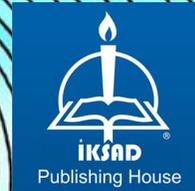


STRATEGIES IN HEALTH DURING THE COVID-19 PANDEMIC

EDITED BY
Çiğdem CERİT



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EDITOR

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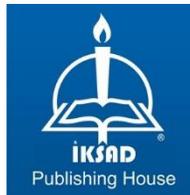
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(The Licence Number of Publicator: 2014/31220)

TURKEY TR: +90 342 606 06 75

USA: +1 631 685 0 853

E mail: iksadyayinevi@gmail.com

www.iksadyayinevi.com

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Iksad Publications – 2021©

ISBN: 978-625-8423-51-8

December / 2021

Ankara / Turkey

Size: 16x24 cm

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EDITED BY

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PREFACE

We dedicate this book to the healthcare professionals who lost their lives during the COVID-19 Pandemic and are still working hard. The helplessness of mankind in the face of the COVID-19 epidemic once again showed the importance of KNOWLEDGE and KNOWING. For this reason, I believe that our book, STRATEGIES IN HEALTH DURING THE COVID-19 PANDEMIC, will be a valuable resource, and I hope it will be useful to the readers.

Assistant Professor Çiğdem CERİT¹

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CHAPTER 1

THE ROLE AND IMPORTANCE OF EPIDEMICS IN THE HISTORY OF MEDICINE FOR MEDICAL INFORMATICS AND HEALTH ECONOMY

Dr. Elçin Güven

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What to learn from this unit?

Upon completing the unit,

You will be able to define the social origins of disease and health in addition to the correlation between such terms as health informatics, disease and health;

You will be able to explain the relation between the history of Turkish medicine and the history of medicine in Ancient Egypt, Ancient Mesopotamia, China, and Ancient Greece.

You will be able to explain the role and importance of epidemics in the history of medicine.

Unit Goals

Defining such concepts as health informatics, health, and disease

Explaining the history of Turkish medicine and the history of medicine in Ancient Egypt, Ancient Mesopotamia, China, and Ancient Greece.

Explaining epidemics in the history of medicine

Introduction

Information Technologies includes all stages for collecting, processing, distributing, and transmitting data, and it has many sub-systems, including health informatics. As a result of the increase in information technologies, information-based medical technologies and health information systems have become more critical. Today, it is essential to use health informatics and technologies in the health services sector (Yıldırım and Çevirgen, 2019:66). In the historical process, infectious diseases are considered some of the most significant public health problems. In the modern world, deaths resulting from infectious diseases are among the top causes of death. Vaccines for preventing infectious diseases are of significance in the history of medicine (Özkan and Aycan, 1999:43). A thorough examination suggests that the major pandemics in the world include the following: The plague (black death) lasting for four years from 1347 to 1351 (eradicating approximately 30-50% of the European population), smallpox in 1520, the Spanish flu from 1918 to 1919 (a disease thought to have inflicted one-third of the world population with a death rate of almost 50 million people), HIV/AIDS (first seen in 1981 and has been seen since then), SARS detected in 2002-2003, Swine Influenza Virus (SIV/H1N1) spotted in 2009-2010 as well as Ebola virus from 2014 to 2016. The COVID-19 pandemic first started in China in December 2019 and has been spreading rapidly worldwide ever since then. This pandemic is still spreading even when this book chapter is being written. Therefore, it still holds the record for being the last pandemic in the history of

infectious diseases because of its high mortality rate e (Üstün and Özçiftçi, 2020: 144).

1. Conceptual Framework: Health Informatics, Disease and Health

Health informatics reduces the workload, facilitates the decision-making process, and allows the exchange of information between individuals and institutions by keeping regular records with its reminder systems. It also enhances the reliability and accuracy of diagnosis-treatment, creates data mining opportunities for statistical research and prevents data loss (Yıldırım and Çevirgen, 2019:66). There are new approaches to the concept of health, which continue to develop with new dimensions. Thanks to improvements, some terms have replaced the others. For instance, 'treatment' has been replaced with 'preventive health services'; 'patient' has been replaced with 'people'; 'surveillance' replaced 'intervention' and 'health' replaced 'disease'. 'Traditional medicine' and 'modern medicine' coexist in treatment practices, and thus they have not lost their currency. Especially in traditional medicine, new research is being added day by day on public health and healing methods. Along with cultural comparisons, the nature of the disease progresses with a focus on the concept of health, while it continues its way with new approaches and concepts (Kaplan, 2016:16).

2. The Cultural Origins of Disease and Health

Throughout history, society and the environment have been influential on how disease and health are perceived. There are cultural differences

in force as to understanding the reasons for diseases and treating them. For instance, whether the pregnancy or premenstrual illness is perceived as a medical illness that requires resting depends on the cultural differences. Cultural norms, beliefs, and values are also influential in the perception of disease due to cultural reflection. The social culture forms the individual reaction and attitude towards diseases, which eventually impacts the individual's health level (Aytaç and Kurtdaş, 2015:238-239-240).

2.1. Medicine in Ancient Egypt

The medicine in ancient Egypt is the foundation of modern medicine thanks to its thousands of years of magical-initiative knowledge and experience. Nine hundred prescriptions have survived to the present day (Winkler-Payer, Translated: Gözen, 2020). It is seen that stomach and intestinal complaints were common in ancient Egypt and that the breastmilk of a mother who had given birth to a boy was used to treat colds (Aboelsoud, 2010:83). Educated in temples, physicians were also qualified as the clergymen in ancient Egypt in addition to their medical profession. In ancient Egypt, each organ used to be associated with such gods as Ra, Isis, Thoth, and Sekhmet. Imhotep, the god of health, is believed to have lived in the last periods of Egyptian Civilization. He was a physician, a vizier and an architect. From 2980 to 2900 BC, Imhotep served as a vizier to Emperor Zoser and designed the plans of Eham.

Papyruses are considered essential sources for studies on ancient Egyptian medicine. Found in Kahun in 1893 and dating back to the 1900s BC, Kahun Papyrus mentions gynaecological diseases in its first chapter and veterinary medicine in the second one. The papyrus has a reference to the use of herbal medicine made of leek, garlic, and onion as a daily supplement for workers so that they can be protected from infectious diseases. Brooklyn Papyrus includes information on snake species, the course of the disease and its clinical effects. Onion was the mainly preferred ingredient to treat snake bites. Although the papyrus mentions crocodile bites and scorpion bites, it mentions no treatment methods for those. Unearthed in Thebes by Edwin Smith in 1862, the Surgical Papyrus dates to the 1600s BC. This papyrus, thought to have been written originally in the 1800s BC during the Hyksos period, includes three sections. The first one includes information on the cardiac channels. It is known that some medical information about the heart used to be kept as a secret among physicians. The main section contains information about fractures, wounds, and tumours from 48 surgical cases. Lip wounds, jaw fractures, tendons, muscle systems, bone cracks, bone fractures are recorded in this papyrus. Uncovered in Thebes by George Ebers in 1873, Ebers Medical Papyrus was in the form of a 0.80*21-meter-long roll. The ancient Egyptian name of this papyrus is Kahmi, which corresponds to the word Alchemy (alchemy). The copy of the papyrus dates to 1553 BC, but the original manuscript is thought to date back to the Middle Imperial Period. While examining the diseases, priority was given to 4 items. These are:

1-Conditional Diagnosis

2-Disease symptoms and examination information

3-The course of the disease

4-Drug therapy information

Hearst Medical Papyrus traces back to 1550 BC and consists of 3 parts, the first of which refers to the heart and circulatory system. The second one talks about surgery. This papyrus also contains tumours, fractures, neck and head wounds, and treatment methods. Found in the temple of Imhotep and written in 1350 BC, Berlin Medical Papyrus mentions internal diseases, surgical applications, and gynaecology. It is being displayed in the Berlin State Museum (Dönmez, 2019:21-22-23).

2.2. Medicine in Ancient Mesopotamia

Mesopotamian physicians used diagnostic methods such as measuring body temperature, counting the number of patient's breaths, checking the eye movement, urine colour, the oral health for the mouth and tongue. Clinical symptoms were carefully observed. They classified the organs into anatomical regions. They pointed out the relation between the heartbeat and blood circulation, the liver and hepatitis. They also provided information on mental illnesses, eye diseases, skin and urinary tract diseases, liver diseases, throat diseases, lung diseases, stomach diseases, ear diseases and intestinal diseases (Mandacı and Uncu, 2013:109-110). Ancient Babylonian King Hammurabi emphasized the

importance of the medical profession in Ancient Babylon by legally setting wages for physicians. There were such treatment methods as rubbing the body with oils and ointments, bathing with cold and hot water, bloodletting. There are cuneiform tablets named 'A.ZU' in Sumerian and 'asu' in Assyrian language about the treatment methods preferred by the healers and physicians. These tablets describe herbal mixtures to be used for a list of diseases and explain how to use herbal mixtures for specific diseases (Masalçı, 2014: 42).

2.3. Medicine in Ancient China

Speculated to be written in 2600BC by Huangdi Neijing - the Chinese emperor (2698BC-2599 BC), the book called 'The Yellow Emperor's Classic of Internal Medicine' also known as 'The Yellow Emperor's Inner Canon and Book of Medicine' is considered essential for the medicine in Ancient China. Known as a semi-mystical figure in China, Huangdi Neijing was known as the Yellow Emperor. Here are some of the most fundamental resources in Chinese medicine (Ekmekçi, 2018:133):

1-The Yellow Emperor's Inner Canon: Based on Taoist philosophy, this book is also known as the internal law. It is argued that disease and health are related to the balance between the universe and man. It consists of two parts:

1.Su Wen: Book of Simple Questions

1.Ling Shu: The Book of Acupuncture

2-The Divine Husbandman's Materia Medica: This script has medication information based on 300 animals, plants, and minerals. Ying Yang and Wu Xing (five elements) system are mentioned while discussing the therapeutic aspects of drugs.

3-The Canon of Problems: In various sources, the book known as 'The Classic of Difficult Issues 'was written in the 1st and 2nd century AD. It suggests such treatment methods as acupuncture and bloodletting.

4-The Treatise on Cold-Damage Disorder: It includes the treatment of diseases such as acute febrile infection (Ekmekçi, 2018:133).

2.4. Medicine in Ancient Greece

Ancient Greek medicine is analysed in 2 periods.

The first one refers to the mythological period from 11th BC to 5th BC.

Furthermore, the second one refers to the scientific period that started and developed with Hippocrates in the 5th century BC.

The mythological period is also called the prehistoric period. The information that has survived from the prehistoric period is reported through myths. Asclepius is the Greek god mostly mentioned in Ancient Greece. Asclepius has four daughters - Hygieia, Panacea, Laso, Akeso-

and three sons -Machaon, Telesphore and Hippocan. Hippocan and Hygieia are more well-known than others. Hippocan is the first representative of the Hippocrates family. Hygieia is the goddess of health, and the word hygiene derives from her name. There are many temples built in the name of Asclepius for treatment purposes. These temples are called Asklepeion, the most famous of which can be found in Athens, Rhodes, Pergamon, Kos, Titan-Triika, Epidaurus. There are temples in 320 cities dedicated to Asclepius, the oldest in Titan and the most important one in Epidaurus. Since Christians burned and destroyed most of the Asclepeions in the 4th century AD, there are sections only in Bergama Asclepeion today. These include holy road, sanctuary, propylon (marble door with four columns), Artemis Corner, library, corridors, theatre, encoimaterion (rooms for dreaming) and a large area. Physicians in the Asclepeion were called Priest-Physician or Asclepiad. Priesthood attributes were used to reference enlightened people with healing powers, not because they were priests. In these temples, the patients were examined as soon as they entered the gates and were not allowed in if their conditions were untreatable. Besides, birth and death were also not allowed in the temple (Yaprak, 2021).

Some of the prominent authors in Greek medicine were Pergamon Galen, Cos Hippocrates, Aristotle. Pergamon Galen (129-216 BC), one of the most influential scientists of antiquity, was a Greek doctor, surgeon, and philosopher. Some historians claimed that these physicians were prominent in pathology, anatomy, pharmacology, physiology, neurology and that they had control over Western medicine

for centuries. Hippocrates of Cos (460-370 BC) is still considered the father of medicine, and he formed the basis for medical development. One of the most important contributions of Hippocrates was that besides stating that disease is a natural process, he argued that theurgy and medical philosophy should be considered as a separate discipline from medical knowledge. Aristotle (384-322 BC) is one of the most influential philosophers of antiquity. His contributions to medicine are primarily speculative. He wrote most of his work on biology (Warbletoncouncil, 2021).

2.5. Medicine in Turkish and Islamic Civilizations

In Islamic states, traditional medicine and Greek medicine form the basis of medicine. In the Islamic world, medieval medical education was carried out by treating patients in hospitals. People with medical training learned treatment methods from physicians through a master-apprentice relationship. The hospital and medical school in Cundishapur, Iran, in the 5th century set a model for the establishment of other hospitals. In about 800, the first Islamic hospital was established during the Abbasid period. In the Turkish-Islamic world, words of Arabic and Persian origin were used for hospitals, such as şifahiye, darüssıhha, darüşşifa and bimarhane. These words were later replaced by "hastane (hospital)" in the 19th century Ottoman Empire. A comparison between European hospitals and darüşşifa in Islamic states suggests that these institutions were similar in physician training programmes and medical services. However, it is also seen that

European hospitals were merely organizations for care and charity (Dündar et al., 2019: 84).

Before 1930, medical history courses were taught in Mekteb-i Tıbbiye-i Şahane (The Great Medical School). MD. Zoeros Pasha taught the medical history lesson from 1860 to 1863. The first work written on the history of medicine was *Hakayık-ı Tabatet*, 88 pages written by MD. Mehmed Emin Fehmi, with a criticism on the followers of traditional medicine and opponents of scientific medicine. MD. Joseph Nurican, an Ottoman physician, published a book on the history of medicine called *Aperçu historique sur la médecine arabe* in Istanbul in 1876. In 1887, Dr. Hüseyin Remzi published the *History of Medicine*, which covers the journey of medicine from ancient civilizations to Galen, as a translation of Pierre Victor Renouard's book *Histoire de la médecine depuis son origine jusqu'à XIX ième siècle* published in 1846. Although MD. Remzi originally planned to publish this work in three volumes, including the sections on the development of medicine in the Turkish-Islamic world; only a single volume was published (Günergün and Yolun, 2013:267-268-269). There are special ethical rules for surgeons and newbies in surgical manuscripts (Sarı, 2000:10).

History of X-Ray

On November 8, 1895, Wilhelm Conrad Röntgen (1845-1923) discovered X-rays and projection in photography. He obtained the first X-ray film of his wife's hand on December 22, 1895. On January 13, 1896, Wilhelm Conrad presented his discovery of Röntgen at a conference on January 23, 1896. Albert von Kölliker suggested that the newly discovered rays be named after x-rays. Wilhelm Röntgen was the first person to receive the Nobel Prize in physics in 1901. Bismuth obtained the first digestive system imaging studies in 1904. Pulmonary tuberculosis screening was performed for the first time in 1936 (Tosun, 2011:57-58).

History of Mammography

At Anderson Cancer Center in the 1950s, Dr Robert L. Egan developed the first mammography imaging method. It combined the high Ma, low kVp technique with single emulsion films. He published an article discussing mammography in 1959 and its impact on mortality and treatment in 1964. In 1965, Charles Gross developed a suitable compression system with a molybdenum x-ray tube with a focal point of 0.7 mm developed by Emila Gabbay and invented a machine manufactured by Thomson CGR to test for breast cancer. In 1966, Dr John N. Wolfe detected all the structures in the breast tissue for the first time with the low kVp method and used a selenium plate instead of the X-ray film (Hipocratist, 2020).

History of Magnetic Resonance Imaging (MRI)

In 1923, the foundations of Magnetic Resonance Imaging were laid when Wolfgang Pauli discovered the phenomenon of spin resonance in the nucleus. Felix Bloch and Edward Mills Purcell described Magnetic Resonance Imaging in 1946. Paul C. Lauterbur made its first adaptation of MR to the human body in 1973. In 1975, the Fourier Transform technique was defined by Richard Ernst, and in 1977, Raymond Damadian provided MR imaging of the whole body. Hawkes defined the multiplanar feature of MRI in 1980, and the first lesion was demonstrated with this method. The first contrast agent application in MRI was performed by Schörner et al. in 1984. In 1986, Haase et al. developed rapid imaging sequences and provided a solution to the lengthy examination time. Charles Dumoulin developed MR-Angiography (MRA) techniques in 1987. MR techniques have expanded the field of MRI and started to be used in 1993 (Oyar, 2008:31-32).

History of Computed Tomography

Conrad Röntgenin established the basis of computed tomography (CT) after he discovered X-rays in 1895. Godfrey Heninsin developed the initial prototype of the CT device. The first clinical studies were conducted in 1971. Computed tomography was announced to the world in 1972 (Akyar, 1990: 94). In 1972, the first clinical computed tomography X-ray unit was developed by G.N. Hounsfield. In these periods, imaging techniques for anatomical formations were advanced. In 1979, Godfrey and Cormack won the Nobel Prize for their work on computed tomography (Kahraman, 2010:482).

3.Epidemics in the History of Medicine

3.1. Epidemics Before 1500 AD

3.1.1. Plague

The plague epidemic in 1348 caused the death of one-third of the European population, which is considered one of the most powerful and the highest mortality rate among the plague epidemics. Three types of Plague were seen in the Middle Ages. They are bubonic, septicaemic and pneumonic. Bubonic Plague is the most common type in Europe. This Plague is passed from one rodent to another through fleas. However, it is black mice that carry the microbe to humans. The bite of fleas carrying the disease, the microbe affects the lymphatic system of humans. Swellings known as bubbling appear in the armpits, legs and groin. During the disease period, if the swellings burst, the patients are saved. However, if the swelling does not burst, the patients die three days after the first swelling. Septicaemic Plague occurs when bacteria become infected with the bloodstream. In the bloodstream, bacteria multiply rapidly, and people die within hours before symptoms of the disease appear. In the pneumonic Plague, patients spit blood and die within a few days due to lung inflammation. The Plague is called the black death because the black-coloured swellings with inflammation and blood are the main feature of the disease (Genç, 2011: 125-126).

It is thought that the Plague first appeared in Palestine in 320 BC. The first plague epidemic in history was seen in Byzantium-Istanbul (Özden and Özmat, 2014:62). From past to present, Plague has affected the

world the most in three dates. In 542 A.D, the Plague of Justinian epidemic first emerged in Alexandria and then spread to Istanbul via grain ships. The Plague continued until the mid-8th century in Palestine, North Africa, Sura and later in Istanbul, Gaul, and Italy. It is estimated that about 100 million people died in this epidemic. The Second Great Plague Epidemic occurred in 1347-1353. In 1348, it was determined that 30 million people died in Southern Europe and Italy. The third epidemic is the Bombay Plague of the second half of the 19th century. Bombay Plague, which started in Southeast Asia and affected the whole world, was effective until the mid-20th century (Hinge, 2020: 79-80-81).

3.2. Epidemics in the 5th and 18th Centuries

3.2.1. Smallpox

Between 1350 BC, the first smallpox patient was Egyptian Pharaoh Ramses V. Marks were found on Ramses' mummy's shoulders, neck, and face. These scars are thought to be from smallpox. Smallpox is thought to have existed in India around 500 BC. In China, smallpox was first mentioned in 340 in Ge Hung's 'Handbook of Medicines for Emergencies'. In 1958, the World Health Organization started a control program for smallpox because it caused a pandemic for 3000 years and killed 300-500 million people in the last century. In 1979, the disease was completely eradicated.

Smallpox is thought to have reached Europe probably in 710 AD. It is presumed that it manifests itself as a mild flu-like illness. It became lethal in the 16th and 17th centuries, and mortality rates increased in Europe. In the new strain of smallpox, large blisters on the skin, high fever, damage to internal organs, swelling of the face and hands were observed. In the 17th century, one-third of child deaths and four-fifth of adults in Europe had smallpox. In the 18th century, smallpox reached the death rate of plague in Europe (Durusoy, 2003: 367-368).

3.2.3. Measles

Measles is an RNA virus. It has only one type of antigenic form. In the measles virus, man is the natural host and is a contagious infectious disease. It can stay in the air for a long time. It can also be transmitted by breathing in the air. It is the most infected prodrome period (Hatipoğlu et al., 2013:105).

3.2.4. Influenza

Influenza, segmented RNA viruses belonging to the Orthomyxoviridae family, are negative-stranded, and sheathed. There are three types; A, B, C. Influenza C causes limited regional epidemics (Akan, 2015:134). The first known flu pandemic occurred in 1580. The Spanish Flu (influenza A H1N1) of 1918-1919 caused the death of more than 20 million people. It is estimated that the death rate of the Asian Flu (Influenza A H2N2) in 1957 was between 700 thousand and 1 million. It is known that 1-2 million people died in Hang Kong flu (Influenza A

H3N2) in 1968. In the city of La Gloria, in the Mexican state of Veracruz, in March 2009, an influenza epidemic occurred that caused deaths affecting 60% of the population. On March 30, 2009, the first case of swine flu was confirmed in San Diego, California, USA. On April 24, 2009, a new flu-like virus, of a bird, two pigs, and a human origin, in a quadruple variety, emerged in clusters in northern California and Mexico. On June 11, 2009, the World Health Organization raised its pandemic alert for the new flu virus to phase 6, the highest level. Worldwide, the new influenza virus has caused at least 16,000 deaths (official figure 15,921) in more than 212 countries. The first domestic flu epidemic in Turkey was confirmed on May 16, 2009. According to the Ministry of Health data, 6.5 million people have been infected. 13111 people were hospitalized, and 2721 were treated in intensive care units. 656 people lost their lives. 59.1% of the patients who lost their lives were those with chronic diseases, 6.1% were puerperal and pregnant women. The virus did not mutate, and the flu epidemic was mildly avoided (Balkan, 2012:194).

