because they have the capacity to infect a large range of cells and organ systems. When it comes to viruses, viruses such as the SARS-CoV-2 virus are particularly hazardous because of their capacity to spread quickly". SARS-CoV-2 is a coronavirus that infects the respiratory tract and produces severe sickness in susceptible individuals. COVID-19 symptoms include infections of the upper respiratory system (sinuses, nose, and throat)," as well as infections of the lower respiratory tract. Infections of the lower respiratory tract are among the most prevalent COVID-19 symptoms (windpipe and lungs) Because of "the virus's ability to enter host cells through the receptor for the enzyme angiotensin-converting enzyme 2 (ACE2), which is found in the greatest abundance on the surface of type II alveolar cells in the lungs, the lungs have been among the organs that have been most severely affected by COVID-19. COVID-19 is a herpes simplex virus that has been identified in the United States. It has been established that COVID-19 is associated with a variety of disorders, including lung cancer. According to the test subjects", COVID-19 has caused substantial lung damage to them. As a result of the employment of an unique glycoprotein known as a "spike" produced by the virus and used to connect to the ACE2 receptor on the surface of the

host cell, the virus is able to bind to the receptor and replicate within the host cell (Letko et al., 2020)

It is made up of the following organs: bronchi, trachea, and bronchioles, which are all connected by bronchioles. As a result of COVID-19 entering the body, infection of the ciliated epithelium of the nasopharynx and upper airways develops. It is this that leads to inflammation and infection of the ciliated epithelium.

It is believed that a lack in smell is produced by an infection of the olfactory epithelium's support cells, which is caused by a deficiency in smell caused by an infection of the olfactory neurons, which are harmed as a result of the infection. COVID-19 has been described as engaging both the central and peripheral nervous systems in various medical journals, which has been demonstrated in clinical trials. COVID-19 is related with a substantial proportion of people who suffer from neurological or mental health problems, which is undoubtedly true in the vast majority of cases, according to the research. A large majority of COVID-19 patients who suffer from neurological diseases have no evidence of the virus in their central nervous system (CNS)," according to the data collected so far. A low level of SARS-CoV-2 has been identified in the brains of patients who have died as a result of COVID-19, according to the Centers for Disease Control and Prevention (CDC). These findings, on the other hand, need to be confirmed. A mystery persists about the specific process by which viruses enter the central nervous system (CNS), despite the fact that viruses have been discovered in autopsy cerebrospinal fluid. ACE2 levels in the brain are low, which means it's more likely that a virus infecting the lungs enters the bloodstream and crosses the blood-brain barrier to gain access to the central nervous system, maybe through an infected white blood cell, to cause the symptoms of encephalitis" (Pezzini et al., 2020).

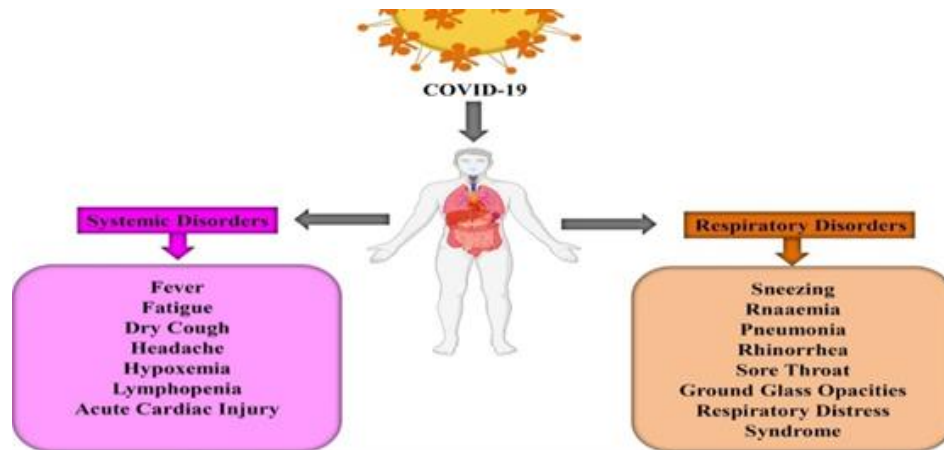


Figure 2.5 Pathophysiology of COVID-19 (Pezzini et al., 2020).

"In glandular cells of the gastric, duodenal, and rectal epithelium, as well as in endothelial cells and enterocytes of the small intestine, there is a significant concentration of the virus's ACE2 protein. These findings show that the virus has an effect on this system. It is expected that Mönkemüller and colleagues (Mönkemüller and colleagues, 2020) will discuss their findings at a conference in the year 2020".

Among the organs and systems that make up the cardiovascular system are the following: Additionally, the virus has the potential to induce acute myocardial infarction (heart attack) in addition to short- and long-term cardiovascular system harm (heart attack). An emergency department in Wuhan, China, discovered that patients with severe sickness had acute cardiac damage. It was discovered that 12 percent of infected people brought to the institution had this condition as well. In this population, the prevalence of cardiovascular symptoms is exceedingly high as a result of the systemic inflammatory response and immune system abnormalities that develop as the disease progresses. An increase in the number of ACE2 receptors in the heart, on the other hand, may also be related with acute myocardial injury, which may explain why the risk of cardiovascular symptoms is so high in people with the condition. The heart includes a high concentration of ACE2 receptors, which are predicted to play a critical role in the regulation of cardiac function and performance. In patients hospitalized to intensive care units (ICUs) with COVID-19 infections, researchers found a significant prevalence of thrombosis and venous thromboembolism, which they believe may be associated with a

poor prognosis in these patients, according to the findings. Blood artery dysfunction and clot formation, it is believed, play a crucial role in the development of cardiovascular disease (as evidenced by greater D-dimer levels caused by blood clots). Individuals who have been exposed to the SARS-CoV-2 virus have experienced an increased incidence of blood clots that can cause pulmonary embolisms and ischemic events inside the brain; both of these have been associated with the death of those who have been exposed to the virus. As a response to infection, the body's blood vessels appear to tighten; new research has proposed that restricting the pulmonary circulation is one way by which oxygenation diminishes concomitant with the presentation of viral pneumonia." Despite the absence of SARS-CoV-2 in the brains and olfactory bulbs of patients who died from COVID-19, a small number of tissue samples from the brains of patients who died from COVID-19 were found to have microvascular (arterioles and capillaries) blood vessel damage, according to the findings.

According to Kubánková et al. 2021, it has also been established that the COVID-19 virus can induce significant changes in blood cell morphology and mechanical characteristics – such as larger sizes – that can last for months after the patient has been discharged from the hospital."

2.9. Diagnosis

After a provisional COVID-19 diagnosis has been made", it is possible to confirm the diagnosis using symptoms by performing a reverse transcription polymerase chain reaction (RT-PCR) or other nucleic acid tests on secretions obtained from infected individuals after the provisional diagnosis has been confirmed. Patients with a high clinical suspicion of COVID-19 infection may benefit from chest CT scans, which can be used in concert with laboratory tests to help diagnose their illness. It is possible to discover whether or not a past infection has been present in a patient's system using infection tests, which look for antibodies produced by the body as a response to an infection" (Li ,et al., 2020)

"The National Institute of Health is joined by a number of other organizations, such as the Italian Radiological Society, which has built a worldwide online database of imaging findings for verified cases., and the National Institute of Health, have created COVID-19 files", which contain images, in addition to the National Institute of Health. rRT-PCR has limited specificity in detecting COVID-19 because of overlap with other infections, such as those caused by adenoviruses. PCR results in the presence of the virus, according to the findings of a big study done in China, are more specific for infection than chest CT scans. While imaging is both faster and more sensitive than PCR results, PCR results are not always accurate (Ai et al., 2020).

2.10. Prevention

Early intervention is crucial because infections can spread quickly if preventative measures such as social distancing, immunization, and the usage of face masks are not put in place as soon as possible. A bigger proportion of the population is protected if containment measures are implemented sooner rather than later, as illustrated in this picture (WHO , 2020).

"There are a variety of prophylactic steps that can be taken to lessen the likelihood of infection occurring. In addition to staying at home and washing hands frequently and thoroughly for at least twenty seconds, wearing a mask in public and maintaining a safe distance from other people, ventilating indoor spaces, managing potential exposure durations, practicing good respiratory hygiene, and refraining from putting unwashed hands near one's eyes, nose, or mouth

It is expected that the number of cases of hepatitis C would increase in the year 2020, according to a new analysis from the Centers for Disease Control and Prevention (CDC). (CDC)".

COVID-19 has been identified as a virus that affects humans, according to recent research." Those who have COVID-19 or those who suspect they may have the virus are

advised to remain at home except when receiving medical care, to call ahead before visiting a healthcare provider, to wear a face mask before entering the healthcare provider's office and when in any room or vehicle with another person, to wash their hands frequently with soap and water, to avoid sharing personal household items, and to avoid sharing personal items such as towels and linens. It is expected that the number of cases of hepatitis C would increase in the year 2020, according to a new analysis from the Centers for Disease Control and Prevention (CDC) (CDC)."