3.3. Epidemics in the 19th Century

3.3.1. Cholera

Cholera has spread worldwide from India (Şehiraltı, 2010:134). In India, the delta area of Lower Bengal, between the Brahmaputra and Ganges Rivers, is known as the source of Cholera. There were six cholera pandemics in the 19th century. There are three ways for Cholera to reach the west:

1-The land route to Russia over northern India, Iran, Afghanistan, and Central Asia

2-The land and sea route to Baghdad passing through the Persian Gulf and the Arabian Sea

3- the sea route from the Mediterranean and Egypt to Europe along the Red Sea.

The classifications in Pollitzer's works are the most accepted ones among scientists. Pollitzer's works suggest six pandemics, including Cholera, in the 19th century from 1817 - 1823, 1829 - 1851, 1852 - 1859, 1863 - 1879, 1881 - 1896, 1899 - 1923 (Yılmaz, 2017:29-32).

3.3.2. Malaria

In 1954, 250 million people suffered from malaria, and 2.5 million died. Today, it is known that 300-500 million people catch malaria every year and the death toll is around 1.5 to 2.7 million. 90% of the malaria sufferers are in Africa (Yıldırım and Yıldırım, 2000).

3.3.3. Typhus

Spotted Fever is another known name for typhus disease. Lice transmit typhus. The bite of lice transmits the disease, and all disease symptoms appear within 10 to 15 days. Symptoms include headache, dizziness, chills, blue spots on the body. The disease takes its name from these spots. Lice must first be destroyed, and the sufferer must be

quarantined. Typhus is very dangerous for blood vessels. The patient's heart weakens, and his pulse becomes almost imperceptible. Heart diseases are seen after the 10th day of the disease, and death occurs (Utkugün, 2018: 256).

3.4. Epidemics in the 20th Century

3.4.1. AIDS

Acquired Immune Deficiency Syndrome (AIDS) and Human Immunodeficiency Virus (HIV) are some of the current problems of contemporary medicine. AIDS is an international disease with epidemic characteristics. Since the disease was first described in 1981, 30.9 million people have died. According to the World Health Organization, more than 45% of cases are between 15 and 24. More than 90% of cases have been reported to occur in developing countries. While it is aimed to decrease the deaths due to HIV/AIDS by 2030, it is estimated that it will be the 10th among the causes of death at the international level. In Turkey, the first HIV/AIDS case was seen in 1985, and the numbers reached 150-200 since the beginning of the 2000s (Kurt and Yılmaz, 2012:48).

3.4.2. Meningitis

Meningitis, first described in 1805, is defined as inflammation of the cerebrospinal fluid. Many micro-organisms such as viruses, bacteria and fungi cause meningitis. Meningitis, which can be treated with

various methods, is an infectious disease that still causes many morbidities and mortality (Özsürekcı, 2013:2).

3.5. Epidemics in the 21st century

3.5.1. SARS

The first SARS case was recorded in the second half of 2002 as a flu infection caused by the human coronavirus in Far East Asia. In the following times, cases started to result in death due to respiratory failure. For this reason, the disease has been named acute respiratory syndrome, referring to a severe acute respiratory syndrome. It is known that the SARS virus, first detected in 2002, spread worldwide within four months and was seen in 37 countries. It has been reported that SARS-COV causes more than 800 deaths with a mortality rate of 10% in 8500 patients and has a virulence feature in people over 65 years of age with a mortality rate of 50%. Like many common cold viruses, SARS-COV is an infectious RNA virus. It is transmitted through respiration and body fluids (Yücel and Görmez, 2019:33).

3.5.2. Ebola

The Ebola virus, which causes haemorrhagic fever outbreaks with high mortality rates, is a zoonosis with an impact on both human and non-human primates. Outbreaks in Africa were seen in the Congo and Nile basins (Lakshman et al., 2015:297). Ebola, an RNA virus from the filoviridae family, has several types such as Bundibugyo (BDBV), Zaire (EBOV), Reston (RESTV), Sudan (SUDV), Thai Forest (TAFV)

(Açikel, 2014:194). Ebola is also called the haemorrhagic fever virus. It was first seen in the Republic of Congo, Sudan, around the Ebola River, from where its name derives. In Zaire, in 1976, the first strain reached 55-80% lethality in large epidemics. Although the Sudan virus had a lethality of 50% in 1976, a single case was reported for the Thai virus in 1994. Chimps are the source of the Thai virus. In 2007, the Bundibugyo virus emerged with a lower lethality rate in Uganda. In 1989, the Reston virus caused an epidemic in America, and the animal trade was stopped. Reston virus reappeared in the Philippines in 2008. Four strains of Ebolavirus, Zaire, Bundibugyo, Thai Forest and Sudan viruses cause haemorrhagic fever and infection. Reston ebolavirus is found in elephants, gorillas, monkeys, and chimpanzees. The Bundibugyo, Sudan, and Zaire ebolavirus strains have caused outbreaks intermittently in Africa. In the Republic of the Congo, in March 2014, when the Zaire ebolavirus peaked in the Republic of Congo in March 2014, mortality rates reached 74%. Liberia, Guinea, and Sierra Leone were most affected by the epidemic (Karatay et al., 2015:91).

3.5.3. Hepatitis B

Hepatitis B seriously threatens public health in the world and Turkey. Hepatitis B virus (HBV), which causes high mortality rates and loss of workforce, causes an acute infection. The persistence of infection leads to cirrhosis, chronic carriage, and chronic hepatitis. Due to hepatitis B, approximately 500 thousand-1 million people die every year in the world. It is reported that 20-30 million people in Turkey and 2 billion people worldwide come into contact with the hepatitis B virus at some

point in their lives. In the distribution by age groups, the rate of hepatitis B is highest in the 20-29 age group with 2039 people. In epidemiological studies in Turkey, it is stated that HBV spreads horizontally within the society and family during youth and childhood (Şahin et al., 2010:36-37).

3.5.4. Coronavirus (Covid-19)

Coronavirus (Covid-19) disease, a new type of coronavirus (SARS-CoV-2) infection, was detected in December 2019 in the Wuhan-Hubei region of China. Soon, it spread to some provinces of China, America, Japan, Thailand, South Korea, and the whole world. The disease caused by this mutated new form of coronavirus has been named COVID-19. The covid-19 infection has been defined as an acute respiratory tract infection. It is a slowly progressing and rapidly transmitting disease with a great fatality when combined with such factors as a chronic disease. On March 11, 2020, the World Health Organization declared that the Novel Coronavirus infection led to a global pandemic. Upon World Health Organization's pandemic declaration, some measures were quickly implemented. These measures include social distancing, closing the borders of countries, stopping flights, and quarantining. However, death rates increased rapidly during the Covid-19 pandemic. According to WHO records, since June 4, 2020, the pandemic has spread to 215 countries and all continents except Antarctica. 6,652,446 people have been diagnosed with COVID-19, and 390,575 have died (Ülman, 2020: 366).

Table 1: Total Covid-19 Rates for Turkey

Year	Total Number of Patients	Total Death Rates	Total Number of Recovered Patients	Total Number of Tests
25 March 2020	2.433	59	-	33.004
25 April 2020	107.773	2.706	25.582	868.565
25 May 2020	157.814	4.369	120.015	1.853.754
25 June 2020	193.115	5.046	165.706	3.135.424
25 July 2020	225.173	5.596	208.477	4.532.672
25 August 2020	261.194	6.163	238.795	6.521.640
25 Sept. 2020	311.455	7.858	273.282	9.834.572
25 Oct. 2020	361.801	9.799	314.390	13.217.888
25 Nov. 2020	467.730	12.840	385.480	17.733.520
25 Dec. 2020	2.118.255	19.371	1.970.803	23.426.941
25 Jan. 2021	2.435.247	25.210	2.314.403	28.648.193
25 Feb. 2021	2.674.766	28.358	2.546.503	32.811.274
25 March 2021	3.120.013	30.619	2.900.829	37.212.928
25 April 2021	4.629.969	38.358	4.073.644	45.884.258
13 May 2021	5.083.996	44.059	4.856.763	50.259.943

Resource: (wikipedia.org, 2021), Accessed: 13.05.2021

History of Vaccine in the World

The vaccine research is based on the idea that an agent that causes disease in animals remains weak in humans. This idea led to the development of the BCG vaccine, which played an important part. Robert Koch discovered tuberculosis bacillus in 1882. In 1921, Calmetto decided to conduct vaccine studies on humans. In France, the first BCG vaccine was administered by Weill-Hale in 1921 to a healthy baby of a mother who died of TB after birth. The first intradermal BCG vaccine was produced in 1927. In 1960, oral BCG vaccines were discontinued, and the intradermal vaccine was used. BCG vaccine has been used for 80 years. Wright and Semple applied inactivated vaccine against typhoid for the first time in England. Kolle and Pfeiffer also implemented the inactivated vaccine against typhoid in Germany. Bordetella pertussis, the causative agent of pertussis, was described by Bordet and Gengou in 1906. In 1936, Kendrick and Eldering developed the dead whole-cell pertussis vaccine. In 1943, the American Academy of Paediatrics (APA) approved the vaccine.

In 1883, diphtheria bacillus was first described by Klebs. It was isolated in pure culture by Loeffler in 1884. While mortality rates were high before the vaccine was developed for diphtheria, only four children died from diphtheria between 1980 and 1995 after the vaccine. John Enders and Thomas Peebles were the first scientists to breed the measles virus in kidney cell cultures in 1954. The first sick child was vaccinated in 1959. In the United States, in 1963, the live measles vaccine was

licensed. This vaccine is used all over the world, even today. Johnson and Goodpasture proved that mumps is a virus. In 1945, Habel produced the mumps virus from embryonated chicken eggs. In 1976, the first live mumps vaccine was developed. In Finland, the inactivated mumps vaccine was developed but was discontinued due to its short duration of action. The measles vaccine began in the 1960s. The rubella vaccine, produced from human diploid cells, is the first live vaccine example. Rubella, measles, and mumps vaccines were combined in 1971. The chickenpox vaccine was produced in Japan. It is the first live virus vaccine produced in immunocompromised children, as with all children. It was also tested in children with leukaemia in the USA by Anne Gershon et al. Its reliability has been proven. The varicella vaccine, licensed in the USA in 1995, is still used today (Akdeniz and Kavukçu, 2016: 13-14-15).

3.6. History of Vaccine in Turkey

The initial studies for vaccine production started during the reign of the Ottoman Empire. The oldest document about the vaccine is a letter written by Lady Mary Montagu, the wife of the British Ambassador to her country in 1721, reporting that a method called vaccination was applied against smallpox in Istanbul.

- In 1885, a law was enacted in the Ottoman Empire for smallpox vaccination for the first time.

- In 1885, the first rabies vaccine was found. The rabies vaccine was brought to the Ottoman Empire in January 1887. The first rabies vaccine was produced in the School of Medicine.
- In 1892, the bacteriology house was established.
- In 1892, the first production house for the smallpox vaccine was established.
- The serums for diphtheria in 1896, cattle plague in 1897, and scarlet fever in 1903 were developed by Mustafa Adil.
- Typhoid vaccines in 1911, cholera, dysentery, and plague vaccines in 1913 were prepared for the first time in Turkey.
- Tuberculosis vaccine production started in 1927.
- The first produced BCG vaccine and package insert took place in 1927.
- From 1931 to 1996, tetanus and diphtheria vaccines were produced.
- Production of rabies serum started in 1937.
- Production of scorpion serum and typhus vaccine started in 1942.
- The Biological Control Laboratory was established in 1947.

- The Influenza laboratory was recognized as the International Regional Influenza Centre by The World Health Organization in 1950. At the same time, the production of the influenza vaccine was started.
- Experimental production of dry BCG vaccine started in 1976, and production started in 1983.
- Vaccine production was centralized by the Sanitation Institute in 1928.
- With mass production, vaccines for cholera, tetanus, typhoid, rabies, typhus, pertussis, diphtheria were produced until the 1940s. Anthrax, diphtheria, tetanus, rabies, scorpion soot, gas gangrene were produced in the serum farm established in 1968.

Typhus in 1971, smallpox vaccine in 1980, their production was terminated with the end of the diseases in Turkey. Rabies and DBT vaccines were discontinued in 1996, and BCG vaccine production in 1997. Five mixed (DaBT-IPV-Hib), pneumonia vaccine (KPA-Conjugated Pneumococcus) in 2009, quadruple mixed (DaBT-IPV) in 2010 were introduced into Turkey. In 2011, injector filling and packaging technology were introduced to Turkey while the country had already purchased vaccines for three years (Ministry of Health, 2021).

Table 2: Methods and Dates for Developing Vaccines

Date	Live, attenuated (Weakened)	Dead, Full cell	Purified protein or polysaccharides	Genetic engineering
18 th century	Smallpox, 1798			
19 th century	Rabies, 1885	Typhoid, 1896 Cholera, 1896 Plague, 1897		
Early 20 th century, first half	Tb (BCG), 1927 Yellow fever, 1935	Whoop cough, 1926 Influenza, 1936 Rickettsia, 1938	Diphtheria Toxoid, 1923 Tetanus Toxoid, 1926	
20 th Century, second half	-Polio oral, 1963 -Measles, 1963 -Mumps, 1967 -Rubella, 1969 -Adenovirus, 1980 -Salmonella typhoid, 1989 -Varicella, 1995 -Rotavirus reassorted, 1999 -Cholera attenuated, 1994 -Influenza adapted to cold, 1999	-Polo IM, 1955 -Rabies (cell culture, 1980) -Tick-born encephalitis, 1981 -Japanese encephalitis (mouse brain), 1992 -Hepatitis A, 1996 -Cholera (WC-Rbs), 1991 -Conjugated Meningococcus (group C), 1999	-Anthrax secrete proteins, 1970 -Polysaccharide meningococcus, 1974 -Polysaccharide pneumococcus, 1977 -H. influenza Type b, 1985 -Conjugated Meningococcus Type b, 1987 -Polysaccharide typhoid (Vi), 1994 -Acellular pertussis, 1996 -Hepatitis B (derived from plasma), 1981	-Hep Bs Ag recombinant, 1986 -Lyme Osp A., 1998 -Cholera (recombinant toxin B), 1933

21 st century	-Rotavirus (attenuated and newly reassorted), 2006 -Zoster, 2006	- Japanese encephalitis (2009, Vera cell) -Cholera (WC only), 2009	-Conjugated pneumococcal recombinant (23 valent), 2000 - Conjugated Meningococcus (4 valent), 2005 - Conjugated pneumococcus (13 valent), 2010	-Human papillomavirus recombinant (4 valent) (2006) -Human papillomavirus recombinant (2 valent) (2009) -Meningococcus group B proteins, 2013 -Human papillomavirus recombinant (9 valent), 2014
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Source: Akdeniz ve Kavukçu, 2016:17

Conclusion

From the beginning of human history, the development of the history of medicine began with the recording of diseases, treatment methods and epidemics. The most important medical records were written in Persian, Babylonian, Egyptian, Indo-Chinese, Greek. These resources paved the way for the development of modern medicine (Kabirzadeh and Saravi, 2005:199). In the medical records, there are epidemic diseases experienced in every period of history. Some epidemic diseases include plague, smallpox, malaria, typhus, influenza, typhoid, cholera. Some of the epidemics and estimated deaths in history are as follows: Black Plague (1346-1350) with 50 million deaths, First

Cholera Pandemic (1817-1823) with 110,000 deaths, Second Cholera Pandemic (1829-1849) with 200,000 deaths, Typhus Epidemic (1847) with 20,000 deaths, Russian Flu (1889-1890) with 1 million deaths, Spanish Flu (1918-1920) with 20 million deaths, Asian Flu (1957-1958) with 2 million deaths, HIV/AIDS (1960 to present) with 40 million deaths, SARS Pandemic (2002-2003) with 774 deaths, Swine Flu (2009) with 284,000 deaths, West African Meningitis Epidemic (2009-2010) with 1,210 deaths, West African Ebola Epidemic (2014 to present) with 4,900 deaths (Nişancı, 2020:89). The Coronavirus (Covid-19) epidemic started in Wuhan, China, in December 2019 and spread. Until the date of this study - 15 May 2021, death tolls were 44,301 in Turkey, 585,238 in the USA, 266,207 in India, 432,628 in Brazil, 107,584 in France, 113,541 in Russia, 127,930 in England, 123,927 in Italy, 79,339 in Spain, 86,030 in Germany, 220,159 in Mexico. The death toll accounts for 3.359,350 million people worldwide. During the Covid-19 epidemic, in which 3.359.350 million people died in the world and tens of thousands in many countries, the death rate in China was 4.850 people (Cbddo.gov, 2021). For the Covid-19 outbreak, there are Biontech (Pfizer) vaccine, Sinovac vaccine, Sputnik vaccines. Biontech vaccine was developed by Prof. Dr. Uğur Şahin and Dr. Özlem Türeci. Many countries continue vaccination and vaccination studies.

Keywords:

- Health Informatics
- Health and Disease

- The relationship between the history of medicine in Ancient Egypt, Ancient Mesopotamia, India, China, and Turkey
- Epidemics in the History of Medicine

Summary

Medicine in Ancient Egypt

The most important sources of Egyptian medicine are papyrus. The most critical papyri are Kahun Papyrus, Brooklyn Papyrus, Surgical Papyrus, Ebers Medical Papyrus, Hearst Medical Papyrus, Berlin Medical Papyrus.

Medicine in Ancient Mesopotamia

Ancient Babylonian King Hammurabi emphasized the importance of medicine in Ancient Babylon by setting wages for physicians by law. There are cuneiform tablets named 'A.ZU' in Sumerian and 'asu' in Assyrian about the treatment methods of healers and physicians.

Chinese Medicine

In Chinese medicine, The Yellow Emperor's Inner Canon, and Book of Medicine', estimated to have been written by the ruler of China (2698-2599 BC) Huangdi Neijing, BC. in 2600, is of great importance.

Ancient Greek Medicine

Many temples were built in the name of Asclepius for treatment, and these temples are called Asclepeion. The most famous are Athens, Rhodes, Pergamon, Kos, Titan-Trika, Epidaurus. Temples were built in

320 cities in the name of Asclepius. The oldest temple is those on Titan, the most important are those on Epidaurus. In the 4th century AD, most Asclepeions were burned by Christians.

Medicine in Islamic and Turkish Civilizations

In Islamic states, medicine is constituted by traditional and Greek medicine. Medieval medical education was carried out in the Islamic world by treating patients in hospitals. People who received medical education learned treatment methods from physicians through the master-apprentice relationship. The hospital and medical school in Cundishapur, Iran, in the 5th century set a model for the establishment of other hospitals. In about 800, the first Islamic hospital was established during the Abbasid period.

Epidemics in the History of Medicine

The most crucial epidemic disease before 1500 was the plague, and the epidemic diseases in the 15th and 18th centuries were smallpox, measles, influenza. In the 19th century, epidemics were cholera, malaria, typhus. AIDS, meningitis were epidemics in the 20th century. The epidemics in the 21st century include SARS, Ebola, hepatitis-b and covid-19.

Vaccination in Turkey

Cholera, tetanus, typhoid, rabies vaccines, typhus, whoop cough, diphtheria vaccines were mass-produced until the 1940s. Anthrax, diphtheria, tetanus, rabies, scorpion soot, gas gangrene were produced

in the serum farm established in 1968. Typhus and smallpox vaccines were terminated respectively in 1971 and 1980 when the diseases were eradicated. Rabies and DBT vaccines were discontinued in 1996, and BCG vaccine production ended in 1997. Five mixed (DaBT-IPV-Hib), pneumonia vaccine (KPA-Conjugated Pneumococcus) in 2009, quadruple mixed (DaBT-IPV) in 2010 were introduced into Turkey. In 2011, injector filling and packaging technology were introduced to Turkey while the country had already purchased vaccines for three years.

Exercises

1-Which of the following was found in 1893?

- a-Kahun Papyrus
- b-Brooklyn Papyrus
- c-Surgical Papyrus
- d-Ebers Papyrus

Correct Answer:a

2-What is the name of the Ebers Medical Papyrus in the Ancient Egyptian language?

- a-Alchemy
- b-Kahmi
- c-Kahun
- d-Sekhmet

Correct Answer:b

3- Which of the following is NOT one of the four priorities for studying

diseases in the Ebers Medical Papyrus?

- a-Conditional diagnosis
- b-Course of the disease
- c-Medical information
- d-Medical instruments

Correct Answer:d

4-Which of the following is the book written by Huangdi Neijing, the basis of Ancient Chinese Medicine?

- a-The Divine Husbandman's Materia Medica
- b-The Canon of Problems
- c-The Treatise on Cold-Damage Disorder
- d-The Yellow Emperor's Classic of Internal Medicine

Correct Answer:d

5- Which of the following is a title for the physicians in ancient Greek medicine?

- a-Epidaurus
- b-Propylon
- c-Asclepius
- d-Asclepiad

Correct Answer: d

6- During which period was the first Islamic hospital established?

- a-Emevis
- b-Khwarzemshahs
- c-Abbasids
- d-Mongols

Correct Answer:c

7-In what year did Wilhelm Conrad Rontgen discover X-rays and projection in photography?

- a-1795
- b-1895
- c-1695
- d-1885

Correct Answer:b

8- Who was the first person to receive the Nobel Prize in Physics in 1901?

- a-Dr.Robert L.Egan
- b-Wilhelm Conrad Röntgen
- c-Wolfgang Pauli
- d-Godfrey Heninsin

Correct Answer:b

9- When was smallpox completely eradicated?

- a-1989
- b-1979
- c-1969
- d-1980

Correct Answer:b

10- Who developed the 'Biontech' vaccine in the Covid-19 outbreak?

- a-Prof.Dr.Uğur Şahin and Dr.Özlem Türeçli
- b-Robert Koch
- c-Bordet Gengou
- d-John Enders and Thomas Peebles

Correct Answer: a

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CHAPTER 2

HEALTH CARE PROFESSIONALS DURING THE PANDEMIC

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What Will You Learn in This Chapter?

After completing this section;

You will

Learn about healthcare manpower in Turkey.

Examine the frequency of COVID-19 disease in healthcare professionals.

Explain the ways of transmission of COVID-19 to healthcare professionals.

Review recommendations to manage the contact of healthcare professionals with COVID-19 patients.

Explain the strategies of healthcare professionals to be strong in physical and mental health.

Goals

To explain the healthcare manpower in Turkey.

To explain the frequency and transmission routes of COVID-19 disease in healthcare workers.

To define healthcare professionals' strategies for managing COVID-19 patients.

To explain the recommendations that will keep healthcare professionals strong during the pandemic period.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious respiratory disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that spreads among humans rapidly ("World Health Organization (WHO). "Naming the coronavirus disease (COVID-19) and the virus that causes it". ,"). It was defined for the first time in the world in the fall of 2019 in Wuhan, China. It spread all over the world and caused the COVID-19 pandemic (Hui et al., 2020; "World Health Organization (WHO). "WHO Director-General's opening remarks at the media briefing on COVID-19"."). On January 10th, 2020, in Turkey, Coronavirus Science Board was established within The Ministry of Health (*Sağlık Bakanlığının COVID-19'un yayılmasını önleme konusunda yaptığı çalışmalar nelerdir?*).

It was announced by Ministry of Health, Republic of Turkey, that the first COVID-19 case was dedected on March 10th, 2020 ("Türkiye'de ilk koronavirüs vakası tespit edildi," 2020), and the first death was occurred on March 15th, 2020 ("Türkiye'de koronavirüs nedeniyle ilk can kaybı; toplam vaka sayısı 98'e ulaştı," 2020). As of December 5th, 2020, The Turkish Ministry of Health declared that 19,338,181 testing were done, a total of 527,070 patients were infected with SARS-CoV-2, 423,142 patients have recovered from COVID-19 and 13,558 people have deceased in Turkey (*COVID-19 Bilgilendirme Sayfası* 2020) . The World Health Organization (WHO) declared the Coronavirus as the International Health Emergency on January 30th, 2020, and announced that this disease to be called "Coronavirus disease-2019 (COVID-19)"

on February 11th, 2020 ("World Health Organization (WHO). Coronavirus disease (COVID-19) situation reports, 2020.," 2020).

In the World Health Organization daily indicator, the number of cases and deaths in many countries are declared. It was reported by WHO that as of December 05th, 2020, there were a total of 65,007,974 confirmed patients were infected with coronavirus in the world and the number of death was 1,507,018 ("World Health Organization (WHO). Coronavirus disease (COVID-19) Situation Dashboard. 2020. ,").

The Covid 19 pandemic still continues all over the world with its global effects. Every individual can encounter the SARS-CoV-2 virus, which is the COVID-19 agent, in any environment. However, it is obvious that some individuals and groups have a higher risk of getting sick. Workplaces are at the forefront of the risky environments with the highest SARS-CoV-2 transmission. This risk is very high especially in airless and crowded environments, and those who work in jobs that require close contact with people. As in all infectious diseases, the occupational group with the highest risk of infection in COVID-19 pandemic, is healthcare workers.

In the COVID-19 pandemic, healthcare professionals dealing with the diagnosis, treatment, follow-up, radiation, screening, transportation of the material, disinfection of the environment, disposal of the waste, preparation of the funerals according to religious procedures carry a high risk of infection. Viral loads are higher than other members of the society. The risk of healthcare professionals increases the risk of transmitting COVID-19 to other patients, other healthcare professionals,

family members with whom they live at home, and other people with whom they live in social life.

Health authorities in Turkey has taken a series of measures to combat COVID-19 pandemics as done in other countries. Despite all the measures were taken, the number of confirmed cases, cases admitted to healthcare institutions, inpatient and intensive care cases are increasing day by day. Healthcare professionals caring pandemic patients are mostly affected by this increase. The number of healthcare professionals is important in combating COVID-19 pandemic.

Manpower in the health field in Turkey

According to Ministry of Health 2018 Health Statistics annual data, without public and private sector distinction the number of specialist physicians were 82, 894; the number of general practitioners were 44,053; the number of assistant physicians were 26,181; the number of dentists were 30,615; the number of pharmacists were 32,032; the number of nurses were 190,499; the number of midwives 56,351; the number of other healthcare personnel were 177,409; the number of health care personnel working with service procurement were 376,367 and the total number of health personnel were 1,016,401, respectively. 642,184 of these personnel were affiliated to the Ministry of Health, 13,977 of them worked in universities and 242,240 of them worked in private health institutions and organizations. 54.1 % of the physicians were specialist physicians, 28.8 % were general practitioners, 17.1 % were assistant physicians.

During the last 15 years, from 2002 to 2018, a significant increase in the number of healthcare personnel in Turkey were monitored. While the number of health personnel in all sectors were 378,551 in 2002, the number increased to 1,016,401 in 2018. Over the past years, despite the observed increase in the number of healthcare personnel, the number of healthcare personnel per 100,000 inhabitants in Turkey shows that it is still low when compared to the Organisation for Economic Co-operation and Development (OECD) group and the European Region countries. Namely;

According to Turkish Ministry of Health 2018 Health Statistics Annual Data, without distinction of the public and private sectors, the total number of physicians in all sectors were 187 per 100,000 people, while WHO European region average were 371 and the OECD average were 348, respectively.

While the total number of dentists, pharmacists, midwives and nurses, per 100,000 people were 37, 39 and 301 in Turkey, the average was 77, 87 and 841 in WHO European region and 70, 83 and 938 in OECD countries, respectively (*T.C. Sağlık Bakanlığı, İstatistik Yıllığı, 2018, 2018*).

The number of physicians in Turkey, were about half of other countries and the number of midwives and nurses are as much as a third of other countries. It has been understood that during the COVID-19 pandemic period, the Ministry of Health has recruited personnel to increase the number of healthcare workers. In 2020, 18,000 healthcare personnel in

the first stage and then 12,000 healthcare personnel were recruited to the units affiliated to the Ministry of Health (*12.000 SÖZLEŞMELİ SAĞLIK PERSONELİ ALIM İLANI*; Ajansı). During the COVID-19 pandemic, it has emerged that there should be sufficient staff to provide health care to covid and noncovid patients in the same system.

This pandemic is challenging the health system capacity in the world as in our country. There are plans for medical students and nursing students to graduate early and start working as young health personnel in some countries that have serious problems with the health system capacity and the shortage of existing health personnel. In addition, there have been countries asking doctors who have retired in the last three years to return to work. Also, there have been countries asking healthcare professionals working in education, research or inspection sector to return to their own clinical duties. Nurses and physicians in the education sector face significant disruptions such as the loss of educational opportunities and interruption of academic progress (Z., 2020). In Turkey, during the first months (April, May 2020) and the last months (November December 2020) of COVID-19 pandemic period healthcare personnel's leave, appointment and retirement procedures were suspended temporarily except for special circumstances such as maternity, pregnancy and health excuse leaves. It has been ensured that physicians working as assistants at universities actively support the process. A legal regulation has also been made for assistants to count the time in the education period that was spent working outside the university especially in the pandemic hospitals.

Prevalence Of Covid 19 Disease in Healthcare Professionals

Influenza Pandemic, SARS-CoV-2 and MERS-CoV outbreaks experienced in recent years have shown us that; during epidemic diseases, the risk of infection among healthcare workers is higher than other segments of the society. The most important reason for this situation is that healthcare personnel have intense and close contact with patients and their secretions, so their viral load is high. In addition, the improper use of personal protective equipment, which is a very important factor in combating the COVID-19 Pandemic, has caused healthcare workers to become infected.

According to the data of Amnesty International dated September 3th, 2020, the number of healthcare workers death due to COVID-19 were 1320 in Mexico, 1077 in United States of America (USA), 649 in United Kingdom, 634 in Brazil, 631 in Russia, 573 in India and 240 in South Africa, 188 in Italy, 183 in Peru, 181 in Indonesia, 164 in Iran and 159 in Egypt , respectively ("Global: Amnesty analysis reveals over 7,000 health workers have died from COVID-19,").

It was reported in Italy on April 7th, 2020, that 12,680 healthcare workers were infected with COVID-19 and a total of 126 healthcare workers, including 100 physicians and 26 midwife nurses, were death due to COVID-19 (15). In a study conducted in Texas, in USA, COVID-19 polymerase chain reaction (PCR) test results of 2,787 healthcare workers and 85 individuals were compared and it was observed that the highest PCR positive test rates were detected in

healthcare professionals working in clinics where patients with COVID-19 were followed (Vahidy et al., 2020). In the review of Chou et al. (Chou et al., 2020), which was updated on August 3th, 2020, the data obtained from various countries were evaluated and it was revealed that the frequency of COVID-19 in healthcare workers ranged from 1.9 percent to 12.6 percent. These rates are quite high when compared to other segments of the society. Studies conducted by scientists in various countries have revealed that in some countries, healthcare workers have insufficient personal protective equipment, healthcare professionals are increasingly at risk of COVID-19, and if healthcare professionals are infected, they will transmit the SARS-CoV-2 to their colleagues, patients and family members. It is clear that healthcare personnel should be protected and monitored so that the health system does not collapse and the COVID-19 pandemic can become manageable.

Thus far, The Ministry of Health made three statements about the frequency of COVID-19 among healthcare workers in Turkey on the dates April 29th, 2020, September 2nd 2020 and December 9th, 2020. Turkey's total population is approximately 84 million. The number of healthcare workers on active duty in 2020, announced by the Ministry of Health, is 1 million 62 thousand; healthcare workers constitute approximately 1% of Turkey's population. In the statement of the Ministry of Health, the number of healthcare personnel infected with COVID-19 was 7,428; 29,865 and 120,000 dated April 29th, 2020; September 2nd, 2020 and December 9th, 2020, respectively. The rate of infection among all healthcare workers is 6.99, 28.1 and 112 per

thousand according to the statement dates, respectively. Unfortunately, as the rate of infection increases, the number of healthcare professionals who lose their lives due to COVID-19 and its complications also increases (C., 2020).

COVID-19 Contagion to Healthcare Professionals

The data revealed to date has shown that COVID-19 is transmitted mostly by droplets. In addition, it is known that the droplets emitted by sick people through coughing and sneezing are transmitted by the mucous membranes of healthcare workers after contact. Mostly, asymptomatic people as well as sick people play a role in the transmission. COVID-19 has been experimentally shown to be suspended in the air for three hours, but its clinical significance is uncertain (van Doremalen, Bushmaker, & Morris, 2020). Coronaviruses are viruses that are not resistant to the external environment, alcohol and disinfectants, on the other hand, they can survive up to 72 hours on surfaces such as plastic and steel, and up to 24 hours on cardboard surfaces (van Doremalen et al., 2020). According to the report of WHO, the evidence for fecal-oral transmission is insufficient. No fetoplacental transmission was shown from a pregnant women diagnosed with COVID-19 (Uğraş Dikmen A.). All the healthcare professionals working in the family health center, pharmacy, outpatient clinic of a dentist, outpatient clinic of the hospital, inpatient clinics of the hospital, intensive care units and 112 emergency and ambulance service, from doctors to attendants, from nurses to drivers,

are at risk due to their work. They are exposed to all kinds of viral situations in their workplaces.

According to WHO data, the incubation period for COVID-19 is on average 4-5 days. However, this period is known to be extended up to 14 days. It is not known exactly how long an individual is contagious in COVID-19. The high amount of viral-RNA in nasopharyngeal swab samples taken in the first days of the disease indicates that the contamination is high in the first days of the disease. While no viral RNA was detected in nasopharyngeal samples taken 10 days after from patients with mild symptoms, a longer period of positivity was detected in patients with more severe disease (Liu et al., 2020). Since people with severe illness are generally hospitalized in health institutions, the exposure time of healthcare workers to the virus also increases.

Managing the Contact of Healthcare Professionals with COVID-19 Patients

Health workers in Turkey begin their support to COVID-19 suspected or definite patients or their relatives by telephone call before resorting to healthcare centers. Systems called Filyasyon Call Centers and Corona Counseling Lines are used for these. Filyasyon Call Center is a 24-hour call center consisting of healthcare professionals such as psychologists, social workers and nurses. Patients who are PCR positive and diagnosed with COVID-19 are called from the Filyasyon Call Center and their physical and mental health conditions are questioned, answers are sought such as whether they isolate themselves,

use their medications, whether there is an aggravation in their symptoms and there are anybody else showing symptoms at home, whether they want a healthteam with a doctor at home.

Corona Counseling Line consists of healthcare professionals such as doctors, nurses, psychologists, health officers and civil servants serving 24 hours. It is also a hotline where citizens can get information about COVID-19. Corona Counseling Line, can be used to learn about test results, to ask when the isolation period is over, to receive e-report service to present to the workplace, to request a home Filyasyon team, to request nasopharyngeal swab sampling at home, to request an ambulance to go to the hospital and to get psychological counseling. The personnel working in the Filyasyon Call Center and the Corona Counseling Line use the Public Health Management System (HSYS), an information management system prepared by Turkish Ministry of Health. People can solve some problems by these call centers before they go to health institutions, so they do not occupy health institutions unnecessarily. Therefore, it is a measure to reduce the viral load of healthcare workers.

In Turkey, people who suspect that they have COVID-19, who have a suspicious contact or who are deemed appropriate to have a PCR test by a healthcare professional can be sampled at home, in the workplace or in health institutions. In addition, routine PCR screening is carried out periodically to strategic personnel such as healthcare personnel, nursing home staff, penitentiary staff, new members of military units. The samples taken are barcoded and entered into the HSYS system and

delivered to the PCR Laboratories licensed and authorized by the Ministry of Health. According to the results of the analysis, the PCR tests given by individuals for COVID-19 are processed as positive or negative in the Laboratory Information Management System (LBYS) managed by the Ministry of Health. The results of positive patients are given feedback to more than one point. The e-Pulse system where the testers track their personal health data, the Public Health Management System (HSYS) followed by the national and local health administrators, the information system of the Law Enforcement Forces (JEMUS in the Gendarmerie, POLNET in the police), The results are transmitted to the Isolation Tracking System (FITAS), the Ministry of Interior's Provincial / District Outbreak Control Center (ISDEM), Life Fits Home (HES) Application. Results are shared with all relevant parties. Patients with positive PCR results are first contacted by phone and told to stay at home, isolated, and their current home address are recorded. With up-to-date information, Filyasyon teams consisting of two people, at least one of which is a healthcare worker, go to homes. The Filyasyon teams undertake tasks such as finding the source of the disease, detecting the person's home, school, workplace contacts, examining, taking samples, starting medication, and calling 112 emergency and ambulance services or transport vehicles if necessary. The work of the Filyasyon teams are described in detail in the next section of this book "Agile Strategies in Primary Health Care in the Period of Pandemic".

Questioning the symptoms of COVID-19 possible or definite cases such as fever or cough at the first entry point to the healthcare facility may be an important step in reducing contact with COVID-19. People who apply to health institutions and have fever, cough and respiratory distress should wear a medical mask at the entrance, if not they should be provided and given a mask. A separate waiting room should be provided for these patients. If a separate waiting room is not possible, they should be separated from other patients at the furthest point. 60-95% alcohol including hand disinfectants and non-contact waste containers should be available in hospitals, patient rooms and waiting rooms. All non-urgent applications and visits in health institutions should be delayed. The contact of healthy people with health institutions should be minimized. Some institutions have created practices that make all healthcare professionals to wear masks in all clinical settings. In particular, healthcare professionals' taking mask precautions in healthcare institutions can help reduce the risk of disease spread from asymptomatic patients. Considering the fact that COVID-19 is droplet and contact transmitted to the mucous membranes healthcare professionals should take standard droplet and contact isolation measures in every suspected case. Standard infection prevention and control measures should be applied during the patient is in the healthcare facility. Medical personnel who will be in contact with possible or definite Covid 19 cases closer than 1 meter and for more than 15 minutes should wear gloves, nonsterile gowns, surgical masks, face protective visors and glasses. When putting on and taking off personal protective equipment, care should be taken to wear and to take

off in accordance with the guidelines recommended by WHO, Centers for Disease Control and Prevention (CDC) and the Ministry of Health. After ensuring hand hygiene, the order to wear personal protective equipment is apron, mask, face shield / eye protection and gloves; The order of removing personal protective equipment is gloves, face shield / eye protection, apron and mask. Mask should be properly removed after leaving the contaminated area.

In Turkey, for healthcare workers, a bedside guide series in the COVID-19 pandemic are created as a result of the work of the Ministry of Health with the recommendations of Scientific Committee, for adult and child case management, drugs to be used in treatment, follow-up recommendations, as well as equipment use and protection recommendations explained in detail (*T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü .COVID-19 (SARSCoV2 Enfeksiyonu) Rehberi (Bilim Kurulu Çalışması) 2020*). Intensive contact with COVID-19 patients includes the following procedures for healthcare workers; taking respiratory tract samples such as PCR sampling, intubation, aspiration of respiratory tract secretions, non-invasive ventilation, cardiopulmonary resuscitation (CPR), high-flow oxygen therapy, use of nebulizer, endoscopy, bronchoscopy, videolaryngoscopy procedures, all kinds of procedures in dentistry, mouth, throat, nasal examination, eye examinations, central catheter insertion. Healthcare personnel who will perform such procedures must wear at least N95 / FFP2 masks, overalls, bonnets and foot protectors. All surfaces in hospital, ambulance and home, contaminated with

respiratory tract fluids which is important in the spread of the disease, should be constantly cleaned with recommended cleaners.

Healthcare personnel working in COVID-19 service, ambulance and intensive care have difficulty in meeting their food and beverage needs and going to the toilet after wearing personal protective equipment. Great care and training are required to remove personal protective equipment after their work. Healthcare professionals wear masks and protective equipment for a long time due to long working hours, which causes fatigue and weakness, and some personnel have a risk of allergies.

Hand hygiene is one of the most basic measures to reduce contamination in healthcare institutions. Each staff member should maintain hand hygiene before and after contact with the patient, contact with infected material, before and after using personal protective equipment. Hands should be washed with soap and water for at least 20 seconds and should be disinfected with 60-95% alcohol-based hand sanitizer (Ağalar & Öztürk Engin, 2020; C., 2020; "World Health Organization (WHO). Infection prevention and control during health care when COVID-19 is suspected: interim guidance, 19 March 2020.," 2020). Healthcare facilities should have procedures and policies that define the safe and correct order of inserting and removing personal protective equipment. Personal protective equipment should comply with the standards of the World Health Organization (WHO) (C., 2020; "World Health Organization (WHO). Infection prevention and control during health care when COVID-19 is suspected: interim guidance, 19

March 2020.," 2020). If gloves are torn or contaminated, hand hygiene should be maintained and the gloves replaced with new ones. Gloves should not be washed or reused. Healthcare personnel should wear a clean isolation gown before entering patient rooms, before leaving these areas, the suit should be removed and disposed of in the medical waste bin. All healthcare personnel in health institutions must wear a medical mask during the pandemic. N95 / FFP2 / FFP3 masks that provide high-level protection should be used in intense contact with COVID-19 patients. The filtering efficiency is 94% for N95 and FFP2, 99.97% for FFP3, respectively. There is no difference in terms of protection between valve and non-valve type of masks. In those with valves, it is easier to breathe and the glasses are less foggy, especially if glasses are used together. Such masks can be used for a maximum of 4-6 hours while caring more than one patient. Face shield or eye protection is part of personal protective equipment. The healthcare provider should wear a disposable face shield or eye protection when entering the patient's room, removed before leaving the room, and reusable face shields or eye protectors should be disinfected before reuse. The medical equipment used should be specific to each patient. Equipment such as stethoscope and thermometers should be disinfected after each use. All surfaces, including floors, walls and objects in isolation areas, should be disinfected with solutions containing 1000 mg / L chlorine. Disinfection should be done at least 3 times a day and should be repeated with every contamination. Personnel doing the cleaning and waste collection should definitely use personal protective equipment (Ağalar & Öztürk Engin, 2020; C., 2020; "World Health Organization

(WHO). Infection prevention and control during health care when COVID-19 is suspected: interim guidance, 19 March 2020.," 2020).

According to the COVID-19 guide of the Ministry of Health, healthcare workers in contact with COVID-19 patients are categorized as high, medium and low-risk.