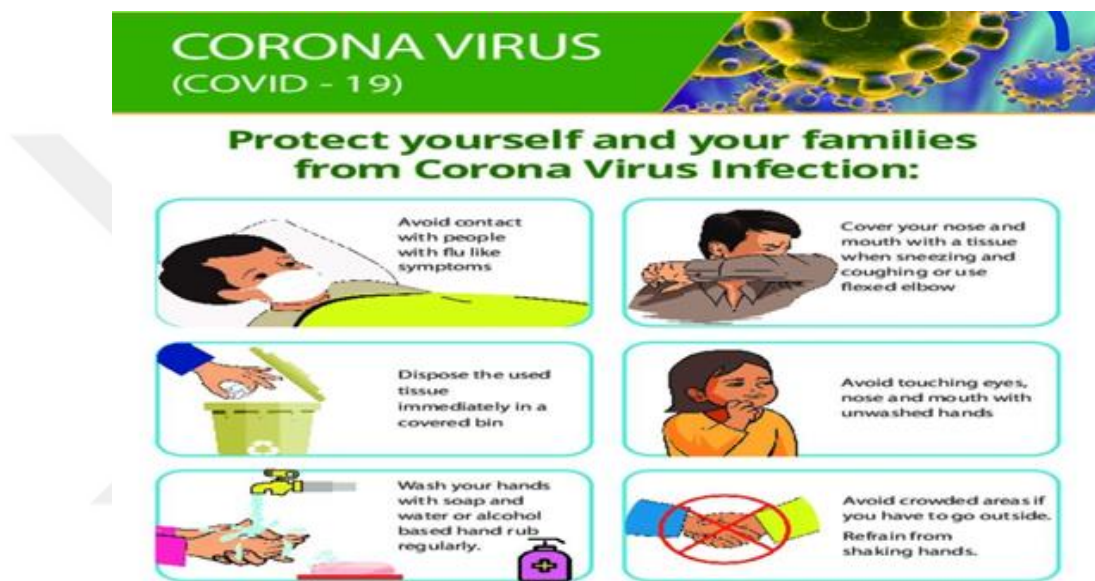


Figure 2.6 Prevention (WHO, 2020)

"The Medicines and Healthcare products Regulatory Agency (MHRA) of the United Kingdom granted approval for the first COVID-19 immunization on December 2nd, according to the agency. On the question of whether the Food and Medicine Administration (FDA) in the United States and numerous other countries should provide emergency use permission to the drug, there has been heated discussion (EUA). Whether provided before or after exposure to the SARS-CoV-2 virus, the National Institutes of Health in the United States does not prescribe any specific treatment for COVID-19 prophylaxis", according to the organization. unless it is done as part of a clinical trial as a starting point. COVID-19 management is dependent on attempting to decrease and delay the epidemic peak because there is no vaccine, other preventative

measures, or effective medicines available to combat the virus. This is referred to as "flattening the curve," and it is an essential component in managing COVID-19 in its various forms. Slowing the pace of infection to reduce the risk of overburdening health-care systems", allowing for better treatment of current patients, and delaying the beginning and spread of new cases until effective medicines or a vaccine become available are all approaches to achieve this goal. Wiles provides a formally" (Wiles, 2020)

The COVID-19 Vaccination Center in Poland, which is linked with the Medical University of Gdask, was in charge of developing and testing the vaccine. The disease is currently being studied in clinical trials with a number of different SARS-CoV-2 vaccine candidate types.

"At the moment, researchers are working on the COVID 19 vaccine, which will provide acquired protection against severe acute respiratory syndrome (SARS). One of the goals of this program is to implant acquired immunity against severe acute respiratory syndrome, which is a severe respiratory ailment. The coronavirus disease that has been reported this year is caused by coronavirus 2 (SARS CoV 2)," which is the virus that is responsible for the illness. This disease is caused by the virus Coronavirus 2," which is found in the bloodstream (COVID 19). Pre-existing knowledge of a substantial body of information, including information on the structure and function of coronaviruses, which are responsible for diseases such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), among others, existed prior to the COVID 19 pandemic", and this knowledge was widely acknowledged prior to the outbreak (MERS). This understanding was critical in the creation of various vaccination platforms throughout the first half of 2020, and it will continue to be so. For a long time, it was assumed that immunization against SARS-CoV-2 would be the most effective approach of preventing the illness's symptoms, which might be potentially fatal. The pharmaceutical industry made a significant commitment to fighting COVID-19 public on March 19, 2020, when it released a statement. Both of these occurrences occurred in the year 2020, on January 10, 2020, and both occurred on the same day of the year 2020, respectively, and both occurred on the same day of the year 2020.

Overall, it is widely agreed that COVID-19 vaccines were incredibly efficient in slowing down both the spread of the disease as well as the severity and death that can occur as a result of the sickness (Padilla, 2021).

Through the implementation of phased distribution schemes in some countries, individuals most at risk of experiencing difficulties, such as the elderly, as well as those most at danger of being exposed to or transferring an infection, such as health-care professionals, have been given priority. The use of a single dose interim immunization strategy is being researched in order to cover the most number of people possible until vaccine supplies become more plentiful.

Globally, approximately 6.31 billion doses of the COVID 19 vaccine had been delivered as of the second week of October 2021, according to official statistics from national public health organizations." The COVID 19 vaccine was approved by the World Health Organization in the first week of October 2021. According to industry projections, the pharmaceutical giant AstraZeneca expects to produce 3 billion doses in 2021, followed by Pfizer–BioNTech with 1.3 billion doses and Sputnik V with 1 billion doses and Janssen with 1 billion doses, respectively. Current expectations are for Contemporary Pharmaceuticals to produce 600 million doses of Convidecia in 2020, while the company that makes the medicine, Convidecia, plans to produce 500 million doses in the same year. More than 10 billion vaccine doses have been preordered by governments in anticipation of delivery by December 2020, with nearly half of the doses purchased by high-income countries, which account for 14 percent of the world's population and will be delivered by December 2020. As well as Woo" (So and Woo, 2020).

A side-mounted exhalation valve is available for purchase on the market for some masks. The system's valves are a weak point, allowing viruses to flow from one site to another without being detected or stopped. It is recommended that non-medical facial coverings be used in public places," particularly in situations where there is a greater risk of transmission and where social distancing measures are difficult to maintain, according to the World Health Organization and the United States Centers for Disease

Control and Prevention (CDC)". This technique, when used in concert with proven preventive strategies such as social separation, is intended to reduce the spread of the disease among asymptomatic and presymptomatic persons, according to the researchers. It is not designed to be used on its own or in conjunction with other products. Because of the way that people speak, breathe, and cough, it is possible to breathe exhaled droplets. Wearing a face cover can help to minimize the volume and travel distance of these droplets. Because of the filter's ability to eliminate virus-containing particles from the air that is breathed in and exhaled, it reduces the likelihood of contracting an illness. Because an expiration valve is built into the mask, anyone wearing it who is sick (possibly without recognizing it and asymptomatic) may have the ability to transmit the virus externally through it, regardless of whether or not they are certified to do so. As a result, infected individuals find it difficult to tolerate masks with an exhalation valve, and as a result, they are unlikely to be useful in arresting the pandemic on a large scale. As a result, several countries and municipal governments encourage or require the wearing of face masks or fabric face coverings by members of the general public in order to prevent the virus from spreading further. Greenhalgh and colleagues will present their findings in 2020. (Greenhalgh and colleagues, 2020)

"It is strongly suggested that people who have been exposed to the virus, as well as those who are caring for someone who may be sick with the sickness, use face masks to protect themselves against infection. In the event that you don't have a tissue available to use to cover your mouth and nose when coughing or sneezing, the Centers for Disease Control and Prevention (CDC) recommended that you use the inside of your elbow to cover your mouth and nose." It is extremely important to thoroughly clean your hands after coughing or sneezing in order to prevent the transmission of infection. Health care workers should wear respirators that are at least as protective as NIOSH-certified N95 or equivalent respirators when dealing directly with COVID-19 patients in addition to other types of personal protection equipment while working directly with COVID-19 patients (CDC, 2021).

Upon expulsion from the body," coronaviruses have the capacity to remain on surfaces for a period ranging from a few hours to many days, depending on the type of surface.

Someone who has been into contact with a contaminated surface has the potential to transmit viruses to another person through their eyes, nose, and mouth. After that, the virus has the capability of infiltrating the body and causing infection to occur. To minimize problems such as the development of antimicrobial resistance as a result of, for example, the use of unsuitable cleaning materials and techniques (which are not the major cause for COVID-19)", a shift in disinfection procedures should be implemented. Several years ago, the phrase "hygiene theater" was coined to describe the practice of rigorous washing and other sorts of surface cleanliness that give the false impression of protection against something that is mostly communicated through the atmosphere (Thompson., 2020).

"Temperature and humidity levels in the environment, as well as the type of surface to which a virus is exposed, all influence the amount of time it can survive. Sunlight exposure causes coronaviruses to die in a very short period of time because of the ultraviolet radiation (UV light) they emit. Like most enveloped viruses, it survives the longest at room temperature or below, as well as when the relative humidity is high (less than 50 percent)". (Bueckert and colleagues, 2020; et al., 2020).