If a healthcare worker who has not used a medical mask or N95 in intense contact with COVID-19 patients who do not wear a medical mask, is considered "High Risk". If any symptom develops in the healthcare worker, the PCR test for the diagnosis of COVID-19 is performed on the day of the symptom; if not, on the 5th day. If the PCR test is positive, it is administered in accordance with the exact case definition. If the PCR test is negative active symptom monitoring is performed; healthcare worker can work with mask. If symptoms develop, the test is repeated, if not, follow-up is terminated. If symptom develops, the PCR test is performed. If the PCR test is positive, healthcare worker is followed in accordance with the exact case definition.

If a healthcare or N95 in intense contact with COVID-19 patients who do not wear a medical mask, is considered "High Risk".

If the healthcare worker who has not used a medical mask or N95 medical mask and in intense contact with the COVID-19 patient with a medical (surgical) mask, or if he used a medical mask in the situation with an N95 indication, the health worker used a medical mask in the situation with the N 95 indication and had intense contact with the

COVID-19 patient who did not wear a medical mask or if he does not use eye protection, it is considered as "Medium Risk". Medium-Risk healthcare workers work with masks and are monitored with active symptom monitoring; If the symptom develops, the PCR test is done on the day of the symptom, if not on the 5th day. If the PCR test is positive, it is administered in accordance with the exact case definition. If the PCR test is negative, working with a mask and active symptom monitoring is performed. If symptoms develop, the test is repeated, if not, follow-up is terminated. If symptom develops, the PCR test is performed. If the PCR test is positive, it is administered in accordance with the exact case definition.

If the healthcare worker who has intense contact with the COVID-19 patient with a medical (surgical) mask but has not used eye protection or gloves or gown, and the healthcare worker who has intense contact with the COVID-19 patient without a medical mask and has not used gloves and gowns, it is considered as "Low Risk". Healthcare Professionals with Low Risk can work with a mask and follow-up symptoms. If no symptoms develop, follow-up is terminated. If symptoms develop, PCR test is performed. If the PCR test is positive, it is administered in accordance with the exact case definition. If the PCR test is negative and symptom develops, the PCR test is performed. If the PCR test is positive, it is administered in accordance with the exact case definition. If the PCR test is negative, rest is recommended until the symptom resolves.

Not only healthcare personnel working in hospitals, but also family physicians working in preventive health services in the field, family health workers, paramedics working in emergency health services, drivers and emergency medical technicians, laboratory workers working in public health laboratories, biologists, drivers who transport patients, who wash the body according to religious procedures, dentists serving in oral dental health centers or private dental clinics, dental clinic staff, dental prosthesis technicians, private pharmacies have played different roles in combating the COVID-19 pandemic. Considering that all this health army is the first point of contact for individuals suffering from infectious diseases such as COVID-19, who have health concerns, seeking reliable information and advice, it should not be forgotten how important it is for healthcare workers to have a balanced body and mental health.

Physical and Mental Health of Healthcare Professionals

The COVID-19 pandemic has once again shown us that healthcare workers are the most basic and effective workforce in responding to the epidemic. It has been stated since the beginning of the process that healthcare workers are at a special risk in the diagnosis, treatment and follow-up stages of the disease. In addition to encountering with the COVID-19 pathogen, being constantly on the alert, home / work need conflict, the need for team harmony, depersonalization, psychological burden, long working hours, psychosocial pressure, fatigue, occupational burnout, witnessing the death of patients and colleagues, discrimination and stigma, physical and psychological violence; these

are not to mention. In addition to all of these, situations such as the healthcare workers becoming COVID-19 positive as a result of contact, being isolated, being sick, falling into the position of receiving the care rather than providing the healthcare, and losing their lives may cause the care to be disrupted and thus the fight against COVID-19. Today, healthcare professionals are the most valuable resource in every country. Health systems can operate at very high capacity for months during the pandemic. However, healthcare workers cannot work at 100% capacity for very long periods. In order to protect public health, precautions and preventive planning for healthcare workers are important. Considering the working conditions of healthcare workers during the pandemic period and the higher prevalence of COVID-19 in healthcare workers compared to other segments of the society, legal and administrative regulations have been initiated in our country to accept COVID-19 as an occupational disease for healthcare workers, as in many countries around the world. During the ongoing pandemic process, healthcare workers diagnosed with COVID-19 and they or their relatives dead due to this disease will be provided with their legal rights. "Preventive approach" should be adopted, keeping in mind that occupational diseases are preventable health conditions (J., 2019)

In the fight against pandemics, health personnel reveal their medical knowledge and practical experience, as well as their struggle in areas such as duty, division of labor and family relations. While healthcare professionals play the leading role in combating the COVID-19 pandemic, they are also members of a family. Some children play the

roles of mothers and fathers. Within the scope of the COVID-19 pandemic measures, while the emphasis is on "Stay at Home" to the citizens, healthcare professionals try to fulfill their duty responsibilities by staying away from their families for long hours and days. Especially, healthcare professionals, who have no opportunity to entrust their young children to elders of their families, other siblings, neighbors, relatives or to entrust their children to anyone, and who have to be separated from their children for a long time bear a heavy psychological burden. On the other hand, healthcare workers who have elderly, sick and needy parents are afraid of carrying this disease home and transmitting it to the household. Another situation is that healthcare workers who fear infecting their family members have to stay in dormitories or hostels or hotels. Due to the social state in Turkey, allocated by the Government, health staff themselves, upon their request, free of charge, can stay in dormitories or hostels or hotels. Healthcare workers, who are already in a tough struggle, also experience these compulsory separations with their families. In addition, healthcare professionals are excluded from the society they belong to due to their potential for transmission of disease. All the experiences make it difficult for healthcare professionals to hold strong.

The uncertainty that their personal needs will be met when exposed to infection also puts the healthcare worker under stress. While caring an increasing number of COVID-19 patients of all ages, with the potential to rapidly deteriorate, emotional tension and physical exhaustion are experienced. Failure to restore COVID-19 patients to their health, fear

of losing their patients, serving terminal patients can be defined as psychologically stressful areas of healthcare professionals. It is observed that healthcare professionals working especially in intensive care units show more depression, anger and anxiety than their colleagues working in other fields, and they are under stress due to heavy workload and excessive responsibility.

Past experience has shown that high levels of stress and psychological distress continue in healthcare workers after outbreaks, and that there are permanent problems in the long term. Therefore, some Agile Strategies can be recommended to reduce the negative effects of the pandemic and prevent mental disorders ("European Centre for Disease Prevention and Control. Rapid Risk Assessment: Outbreak of novel coronavirus disease 2019 (COVID-19): increased transmission globally – fifth update. ," 2020):

It is necessary to establish a two-way communication network between administrations and healthcare professionals that will ensure that healthcare workers working during the pandemic are informed about the status of the pandemic and new situations. It is important that healthcare professionals are constantly informed about standard care provision, treatment protocols, common drug interactions, and drug doses. In Turkey, Ministry of Health evaluates WHO recommendations and country dynamics and within the recommendations of Scientific Board, Treatment Guidelines are prepared, updated and published on

the site <https://covid19.saglik.gov.tr> (*COVID-19 Bilgilendirme Sayfası* 2020).

The duties and responsibilities should be clearly stated in the work environment. Job descriptions should be made and communicated to those concerned.

It should be ensured that healthcare personnel who will work in the most risky areas in the COVID-19 Pandemic receive comprehensive and repetitive training on infection control and the use of personal protective equipment.

Healthcare workers should be screened regularly for COVID-19 disease, their controls should be made, access to the vaccine should be provided at the first stage, and prophylactic and other drugs should be accessed when needed,

It has been shown in various studies that positive support from the supervisors and teammates of healthcare professionals in health institutions and organizations reduces the rate of psychiatric symptoms. It is stated that the "buddy" system, which will be created by matching the more experienced health worker with the less experienced health worker, reduces social isolation, increases the sense of commitment and creates a feeling of support. In order to maintain social distance and reduce the risk of contamination among employees, it should be ensured that the same personnel work in the same time period.

Hospital management should develop methods for resting and relaxing healthcare workers to prevent health burnout. Programs that teach coping with stress and relaxation techniques can be popularized. Moral activities, reward and appreciation activities to be organized by the managers, verbal appreciation can be useful. In cases where healthcare professionals or their relatives get sick, even being called by their managers will create positive motivation.

In dealing with the pandemic, healthcare professionals may feel stuck between their families and patients. Psychosocial programs aimed at serving families of healthcare professionals can be helpful in raising morale for staff. For example, lending healthcare professionals and their families cell phones, laptops or tablets so that healthcare professionals can keep in touch with their families helps healthcare professionals feel connected with their family.

Healthcare professionals should be reminded about infection control measures when they return home. For example, hand washing and changing clothes before entering the house. Providing disposable clothing, especially to wear in the hospital, can somewhat reduce the fear of healthcare professionals of spreading the disease to their family.

Some special privileges can be defined in the society during this important period in which healthcare professionals work. For example, providing special ID cards to ensure that they do not wait in line at gas stations or supermarkets, compensation and salary support may be given to the families of deceased medical personnel. In addition,

supporting healthcare professionals in the community and showing good practices as an example will prevent negative stigmatization in the society and thus violence in health.

It has been proven that permanent psychological problems continue after the pandemic due to the reasons such as the healthcare professionals witnessing traumatic experiences and being repeatedly exposed to situations such as death. Support programs should be established for employees who experience problems such as alcohol and substance abuse, traumatic stress, and anxiety disorders during and after the pandemic. In the long term, it is recommended to increase mental health screenings. Psychosocial counseling support should also be provided to maintain the individual well-being of healthcare professionals.

A risk assessment should be made regarding the potential encounter, exposure and exposure processes of healthcare professionals with COVID-19. Pre-contact and post-contact monitoring, control and communication processes should be clearly stated. Preventing healthcare workers from being a potential source of contamination should be planned in terms of public health. Algorithms should be prepared against all possibilities and shared with healthcare professionals. Guidelines prepared by the CDC should be used ("COVID-19 ", 2020).

Hospital management and chief physician can provide feedback and needs from healthcare professionals in the field.

Exercises

1. “In the COVID-19 pandemic, they are the professionals who deal with the diagnosis, treatment, monitoring, filtration, scanning, transport of the material, disinfection of the environment, disposal of wastes, preparation of funerals according to religious methods.” Which is the definition given?

- A. Religious official
- B. Healthcare professionals
- C. Teacher
- D. Mayor

Answer: B

2. Which of the following is one of the information systems used by healthcare professionals during the COVID-19 Pandemic period?

- A. e-Pulse system
- B. Public Health Management System (HSYS)
- C. Filtration and Insulation Tracking System (FITAS)
- D. All

Answer: D

3. Which of the following is the information system used by actors other than healthcare professionals during the pandemic period?

- A. JEMUS used by the gendarmerie
- B. POLNET used by the police
- C. Provincial/District Epidemic Control Center System (ISDEM) used by the inspection teams affiliated to the Ministry of Interior
- D. All

Answer: D

4. Which of the following is done with Life Fits Home-(in Turkish: Hayat Eve Sığar) (HES) application?

- A. Risk status inquiry
- B. Vaccination status inquiry
- C. Questioning the case density
- D. All

Answer: D

5. Which of the following is not one of the prevention strategies that healthcare professionals should do while serving COVID-19 patients?

- A. Paying attention to Hand Hygiene
- B. Use of Personal Protective Equipment
- C. Use of prophylactic COVID-19 drug
- D. Use of Hand Sanitizer

Answer: C

6. “They are places serving COVID-19 patients of all ages who can deteriorate rapidly. Not being able to rehabilitate COVID-19 patients, the fear of losing patients, and serving terminal stage patients makes these places psychologically stressful areas for healthcare professionals. It is observed that healthcare professionals working in this areas show more depression, anger and anxiety and they are under more stress for heavy workload and more responsibility than their colleagues working in other areas. ”

What is the name of the area described above?

- A. Restaurant
- B. Intensive care
- C. Morgue
- D. Laboratory

Answer: B

7. Which of the following can not be said for the healthcare professionals working during the pandemic period?

- A. They should be screened regularly for COVID-19 disease
- B. Health checks should not be done
- C. They should have access to the vaccine at the first stage.
- D. Prophylactic drugs should be provided for them.

Answer: B

8. Which of the methods should managers follow to prevent burnout of healthcare professionals working in the COVID-19 pandemic?

- A. Programs that teach dealing with stress and relaxation techniques should be expanded.
- B. Mood-enhancing activities should be done
- C. Awards must be given; verbal/written appreciation must be forwarded
- D. All

Answer:D

9. What demands should health administrations respond to healthcare professionals during the COVID-19 pandemic?

- A. Train me, prepare me
- B. Hear me, protect me
- C. Support me
- D. All

Answer:D

10. What is the name of the system that will be formed by matching the more experienced healthcare professionals with the less experienced ones?

- A. On Duty
- B. Buddy
- C. Senior
- D. Beginner

Answer:B

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CHAPTER 3

HEALTH STRATEGIES IN PRIMARY HEALTH CARE SERVICES IN PANDEMIC PERIOD

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What Will You Learn in This Book Chapter?

After completing this section; you will

Be able to define the concepts of health and rights in health.

Learn the central and provincial organization of the Ministry of
Health in Turkey.

Explain the duties and responsibilities of institutions providing
preventive health services.

Understand the importance of primary health care services during
the COVID-19 Pandemic Period.

Explain the working model of the filtration teams and their strategic
role in the COVID-19 pandemic.

Goals

To define the concepts of health and the rights in health.

To explain the structure of the central and provincial health
organization of Republic of Turkey.

To explain the role of primary health care institutions in the
COVID-19 Pandemic.

To explain the importance and duties of the filtration teams.

INTRODUCTION

The most valuable wealth of a country is human. Health services cover all activities that affect people's lifespan, strength and resistance, energy and vitality. The Law on Socialization of Health Services defines health and health services as follows; "Health is not only the absence of illness and disability, but a state of complete physical, mental and social well-being." and "Health services are medical activities carried out for the elimination of various factors that harm human health and protection of the society from the effects of these factors, treatment of patients, and the rehabilitation of those with reduced physical and mental abilities and abilities." (Gazete, 12.01.1961). Hence, health services can be classified as preventive health services and curative health services. Carrying out preventive and curative health services in our country is the duty of the Ministry of Health of Turkish Republic. Turkish Republic provides preventive health services for free and demonstrates its efforts to protect and improve human health in our country, as in many countries. Therapeutic health services are examination, diagnosis, treatment and rehabilitation services provided to individuals. The aim of therapeutic health services is to provide rapid and effective treatment for the patient with early diagnosis. In addition to the public health institutions of Ministry of Health, universities and other private health institutions also provide curative health services. People have to participate partially or completely in the financing of curative health services (Tengilimoğlu D., 2000).

While providing Health Services, firstly "human" and first "health" understanding should be motivated. Health care is an innate right. A healthy society consists of healthy individuals. A healthy society also contributes to the development and economy of that country. This situation is a very important point for the welfare and development of the society. Health

services are provided to protect the health of the society and aimed to increase the health level. In Turkey, protecting the public health services, setting standards and rules of the system and supervising are the duties of the Ministry of Health (Başol E., 2015).

Starting from the central organization of the Ministry of Health, it has been structured in such a way as to provide health services to the most remote points with the provincial organization. The Ministry of Health, Deputy Ministers, General Managers, Ministers Counselors and Heads of Departments constitute the management staff.

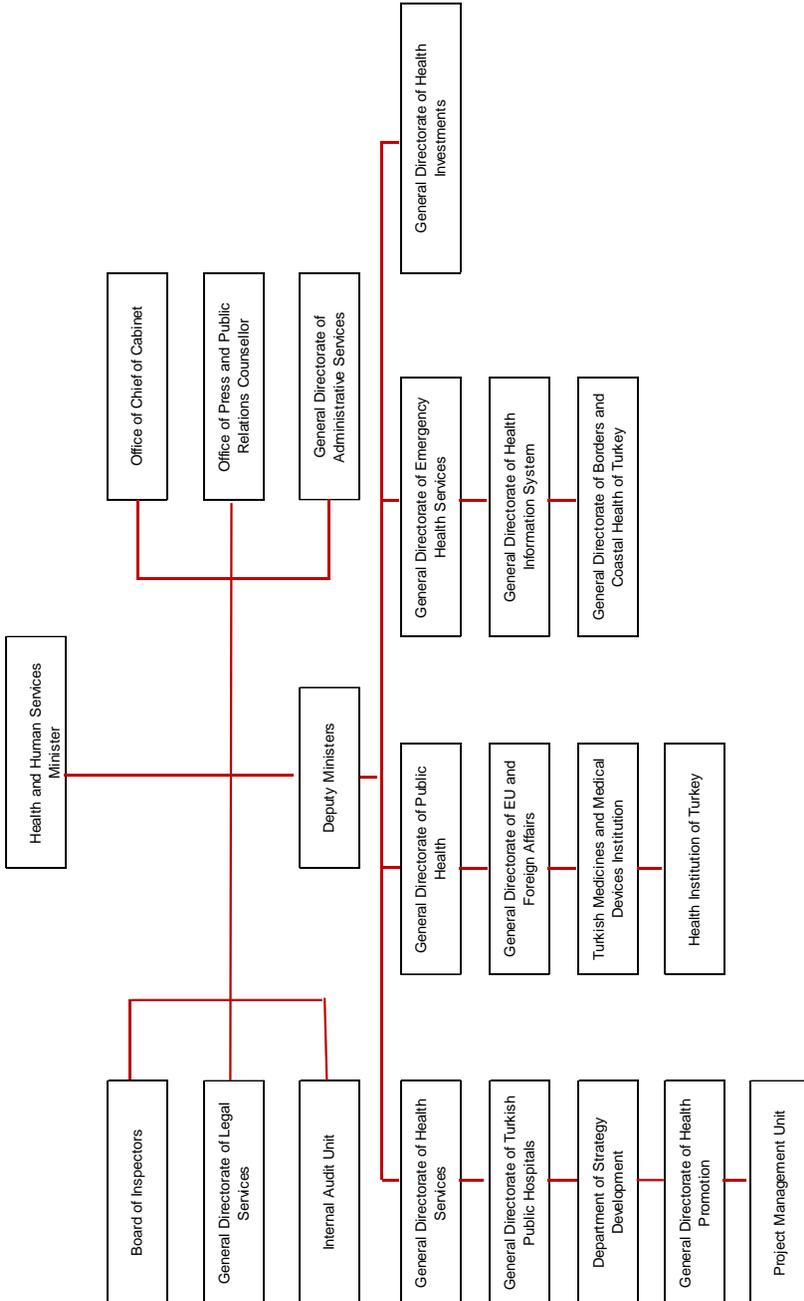


Figure 1. Central Structure of the Ministry of Health in Turkey

The figure was created by the author

In Turkey, the projection centers of the Ministry of Health in the provinces are the the Provincial Health Directorates. In Turkey, health care organizations are provided by primary, secondary and tertiary health care institutions. The coordination of these services in the province is provided by the Provincial Health Directorates.

Primary Health Care in Turkey includes Family Health Centers, Community Health Centers, District Health Directorates, Healthy Life Centers, 112 Emergency Health Services Stations, Tuberculosis Control Units, Immigrant Health Polyclinics, Foreign National Polyclinics, Public Health Laboratories, Health Houses and the health services provided there.

Secondary Health Care includes inpatient health services provided in the public and private sectors and the services provided in oral and dental health centers.

Tertiary Health Care includes education and research hospitals, university hospitals and private branch hospitals where advanced tests and treatments are performed.

According to the Regulation on the Amendment of the Ministry of Health Provincial Organization Administrative and Service Units Staff Standards Regulation published in the Official Gazette dated 07.10.2020 and numbered 30203, The District Health Directorate is located in districts with a population of 30,000 and above. In districts with a population between 15,000 and 30,000, a district health directorate can be established based on issues such as planning the health service delivery, geographical conditions and population increases. The services in districts where the district health directorate is not established are provided by the District State Hospital Chief Physician and / or the Heads of the Community Health Center (Gazete, 7.10.2020).

Integrated District Hospitals and Integrated Health Centers have been established in settlements where there are no state hospitals. Integrated healthcare service are designed to intensively carry out primary health care services, where emergency health services, examination, treatment and rehabilitation services, birth, maternal and child health services, outpatient and / or inpatient medical and surgical intervention and environmental health, preventive health services, such as forensic medicine and oral / dental health services are provided 24/7.

With the Regulation on the Amendment of the Community Health Center and Affiliated Units Regulation, Healthy Life Centers were opened. Healthy Life Centers are multi-purpose structures established to protect individuals and society from health risks, to encourage a healthy lifestyle, to strengthen primary health care services and to facilitate access to these services. Supporting and strengthening family medicine services (such as health counseling, x-ray, laboratory), non-medical health services in primary care (nutritionist services, psycho-social support services, physiotherapy, child development services, etc.) with the Healthy Life Centers are established due

to the understanding of "Investing in Health, Not Disease" and aimed to prevent the hospital accumulation by facilitating access, to combat the health risks and threats caused by smoking and similar harmful substances; combating malnutrition habits and obesity, currently carried out within the framework of a health nutrition and active lifestyle program. It is aimed to gain the society habits that will increase the quality of life.

A Family Medicine Model has been created. unique to our country. It is planned with taking into account the conditions and needs of our country as well as the examples of other countries, It aimed to achieve the goals of the Health Transformation Program, in order to strengthen primary healthcare services in our country, to organize and deliver primary healthcare services in a quality, to be effective, efficient and equitable.