"It has been reported by the Centers for Disease Control and Prevention that a wide range of surfaces, including glass and some types of plastic as well as stainless steel and human skin, can retain their infectious properties for several days when stored at room temperature, and in some cases for up to a week under ideal conditions. According to the Centers for Disease Control and Prevention, when the virus comes into touch with other materials such as cotton fabric or copper", it usually dies within a few hours. Porous surfaces kill viruses more quickly than nonporous surfaces due to capillary action within pores and faster aerosol droplet evaporation as a result of the higher rate of evaporation found on porous surfaces. Capillary action within pores and faster aerosol droplet evaporation are two reasons why porous surfaces kill viruses more quickly than nonporous surfaces. This is owing to the increased rate of evaporation seen on porous surfaces, which causes the water to evaporate more quickly. It's true that out of the many surfaces that were tested the N95 respirator mask and the surgical mask

(both of which are considered porous surfaces) had among the longest life expectancies of all of the surfaces that were tested (Bueckert et al., 2020).

"Washing surfaces using soap or detergent, rather than disinfecting them, according to the Centers for Disease Control and Prevention (CDC), will reduce the risk of transmission in the great majority of situations. It is therefore recommended that all sites where a COVID-19 case has been suspected or confirmed be disinfected by the Centers for Disease Control and Prevention (CDC)". There are also shared electronic equipment such as tablet computers, touch screens, keyboards, remote controls, and ATM machines that were utilized by the sick folks," as well as common places and shared electronic equipment such as bathrooms and common areas. In order to remove contaminants from surfaces, a number of decontamination processes should be employed, including the use of ethanol (62–71 percent by volume), isopropanol (50–100 percent by volume), 0.1 percent sodium hypochlorite, 0.5% hydrogen peroxide, and 0.2–7.5 percent povidone-iodine. The antibacterial activity of another class of solutions, such as benzalkonium chloride and chlorhexidine gluconate, has been demonstrated to be insufficient in some cases. Along with normal procedures", it is possible to use ultraviolet germicidal irradiation to kill bacteria and viruses in addition to typical ways. In addition to other useful information, the additional material includes an informative datasheet on allowed chemicals for disinfection in the food business (including suspension or surface tested, type of surface, use dilution, disinfectant and inoculum quantities), as well as other useful information (Pedreira et al., 2021)

"According to medical authorities, people who have been diagnosed with COVID-19 or who are concerned that they may have been infected are encouraged to exercise self-isolation at their homes. Self-quarantine for entire communities has been legalized in several countries, and health experts have created comprehensive standards for ensuring that communities are effectively isolated. Per the authorities, individuals classified as high-risk have been given the most stringent self-quarantine instructions that can be given". A 14-day self-quarantine is recommended for people who are at risk of contracting COVID-19," as well as those who have recently traveled to a country or region where the virus has been widely disseminated. The self-quarantine should be

initiated immediately after the person has had his or her last possible contact with the virus. It is the mission of the Centers for Disease Control and Prevention (CDC) to prevent and control illness throughout the world" (CDC,2021)

According to the Harvard T.H. Chan School of Public Health," a healthy diet and regular physical activity are also encouraged, as is reducing psychological stress and obtaining enough sleep.

"It has been demonstrated that engaging in 150 minutes or more of exercise or similar physical activity per week, as recommended by scientific guidelines, is associated with a lower likelihood of hospitalization and death from COVID-19 when other likely risk factors such as elevated body mass index are taken into account" (BMI). According to the most recent accessible evidence as of March 2021," vitamin D levels do not appear to be connected with COVID-19 health outcomes, according to the most recent accessible information. According to the study's organizers, with around 6 000 participants and a dosing regimen that is close to the recommended daily intake (RDI), this will be the largest clinical research study on the subject ever conducted. Following the plan, the investigation is projected to be completed by July 2021, at the latest. Basatne and his associates (Bassatne and colleagues, 2021)

As reported in a Cochrane Rapid Review released in 2021, evidence with a low level of confidence suggests that foreign travel–related control measures including limiting cross-border travel may be useful in slowing the spread of COVID-19. As an additional precaution, screening approaches for symptoms and exposure at border crossings may be unsuccessful in discovering a considerable proportion of confirmed cases, despite the fact that they are widely used. The fact remains that even if test-based border screening processes are more effective, if they are simply provided at the time of entry without any follow-up, a considerable proportion of positive instances may be disregarded by the system. In a recent analysis, it was discovered that a 10-day quarantine could be beneficial in preventing the spread of COVID-19", and that it could be even more effective if combined with another management strategy, such as border screening, to reach even greater efficacy (Burns et al., 2021).

2.11. Treatment

It is offered a description of the COVID-19 therapy as well as its drugs. The production of a new report on Coronavirus sickness 2019 (COVID-19)", a disorder caused by the SARS-CoV-2 virus for which there is now no specific, effective therapy or cure, is necessitated by the publication of an existing report. As a result of the advent of highly effective vaccines against SARS-CoV-2 in the first year of the pandemic, the virus's spread has begun to be curtailed. Individuals who are awaiting immunization, as well as the millions of immunocompromised people who are expected to be born in the next several years and who are unlikely to respond robustly to vaccine, must be treated as soon as possible. Due to a lack of progress in the development of effective drugs, supportive care has been the cornerstone of COVID-19 management since the disease was first discovered. In addition to treatment to ease symptoms, fluid therapy and oxygen support when necessary, prone positioning when appropriate, and medications or devices to aid other important organs that have been harmed by the injury are all part of the process (Wang et al., 2020).

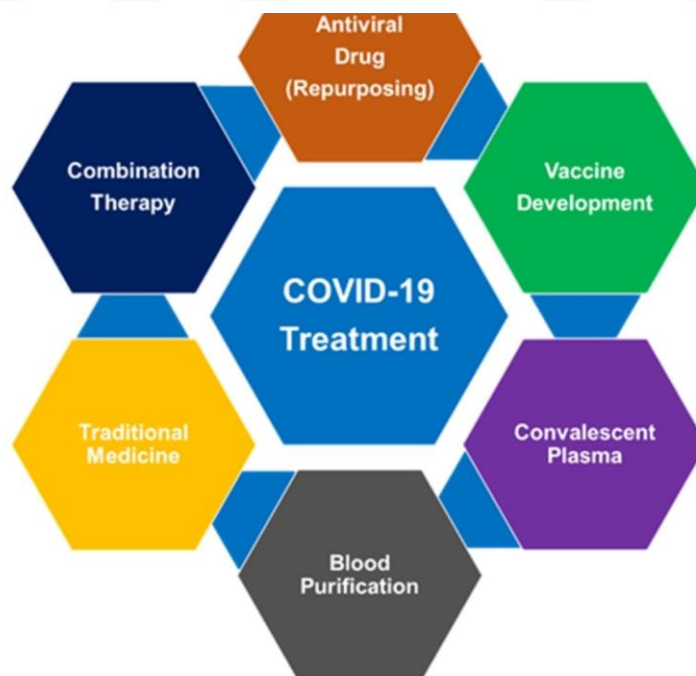


Figure 2.7 Treatment (Wang et al., 2020).

When it comes to severity, the majority of COVID-19 instances are deemed light. Supportive therapy in these instances may include the administration of pharmaceuticals such as paracetamol or NSAIDs to relieve symptoms (fever, physical pains, cough), as well as the promotion of healthy lifestyle habits such as proper drinking, rest, and nasal breathing, among other things. Good personal cleanliness measures, as well as a nutritionally balanced diet, are also recommended. According to the Centers for Disease Control and Prevention (CDC) in the United States of America, anyone who are concerned about becoming infected with the virus should isolate themselves at home and wear a protective mask. According to the Centers for Disease Control and Prevention (CDC), a report on the subject will be released in 2020.

For people experiencing severe symptoms, it is conceivable that hospitalization will be required in order for them to obtain therapy." Administration of the glucocorticoid dexamethasone is strongly advised in individuals with low oxygen levels since it has been shown to minimize the risk of death in these patients." Noninvasive ventilation, followed by admission to an intensive care unit for mechanical ventilation, may be required in the event that breathing help is required. Extracorporeal membrane oxygenation (ECMO) has been used to aid patients who are suffering from respiratory failure, although the benefits of this procedure are still being debated. Occasionally, a cytokine storm, also known as symptomatic systemic hyper-inflammation, has been associated to the progression of a serious disease in some cases. Formalized formalized formalization of Kim and colleagues (2021) has resulted in the development of a Formalized Formalization of Kim and colleagues (2021)". (Kim and colleagues, 2021).

Therapeutic drugs of various types are now being researched in clinical trials, "including but not limited to According to the Centers for Disease Control and Prevention, another class of medications, hydroxychloroquine and lopinavir/ritonavir, was originally thought to be promising, but additional study revealed that they were useless or even hazardous. Despite the fact that research is still underway, there is now insufficient high-quality data to justify the recommendation of so-called early treatment, despite the fact that research is still being conducted. The good news is that, in the

United States, two monoclonal antibody-based medicines, aflibercept and filgrastim, are currently available for use in the treatment of patients who are assessed to be at high risk of developing severe disease early in the course of the disease. But due to insufficient evidence of its effectiveness, the antiviral remdesivir is not advised for patients who require mechanical breathing and is wholly discouraged by the World Health Organization for this reason (WHO)". By the year 2020, Siemieniuk and colleagues expect to have completed their research (Siemieniuk and colleagues).