With the Family Medicine Pilot Implementation published in the Official Gazette dated 24.11.2004 and numbered 25650 with the Law Number 5258; Regulation on Family Medicine Pilot Implementation published in the Official Gazette dated 06.07.2005 and numbered 25867; Regulation on Payments to be Made to the Personnel Employed by the Ministry of Health within the scope of the Family Medicine Pilot Implementation and the Regulation on Conditions of Contract published in the Official Gazette No. 25904 dated 12.08.2005, the basic procedures and principles regarding the family medicine practice were determined. In 2005, the family medicine practice has started as a pilot study in Turkey and by the end of 2010 the family medicine practice has become applicable throughout the country.

Family medicine units were planned with an average of 3000 people per a family physician, and family health centers consisting of one or more family medicine units were established in rural areas, taking this population into account. Family physicians with a population of more than 4000 can not be

registered. In this case, it is recommended to register with another family physician closest to their address and suitable population, and a new family medicine unit is planned for the family health center where the population has increased, and the population per family physician is reduced, allowing our citizens to prefer family physicians.

Health houses are the smallest health units established in villages, towns and hamlets with a population of over 500 according to the data of the Turkish Statistical Institute (TUIK). More than one village, hamlet or town can be attached to a health house. Health homes are units where primary care is provided by a midwife who is affiliated with the District Health Directorate / Community Health Center in terms of administration and family physicians in terms of operation.

In order to provide preventive health services and basic health services to Syrian refugees and immigrants living in our country more effectively and efficiently, to overcome the problems caused by the language and cultural barrier, and to increase access to health services, Migrant Health Centers are established as the unit of the Community Health Center of the district where these people live. In addition to Syrians under temporary protection, our country also hosts immigrants from different nationalities, most of them from Pakistan, Afghanistan and Iraq. "Foreign National Polyclinics" have been opened to provide primary health care services, with the priority of preventive health services and fight against infectious diseases, to these people.

Emergency healthcare services are primary public or private health institutions established to support the services of these institutions, which are not considered among the basic service units and have not undertaken a role in the service, but can be applied to those who need first and urgent assistance.

Three people, consisting of a driver, an emergency medical technician, a doctor or a paramedic, work in the ambulance.

We can detail the structure of the above-described local offices in Turkey by the diagram in Figure 3.

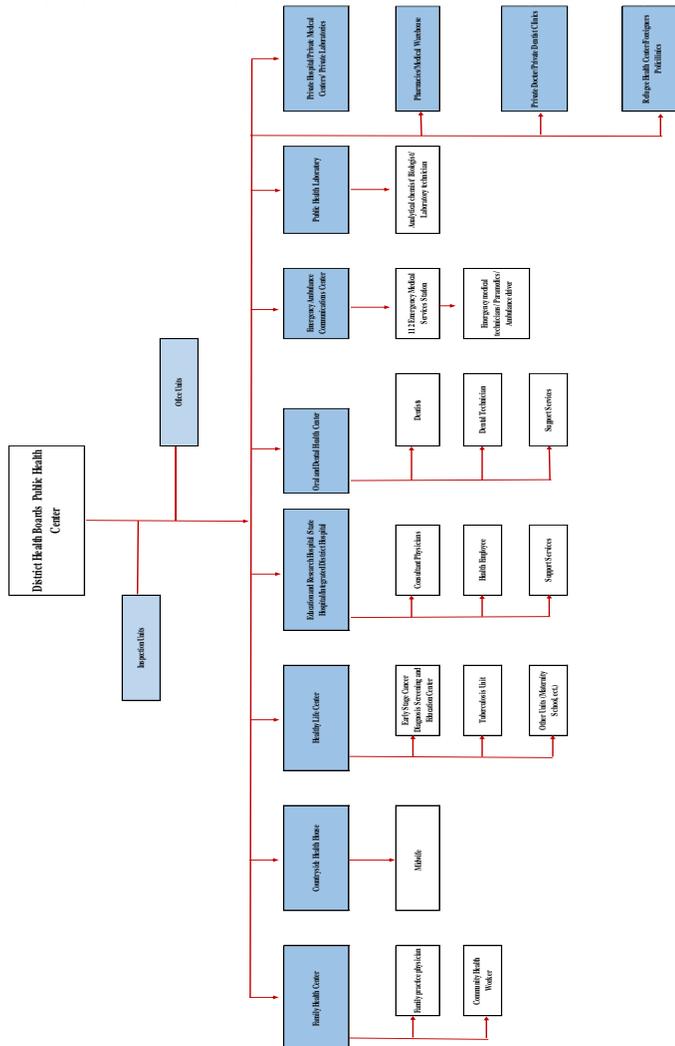


Figure 3. Turkey's Provincial Health Services Structuring

The figure was created by the author

According to Ministry of Health annual statistics for 2018, the number of institutions and organizations that offer primary health care services are as follows: almost 26 252 family physicians employed in 7979 family health centers are located in Turkey. The average population per family physician is 3,124 people. The number of district health directorates established in districts with a population of 30 thousand and above is 423 and the number of community health centers serving in settlements with a population of less than 30 thousand is 353. There are 5,259 health houses, 173 tuberculosis dispensaries, 175 Cancer Early Diagnosis, Screening and Education Center, 83 Public Health Laboratories are available in Turkey. There are 2,735 112 Emergency Health Service Stations (ASHI) and the population per 112 emergency aid station is 29,983 people. The population per 112 emergency aid ambulances is 16,701 people (T. C. S. Bakanlıđı, 2018).

In Turkey, total number of application to the family medicine outpatient clinics and community health centers is 265.496.223. The number of applications to physicians is 9.5 per person. 3.2 of this number is due to applications to the 1st level health institutions and 6.3 of it is due to the 2nd and 3rd level health institutions. While the number of applications to physicians is 9.5 per person in Turkey; it is 6.9 in European Union (EU) and 6.8 in the Organization for Economic Co-operation and Development (OECD) Countries, respectively (T. C. S. Bakanlıđı, 2018).

Vaccination, family planning, pregnancy, newborn and children follow up are defined as preventive health services and these constitute the components of the basic health services set out in the 1978 Alma Ata Declaration ("Declaration of Alma-Ata," 1978). In a staged health system, the main function of primary health care institutions should be to provide preventive

health services for the whole society. Primary health care services are provided free in Turkey (İ. e. al., 2006).

In two different studies in the elderly population in Turkey, the first application point to get health care of the elderly population have been identified as formerly health centers as in the new terminology family health centers (Özcebe H, 2003; Öztürk A, 2002). In a study conducted with women aged 15-49, family health centers were found as the first application point (Naçar M, 2004; Torcu M, 2005). Several studies about primary health care in Turkey show that the first application point of the featured groups such as women and the elderly are family health centers. Preferring the family health center as the first point referred to that family health centers are located close to living places in the community and they are easily accessible. The fact that primary health care institutions are close to the access of the society, they provide services to a significant part of the society such as children, women and the elderly show us that they are the places where the principles of accessibility, inclusivity, continuity and coordination in health services are applied the strongest.

In Turkey, staff that serves mostly primary health care services are family physicians, nurses / midwives and other health care personnel and they work in family health centers. In Primary Health Care in Turkey, the community segments such as infants, children, elderly, women aged 15-49 use the family health centers frequently are implemented in some programs may be considered with Strategies and these applications of this segment are transformed into an opportunity for preventive health services. Some of the implemented programs can be summarized as follows: Expanded Program on Immunization, Nutrition Friendly Schools Program, Turkey Diabetes Program, Turkey Healthy Eating and Active Life Program, Excessive Salt Consumption

Prevention Program, Chronic Disease Management Program, Control Program of Diarrheal Disease, Control Program of Acute Respiratory Diseases, Baby, Child and Adolescent Monitoring Programs, Preventive Oral and Dental Health Program, Nutritional Support Programs, Screening Programs (AÖ., 2020; *Halk Sağlığı Genel Müdürlüğü Tarafından Yürütülen Programlar*).

In Turkey, during the last 10 years, a radical change has taken place in the execution, financing and organization of primary health care services called the Health Transformation Program (S. Bakanlığı, 2008). In 2003, with the past knowledge and experience, especially the socialization of health care health care reform efforts and considering the world's successful examples, Turkey has demonstrated a new health model and named it as Health Transformation Program (S. Bakanlığı, 2008, 2019). In the 2008 report of the World Health Organization (WHO), it was emphasized that a health system that responds better and faster to the needs of the changing world can be established by improving primary health care services. In the same report, the necessity of delivering a health service that better responds to health needs was expressed. Providing human-centered health service provision in primary care is recommended. In this context, instead of an understanding of health service delivery focused on disease or treatment and providing remedial care; Primary healthcare service delivery that focuses on health needs, is based on comprehensive, continuous and personal relationships, and prioritizes the improvement of individual and community health should be supported (M., 2014). Primary healthcare services have an important place in the healthcare system in Turkey, because it is the first health institution to be consulted, has a more widespread service network compared to hospital services and can provide continuous health services to individuals. In good practice, primary health care has a central position in the entire health system. In this context,

strengthening primary care services and increasing primary care utilization rates were included among the strategic priorities in the 2019-2023 Strategic Plan of the Ministry of Health (S. Bakanlıđı, 2019). During the COVID-19 Pandemic period, the importance of primary healthcare services has once again emerged.

Basic strategies related to the outbreak in the process since the detection of the first COVID-19 case on March, 2020, in Turkey, are taking necessary public health measures to reduce these number of cases in order to avoid peak demand that may block the health care system. Efforts are made to prevent severe medical consequences (severe illness, intensive care need, death, disability, etc.) associated with COVID-19 in cooperation with the primary health care services with preventive health and therapeutic services (Organization, 2020). As country policy, the general approach in the COVID-19 pandemic is to gradually reduce the damages of the epidemic, limit and suppress the epidemic (*COVID-19 (SARS-CoV-2 Enfeksiyonu) Genel Bilgiler, Epidemiyoloji ve Tanı. Bilimsel Danışma Kurulu Çalışması. 7 Aralık 2020, Ankara 2020*). With National Influenza Pandemic Preparedness Plan, updated in 2019, all people, and institutions are provided to recognize the pandemic organizations and to make preparations to fulfill their roles and responsibilities and informed to act in coordination during a pandemic (*Ulusal Pandemi Hazırlık Planı 2019*).

Both globally and in our country, the offered primary health care service itself is conducted in Strategy. During COVID-19 pandemic period, in Primary Health Care, good work is done in the fight against the pandemic as well as sustaining the routine health services. Working in harmony with each other in all the systems offered in provincial / district health directorates, community health centers, family health centers, 112 ambulance system and inpatient

treatment services, which are included in the scope of primary health care services, will bring success. The pandemic period is a test that reveals the strengths and weaknesses of the health system. On the one hand, vaccination services, follow-up of babies, children, pregnant women, monitoring of chronic patients; on the other hand efforts to serve COVID-19 cases and their contacts are difficult to balance. Preventive health services should not be interrupted for whatever reason. Routine services should not be disrupted in primary health care in order not to have to struggle with uncontrolled diabetes and uncontrolled hypertension, advanced cancer cases due to interruption of screening, children with growth retardation due to lack of follow-up, babies with vaccine-preventable diseases due to not being vaccinated, in the following years after the pandemic period.

In particular, fillation studies came to the fore in this period. Fillation has a very important role in combating infectious diseases. Fillation is the process of determining the cause of any infectious disease. It is a resource search study. According to the Republic of Turkish Ministry of Health fillation is defined as "making field investigations, conducting studies to determine the source of the agent and / or including the troops, taking the prevention and control measures".

Although there are some differences between 81 provinces in terms of the work of the fillation teams, in Turkey; in each provinces Provincial Pandemic Boards were established and headed by the Provincial Governorship. Under the chairmanship of the Governor, there are administrative chiefs of some public institutions such as the Provincial Health Director, the Mayor and representatives of non-governmental organizations and academic members of Faculty of Medicine. In addition to the measures taken by the central government, the Provincial Pandemic Boards make decisions including

different measures according to the dynamics of the province and evaluate the details of the epidemic throughout the province. It can only make recommendations (Telatar T.G., 2020). According to the General Hygiene Law, the decisions taken by the Provincial General Hygiene Board, which is authorized to write the health law of the province, and the decisions taken in the Provincial Pandemic Board are reinforced. The Fillation teams summarize the problems in the field and solution suggestions are evaluated by the Provincial Pandemic Board and the Provincial General Hygiene Board and decisions are taken. For example, if there is an increase in COVID-19 cases clustering in a certain region, this situation is forwarded to the relevant boards as an agenda and a quarantine decision can be made for that region. As another example, in a district where markets stand out as a source of contamination, board decisions such as increasing the measures taken in the markets and scanning the market employees with polymerase chain reaction (PCR) can be made. The filltion teams work proactively and contribute to local epidemic management.

The fillation team is a three-person team consisting of a doctor, dentist, midwife, nurse, health officer and a driver. Each fillation team moves with a vehicle. Fillation teams have been established in provinces with the organization of Provincial Health Directorates. In some provinces, mostly Community Health Center employees are placed in the fillation teams, while in some provinces oral and dental health workers or different healthcare professionals are assigned. In provinces with medical faculties, faculty members and research assistants of the Department of Public Health also contribute to the efforts of the Provincial Health Directorate to combat the epidemic at different levels (Telatar T.G., 2020).

When a COVID-19 case is detected at any point, the mission and family information of the person automatically falls into the Public Health Information Management System (HSYS) of the Ministry of Health and the Filiation and Isolation Tracking System (FITAS). After this stage, the fillation teams take action. As soon as the case occurs, the fillation teams pay a visit to the person's address and workplace. Thus, it is revealed whether the danger still continues and the other people contacted with are at risk (S. Bakanlıđı, 2019).

Although the task flow of the Filiation Team varies between provinces, it can be summarized as follows: HSYS Data Tracker, consisting of healthcare personnel, takes charge in each district. This personnel checks the Public Health Management System (HSYS) data. HSYS reports cases that are positive due to the results of authorized laboratory analysis to the search team at the community health center. Search teams take on the role of collecting patient prior information. This personnel is preferably a healthcare professional. In some cases, non-healthcare personnel also serve as a search team. Search personnel take information from patients and contacts by phone and record them. The evaluation form is filled with the patient's and patient contact's information. The contacts are added from the public health information management system. The personnel submits the completed forms to the coordinator physician at the community health center. The coordinator physician evaluates the patient contact evaluation form and directs it to the appropriate team. The fillation teams working actively in the field are divided into three groups according to the working healthcare personnel as *the mobile fillation team, the fillation team with mobile doctor and mobile sample team*.

The Mobile Filiation Team goes to the addresses given by the coordinator physician, wearing personal protective equipment, with sufficient medicine

and sampling material, and takes the cases from FITAS in order to carry out the training of the case given by the coordinator physician. The team applies the treatment given by the coordinator physician. It questions the status of the patient and his contacts and adds new contacts if necessary. When necessary, the coordinator consults with the physician and takes samples. It completes the process through FITAS by questioning the status of patients and their contacts. If necessary, makes a referral.

The Filiation Team with Mobile Doctor examines the patient at home, wearing personal protective equipment, with sufficient medication and sampling materials, to the addresses given to them by the coordinator physician. The team takes PCR samples as needed. After asking the sampled individuals about the initiation of treatment before, they start treatment according to their symptom status. If necessary, makes a referral.

In the Mobile Sample Team dentists and healthcare personnel take place. The coordinator physician give the team the forms and they take samples from symptomatic contact people informed by Family Physicians by going to the addresses by wearing necessary personal protective equipment, with sufficient medicine and sampling material. The team takes samples for COVID-19 from asymptomatic people over 60 years of age with comorbid diseases such as hypertension and diabetes. By questioning the status of the individuals who have been sampled before, the team give treatment if necessary, within the knowledge of the coordinator physician. If necessary, the team makes the referral of the person.

Respiratory samples from probable or definite COVID-19 cases can be taken in primary, secondary and tertiary healthcare institutions, as well as by healthcare personnel assigned in the fillation teams. Pandemic Management in Secondary and Tertiary Health Services is explained in the following

sections. Prior to assignment, healthcare personnel assigned for sampling from COVID-19 individuals are given training on infection control measures, use of personal protective equipment, and appropriate sampling. The fillation teams question the patient for information (e.g. name-surname, date of birth, gender, contact information), history of contact with a positive case, risky areas visits (e.g. hospital), risky behaviors (e.g. funeral ceremonies, wedding ceremonies participation etc.) queries. If people who live together in the same household have symptoms, they take a PCR sample. They record the date and the time sample was taken, the anatomical site and location where the sample was taken, clinical symptoms, and relevant patient information (epidemiological information, risk factors, vaccination status and antimicrobial treatments). They process data to FITAS. The fillation team can follow individuals at home or they refer them to hospitals, depending on their clinical condition. Patients undergoing chemotherapy and radiotherapy, patients who underwent organ transplantation, patients who underwent bone marrow transplantation, patients who have used > 15 mg prednisolone or equivalent glucocorticoid and / or biological agents with immunosuppressive effects in the last 3 months are referred to the hospital (*COVID-19 (SARS-CoV-2 Enfeksiyonu) Genel Bilgiler, Epidemiyoloji ve Tanı. Bilimsel Danışma Kurulu Çalışması. 7 Aralık 2020, Ankara 2020*). The follow-up of the cases or their contacts in which the fillation teams initiated the isolation process at home is carried out by family physicians in the form of phone follow-up. Individuals identified as case or contact is reported to the family physician via the Family Medicine Information System (AHBS), and their health status is questioned by calling them on the days determined by the family physician for 10 days. Individuals whose treatment is completed at the end of 10 days and do not show any symptoms are excluded from follow-up.

Fillation Teams demonstrate Strategic Approach in the field. Strategic approach and fillation relationship can be explained as follows (S. S. e. al., 2015; İ.). The fillation teams are self-managed small teams consisting of experts in different disciplines such as physicians, dentists, midwives, nurses, health officers, and civil servants aimed to fight COVID-19. They are proactive teams that influence the decisions in the province, trying to find the source of the disease and make improvements by breaking down the problems and learning at every step. It is an action-taking structure that places the COVID-19 case at the center of the mission and moves around it. The fillation teams are people-oriented, they take care of their job, have the ability to make decisions, feel competent in the field and are motivated to fight a disease that kills people, harm their health in the long term. For example, let a positive case be a factory worker. When the fillation team goes to the house of this case and finds out that the person is a factory worker outside of his family members and social environment, he definitely goes to the factory to do the workplace fillation. The team is automated in this regard and does not expect to receive instructions from anyone. When the close contacts of the positive case are detected in the factory, team makes the decision of isolation. If the employee's department or service is found to be together for a long time without a mask, all employees who are in contact with the positive case are put in isolation. Sometimes this situation can go as far as the workplace stops its activities. It is accepted that the fillation teams do this task objectively and the employer follows the precautions.

The fillation teams have to put forward a multi-disciplinary working style. For this reason, their education processes continue and each situation is handled individually and they exhibit a continuous learning organization. The

activities of the fillation teams in a district unite in addition with with other teams in the province and totally in the region and find a single body response in the whole country and it is a working model that spreads to the whole in the fight against the COVID-19 pandemic. Fillation teams may seem like a small team doing a small work but if we think the whole country, multiplier effects of all the teams make them the Leader of the epidemic. This is a critical task and must exist for complex work such as pandemic dealing with many teams.

The work carried out in the fillation teams has become the priority of the employees. The personnel working here have suspended their main duties. For example, if a dentist is in charge of the fillation team, his main task is to do fillation, not the dental treatment of the patients. Health personnel working in the fillation teams increase their personal and professional development with this process they spend in the field, and gain a good experience with the sense of fighting and achieving an epidemic. Strategic Approach is exhibited in the fillation studies. The ability of the teams, their autonomous movement, their competence, their active use of technical infrastructure and tools, health information systems such as HBYS, FITAS, increased wages compared to other personnel, working environments and the pleasure of achieving something contribute to this experience.

After determining the capabilities and motivation sources of the healthcare personnel who have recently joined the fillation process, it is investigated at what point it will be more beneficial. In order to adapt and develop with the team, an internship process is initiated by matching the professional team with the newly recruited staff. The processes of using personal protective equipment, complying with infection and droplet rules, taking PCR, barcoding of the sample, transferring data to information systems, interpreting it, transmitting the samples to the laboratory, establishing a dialogue with the

patient and their relatives are transferred to the new team member with a master-apprentice relationship. People who work in the fillation need to be motivated, committed and skilled. If everyone involved has the same view of where it is, where it is going, and why it is going, then it will act in the same direction with one goal and succeed in extinguishing the epidemic. As a matter of fact, it is seen that this unity is behind the success stories.

With the goal of normalization, the fillation teams are putting forward efforts to eliminate the COVID-19 outbreak in the field. This effort of the fillation teams has created a leverage effect for primary healthcare services during the pandemic period.

Fillation teams in Turkey, have gained value to primary health care services by using digital infrastructure offered by the Ministry of Health that has revealed an efficient and innovative model when using in the field. The effect of fillation has spread to the whole health organization and has managed to partially take the burden of therapeutic health services by finding resources, finding and isolating contacts, taking samples from people in their homes, and starting early medication. It can be said that early intervention in COVID-19 patients with fillation studies is a powerful model that reduces the mortality of COVID-19 disease.

During pandemic period, Primary Health Care in Turkey work with the catchword "World Without Corona For Everyone", "Health For All" ; act with the mission and vision of being achievable especially for women, children and elderly; being preferred by all the citizens; making dynamic plans according to population; being widespread; being a team with enough and qualified health personnel who are suitable the work; encourage with positive feedback; continuously improve and share information; focus on preventive health services rather than curative health services; reduce the burden of curative

health services; being self-governing and self-organized and using an appropriate budget. The pandemic period has been a period in which an answer was found for the question of "How important health services are for us?". In countries with a strong primary health care service delivery, such as Turkey pandemic period has given the answer to society's health needs with good presentation of preventive health care services.

It should not be forgotten that primary health care services constitute the skeleton of the health system and this skeleton must remain strong in standing upright. Healthy, safety and motivated healthcare teams working at all stages of primary health care services should be protected. Teams should be kept in constant balance in order to remain mentally and physically active and to continue working. In order to continue our fight against the COVID-19 pandemic, it is necessary to interact with all elements, especially the healthcare professionals who are at the forefront. Our main strategy should be to protect the teams struggling with the pandemic by developing empathy and providing trust. To protect the health of the individual and society at the highest level with a human-centered approach; to produce timely, appropriate and effective solutions to health problems, efforts should be made to overcome the COVID-19 pandemic period with minimal damage. All the efforts made are just for a healthy life.

Exercises

1. "It is not merely the absence of disease or disability, but a state of complete physical, mental and social well-being."

Which is definition given?

- A. Disease
- B. Health

- C. Rehabilitation
- D. Treatment

Answer: B

2. Which of the following can be said about health services?
- A. Healthcare is a birth right.
 - B. A healthy society consists of healthy individuals.
 - C. Health services are the services provided to protect the health of the society and to increase the level of health.
 - D. All

Answer: D

3. Which of the following is not one of the institutions providing Primary Health Care Services in Turkey?
- A. Family Health Centers
 - B. Community Health
 - C. State Hospitals
 - D. Public Health Laboratories

Answer: C

4. Primary Health Care Services are places such as preventive health services; emergency health services; examination, treatment and rehabilitation services; birth, maternal and child health services; outpatient and/or inpatient medical and surgical intervention clinics; environmental health services; forensic medical clinics and oral/dental health services. They are institutions that are planned to carry out health services intensively and provide integrated health services 24/7. Which of the following is the definition of this institution?

- A. Integrated District Hospital/Integrated Health Center
- B. Public Hospital
- C. Health house
- D. Tuberculosis Dispensary

Answer: A

5. When was the first COVID-19 case seen in Republic of Turkey?
- A. November 1, 2019
 - B. December 1, 2019
 - C. March 11, 2020
 - D. 19 May 2020

Answer: C

6. Which of the mechanisms take an active role in the provinces during the COVID-19 Pandemic?
- A. Provincial Hygiene Board
 - B. Provincial Pandemic Board
 - C. Filiation Teams
 - D. All

Answer: D

7. Which of the following definitions is a task?

“It is the structure that undertakes tasks such as finding the source of the COVID-19 case, finding contacts, isolating people, taking samples, and starting drug treatment.”

- A. Filiation team
- B. Fidelity (Vefa) team

- C. Call handling team
- D. Intensive care team

Answer: A

8. “It is a powerful model that enables early intervention, hospitalization and intensive care unit admission of COVID-19 patients, and thus reduces the mortality of COVID-19 disease.”

Which of the following services is described above?

- A. Psychosocial services
- B. Preventive health services
- C. Curative health services
- D. Physiotherapy services

Answer: B

9. When did the World Health Organization declare a pandemic for COVID-19 disease?

- A. March 11, 2020
- B. March 11, 2021
- C. November 1, 2019
- D. November 1, 2020

Answer: A

10. Which of the following is a part of the filiation team?

- A. Mobile team
- B. Mobile doctor team
- C. Mobile sampling team
- D. All

Answer: D

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CHAPTER 4

HEALTH STRATEGIES IN HOSPITAL SERVICES DURING THE PANDEMIC PERIOD

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What Will You Learn in This Book Chapter?

After completing this section; you will

Learn the hospital pandemic plan preparation commission members.

Be able to make a hospital pandemic plan in coordination with the Provincial / District Health Directorate.

Be able to prepare, plan, coordinate, communicate and sustaine collaboration to preserve healthcare capacity to meet increased need in a pandemic.

Goals

To determine current status

To establish units for inpatient service during the pandemic period

Prepare the communication plan

Plan trainings before and during pandemic

Determine personnel needs for pandemic period

Increase patient capacity for pandemic period

Increase laboratory capacity for pandemic period

Increase hospital capacity for pandemic period

Determine medical and other requirements for pandemic period

Determine infection prevention and control measures

Plan for patients who lose their lives

To make hospital pandemic action plan

INTRODUCTION

The coronavirus, which was determined as the cause of pneumonia cases seen at the end of 2019 in Wuhan, a city in Hubei Province of China, was not limited to this region and turned into a worldwide pandemic in a few months with its high contagious rate.

The causative agent of the disease, named Coronavirus disease 2019 (COVID-19) by the World Health Organization, has been identified as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). Clinical manifestations of SARS-CoV-2 ranges from asymptomatic infection to fatal pneumonia and multisystem organ failure (Fauci & Lane, 2020). The medical mystery of SARS-CoV-2 is still not fully resolved.

The coronavirus disease 2019 pandemic has become an international public health problem. According to the updated case counts on the World Health Organization (WHO) and European Centre for Disease Prevention and Control websites, all around the world, near 277 million confirmed cases including 5.37 million deaths have been reported since its emergence in December 2019 ("Centers for Disease Control and Prevention. 2019 Novel coronavirus, Wuhan, China. Information for Healthcare Professionals. ," ; "World Health Organization. Novel Coronavirus (2019-nCoV) technical guidance. ,").

Turkish Ministry of Health, had published The National Pandemic Plan due to a preparedness of an influenza pandemic, in 2006 and then had updated this as ‘‘The Pandemic Influenza National Preparedness Plan’’,

in 2009 and 2019 (Küresel Bir Grip Salgını (Pandemi) Konusunda Yapılması Gereken Hazırlıklar ile İlgili 2006/23 Sayılı Başbakanlık Genelgesi 2006; Pandemik İnfluenza Ulusal Hazırlık Planı, 2019). After central planning, Provincial Health Directorates were asked to prepare their own Provincial Pandemic Influenza Preparedness and Action Plans. Although the pandemic plan was prepared for Influenza, it was immediately adapted to SARS-CoV-2 after WHO declared it as pandemic. In coordination with Provincial Health Directorates, all public hospitals act according to their Provincial COVID-19 Pandemic Preparedness and Action Plans.

With close follow-up of national and international developments, Ministry of Health has taken necessary measures. In line with the recommendations of The Scientific Board for COVID-19, established at the Public Health Emergency Operation Center within the General Directorate of Public Health (GDPH); Ministry of Health presents actual COVID-19 guidelines and algorithms both for institutions, healthcare personnel and the public and share them on the official website, orderly ("World Health Organization. Transmission of SARS-CoV-2: Implications for infection prevention precautions. ,").

The first aim in combating the disease is to prevent and control the spread of the virus through preventive medicine practices and the second aim is to diagnose and treat patients in health institutions in case of illness despite all preventive medicine practices.

While the healthcare services provided to COVID-19 patients are going on, the need of the healthcare serving for non-COVID-19 patients should also be carried on. This situation reveals the necessity of providing services to patients with and without COVID-19 within the same system. In addition, infection control and prevention precautions should be implemented effectively to reduce in-hospital transmission. Interprofessional and interdisciplinary teamwork is required to deal with the COVID-19 pandemic.

In this part of the book, health strategies in hospital services during the pandemic period has been evaluated.

PANDEMIC PREPARATION IN HOSPITALS

The hospital pandemic plan was in accordance with the hospital disaster plan (HAP) framework. The HAP aims to prevent and reduce, and to be prepared for disasters and emergencies and helps hospitals to reduce the risk of disasters and emergencies. The aspects that distinguish COVID-19 from other emergency-disaster situations was taken into account in planning. Respiratory and highly highly contagious characteristic of SARS-CoV-2 and the pandemic process is estimated to take months; the hospital pandemic plan would not be in full compliance with the HAP framework. Therefore, it would be appropriate to prepare the hospital pandemic plan as an "event specific plan" in a complementary way.

During COVID-19 pandemic; number of cases seen across the country, number of applications to health institutions due to COVID-19 and

related complications, number of patients hospitalized in intensive care units and number of deaths due to COVID-19 and related complications are increasing day by day. Considering this situation, inpatient treatment institutions prepared their hospital pandemic plans and shape and widen their preparations according to their pandemic level.

For each inpatient treatment institution, hospital pandemic plan preparation commission was determined and they made their own pandemic plan. The commission members consisted of; the Chief of the Hospital, Deputy Chief Physician, Infectious Diseases Specialist, Pediatric Health and Disease Specialist / Pediatric Infectious Disease Specialist, Internal Medicine specialist, Public Health Expert, Laboratory Manager, Intensive Care Specialist or Intensive Care Officer, Emergency Medicine Specialist, Emergency Medicine Charge Nurse, Administrative Financial Services Manager, Healthcare Services Manager, Civil Defense Personnel, Occupational Health and Safety Doctor (if any), Head of the Infection Control Committee and other responsible personnel that will be needed in the preparation of the hospital pandemic plan.

Hospital pandemic plans were made and prepared in coordination with the Provincial / District Health Directorate, taking into account these following headings:

1. Current Status

The current status of the number, characteristics and distribution of personnel, branches served, number of outpatient clinics, number of daily patient examinations, services bed capacity and bed occupancy rate, intensive care capacity (bed and ventilator) and intensive care bed occupancy rate, laboratory capacity (tests performed, daily analysis capacity, etc.), closed area capacity to be used as an additional outpatient clinic or inpatient services were stated.

2. Establishment of Units for Inpatient Service During the Pandemic Period

For the continuity of service provision during the pandemic period, the work to be done in the units, personnel to be assigned were determined and the following job descriptions were specified and units were established taking into account and information were recorded.

a. Management Unit

During the pandemic period; putting pandemic plans into practice, planning the working order of healthcare personnel in accordance with the pandemic, organizing the health service delivery in accordance with the pandemic, the implementation of triage planning of the hospital, evaluation of in-hospital infection prevention and control measures and its implementation were planned by the management unit.

The management unit ensures the application of case follow-ups in accordance with the case management algorithm.

b. Education Unit

Infection prevention and control measures, case definitions and management algorithms, treatment protocols were planned by Education Unit in accordance with actual COVID-19 guidelines and algorithms presented by Ministry of Health and trainings were given to healthcare personnel during the pandemic period.

c. Communication Unit

In every inpatient treatment institution a coordination unit was determined and the coordination of the pandemic period within and outside the institution were achieved. Communication according to the communication plans were prepared. Communication units work in coordination with the Provincial Health Directorate.

d. Surveillance Unit

The data of number of outpatient clinic applications, inpatients, inpatients in the intensive care unit and deaths were requested by The Health Directorate daily and these were provided by the Surveillance Unit.

3. Preparing the Communication Plan

In-hospital and out-of-hospital communication plans were established. In this context; the contact information of the hospital staff were recorded and were regularly updated. Communication with the needed institutions and especially with Province / District Health Directorates

were determined. Their contact information were obtained and regularly updated.

4. Planning Trainings Before and During Pandemic

In the pre-pandemic period, training about infection prevention and control measures, general information and responsibilities about the pandemic plan, the use and dispose of personal protective equipment (PPE) were given to personnel.

During the pandemic period, training about pandemic SARS-CoV-2 agent, case description, case management algorithm, diagnosis and treatment protocols, infection control in health institutions were given to personnel.

Planning for the implementation of training programs and their regular repetition were achieved so that personnel gained automatism.

5. Determining Personnel Needs for Pandemic Period

The severity of the pandemic and how busy the units will be were considered, risks were calculated and plans were actually made.

In COVID-19 pandemic, some of the personnel working in the institution got ill and in addition, some of them had a sick relative (child, partner, parent etc.) and expected absence from work arised on the following days. This was taken into account when planning working schedule of the personnel.

Healthcare personnel were taught to monitor themselves for fever and symptoms of COVID-19. In one report of 48 healthcare personnel with confirmed COVID-19, 65 percent of them were reported working for a median of two days while exhibiting symptoms of COVID-19 (Chow et al., 2020).

During the peak period of the pandemic, all capacities and resources were reserved for pandemic patients and non-elective surgical procedures. In this way, hospitals compensated for the shortcomings in personnel, even limited, personnel were transferred to units with heavy workload related to the pandemic. Gradual plans were made to postpone elective surgical procedures. Annual leaves were canceled, if not necessary.

6. Increasing Patient Capacity For Pandemic Period

Plans were made to increase the capacity to meet additional demand during the pandemic. Many city hospitals and pandemic hospitals were built and put into use immediately. Most of the hospitals arranged additional outdoor patient examination rooms for polyclinic service provision. The bed and intensive care unit capacity were increased in order to meet the additional need.

The need for mechanical ventilator was determined. Ministry of Health made a national campaign about mechanical ventilators and ventilators were produced by domestic factories. Damaged mechanical ventilators were quickly overhauled and put into use.

The need of intensive care nurse and the reserve personnel that will work as intensive care nurse during the pandemic period were determined. The triage for the admission of COVID-19 patients within the hospital was planned. For triage of suspected COVID-19 patients, additional tents were built in hospital gardens. Nasopharyngeal swab samples of patients suspected with COVID-19 were taken here with appropriate PPE in a cabin without direct contact with patients.

7. Increasing Laboratory Capacity For Pandemic Period

At the beginning, analysing the nasopharyngeal swab samples by using polymerase chain reaction (PCR) were made at GDPG Microbiology Reference Laboratories, only. Samples taken from suspected cases were transferred immediately to central reference laboratories by airline or road but then the possibilities were expanded and PCR tests were started to be studied in several provincial authorized laboratories. The requirement for special infrastructure, trained staff were met immediately in laboratories of hospitals. By the time, samples can be 24 hours worked.

8. Increasing Hospital Capacity For Pandemic Period

Depending on the increase of the number of applications, it was kept in mind that some health services will need to be prioritized such as intensive care units and emergency departments. So working order has been rearranged for healthcare personnel and updated as needed.

Coronavirus disease 2019 pandemic patients should be placed in a well-ventilated single-occupancy room with a closed door and dedicated bathroom ("Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic. ,"). When this became an impossible issue due to the increasing number of applications, patients with confirmed COVID-19 were began to be hospitalized in pairs, if needed. The healthcare personnel and material needs to care these patients were determined and Ministry of Health appointed personnel and as soon as all the equipment needs were provided.

In order to meet the increase in the number of pandemic patients, additional hospitals were opened and buildings such as student dormitories and official buildings were used as additional hospitals if needed. Locations where mobile hospitals can be established were determined (for example: hospital parking places). Inpatient services that can be used as additional intensive care units were determined (for example: operating rooms) and if needed they were converted into intensive care rooms. Especially, with detailed planning and implementation of polyclinic and inpatient treatment services together; arrangement of intensive care units to be sufficient for pandemic patients has become the most important topic.

9. Medical and Other Requirements for Pandemic Period

Considering the case management algorithm; the medical materials and drugs used for pandemic patients were determined.

Demand for the supply of medicine used in treating pandemic patients were expected to increase suddenly in this period. Ministry of Health predicted this situation and medicines used in treatment were seized and their sale from pharmacies were banned.

All healthcare personnel who work in triage or enter the room of a patient with suspected or confirmed COVID-19 should wear PPE to reduce the risk of exposure. Standard PPE for patients with suspected or confirmed COVID-19 includes the use of a gown, gloves, a respirator or medical mask, and eye or face protection. Procurement plans were made to meet the PPE. PPE materials were provided by Ministry of Health to all hospitals. All patients were asked to wear a mask prior to entry. Cloth masks were not considered as PPE ("World Health Organization. Advice on the use of masks in the context of COVID-19,." ; "World Health Organization. Transmission of SARS-CoV-2: Implications for infection prevention precautions. ,"). Surgical masks needed for prevention of transmission were determined to patients who don't wear a mask/or wear a cloth mask upon entry into the hospital.

It was announced to public by Ministry of Health that vaccine will be procured after the COVID-19 vaccine network in the World has been completed, as well as the vaccination studies carried out in our country

was expected to be put into practice by April 2021. Planning were made for the vaccination and the priority groups.

10. Determination of Infection Prevention and Control Measures

The transmission of SARS-CoV-2 occurs primarily through droplets and secondarily through contact with mucous membranes with contaminated hands. Person-to-person spread is the main mode of transmission (Meyerowitz & Richterman, 2020). Increasing infection prevention and control measures is necessary for this purpose.

Infection control interventions to reduce transmission of COVID-19 include universal source control (eg, covering the nose and mouth to contain respiratory secretions), early identification and isolation of patients with suspected disease, the use of appropriate PPE when caring for patients with COVID-19 and environmental disinfection.

During pandemic period, infection prevention and control measures were determined and all the staff were educated for all known or possible unprotected exposures to COVID-19 (both in the community and at work). Errors in removal of PPE are common. recurrent trainings were given to healthcare personnel about the appropriate sequence of putting on and taking off PPE and the use of hand hygiene to avoid contamination.

To prevent in-hospital transmission, all patients were screened for clinical manifestations related with COVID-19 prior to entry into the hospital. Separate waiting areas for patients with respiratory symptoms

were designated, with seating spaced at least two meters apart. Patients without symptoms were also questioned about any unprotected exposures to a person with COVID-19. To identify patients with asymptomatic or presymptomatic infection, many healthcare settings have also implemented PCR testing prior to elective procedures. Infection control and prevention measures were expanded as the number of pandemic patient applications increased and patient visits were restricted.

All patients and visitors should wear or be given masks to wear prior entry into the hospital for universal source control ("Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic. ,").

Once patients with suspected COVID-19 are in a single room with the door closed, they usually remove their mask. However, patients should put the mask back on for source control whenever a healthcare personnel enters the room. Health care workers should also wear a mask while they are in the hospital (Wang, Ferro, Zhou, Hashimoto, & Bhatt, 2020).

The hospitals educated their healthcare workers about the clothes the staff wear at the hospital are separate from they go to home. Hospital laundries clean uniforms worn by healthcare personnel in the hospital without being sent home. If possible, some of the hospitals provide

logistical support and environment for staff to take a shower before putting on their own clothes to go home after working.

Healthcare personnel with reported chronic diseases or conditions who are at risk for COVID-19 are shifted to non-COVID-19 units.

In the staff cafeteria, which is one of the public areas in the hospital, the tables were arranged in a way that only one personnel can sit and ventilation of the cafeteria was provided. Meal times have also been extended. Snack food were served to departments for personnel. All personnel were warned to eat alone in the units where they work. All the meetings, educations and social activities done in hospitals were postponed and rearranged online.

Renewal of the training of healthcare personnels on the use of PPE and continuously informing healthcare professionals about the administrative measures taken are ongoing.

11. Planning for Patients Who Lose Their Lives

Deaths due to COVID-19 disease and complications are increasing day by day. Hospital morgue and gassal capacity were increased. Due to the increased capacity in hospital morgues, additional clergy was assigned to public hospitals by the Presidency of Religious Affairs. Services required for funeral owners continue to be provided in full.

12. Hospital Pandemic Action Plan

Hospitals act in accordance with the case management algorithm, diagnosis and treatment protocols determined by the Ministry of Health. Patients transfer and triage are organized in accordance with the rules. Hospitals act in coordination of hospital pandemic action plan in accordance with Provincial / District Health Directorates.

Meeting the personnel and logistics needs during the pandemic, supporting personnel and public education activities, planning and implementation of new inpatient treatment services for the pandemic period are ongoing.

The COVID-19 pandemic has created an intense demand for inpatient care on hospitals. COVID-19 pandemic patients especially older adults with preexisting chronic health conditions require hospitalization and/or intensive care. During COVID-19 pandemic experience, interprofessional and interdisciplinary teamwork is needed. Preparation, planning, coordination, communication and sustained collaboration are essential to preserve healthcare capacity to meet increasing needs.

Exercises

1. What is the aim of the hospital disaster plan (HAP)?
 - A. To prevent and reduce disasters and emergencies
 - B. To be prepared for disasters and emergencies
 - C. To help hospitals to reduce the risk of disasters and emergencies
 - D. All

Answer: D

2. Which of the following is a member of hospital pandemic plan preparation commission?

- A. The Chief of The Hospital
- B. Infectious Diseases Specialist,
- C. Head of the Infection Control Committee
- D. All

Answer: D

3. The data of number of outpatient clinic applications, inpatients, inpatients in the intensive care unit and deaths were requested by The Health Directorate daily. Which of the unit provides these information?

- A. Surveillance Unit.
- B. Education Unit.
- C. Management Unit.
- D. Communication Unit.

Answer: A

4. Planning for the implementation of training programs and their regular repetition gained personnel (.....)

Fill in the brackets with the suitable definition.

- A. Automatism.
- B. Disability.
- C. Unconfidence.

D. Feeling of discomfort.

Answer: A

5. Which of the following was not aimed during COVID-19 pandemic period?

- A. Sick relatives of healthcare professionals were taken into account when planning the working Schedule.
- B. Healthcare professionals were taught to monitor themselves for fever and symptoms of COVID-19.
- C. Personel were transferred to units with heavy workload related to the pandemic.
- D. Gradual plans were made to increase elective surgical procedures proportionally when infected cases increse.