2.12. Prognosis

From one individual to the next," the severity of COVID-19 varies. It is likely that individuals who contract the ailment will experience a moderate course with few or no symptoms, similar to other common upper respiratory disorders such as the common cold, following the onset of the condition. If a patient has a serious or critical illness, hospitalization may be required in 3–4% of instances, depending on the severity of the condition (7.4 percent of those over the age of 65). The majority of mild cases recover in two weeks or less, but severe or critical cases may demand hospitalization for three to six weeks, depending on how severe the sickness is and how long the patient has been sick. The time between the beginning of symptoms and death has varied between two and eight weeks on average among those who have died from the disease. Approximately twelve days passed on average between the onset of symptoms and death, with seven people being admitted to hospitals during that time frame, according to the Italian Istituto Superiore di Sanità (Higher Institute of Health) (Higher Institute of Health). However, people who were admitted to the hospital and then moved to an intensive care unit died on average ten days after being admitted to the hospital. Being admitted to the hospital with a prolonged prothrombin time and high C-reactive protein levels is associated with a severe course of COVID-19 and the need for intensive care unit (ICU) admission" (Christensen et al., 2020).

"According to preliminary findings, people with COVID-19 are more likely than the general population to experience symptoms that persist longer than a month, with 10 percent to 20 percent of patients reporting symptoms that stay longer than a month. If a

person is admitted to the hospital with a severe disease, the vast majority of the time they complain of long-term difficulties such as exhaustion or shortness of breath. On October 30, 2020, the World Health Organization (WHO) issued a warning, stating that "the COVID virus poses a risk of a variety of serious long-term repercussions to a considerable number of people," according to the warning. His wide range of COVID-19 symptoms, which can reveal themselves at any time and fluctuate over time, have been regarded as "very frightening" by those who have witnessed them. A wide range of symptoms such as weariness, coughing, and shortness of breath can occur as a result, as well as inflammation and injury to vital organs such as the lungs and heart, as well as neurological and psychological effects, among other things." Symptoms are frequently confused with one another and can manifest themselves in any organ or system of the body, making diagnosis challenging. Infected individuals have experienced recurrent periods of lethargy and headaches, "as well as months of full weariness, mood swings, and a variety of other signs and symptoms of the infection. As a result of his research, Tedros came to the conclusion that establishing herd immunity through infection rather than vaccination is "morally repulsive and unworkable," and that vaccination is the only realistic option. Approximately 9 percent of the 106,000 persons who were discharged from the hospital were required to return within two months after their initial discharge, according to data from the National Hospital Discharge Survey. Approximately eight days passed between the first and second hospitalizations, on average, according to the data collected. Many risk factors have been identified as being associated with the need for many hospitalizations in a single year, and these risk factors are detailed in the section below. For example, being older than 65 years old, as well as having a chronic illness such as diabetes, chronic obstructive pulmonary disease (COPD), heart failure, or chronic renal disease, are all factors that contribute to one's risk of death"(Lavery et al., 2020).

2.13. Complications

"A study is currently underway to determine the cause of the cytokine storm induced by SARS-CoV-2, as well as the implications of the storm. As a result of this procedure, the vast majority of patients will experience complications such as pneumonia, acute

respiratory distress syndrome (ARDS), multi-organ failure, septic shock, and death, among others. The complications of acute coronary syndrome (ACS), which include cardiac failure, arrhythmias (including atrial fibrillation), inflammation of the heart, and thrombosis, are all possible (particularly venous thromboembolism). When people with COVID-19 present to the hospital with elevated liver enzymes, it is likely that they have sustained liver injury. This is found in approximately 20–30 percent of patients" (Sanders et al., 2020).

"It is possible to develop neurological symptoms such as seizures, a stroke, encephalitis, and the Guillain–Barré syndrome, to name a few examples of such symptoms (which includes loss of motor functions). Symptoms of paediatric multisystem inflammatory syndrome, which is comparable to Kawasaki disease and can be fatal if not treated rapidly, can occur in children who have been infected with the Kawasaki virus. The likelihood of acute encephalopathy should be investigated in individuals who have been diagnosed with COVID-19 and are experiencing altered mental status. As a result of COVID-19, the Centers for Disease Control and Prevention (CDC) warns that pregnant women are at increased risk of becoming very ill. It is critical to remember that pregnant women who have COVID-19 are more likely to develop respiratory and obstetric issues, which can result in miscarriage, early birth, and intrauterine growth restriction, among other complications, during their pregnancy."

Thus far, individuals who have recovered from COVID-19 have been found to have fungal disorders such as aspergillosis, candidiasis, cryptococcosis, mucormycosis, and other fungal infections," according to the research that has been done so far. The World Health Organization (WHO) is a non-governmental organization that works to improve the health of people all over the world (World Health Organization, 2020). Preliminary research findings suggest that 10-20 percent of those who have COVID-19 will experience symptoms that last longer than a month as a result of the findings of the study. Individuals who are hospitalized for serious illness almost often complain of long-term issues, such as fatigue and shortness of breath, which are common indicators of the condition. The vast majority of people admitted to a hospital are suffering from a serious or life-threatening condition, such as pneumonia or acute respiratory failure,

which affects approximately 5–10 percent of all patients hospitalized" (Huang et al., 2020).

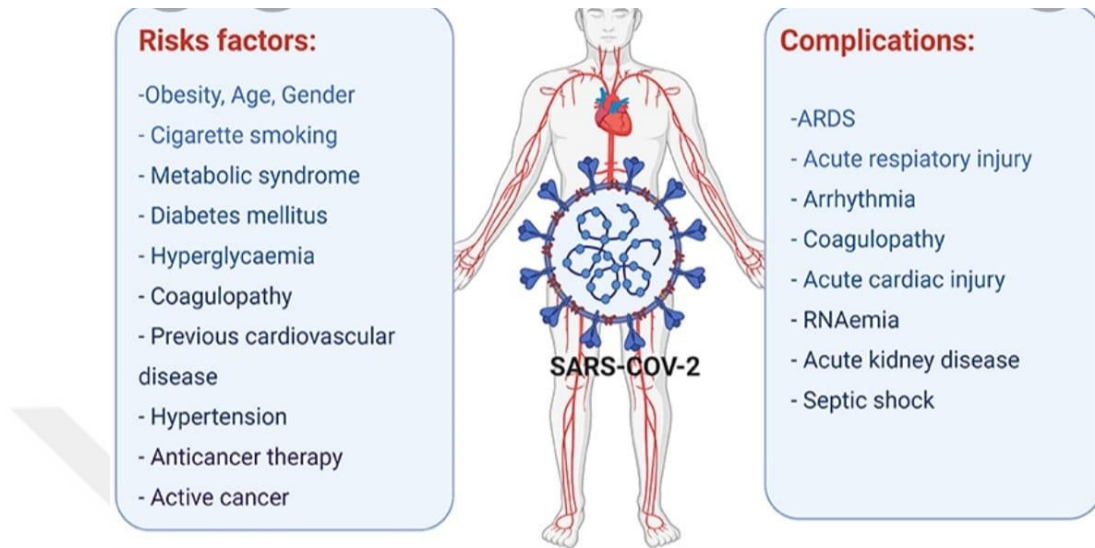


Figure 2.8 Complications (Sanders et al., 2020).

When it comes to COVID-19-induced organ damage, the lungs are the most severely affected, and this is due to a variety of factors", including the presence of COVID-19 in the environment. According to the American College of Radiology, up to 98 percent of CT scans performed on patients who require hospitalization for more than 28 days after falling unwell detect lung abnormalities, even though the patients appear to have recovered clinically from their illness. The elderly, persons with severe disease, those who have been in the critical care unit for an extended amount of time, and smokers are more likely to experience long-term consequences, such as pulmonary fibrosis and other lung disorders, than the general population. Patients who are asymptomatic should anticipate to develop pulmonary fibrosis or reduced lung function as determined by the double-lung carbon dioxide (DLCO) after four weeks of involvement, according to the study's findings. But there is evidence to suggest that with the passage of time, things will continue to get better and better" (Torres and Castro, 2020).

2.14. Mortality

These figures fluctuate by region and over time as a result of a variety of factors, including the amount of testing done, the quality of the healthcare system, treatment options, the length of time that has passed since the outbreak began, and demographic characteristics such as age, gender, and overall health (among others) (Ritchie et al., 2020).