Answer: D

6. For triage of suspected COVID-19 patients, which of the arrangements were made?

- A. Additional tents were built in hospital gardens.
- B. Nasopharyngeal swab samples of patients suspected with COVID-19 were taken with appropriate personal protective equipments
- C. Nasopharyngeal swab samples were taken in a cabin without direct contact with patients.
- D. All

Answer: D

7. Which of the following plans were made to increase the capacity to meet additional demand during the COVID-19?
- A. Arrangement of additional outpatient examination rooms for polyclinic service.
 - B. Increase the bed and intensive care unit capacity.
 - C. Make a national campaign to produce mechanical ventilators by domestic factories.
 - D. All

Answer: D

8. Which of them must be used as the standard personal protective equipment when serving patients with suspected or confirmed COVID-19?
- A. Gown and gloves,
 - B. A respirator or medical mask,
 - C. Eye or face protection,
 - D. All.

Answer: D

9. Which of the following was done to prevent in-hospital transmission prior to enter into the hospital?
- A. All patients were screened for clinical manifestations related with COVID-19

- B. All patients were screened for saturation.
- C. All patients were screened for hypotention.
- D. All patients were screened for bradycardia.

Answer: A

10. What is essential to preserve healthcare capacity to meet increased demands?

- A. Preparation and planning,
- B. Coordination and communication,
- C. Sustained collaboration,
- D. All

Answer: D

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CHAPTER 5

ELDERLY HEALTH AND CARE SERVICES MANAGEMENT AT HOME IN THE COVID-19 PROCESS

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What will you learn in this chapter of the book?

After completing this chapter;

You will be able to distinguish the global demographic change process and the elderly population profile structure.

You will be able to explain the subgroups of the aging process as chronological, psychological, sociological and biological aging.

You will be able to explain the importance of home care services in the health of the elderly.

You will be able to distinguish the problems and ethical dilemmas related to elderly health during the COVID-19 Pandemic period.

Goals

To define the global demographic change process and the concepts of old age.

To explain the chronological, psychological, sociological and biological aging subgroups of the aging process.

To explain the importance of home care services in elderly health.

To explain the problems and ethical dilemmas related to elderly health during the COVID-19 Pandemic period.

INTRODUCTION

Health workers, primary and secondary care services throughout the Pandemic period were discussed in other chapters of our book, beginning with the role of epidemics in the history of medicine. The aged persons who go through serious processes in the broad sense, home care services, the challenges that the elderly face during this time, and ethical dilemmas are all explored in this part.

The concepts of old and elder, are concepts that are used in the fields of gerontology and geriatrics, are confused in meaning. Although these concepts are not clear in meaning, they are also used incorrectly interchangeably (Duyar, 2008). Norman defined normal old age as the gradual loss of functionality of many body systems over time, excluding losses caused to incapacity or disease (Kav, 1995). The dictionary meaning of the word "old age" as an adjective in the Turkish Language Institution is aged, old, elder (person). Again, we see the meaning of someone who has lived for many years as an adjective (<https://sozluk.gov.tr>). When assessing the needs of elderly people, it's important to consider their level of self-care competency, whether they have a mental or psychiatric problem, the need for special care, the presence of chronic disease, the drugs they're taking, the suitability and safety of their home environment, whether they have social support, the relatives' educational needs, and their ability to perform daily activities (Erci,2009).Caring for the elderly might be provided formally by a professional, public, private, or voluntary group, or it can be provided informally by relatives and friends. The services provided to the elderly

should be comprehensive, including physical, psychological, and financial support (Erdem, 2005).

Although the terms “aging” and “elderliness” are sometimes used interchangeably, they are two completely different concepts. Aging means getting older, getting on in years. Old age, on the other hand, refers to the life cycle in which the effects of that age are seen with each age taken. In both concepts, some changes are seen in the person with the increase of age. Although a child who has reached the age of fifteen is perceived as 'old' for a three-year-old child, she has not reached the 'old age' stage because (s)he is in puberty yet. As each individual will be affected by the aging process from various angles, the individual should be analyzed holistically from several angles. (Beğer & Yavuzer, 2012). Many theories have been formed about the causes of aging. Nevertheless, no theory can clarify aging. Each theory tries to prove them by stating some hypotheses from a certain point of view.

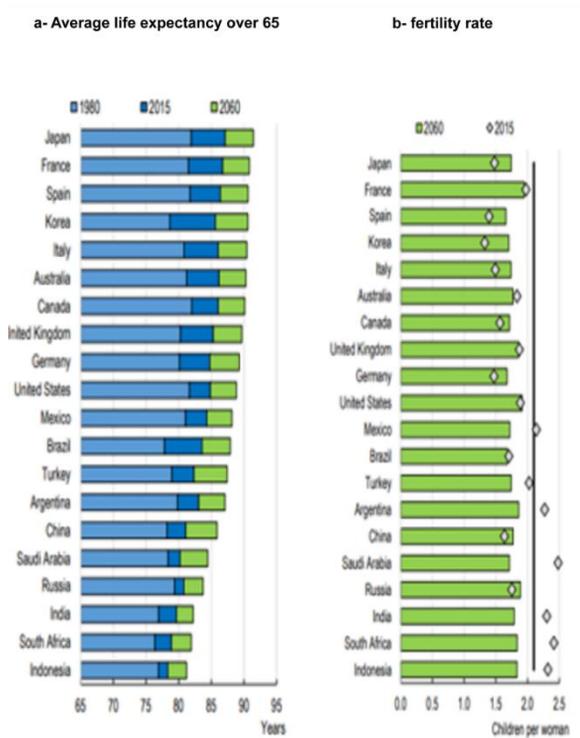
1. The Process of Global Demographic Change

Despite the rapid spread of health technologies, the fertility rate has decreased, life expectancy has increased, and the death rate has decreased significantly as a result of increased access to health services, rising income levels, higher education levels, and increased women's employment around the world. People aged 65 and over are defined as the elderly group. Globally, the population over 60 is reported to be growing rapidly according to different age groups.

1.1. The Elderly Population Profile in the World

According to the data obtained, the population of elderly individuals is increasing rapidly. In 2017 data, it is predicted that there are 13%, that is, approximately 962 million people in the world over the age of 60. The estimated number for 2025 is 1.2 billion people over the age of 60, and the forecast for 2050 is 2 billion. (UN, 2017; TR Ministry of Development, 2014). Table 1 shows the average life expectancy and fertility rate over 65 years of age in G20 countries.

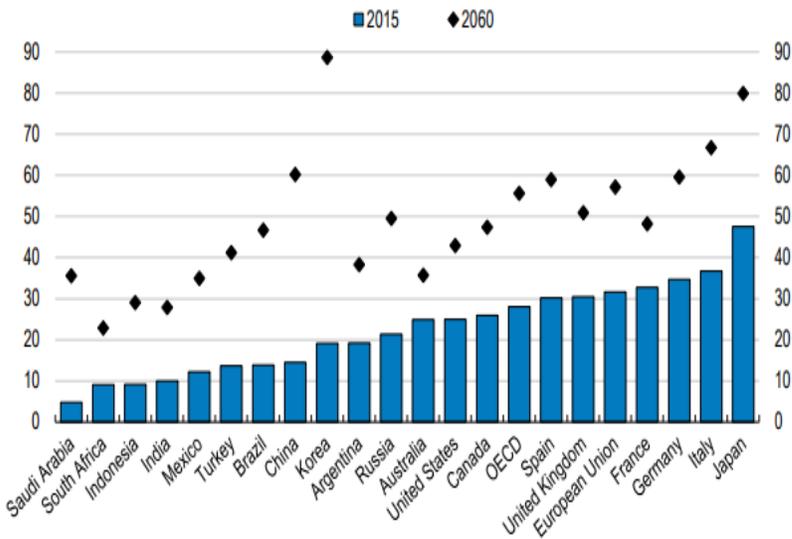
Table 1: Average life expectancy and fertility rate of G-20 countries



Source: <https://www.oecd-ilibrary.org>.

The old population and elderly dependency rates will rise at varying rates in the next 10 years due to a lack of critical policy adjustments, as shown in Table 2. In the table, the number of people over the age of 65 per hundred people is given. Japan has been going through this process since 2015. In the table, the number of people over the age of 65 per hundred people is given. In countries like India, South Africa, and Indonesia, the population will age more slowly. Among the difficulties of these countries, it is thought that providing sufficient employment for the young population will be a problem.

Table 2: Old age dependency ratio of G-20 countries

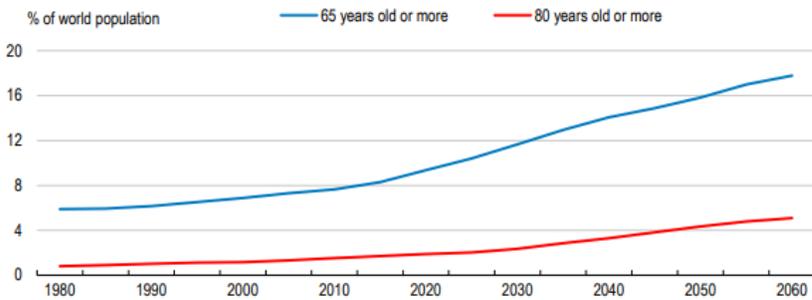


Source: <https://www.oecd-ilibrary.org>.

In Table 3, it is expected that the population aged 80 and over will increase between 2015 and 2060. It is expected that the number of

people over 80 years old, which was 8% in 2015, will increase to 18%, and from 3% to 18% in Korea. The impact of aging is linked to how healthy these individuals will be in the future. Increased health and care demands are also predicted as a result. Although the world's population is aging in a non-uniform manner, those in developed and developing countries with a higher level of education and who are more economically prosperous will have a better chance of living longer. According to OECD data, a 25-year-old male with a university degree can live 75 years longer than his less educated peers. In addition, urban areas will attract younger and more active workers, while rural areas will be the living spaces of the elderly and retirees. As a result, strategies and solutions to deal with the holistic effect of aging will need to be developed with inequalities between regions in mind.

Table 3: The growth rate of the population aged 80 and over between 2015 and 2060

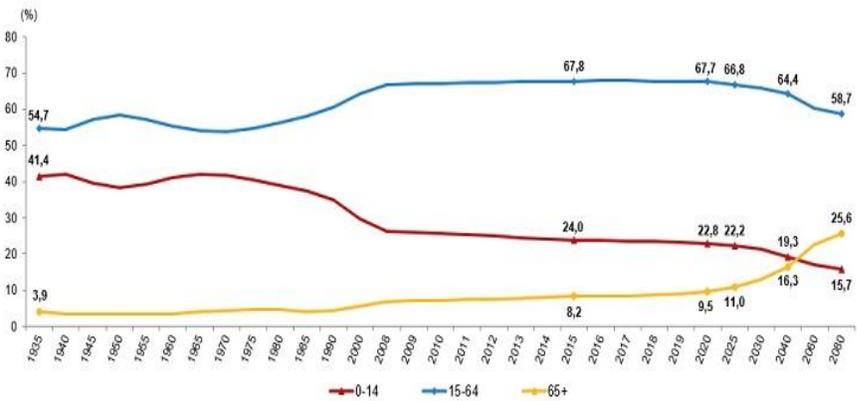


Source: United Nations World Population Prospects: The 2017 Revision.

1.2. Elderly Population Profile in Our Country

The elderly population of our country aged 65 and over has increased by 22.5% in the last five years, from 6,495,249 to 7,953,555 from 2015 to 2020. The proportion of the elderly population in the total population is 8.2% in 2015 and 9.5% in 2020. In 2020, 44.2% of the elderly population group is male and 55.8% is female. According to population projections, this ratio was predicted to be 11.0% in 2025, 12.9% in 2030, 16.3% in 2040, 22.6% in 2060 and 25.6% in 2080. The population ratio by age group between 1935 and 1980 is given in Table 4.

Table 4: Population ratios of age groups between 1935-2080

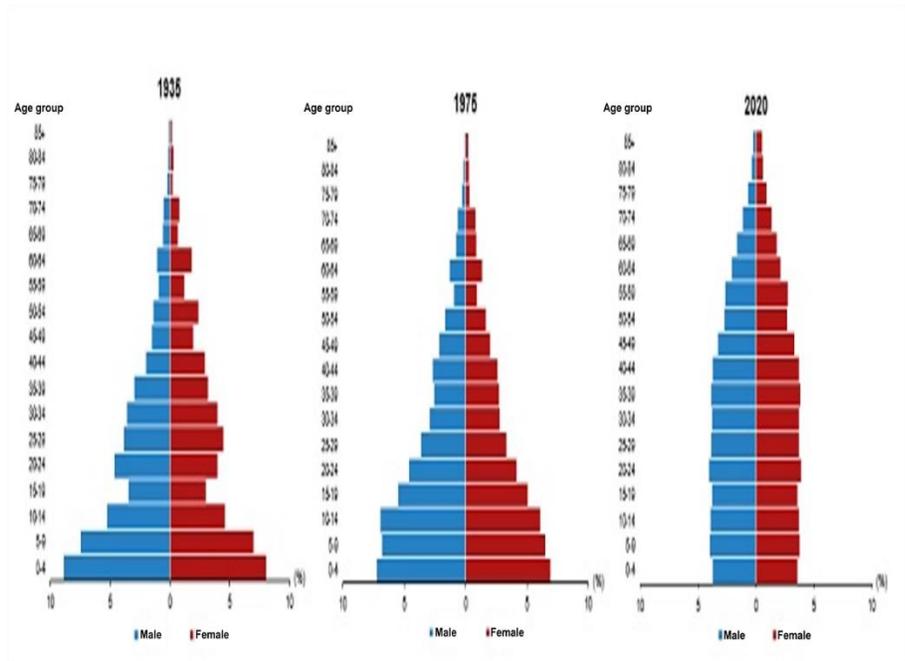


Source: <https://data.tuik.gov.tr/Bulten=Istatistiklere-Yaslilar-2020>

The fact that the proportion of the elderly population in the total population is over 10% is an indication that our population is aging. Turkey's elderly population has increased more rapidly than the population in other age groups. The age structure of the population has

changed as a result of the "Demographic Transformation" process known as the "Global Aging Process," which includes decreases in fertility and death rates in our country, as well as developments in the health sector, an increase in the standard of living, a higher level of welfare, and an increase in life expectancy at birth. While the proportion of children and youth in the total population decreased, the proportion of the elderly increased. In Table 5 below, the population pyramid according to the 1935 and 1975 general population census based on TUIK data, and the 2020 address-based population registration system is seen.

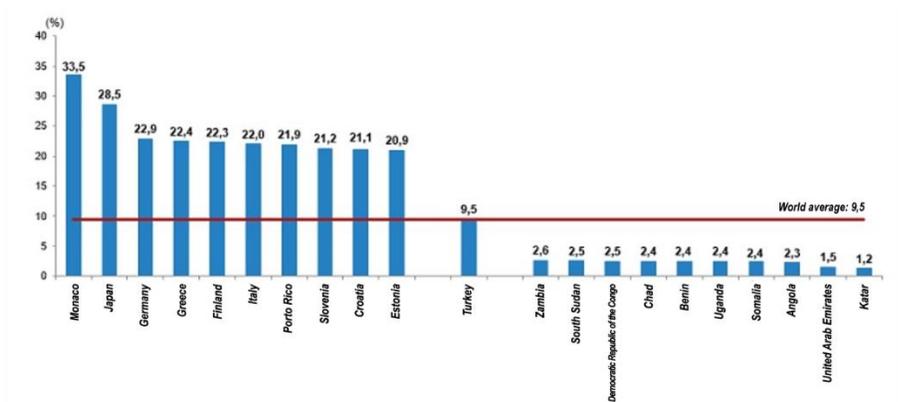
Table 5: 1935,1975 and 2020 Population Pyramid



Source: <https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklere-YasliIar-2020-37227>

The elderly dependency ratio, which is expressed as the number of elderly people corresponding to every hundred people of working age, is 12.2% in 2015 and 14.1% in 2020. There is an elderly person in one out of four households.

Table 6: 10 countries with the highest and lowest proportion of the elderly population, 2020



Source: <https://www.census.gov/> The source of Turkey's numbers is TUIK.

One of the data that shows the aging of the population is the “median age”. “By listing the ages of the individuals who make up the general population, from the newborn infant to the oldest individual, from the smallest to the oldest, we can conclude that the median age is the age of the individual who is in the middle.” As the median age increases, the number of elderly individuals in the population increases in parallel.

In comparison to the younger population, the elderly population continues to grow significantly. The median population grows in lockstep with the number of elderly people in the population. *The median age of 30.4 in 2013 was 31.7 in 2017 (TÜİK, 2018; Ünal, 2015). The estimated median age in 2040 is projected to be 42 (TR Ministry of Family and Social Policies, 2012).*

2. SUB-GROUPS OF THE OLD AGE PROCESS

Aging is a process that is important to be evaluated holistically in terms of its psychological, sociological and physical dimensions (Birren, 1982). Norman expresses that as a single definition cannot be made for the concepts of aging and old age, the process; it is divided into subgroups as chronological, psychological, social and physiological aging (Kav, 1995).

2.1. Chronological Aging

The chronological aging process begins at birth and is a type of aging that is measured in years and lasts until the end of an individual's life (Danışoğlu, 1988). Social gerontologists classify people between the ages of 65 and 74 as young-old, those between the ages of 75 and 84 as middle-aged, and those over the age of 85 as elderly (Quadagno, 1999). Since there is no criterion for aging that establishes biological, psychological, or sociological distinctions among people, chronological age is used to determine eligibility for work-life or old-age insurance benefits. There are also some differences between countries, the age of

65 is a chronological criterion in our country's social security practices. We consider people over the age of 65 to be elderly. However *“chronological ages of individuals; it cannot fully reflect the biological, psychological or social status of that individual”*. Aging is a process that is within the scope of the program in terms of genetics and because each person's emotional life, educational opportunities, work experience, the standard of living, and social milieu are all unique, peers do not age at the same rate. Bad habits, biological characteristics, dirty environment, cultural norms of the society, values or new role expectations are all factors that affect aging (Kalınkara and Arpacı, 2013; Ministry of Development, 2013; Arpacı, 2017).

2.2. Psychological Aging

If we look at some definitions; Psychological aging is the emotional, perceptual and behavioral changes in people (Quadagno, 1999). Aging is related to its psychological dimension, in general terms, cognitive skills and mental behavior changes. Language, memory, attention, intelligence, learning, visual talents, reasoning, and cognitive flexibility are some of the cognitive skills that people have alterations to the environment; Emotional state, motivation, and other types of coping skills are all factors that affect mental conduct (Er, 2009).

With aging, cognitive capacities such as learning new knowledge, calculating, making judgments, and effective thinking and speaking change. These abilities are affected by people's life experiences (Çuhadar et al, 2006). In a study by Çuhadar et al., it was discovered

that the elderly's gender, age, and educational position were all factors in the development of cognitive problems, and those with cognitive disorders had difficulty performing daily activities (Çuhadar et al., 2006). However, certain changes in quality of life occur as a result of changes such as losses encountered in old age, new diseases, loss of physical strength, and the transition to retirement. Not all elders exhibit the same attitude and behavior in the face of these changes. The elderly develop a behavior pattern with the experience and individual personality traits they have learned throughout their lives. No matter what personality and characteristics they have, they face many different psychological problems when they get old. As a result, due to the situation experienced, individuals are negatively affected by this situation and may experience adjustment problems (Maier et al, 1999; Koç, 2002; Mroczek et al, 2007).

2.3. Sociological Aging

Sociological aging is related to the behavior expected from certain age groups of the society and the value given to that group by the society (Rose et al, 1998). Social and cultural interactions are effective on the biological process of aging. The biological structure, as well as the social integrity of people who experience aging as a reduction in everyday life activities and connections, have been reported to be altered by aging. It has been stressed in the literature, in the form of a theory termed "relationship reduction," that older people move away from life, daily activities, and social relationships as they get older and consider this conduct as "normal." In societies where this view is

dominant, the elderly experience serious health problems along with mental and social problems (Hochschild, 1975). Individuals care about their social needs and when these needs are not met, they may experience mental and physical health problems. Meeting the social needs of the elderly is a factor in maintaining the quality of life. Technology occupies an important place among these requirements (Beger & Yavuzer, 2012).

2.4. Biological Aging

It means that the characteristics of the body begin to deteriorate gradually. Changes in DNA, cells, tissue, organs and systems are the increase in the probability of disease and death. Visible aging-related changes in the body are signs of biological aging. Fine lines around the mouth and nose, dark circles under the eyes, spots and drooping of the upper eyelids are examples of symptoms. Although the signs of biological aging are similar, the speed and severity of aging are different for each individual (Nalbant, 2006). In physiological aging, changes in structure and functions can be seen. These changes include a loss of aerobic capacity, memory loss, changes in body posture, skin elasticity loss, and cell losses that cannot be regenerated as the body ages, resulting in wrinkles (Schneider, 1983).