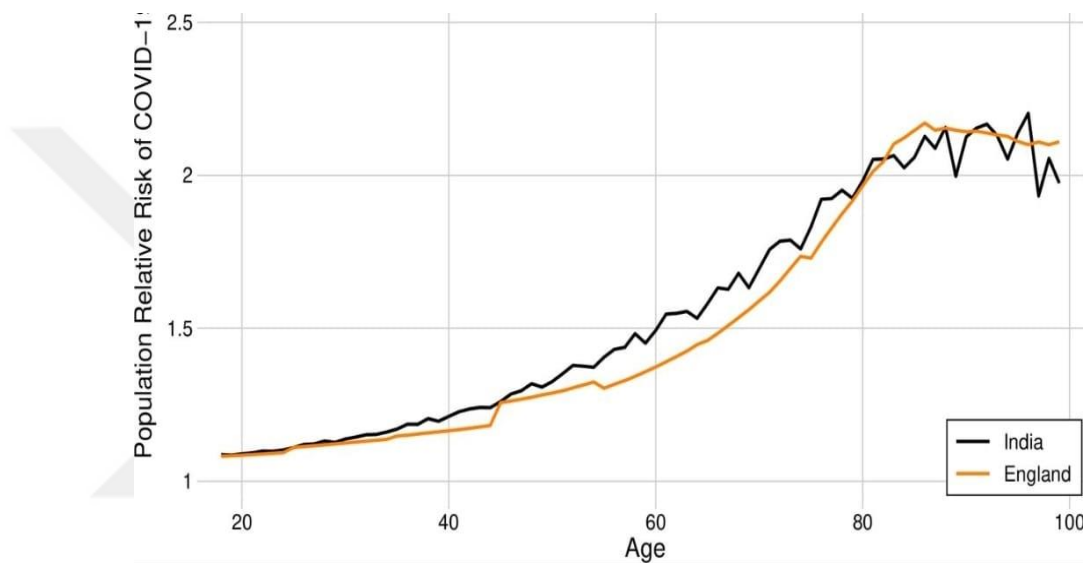


Figure 2.9 Mortality (Ritchie et al., 2020).

You may find out how many people died in a certain demographic group by taking the number of deaths in that demographic group and dividing it by the total number of people in that demographic group. The death rate in a certain community, then, is a reflection of both the prevalence and severity of the disease in that specific group. Death rates are closely tied to age, as illustrated in the graph below," with rates for young adults being relatively low and rates for the elderly being fairly high. In contrast to the age structure of a country's population, it has been demonstrated that the age structure of a country's population has a substantial impact on death rates in that country. Take, for example, the case fatality rate for COVID-19 in India against the rate in the United States. Accordingly, as compared to the United States, India has a younger population that constitutes a higher fraction of its total population"(Dehingia, 2020)

2.15. History

As a result of a spillover infection from an animal source, the virus is regarded to be of natural origin and to have originated from that source, according to the most recent available evidence. A number of hypotheses have been put forward to explain the origins of the first case (also known as "patient zero," or "patient zero"), and investigations into the outbreak's beginnings are currently underway. An examination of the SARS-CoV-2 virus's phylogenetic tree suggests that it first appeared in the wild in October or November of this year. The results of an algorithmic phylogenetic study suggest that the virus was already in circulation in Guangdong before it made its way to Wuhan." It appears that the virus in question is closely related to the coronavirus that infects wild bat populations, and that it is transmitted to humans through an intermediary wildlife host, according to the findings of the research. It is also becoming increasingly common to discuss the possibility that the virus was mistakenly released from a laboratory, which is concerning (Zachary, 2021).

The Chinese city of Wuhan, which is located in the affluent Hubei province, was the site of the world's first human infections in 1998, according to the World Health Organization. A research of the first 41 validated cases published in The Lancet in January 2020 found that symptoms of COVID-19 began showing on the 1st of December, according to the findings of the study. As shown by the findings of the study, the symptoms first appeared on the 1st of December, in the month of 2019. In official records issued by the World Health Organization (WHO), it is stated that the first signs and symptoms occurred on December 8, 2019, and that the investigation is still ongoing at this moment. After conducting an investigation, the World Health Organization and Chinese officials determined that human-to-human transmission had happened by the 20th of January 2020, which was the deadline for the outbreak. It is believed that the majority of these instances occurred at the Huanan Seafood Wholesale Market, which sold both live and dead animals. It was announced in May 2020 by Dr. George Gao, Director of the Centers for Disease Control and Prevention (CDC), that animal samples obtained from the seafood market had tested negative for Ebola virus, indicating that the market had been the site of an early superspreading episode but had

not been the site of the virus's initial outbreak. Tests were carried out on the 18th of December on water samples taken from Milan and Turin in Italy, and it was discovered that they contained signs of the virus" (Kelland, 2020).

Human-to-human transmission is expected to account for nearly all of the virus's global spread by the end of this calendar year, according to projections. On the 20th of December, sixty coronavirus illnesses were reported, and by the 31st of December, at least 266 coronavirus infections had been confirmed in the province of Hubei, according to official figures. On December 24, a sample of bronchoalveolar lavage fluid (BAL) was sent to the sequencing company Vision Medicals as part of an ongoing clinical case at Wuhan Central Hospital. On the 27th and 28th of December, a novel coronavirus was detected during a normal laboratory test, which "was carried out at the time. Results were sent to the Wuhan Central Hospital and the Chinese Centers for Disease Control and Prevention, which were both notified of the discovery on the same day it was made. Dr. Zhang Jixian, of Hubei Province, made the diagnosis and administered therapy for a pneumonia cluster with an unknown origin on December 26. In the following days, Dr. Zhang notified the Wuhan Jiangnan Center for Disease Control and Prevention about the scenario, which occurred on December 27. Several doctors at Wuhan Central Hospital were alerted to an error by a test report from the company CapitalBio Medlab, which stated that the hospital had received an incorrect positive result for SARS on December 30. They immediately notified their colleagues and the appropriate hospital authorities, who were also alerted to the error. According to hospital records, the mistake was discovered on December 31st and the hospital was contacted. In the early hours of that evening, the Wuhan Municipal Health Commission sent out a notice to a large number of medical facilities informing them of "the treatment of pneumonia with an unknown etiology." The notification made the medical institutions aware of their responsibilities in this situation. Li Wenliang (who was arrested and sentenced to prison on 3 January) and eight other doctors, including Ai Fen (who was reprimanded by her superiors for raising the alarm), were eventually charged with spreading false information and prosecuted by the police" (Kuo, 2020).

2.16. Nursing care plan of COVID-19

The challenge of caring for persons who have been infected by COVID-19 while also attempting to prevent the virus from spreading further has been met with enthusiasm by nurses since COVID-19 first became widespread. Clear nursing management guidelines can aid nurses in giving better care to patients suffering with COVID-19 and, as a result, improving patient outcomes. If clear regulations are established and implemented before the pandemic causes an overwhelming stream of critically sick patients, the outcomes of those individuals will be improved in the long run, if done early enough. Knowing what to do in the face of a tsunami of critically sick patients can also help to ensure that your nursing staff remains safe, on schedule, and in complete control of the situation. Nurses who are caring for patients who have COVID-19 infection must do a variety of tasks, including assessment, diagnosis, development of nursing care plans and goals, interventions, assessments, and documentation.

❖ Nursing Assessment

In order to diagnose and treat people who may have COVID-19, it is crucial to conduct a thorough examination and assessment. This is especially true in the case of people who have fever, acute respiratory illness, and other signs and symptoms of infection. When evaluating these patients, it is critical to take the following aspects into consideration:

This includes journeys to other nations, states, or cities where COVID-19 cases are currently active; websites such as the Johns Hopkins Coronavirus Resource Center can be useful in discovering geographic "hotspot" regions in the United States and around the world.

Examining the physical body in great detail includes the following: When COVID-19 symptoms emerge, they should be documented as soon as possible in order to ensure proper recording. Following infection to the virus, according to the Centers for Disease

Control and Prevention (CDC), the following symptoms may manifest themselves anywhere between two and fourteen days after exposure:

- Fever, chills
- Cough
- Dyspnea
- Headache
- Fatigue
- Myalgia
- Sore throat
- New loss of smell (anosmia) or taste (ageusia)
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

COVID-19 patients will not necessarily exhibit all of the symptoms indicated above. Some patients will experience only a few of the symptoms described above. Following the virus's impacts, a research published on June 23, 2020 discovered that 78 percent of COVID-19 patients reported having a temperature, 57 percent reported having a cough, and 31 percent reported feeling weary. Interestingly, 25 percent of those who

participated in the survey indicated that they had lost their sense of smell, while 23 percent reported that they had lost their sense of taste as a result of the accident.

❖ **Nursing Diagnosis**

An based on clinical judgment nursing diagnosis is made on a patient's experiences and responses to a suspected coronavirus infection in order to determine the cause of the infection. When making a nursing diagnosis of a patient with COVID-19, the following factors should be taken into consideration:

- Exposure to the virus that causes COVID-19 is a possibility.

the level of knowledge the patient has about the transmission of COVID-19;

- In addition to fever, patients may suffer the following symptoms:

Affected breathing pattern as a result of shortness of breath Anxiety linked with the disease's unknown etiology

❖ **Nursing Care Planning and Goals**

It is possible to enhance patient outcomes while also reducing COVID-19 transmission by establishing nurse care plan objectives. Listed below are some examples of important nursing care planning objectives for COVID-19, in no particular order:

- " Defining objectives and implementing initiatives
- Patients' skin integrity, fatigue, poor comfort, gas exchange, dietary requirements, and nausea are all assessed; and the spread of coronavirus infection to the patient's family members, the general public, and healthcare providers is prevented by implementing these measures."

- "Additional information on COVID-19 and its care should be provided to the patient. This includes the following items: When asked about the CDC, just 64 percent of individuals responded that it "most of the time gets the information regarding the outbreak correct." The poll was conducted by the Pew Research Center and released on June 29, 2020".
- Among the objectives are the lowering of fever and the restoration of normal breathing patterns.

"A combination of anxiolytic medicines and psychotherapy, which may include relaxation techniques, breathing exercises, and support, can be used to relieve anxiety in COVID-19 patients."

❖ **Nursing Interventions**

Following the outcomes of the evaluation, clinical nursing treatments for COVID-19 should be prioritized, with acute respiratory failure, hyperthermia care, and transmission minimization being the top three priorities." Because fever and dyspnea are both common symptoms of the COVID-19 infection, it's important to keep an eye on your vital signs, particularly your temperature and breathing rate".

"Maintain close track of the patient's oxygen saturation, which should be 94 percent or above in healthy individuals. Patients having severe COVID-19 symptoms may develop hypoxia, with oxygen saturation readings lowering to levels that demand the use of supplemental oxygen equipment.

Continue to maintain control of fever by implementing appropriate hyperthermia treatment, which may include lowering the temperature of the room, removing excess clothing and blankets, using cooling mattresses, applying cold packs to major blood vessels, initiating or increasing intravenous (IV) fluids as permitted, administering antipyretic medications as prescribed, and preparing oxygen therapy in the event of

respiratory problems resulting from the metabolic demands for oxygen thwarted by the fever".



Figure 2.10 Interventions (Lynn et al., 2020)

Check to make sure there isn't any lung pollution present on the property. It is advised that isolation rooms be clearly identified and that access to them be restricted; anyone entering a restricted-access area should be wearing personal protection equipment, "such as a mask and gown, to ensure their own safety and the safety of others. Patients, as well as anyone entering or leaving the room, should wash their hands quickly after coughing in order to decrease or prevent the transmission of coronavirus. COVID-19 transmission should be explained to the patient and his or her family members", as should the diagnostic tests used to diagnose the condition, how it progresses, any consequences that may arise, and how to protect oneself and one's family from coronavirus infections

❖ **Nursing Evaluation**

- "Nurses use evaluation to determine whether or not they have met their goals."

- "The patient effectively averted the spread of infection to family members, the community, or healthcare workers.
- The patient gained a better understanding of COVID-19 and how to treat the infection."
- " The patient's body temperature levels were brought back to normal."
- "The patient's breathing patterns were restored"
- The patient's anxiety levels were decreased.

❖ **Documentation Guidelines**

"Documentation is always important, but it is maybe even more so when caring for persons who are suffering from COVID-19 infection. The following are the documentation needs for patients with COVID-19 syndrome:

Other than external influences affecting the patient's condition, individual outcomes include interactions with other individuals and social exchanges, as well as distinct patient behaviors. Examples of such interactions are as follows:

A detailed discussion of the patient's cultural and religious beliefs, as well as his or her expectations, is included in the care plan and teaching plan. Nursing interventions, education, and information are described in depth in the response plan and teaching plan. Similarly, nursing actions are discussed in length in both the response plan and the teaching plan.

The nursing management of COVID-19 has been established by a number of organizations and healthcare facilities, and these recommendations are available online. This, on the other hand, is vulnerable to rapid change in reaction to new knowledge

gained from researchers or as a result of the overwhelming number of patient situations that must be dealt with in a given period of time. If you want to learn more about COVID-19 nursing management, you should speak with a representative from the hospital, nursing home, healthcare organization, or educational institution where you are applying. In the company of Lynn and her associates"(Lynn et al., 2020)



3. MATERIALS AND METHOD

This chapter demonstrates the research design and process for the Assessment of Clients' Knowledge Concerning COVID 19 at Primary Health Care Centers in Baghdad City . This part also includes administrative arrangement used in the study, the data collection, the validity of the tool and the empirical reliability study, as well as the analysis of the data.

3.1. Design of study

A descriptive cross-sectional research used assessment approach with questionnaire items is conducted to Assessment of Clients' Knowledge Concerning COVID 19 at Primary Health Care Centers in Baghdad City for the periods of October 15th 2021 to December 1th 2021.

3.2. Administrative arrangements

The official permissions were obtained from relevant authorities before collecting the study data as follow:

- Approval from the Research Ethical Committee at the College of Nursing, University of Çankırı karatekin (Appendix A).

3.3. Ethical considerations

"Clients were informed that their participation in the study was voluntary. The purpose of the study and its benefits were clarified by the researcher. After they agreed to participate in the study, an anonymous questionnaire was handed to them to keep the participants strictly confidential."

3.4. Study preparation

"The study was carried out via social networks (Facebook, WhatsApp, Telegram, Viber) for clients who visit primary health care centers in the Rusafa and Karkh side of Baghdad."

3.5. Study sample

An intended sample of (200) clients was selected using the non-probability sampling method. The study was distributed via social media networks (Facebook, WhatsApp, Telegram, Viber) to clients who visit primary health care centers on the Rusafa and Karkh side of Baghdad. The study sample is selected according to the following criteria:

❖ The inclusion criteria:

- Clients who visit primary health care centers.
- "Clients who agreed to participate in the study."

❖ Exclusion Criteria:

- Clients who chose the pilot study.
- Clients who do not agree to participate in the study.

3.6. Study instruments

A constructed questionnaire which was created through a comprehensive review of the literature that have relevant. The Clients test their knowledge questionnaire was created as a screening method to identify those who are likely to have knowledge or not. The questionnaire was used as a method for collecting data containing the following:

Part I: This section consists of demographic characteristics that include “age, gender, educational level, marital status, occupation and economic status.”

Part II: This part consists of (16) paragraphs and deals with the knowledge of Clients regarding COVID 19 All items were measured on a 2type-like scale as YES or NO .

3.7. Validity of the questionnaire

Validity is one of the main concerns with research. Valid measures help reducing the probability of making type 2 error. The English version of the questionnaire used in the study was translated into Arabic Language to be understandable to the participants. The questionnaire was presented to (4) panel of experts in the area of competence to maintain the validity of the instrument.

Experts' team notes reveal that all of the experts have accepted that (16) items of the tool are pure and sufficient for the measuring the phenomenon present the study. Changes are made on limited items according to the experts' recommendations.

Akalu, Y., Ayelign, B., & Molla, M. D. (2020). Knowledge, attitude and practice towards COVID-19 among chronic disease patients at Addis Zemen Hospital, Northwest Ethiopia. *Infection and drug resistance*, 13, 1949.

3.8. Pilot of study

"This preliminary study was conducted to regulate the stability and credibility of the study tool, clarity and its efficiency which confirmed, and standard time required to collect data for each character which can estimated during the interview and self-report procedures and to difficulties identification that may encounter. Reliability of the Questionnaire:

"Reliability refers to an extent to which a questionnaire reports the same results on repeated time measure. Briefly it refers to consistent scores over times or raters" (Akalu et al ., 2020).

"The reliability of the tool study was determined by the computation of Alpha Cronbach's test (Alpha Correlation Coefficient); internal consistency method was used for determining the reliability. The Alpha Correlation Coefficient was useful for the determination of reliability of study tool by application of "Statistical Package for Social Science Program" version 24.

The finding of reliability for the items (Table:3-1) was statistical as:

good, mean that items had acceptable level of internal consistency and correspondence a measurable."

Table 3.1 Reliability of studied questionnaire (N=16)

N. items	Actual values	Acceptable value	Assessment
Knowledge (16 items)	0.83	0.90	Pass

The questionnaire is reliable. The time required to answer the questionnaire ranged between (10-15) minutes. The elements of the tool were clarifying and understanding the phenomenon of clients' knowledge of COVID 19 in primary health care centers in the city of Baghdad and its impact on the similar community in any period in the future.

3.9. The methods of data collection

After completing the required approvals, data was collection by the use of an instrument (Arabic version) self -report techniques Clients." The researcher introduced himself to the participants and explained the purpose of the study in order to get oral agreement. The questionnaire fill out an answer by the participants(Clients) The researcher gathered the questionnaire from the participants after self administrative on individual bases. Approximately each interview took (10 to 15) minutes. Data collection was performed for the period ofof October 15th 2021 to December 1th 2021".

3.10. Methods of statistics

"The SPSS "Statistical Package of Social Sciences" version 20, and Microsoft Excel (2010) were used to analyze the collected data of the study":

❖ Descriptive approach

- Statistical table "Frequency and percentage " which are:

$$\% = \frac{\text{Frequency}}{\text{Sample Size}} \times 100$$

- Mean scores

The average score can be calculated by using the following:

$$M.S = \frac{\sum r_i = 1 F_i \times S_i}{\sum r_i = 1 F_i} \times 100$$

For Knowledge

$\sum x_i$ = sum of the "1x Don't Know + 2x Uncertain+ 3 x Know" for items.

- ✓ Average score (1-1.33) is measured Poor Knowledge.
- ✓ Average score = (1.34-1.67) is measured Faire Knowledge.
- ✓ Average score = (1.68-2) is measured Good Knowledge.

- The test of standard deviation S.d.

$$\text{Standard deviation} = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

- It uses a correlational coefficient "Cronbach alpha" used in estimating the internal consistency of the study tool, which can be calculated by using following:

$$\alpha = \frac{K}{K-1} \left[1 - \frac{\sum_{i=1}^K \sigma_{ii}}{\sum_{i=1}^K \sum_{j=1}^K \sigma_{ij}} \right]$$

"K is the items number items and is the investigate covariance between the items i and j. Note the is the difference not standard deviation" of items I".

❖ Inferential approach

Pearson Correlation

To check the difference among the number of nominal standards of random variables dichotomous as Clients knowledge, attitudes and their demographic characteristics and general information.

Shortcuts for measuring important compared to the level, are used as follows:

- "NS : Non significantly at probability-value >0.05 ".
- "S : Significantly at probability-value <0.05 ".
- "HS : Highly significantly at probability-value <0.01 ".

4. RESULTS

Table 4.1 "Distribution of samples by demographic" characteristic (N= 200)

Demographic Variables		Frequency	Percentage
Age	18-22	31	15.5
	23-27	51	25.5
	28-32	28	14.0
	33-37	26	13.0
	38-above	64	32.0
Gender	"Male"	"106"	"53.0"
Social Status	Single	67	33.5
	Married	114	57.0
	Widower	15	7.5
	Divorced	3	1.5
	Separated	1	0.5
Level of Education	Not read or write	7	3.5
	Read and write	39	19.5
	Primary graduate	23	11.5
	Middle school graduated	46	23.0
	Secondary graduate	26	13.0
	Institute graduate	22	11.0
	Bachelor and above	37	18.5
Occupation	Student	27	13.5
	Employee	70	35.0
	Retired	11	5.5
	Free business	33	16.5
	Does not work	59	29.5
Economic Status	Low income	36	18.0
	Median income	156	78.0
	Good income	8	4.0

Table (4-1) displays the frequency counts for selected variables. As mentioned above, size of the group is (200) participants. Most of the participants in the study are in the (38 – above) years-old age groups (n = 64; 32.0%).

Most of the participants according to their gender are male (n= 106; 53.0 %) , while the number of female were (n:94;47.0%), Most of the participants in the study are married (n = 114; 57.0 %), and (n:67;33.5%) single participants. Most of the participants in the study are graduated from middle school (n=64; 23.0%), followed by those read and write (n = 39; 3019.5%), followed by those who graduated from bachelor and above (n = 37; 18.5%) and followed by those who secondary graduated (n:26;13.0%).

Most of the participants according to their occupation are employee (n:70;35.0%), followed by those does not work (n:59;29.5%), followed by free business (n:33;16.5%), and followed by those students (n:27;13.5%).

Most of the participant in the study according to their economic status are median income (n:156;78.0%), followed by those low income (n:36;18.0%), and followed by good income (n:8;4.0%).

Table 4.2 " Evaluation of participants knowledge concerning COVID 19" (N=200)

NO.	Questions of Knowledge	Mean	S D	Evaluation
1	"Main clinical symptoms of COVID-19 are fever, cough, shortness of breath, and fatigue"	1.97	0.184	Good
2	"Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus"	1.86	0.348	Good
3	"COVID-19 symptoms appear within 2–14 days"	1.89	0.314	Good
4	"Currently, there is no effective treatment or vaccine for COVID-2019, but early symptomatic and supportive treatment can help most patients to recover from the infection"	1.75	0.437	Good
5	"Not all persons with COVID-19 will develop severe cases. Those who are elderly, have chronic illnesses, and with suppressed immunity are more likely to be severe cases"	1.97	0.157	Good
6	"Touching or shaking hands of an infected person would result in the infection by the COVID-19 virus"	1.93	0.247	Good
7	"Touching an object or surface with the virus on it, then touching your mouth, nose, or eyes with the unwashed hand would result in the infection by the COVID-19 virus"	1.91	0.287	Good
8	"The COVID-19 virus spreads via respiratory droplets of infected individuals through the air during sneezing or coughing of infected patients"	1.9	0.171	Good
9	"Persons with COVID-19 cannot infect the virus to others if he has no any symptom of COVID-19"	1.54	0.500	Moderate
10	"Wearing masks when moving out of home is important to prevent the infection with COVID-19 virus"	1.94	0.229	Good
11	"Children and young adults do not need to take measures to prevent the infection by the COVID-19 virus"	1.33	0.471	Poor
12	"To prevent the COVID-19 infection, individuals should avoid going to crowded places such as public" transportations, religious places, Hospitals and Workplaces	1.93	0.256	Good
13	"Washing hands frequently with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer (60%) is important to prevent infection with COVID-19"	1.98	0.122	Good
14	"Traveling to an infectious area or having contact with someone traveled to an area where the infection present is a risk for developing an infection"	1.98	0.140	Good

Table 4.2 (Continue) " Evaluation of participants knowledge concerning COVID 19"

15	"Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus"	1.98	0.122	Good
16	"People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place".	1.90	0.294	Good
Total		1.86	0.267	Good

SD: Standard Deviation.

Poor Knowledge (1-1.33), Moderate Knowledge (1.34-1.67), Good Knowledge (1.68 - 2)

Table (4-2) shows that good evaluation of participants knowledge concerning covid-19 (total mean:1.86), all items of evaluation are good except of the (Children and young adults do not need to take measures to prevent the infection by the COVID-19 virus) was poor (M:1.33), and (Persons with COVID-19 cannot infect the virus to others if he has no any symptom of COVID-19) was moderate (M: 1.54). but totally the evaluation of participants knowledge concerning covid-19 was good.

Table 4.3 Differences between socio-demographic variables and peoples knowledge.

Socio-demographic variables		M.S	S.D	D.F		Test	P	Sig.
Age	18 – 22	30.35	1.142	Between Group	4	F = 2.763	.029	S
	23 – 27	29.78	1.119	Within Group	195			
	28 – 32	29.39	1.618	Total	199			
	33 – 37	29.62	1.023					
	38-above	29.94	1.139					
Gender	Male	29.72	1.300	198		t = 1.582	.115	NS
	Female	29.99	1.112					
Social Status	Single	29.96	1.134	Between Group	4	F = .867	.485	NS
	Married	29.81	1.296	Within Group	195			
	Widower	29.53	.990	Total	199			
	Divorced	30.67	1.155					
	Separated	29.00	.					

Table 4.2 (Continue) Differences between socio-demographic variables and peoples knowledge.

Level of Education	Not read or write	29.86	.690	Between Group	6	F = 1.429	.205	NS
	Read and write	30.26	.993	Within Group	193			
	Primary graduate	29.52	1.702	Total	199			
	Middle school graduated	29.78	1.263					
	Secondary graduate	29.88	1.177					
	Institute graduate	30.00	.976					
	Bachelor and above	29.57	1.214					
Occupation	Student	30.11	1.219	Between Group	4	F = 1.589	.179	NS
	Employee	29.86	1.107	Within Group	195			
	Retired	30.00	.775	Total	199			
	Free business	29.39	1.676					
	Does not work	29.93	1.081					
Socio-demographic variables		M.S	S.D	D.F		Test	P	Sig.
Economic Status	Low income	29.69	1.508	Between Group	2	F = .332	.718	NS
	Median income	29.88	1.115	Within Group	197			
	Good income	29.88	1.808	Total	199			

M.S :Mean of score, S.D : Standard deviation, D.F :Degree of Freedom, F : One Way Anova, t : Independent T-Test, P :P value, Sig. :Significant.

Table (4-3) shows that; there is association between participants knowledge, with their age (at p value = 0.029). And there is no association between participant knowledge, and their other socio-demographic characteristics (gender, social status, level of education, occupation, and economic status).

5. CONCLUSION

5.1. Discussion of the sample demographic characteristics (Table 4-1)

Most of the study participants are in the age groups (38 - above) years of age (n = 64; 32.0%). And the participants according to their gender were male (n = 106; 53.0%), while the number of females was (n: 94; 47.0%), as well as the study participants are married (n = 114; 57.0%), and (n: 67; 33.5 %) individual participants, this study (Daniel et al, 2020) seems to support the researcher's study, as the proportion of participants over the age of 38 was about 51.7% while the proportion of men was 92.4% as well as the proportion of married participants, which amounted to 63.4%, as well as another study appeared to (2020, Akalu et al) agreed with the researcher's studies, as the majority of men (60.9%) of the total participants in the study appeared, and about 305 (75.5%) of the participants are married.

Study researcher study saw participants graduate from middle school (n = 64; 23.0%), followed by those who read and write (n = 39; 3019.5%), followed by those who graduated with a bachelor's degree and above (n = 37; 18.5%) They were followed by those who graduated from secondary school (26%; 13.0%), on the educational level of the participants that most of the participants were from the middle stage (Ekaterini et al., 2020), which was 50.4 of the total participants.

The respondents according to their profession are employed (n: 70; 35.0%), followed by those who are not working (n: 59; 29.5%), followed by self-employed (n: 33; 16.5%), followed by these students (n: 27; 13.5%).), the percentage of employees participating in this study (Zhong, 2020) is consistent with the researcher's study, where the percentage of study participants was 56.2, most of the study participants according to their economic status, there is an average income (number: 156; 78.0%) , followed by low income (n: 36; 18.0%), followed by good income (n: 8; 4.0%), middle-class participation rate—people in this study (Asif et al, 2020) are higher than those with high and low incomes, reaching to 40% of the total participants, which is also in agreement with the researcher's studies.

5.3. Discussion participants knowledge concerning COVID 19 (Table 4-2)

It shows in the two studies the good evaluation of participants' knowledge regarding covid-19 (overall average: 1.86). A study similar to the two studies above (Table 4-2) found that participants considered to have good knowledge among 2045 respondents, 1122 (54.87%) respondents retained good knowledge (mean score 30.41 ± 3.55). On the basis of demographic classifications, known participants (GKPs) were 309 (15.11%) of total respondents and 27.54% of GKPs were from Dhaka department, mean age was 27.24 ± 6.61 , 643 (31.44% of all) were Staff and 57% 31% of all participants were men, and 590 (28.85% of all students and 52% 58% of all participants) were graduates (Meseret, 2020).

These investigations are consistent with the findings of the researcher's study, which included participants from Kenya, China, and Iran and found that the variations in a measure used for assessment of know prevalence of bad knowledge were little. The explanation for this discernible edge, as well as the time period during which the data was collected Because of the socioeconomic differences between China and Iran, it is possible that these studies were conducted in pansy. However, the data were obtained during the primary status of research participants. Furthermore, it is probable that this is due to the period of the outbreak during which the bulk of the population has been exposed to a significant amount of information about COVID-19. The vast majority of Ethiopia's population, which was concentrated in rural areas, did not have access to electricity or the internet at the time of writing. 26 The result is that COVID-19-related updates and preventive activities posted online by official government health authorities and other media outlets, which have been shown to be successful in expanding knowledge about the disease, are only available to a limited number of people.

Television and/or radio were the most frequently cited sources of information in this survey (59.9 percent), whereas social media was the most frequently cited source of information in the study conducted by Bhagirathi et al (60 percent).

27 The differences in socioeconomic and educational backgrounds across the research populations could be a contributing factor to this disparity, according to certain theories.

Rural residents were found to be nineteen times more likely than urban residents to have poor knowledge and practice, according to the research. According to the researchers, this observation is in keeping with the findings of a study conducted in China, which supports their hypothesis. 28 It is impossible for those living in remote areas, where there is no access to electricity or mobile networks, to keep up with the newest advancements in COVID-19 because they lack the necessary resources. This is due to a scarcity of readily available information. People living in rural locations are unable to obtain health information on the internet, despite the fact that the availability of health information on the internet, which might improve patient knowledge and practice, is increasing. A lack of access to and limited ability to interpret health information and health-promoting activities that can assist individuals in preventing COVID-19.³⁰ and ³¹ is a problem in rural Ethiopia, where the majority of the population is illiterate. Ethiopia's rural areas have the most common sources of information, which are families, friends, and health-care providers. However, none of these sources of information is nearly as current as the methods of collecting information in metropolitan areas. In the absence of timely and efficient dissemination of health information, the likelihood of putting health knowledge into practice reduces.

Researcher: These studies took place at the beginning of the spread of the Corona virus, and it is normal for clients who do not have sufficient knowledge of this virus. As for the researcher's study, it was conducted years after its spread, and above all, the researcher conducted a study in the capital, which is the center of culture and information exchange (yonas et al ., 2020).

5.4. Discussion the differences between social and demographic variables and peoples knowledge (Table 4-3).

According to the results of the researcher's study, there is a positive relationship between the participants' knowledge and their ages (p value = 0.029). According to the findings, there is no relationship between participants' knowledge and their other socio-demographic factors (gender, marital status, education level, occupation, and economic status). It is here that I discovered a study that is compatible with my own. The average C19KT score suggests that the vast majority of participants have a thorough understanding of COVID-19. According to the results of multivariate linear regression and binary logistic regression analyses, C19KT scores differed considerably depending on the participant's age, gender, educational level, domicile, monthly household income, and marital status. The occupation, on the other hand, did not appear to have much of an association. The following graph depicts a detailed demographic association with knowledge (Mohammed et al, 2020).

While the other research does not contradict the findings of the researcher's study, there is a strong correlation between variables and the knowledge of clients in the other study. According to the findings of the researcher's study, there is no relationship between variables and knowledge of clients, with the exception of age. Knowledge score was found to be statistically significant when the existence of underlying disease was present. In a multivariate logistic regression analysis, participants' age, educational status, and married status were found to be substantially linked with their knowledge level on COVID-19. As a result, participants in the 18–30 age group were 7.33 (AOR=7.33; 95 percent CI: 2.76–19.49) times more informed than those in the 60–plus age group, according to the findings. Those with a completed primary school, completed secondary school, completed university/college, or a higher level of education had a 2.94 (adjusted odds ratio [AOR] of 2.94; 95 percent confidence interval (confidence interval): 1.56–5.51), 5.91 (adjusted odds ratio [AOR] of 5.91; 95 percent confidence interval [95 percent CI]: 2.94–12.10), 8.59 (adjusted odds ratio [AOR] of 8.59; 95 percent confidence interval [95 percent CI]: 4.13–18.21), and 2.82 (adjusted odds ratio [AOR] of 2.82; 95 percent confidence interval [95 percent CI]: 1.13–7.03) times more informed than those with no formal education, respectively.

times higher knowledge score than separated or widowed participants (Daniel et al ., 2020).



6. CONCLUSION AND RECOMMENDATIONS

❖ **Conclusions:**

Created on findings of the this study, the researcher concludes the following:

Outcome Rate Assessment of participants' knowledge of COVID-19 Good (M.1,86)
There is a correlation between participants' knowledge and their age (at p-value = 0.029). There is no correlation between participants' knowledge and their other socio-demographic characteristics (gender, marital status, education level, occupation, and economic status).

❖ **Recommendations:**

Created on the stated above conclusions, the current study can recommend that:

1. The Ministry of Health should increase support for the community and provide the necessary life necessities to avoid people's lack of commitment to their knowledge of COVID-19, which leads to a high rate of infection
2. The Ministry of Health should raise awareness of clients and compel them to take the vaccination
3. Researchers should study the psychological aspect or the practical aspect of COVID-19 and how it affects clients
4. The Clients should share knowledge and pass it on to people who have little knowledge of COVID-19 to prevent the spread of infection
5. Clients should not ignore their knowledge about COVID-19, which leads to increased infection with the virus

Adhere to a mask and gloves in crowded places due to the spread of the epidemic

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APPENDICES

APPENDIX 1. Etik kurul onayı, Genel Bilgi Formu vb.

APPENDIX 2. Questionnaire



APPENDIX 1. Etik kurul onayı, Genel Bilgi Formu vb.

Başvuru Kodu: 42ce9393a2744f6e

Bağdat Şehrindeki Birinci Basamak Sağlık Merkezlerinde Hastaların COVID 19 İle İlgili Bilgilerinin Değerlendirilmesi

Başvuru Kabul Edildi



APPENDIX 2. Questionnaire

Domain	NO.	Question	Answer	
			Yes	No
Symptoms	1	Main clinical symptoms of COVID-19 are fever, cough, shortness of breath, and fatigue		
	2	Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus		
	3	COVID-19 symptoms appear within 2–14 days		
	4	Currently, there is no effective treatment or vaccine for COVID-2019, but early symptomatic and supportive treatment can help most patients to recover from the infection		
	5	Not all persons with COVID-19 will develop severe cases. Those who are elderly, have chronic illnesses, and with suppressed immunity are more likely to be severe cases		
Transmission	6	Touching or shaking hands of an infected person would result in the infection by the COVID-19 virus		
	7	Touching an object or surface with the virus on it, then touching your mouth, nose, or eyes with the unwashed hand would result in the infection by the COVID-19 virus		
	8	The COVID-19 virus spreads via respiratory droplets of infected individuals through the air during sneezing or coughing of infected patients		
	9	Persons with COVID-19 cannot infect the virus to others if he has no any symptom of COVID-19		
Prevention	10	Wearing masks when moving out of home is important to prevent the infection with COVID-19 virus		
	11	Children and young adults do not need to take measures to prevent the infection by the COVID-19 virus		
	12	To prevent the COVID-19 infection, individuals should avoid going to crowded places such as public transportations, religious places, Hospitals and Workplaces		
	13	Washing hands frequently with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer (60%) is important to prevent infection with COVID-19		
	14	Traveling to an infectious area or having contact with someone traveled to an area where the infection present is a risk for developing an infection		
	15	Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus		
	16	People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place.		

CURRICULUM VITAE

Name: Ammar Mohammed Sabeeh

I live in the city of Baghdad in Iraq, married and father of two children. He holds a Bachelor's degree in Nursing from the University of Baghdad in 2014. I work in health institutions at Imam Hospital - peace be upon him - for more than five years and other hospitals. My work frequency during the period mentioned in the departments (eye operations, cardiopulmonary resuscitation, dialysis, and emergency) and I worked in private sector institutions for a short period, and I also work as a lecturer in charitable nursing institutions. I speak English and Turkish a little.