As time passes in the aging process, vital organs begin to lose their functions in a sequential manner. The changes occur in all cells, tissues and organs and affect the functioning of all systems in the body. These changes due to aging are:

- “1. Sarcopenia (Decreased muscle strength),
2. Decreased heart performance/cardiac index,
3. Reduction of respiratory capacity/oxygen consumption,
4. Decreased kidney and liver functions, which are important in terms of drug side effects,
5. Presbyopia (Decreased visual acuity)
6. Presbycusis, (Decreased hearing ability)
7. Decreased body temperature regulation capacity,
8. Dementia (decreased mental functions),
9. Changes in the immune system (infection susceptibility, low immune response to the vaccine, increased incidence of cancer),
10. Having sleep changes,
11. Volume reduction in the liver, brain and kidneys,
12. Reduction of the area size of the body, shrinkage,
13. Decrease in the total amount of body fluid,
14. Decreased body weight” (Aras, 2017; Arasil, 2017).

3. HOME CARE SERVICES FOR ELDERLY

The aging of the world population has become a global problem discussed in economic, political and social fields in all countries. With the increase in aging population, changes in social structure, changes in both health and social services provided to aging folks, and new

approaches, new approaches have been questioned, while the COVID-19 period has added a new dimension to the event. Every service provided for elderly individuals is very important for the individual, his/her family, relatives, that is, for the whole society.

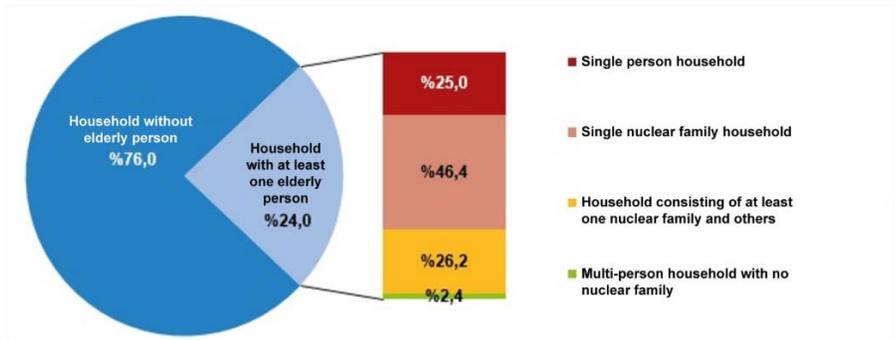
In aged care, personal and sociological needs are emphasized for the individual who needs assistance with daily activities and health care, and who wishes to age with dignity. It is a very sensitive period. Elderly people require a caring and comfortable atmosphere in order to meet all of their needs and enjoy a healthy, worry-free life. Lack of awareness of the elderly person can lead to neglect and abuse. The problems of individuals in need of care are a social issue that concerns their social environment, primarily their own family members. (Arpaci, 2017).

Some details should be paid attention to in the services to be provided to the elderly;

- ✓ To enable them to live in their houses in peace, safety, comfort, and independence without being too isolated from their surroundings,
- ✓ If there is homelessness, inability to be self-sufficient owing to old age, or reliance on others for care needs, building an appropriate atmosphere for these situations and planning houses accordingly is necessary.
- ✓ It is to provide adequate institutional options if there is a need for control and care due to a mental or physical sickness (Gökkoca and Baharlı, 1999).

Home health care has arisen as a constructive service model that has begun to spread across our country, and it takes the form of institutionalized care supplied primarily in nursing homes. According to the findings of TÜK's Family Structure Research, just 9% of the elderly preferred to live in nursing facilities in the 2006s, while the rest preferred to live with their children (Subaşı and Öztekin, 2006). Changes in the intervening years and our social structure have become inevitable and in the near future, in Turkey, in the 2020 Address-based population registration system, as seen in Figure 1 there were 1,478,346 elderly people living alone out of 5,903,324 households with at least one older person (<https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklere-Yaslilar-2020-37227>).

Figure 1: Old age population ratio by household type, 2020



Source: TÜİK, Address Based Population Registration System, 2020

Elderly people desire supportive care models in the environments they prefer, rather than institutional models related to their future living. This

request is an increasingly important maintenance model. Demographic change, differences in illness burden across individuals, the fact that numerous health technologies have been developed and may be accessed even in the home environment, and the health service's need for continuity are all reasons for requiring this service.

Home care can be characterized as medical or social work, with formal care provided by health experts in the field or informal care provided by family, spouses, friends, relatives, and friends, as well as persons without a high school diploma. Short-term care, such as medical care, education, and rehabilitation following hospital discharge, is usually limited to 30 days, whereas long-term care is provided so that the individual can live as independently as possible to avoid further handicap (Altuntaş et al., 2010; Yılmaz et al. 2010).

The most general definition of elderly care provided at home is a care model that prevents isolation from social life, improves the quality of life, and maintains the care of the elderly individual without removing him or her from the environment in which he or she lives, knows and is accustomed, regardless of illness or disability. WHO home care; “individuals whose *activities do not have the capacity to provide personal care for themselves, to maintain a quality life, to fulfil their individual wishes and to need a family member, relative or a medical specialist while ensuring the continuation of their life*” (Bilge et al, 2014). In the globe, home care system applications are viewed as a broad concept that includes health and social services, and "Home Health Services" falls under this umbrella (Academic Geriatrics

Association, 2013). The program options in-home care and support services are;

Daily care according to the needs of individuals

Accompanying support with trained and certified personnel in elderly care

Catering services,

Social assistance and support services,

Support for minor maintenance, repairs, etc. in the houses they live in,

Transfer assistance service related to daily life,

These are the health-related services provided at home.

The psycho-social aspect of old age is not seen with the perception of health care and maintenance to be given to senior folks who require more specialized care in our country's system. For this reason, these services offered in our country are not at the desired level. In order to reach the desired level, some problems need to be solved (Bahar and Beşer, 2017; Subaşı and Öztekin, 2006).

These are respectively;

Deficiencies in the number of establishments established for this purpose,

Lack of holistic approach

Deficiencies and confusion in the legislation,

Problems in integration with the general health system,

Health insurance institutions do not cover the costs of these services,

Lack of supervision,

Financing problem

Lack of education of caregivers

3.1. Historical Development of Aged Home Care Services

The average human life expectancy in the world is increasing and our elderly population continues to increase. In particular, the elderly dependency of underdeveloped and developing countries is at higher levels than in other countries. Our increasing elderly population and social changes have made restructuring a necessity.

3.1.1. Home Care Services in the World

The development of care services dates back to before Christ. In these dates, mystical practices are in the form of suggestions. It is seen that the first service provided in-home care services is labor. Religious organizations, which have been providing these services since the 1700s, have played an important role in these efforts, which were carried out in the form of house visits by volunteers. The service provided in this way is in the social service dimension rather than the medical dimension (Çoban & Esatoğlu, 2004).

The first information about home care services is seen in the 19th century. In the 20th century, people in need of care in England were

cared for by people under the control of churches, who volunteered, and were educated. The first registered representative to provide these services, William Rathbone, established home care units for the poor. The first names involved in care services are Florence Nightingale, Lillian Wald and Mary Robinson. Florence Nightingale is the most important name that develops and pioneers professional home care services (Konak, 2016).

Changes in the socio-economic field and wars have accelerated the development of in-home care services. During World War II, the number of health workers decreased, and because of this, the patients had to be treated at home, so home care services began to spread rapidly. Home care services, which were carried out regionally in the USA in 1886, continued in the form of life insurance including home care insurance in 1909. Insurance organizations mostly work with hospitals (Aydın, 2006; Konak, 2016). In 1990, the governments of New Zealand, Australia, Japan and China started to use the services provided to the elderly as a home care model. In 1965, Medicare and Medicaid state health systems were enacted (Örsal and Baybuğa, 2016; Akdemir, 2003).

3.1.2. Home Care Services in Turkey

Turks established teams in order to fight diseases and protect the health of people in the society in the pre-Islamic periods. Due to the nomadic lifestyle, it is thought that all health-related services are given at home. Seljuks in Anatolia received health services at home, in bazaars and

markets through physicians. It is seen that elderly care services were carried out through foundations in the Ottomans. The establishment of Kızılay was in 1868, and the opening of the Hospice was in 1895. There are healing houses and hospitals built by generous people in the Ottoman Empire because the general administration structure was military and the health services offered were for the army (Konak, 2016; Bilge et al, 2014). The services provided for the elderly in need of care and protection in the Republican period are protected by laws. These are; Law No. 1479, Law No. 5434, Law No. 202, Civil Law No. 1580, Law No. 506 No. 1005 (Çavuş, 2013). Home care services, which were offered as preventive health services until 1980, turned into services provided by private health institutions or individuals in the form of treatment and care services provided after the hospital after 1980. Currently, services related to elderly care are carried out jointly by the Ministry of Family, Labor and Social Services and the Ministry of Health. (Orsal and Baybuğa, 2016).

3.2. Home Care Services Team According to Legislation

Home care services are the presentation of labor and information to the individual in need by everyone in the team in a complementary way. The team uses its professional knowledge and skills independently by establishing positive relationships with the individuals and their families. A home senior care team is made up of experts such as an elderly care/home care technician, a nurse, a dentist, a geriatrician, a psychiatrist, an occupational therapist, a language and speech therapist, a psychologist, a physiotherapist, caregivers, a social worker, and a

dietician. A large part of the services provided is the continuation of medical treatment. The practice of home care may vary depending on the requirements of persons at the time. It involves a wide range of tasks in addition to medical treatment, such as bathing, changing clothes, applications that require individual attention, house cleaning, washing clothes, budgeting, meeting travel needs, social activities, and meeting economic and social demands (Turan, 2008). Those who provide home care services should be able to meet the highest level of needs in accordance with changing societal conditions, evaluate individual needs in a planned process, and ensure the highest level of health without intruding too much on the individual's personal space with the necessary organizations. It is important to create guidelines that can be applied at the level of our country by following internationally valid standards in practice (Dik, 2017). In the Regulation on the Provision of Home Health Care Services by the Ministry of Health and its Affiliates (Official Gazette dated 27.02.2015 and numbered 29280), the team is defined in Section 1, Article 4, paragraph g as follows. *“The team consists of health personnel and other personnel who are assigned to provide home health services together and have been trained on this subject formed by the Unit.”*

In Article 5 of the Second Chapter, the organization of home health services is mentioned. In Article 5 paragraph 1, *“home health services are provided through education and research hospitals, general hospitals or branch hospitals, OCs and units established within PHCs, FPCs via the Ministry and its affiliates”*

In Article 9 of the Third Chapter, home health services unit types are given. Article 9 Paragraph 2 a,b,c

They serve as T type, H type, D type Service units.

3.3. Organization of Home Care Services, Application and Operation Process

Home care services are applied in 3 groups.

1. Type of Service: Providing needed medical and social services.
2. Duration of Service: Providing short or long-term services.
3. Service Delivery: It is the care services provided by health workers or family members.

The time to be provided in-home care services is arranged according to the current care needs of the individual. It is most needed in the post-discharge period. This is about 30 days. Situations that require both social and medical care are long-term care that lasts for at least six months (Oğlak, 2007).

3.3.1. Who can benefit from home care services?

Those who are not in sufficient condition financially and socially,

Those who need examination in the home environment,

Those who need physical therapy in the home environment,

Those who live alone at home and need care,

Those who depend on others in activities related to daily living,

Those who cannot go to the health institution,

Those who have been discharged from the hospital and still need medical care,

Those who need care after surgery,
Those who need it for wound care application and injection application,
Oncological group patients,
Those who need care due to chronic illness,
Those who need medical support equipment at home, etc. (Cindoruk and Şen, 2009).

3.3.2. Application and Evaluation in-Home Care Services

Applications are made in three ways. It can be done online, over the phone at 444 3 833, or by submitting the "Home Health Services Application Form" to the provincial coordination centers through Community Health Centers/Family Medicine Units. Demographic information, anamnesis about the individual's ailment, the drugs he consumes on a regular basis, the necessity for dental treatment, and so on are all included in the content of this form.

Application form can be downloaded from this link <https://www.resmigazete.gov.tr/eskiler/2015/02/20150227-14-1.pdf>.EK 3.

The patient's degree of need, residence and the intensity of the coordination center to which he is associated are analyzed, and the appropriate team is assigned based on the patient's level of need, domicile, and the intensity of the coordination center to which he is affiliated. Depending on the situation, the patient can also be referred to his/her own family physician. The assigned unit creates an evaluation

report. Applicants who have received negative feedback are also informed of their reasons. These patients may request a re-evaluation. In case of a disagreement between the units, the Home Health Services Commission concludes the case. In positive applications, a work and work plan is prepared with the agreement of the physician in charge of the home health care unit and the supervisor of the coordination center, and the process is carried out as planned. Health services offered at home are carried out on an appointment basis and within working hours. The scope of the health service provided is as seen in Table 7 above (Duy, 2016).

3.3.3. Evaluation of Elderly Care Needs

Adopting a proper planning and holistic strategy when delivering long-term home care services for the elderly will have an impact on the quality of the service delivered (Konak, 2016). Elderly care requirements and care are given in Table 7 below (Erci, 2009)

Table 7: Elderly Care Requirements and Care Practices

Elderly Care Requirements and Care	
<ul style="list-style-type: none"> • Selfcare 	<ul style="list-style-type: none"> • Oral and dental care • Eye-ear care • Bath • Getting dressed • Hair-beard care • Hand-foot care • Toilet hygiene, catheter care, perineal care if needed • Sleep hygiene

<ul style="list-style-type: none"> • Nutrition 	<ul style="list-style-type: none"> • Regulation of nutrition appropriate for the disease • Food and shopping support • Compliance of food preparation and storage conditions • Adequate and balanced nutrition
<ul style="list-style-type: none"> • Home hygiene 	<ul style="list-style-type: none"> • Washing of clothes • Changing the sheets • General cleaning of the house • Hygiene of the bathroom • Arranging invoice payments
<ul style="list-style-type: none"> • Prevention of accidents 	<ul style="list-style-type: none"> • Arranging the home environment appropriately for the elderly in order to prevent accidents
<ul style="list-style-type: none"> • Continuation of treatment 	<ul style="list-style-type: none"> • Performing health checks • Regular intake of medications • Making necessary dressings • Prevention of bedsores development
<ul style="list-style-type: none"> • Sociability 	<ul style="list-style-type: none"> • Planning your hobbies • Increasing social interaction
<ul style="list-style-type: none"> • Training and support 	<ul style="list-style-type: none"> • Education of patients and their relatives • Providing the necessary information • Providing support to caregivers • Providing special education and support to the disabled

Source: Erci B. (2009) Family health nursing. Public Health Nursing.

3.3.4. Home Elderly Care Services Provided by Public Institutions, Local Administrations and Private Sector

In our country, home care services were first provided by the private sector and are now provided by governmental institutions, local governments, and the private sector. Regulation No. 25751 on the Delivery of Home Care Services, which went into effect in 2005, provides the legal basis for the services. On February 27, 2015, the Ministry of Health and its affiliates published a regulation on the supply of home health care in OG No. 29280. Home health services in our

country, according to the Section 2 article 5i paragraph 1 in the regulation, *“home health services are provided through training and research hospitals, general hospitals or branch hospitals, ADSMs and units established within TSMs and AHBs within the Ministry and its affiliates.”*

3.4. Quality in-Home Care Services

It includes many factors such as the quality of the health services provided, the level of accessibility, efficiency, equality, continuity and reliability (Offi et al, 2004). In order to meet the demands of individuals in-home care services, it is obligatory to have social services and health services together. This requires a multidisciplinary study (Işık et al, 2016). Whether the services provided comply with the quality standards is come through international quality accreditation studies. The Joint Commission International (JCI) has established certain accreditation criteria for home care services, including "employing a sufficient personnel to meet the patient's needs, conducting personnel orientation and continuing education, and evaluating the personnel's development and adequacy" (Cimete, 2008). In Table 8 below, JCI's Home Care Standards Targets are given (Fadıloğlu, 2013).

Table 8: JCI Joint Commission Home Care Standards Goals

International Accreditation Joint Commission Home Care Standards, patient safety objectives;
Knowing the patient correctly who will receive care,

Developing effective communication with the patient,
Identifying unsuitable situations for home care service,
Increasing safety to prevent the use of dangerous drugs
Reducing the risk of infection
Reducing the patient's risk of falling

Source: Fadılođlu, Ç., Ertem, G., & Şenuzun, F. (2013). Home health and care.

One of the countries in the transition process in-home care services is Turkey (Yılmaz et al., 2010). With aging, the health and social care needs of these individuals increase. Long-term operations reveal the necessity of new institutional support and policies (Ođlak, 2011). According to Gemlik and Arslanolu, dealing with aging policies in a multidisciplinary approach is critical (Gemlik and Arslanođlu, 2018)

3.5. Problems That Can Be Encountered in-Home Elderly Care Services

Although home care services are a control problem at first, there are many problems that need to be solved (Karabađ, 2007). Let's examine these problems under three headings;

3.5.1. General Problems

- ✓ Supervision of services provided at home,
- ✓ The home environment security problem of the caregiver and the elderly person,

- ✓ The difficulties brought by the service delivery provided by the health worker outside the institution,
- ✓ Sufficiency and competence level of the personnel who will provide the care,
- ✓ Insufficient number of personnel with the qualifications to provide the appropriate service,
- ✓ Insufficient equipment required for service delivery,
- ✓ The reason service is not provided outside of working hours
- ✓ Treatment is disrupted as a result of the elderly person's or his/her family's failure to continue or finish the treatment that they started.
- ✓ The inability of the elderly person or their relatives to communicate effectively with health personnel.
- ✓ Intermittent visits of the team members to the patient as well as difficulties intervening in emergencies because they are not constantly together,
- ✓ Ethical issues of various dimensions (Başgüll et al, 2012; Karamercan, 2001; Marks et al., 1994).

3.5.2. Ethical issues of geriatrics and gerontology

- ✓ Not paying attention to the individual's/privacy patient's while performing body cleaning/care in bed, obviating the need for evacuation or catheter application
- ✓ Without fully evaluating the individual/perception patient's and decision-making abilities, the tendency to discuss their own medical decisions with their relatives and not take them into

consideration, the failure to conduct detailed examinations, and the refusal to accept the subject of radical treatment,

- ✓ The poor prognosis of the individual/patient is not told with the assumption that they cannot tolerate it,
- ✓ Taking the usual "elderly person" method to talk with an elderly patient/individual without considering the individual's specific qualities,
- ✓ Ignoring the right to refuse treatment, assuming that the elderly patient/individual's ability to make decisions is not healthy,
- ✓ Ignoring the idea that the old patient/individual may not be completely competent in making decisions, immediate acceptance of the individual's wish to decline treatment.
- ✓ The elderly patient's relatives become decision-makers by disabling the person related to the medical procedures against him/her,
- ✓ With the premise that elderly patients/individuals will not understand, specifics and information regarding their own condition are not given to them.
- ✓ Withholding support and care practices that will increase the quality of life from the elderly patient/individual,
- ✓ Making aggressive practices that will reduce the quality of life of terminal patients,
- ✓ The decision not to resuscitate is easier for terminally ill patients than for younger patients with the same condition.
- ✓ When examining the elderly patient/individual, special evaluation is not made with an abuse-neglect perspective,

- ✓ Avoiding radical treatment methods, considering that it is sufficient to apply palliative treatment methods to elderly patients/individuals,
- ✓ Involving elderly patients and individuals as subjects in studies investigating treatment methods that are not suitable for their age,
- ✓ Age discrimination in favor of young patients in health institutions where the entire society benefits from restricted medical facilities such as beds, operating rooms, medical equipment, and ventilators.
- ✓ The condition in which elderly patients/individuals' requests to improve their quality of life and extend their life span are ignored (Can et al, 2009-2010)

3.5.3. Ethical Issues of Homecare

- ✓ Medical procedures are carried out in accordance with the intentions of the patient's relatives, with less regard for the patient's autonomy than the patient's relatives.
- ✓ Inadequate informing of patients and their relatives due to the medicosocial environment,
- ✓ Failing to protect confidential information that the patient does not want to be shared,
- ✓ Inadequate protection of the patient's body privacy,
- ✓ Not being able to notice the adverse health development of the patient in the early period,
- ✓ The family's refusal to accept decisions such as refusal of treatment or resuscitation of the terminally ill patient,

- ✓ Insisting home care by the relatives of the patient who requires follow-up in the hospital,
- ✓ Insisting on staying at home by risking the life-threatening situation for the patient with a referral indication while being cared for at home,
- ✓ The patient who is leaving his/her own decisions completely to people who care for him/her because of the gratitude (s)he feels towards them (Collopy et al., 1990; Boillat et al., 1997).

Advantages of home care services are shown in Table 9 and Disadvantages of Home Care Services as are seen in Table 10 (Karahan and Güven, 2002; Subaşı and Öztek, 2006; Yılmaz et al, 2010).

Table 9: Advantages of Home Care Services

Providing personalized care
Receiving care in one's own home
Family members can participate in care
Decreasing the cost
Opportunity to live more independently
Maintaining the relationship with the family
Improvement of the quality of care
Availability of care, including diabetes, asthma, heart diseases and intensive care (Karahan and Güven, 2002).

The table was created by the author.

Table 10: Disadvantages of Home Care Services

Infection due to home environment
Failure to continue the planned treatment
Failure to comply with established nutritional criteria
Negligence of relatives in patient care
Misadvisedness
Inadequate control mechanisms
The private life of the household can harm the privacy of the patient or vice versa
Not taking medications regularly and correctly
Complications due to faulty and careless use of devices (Subaşı and Öztekin, 2006; Yılmaz et al, 2010)

The table was created by the author.

4. APPROACHES TO THE HEALTH OF THE ELDERLY DURING THE COVID-19 PANDEMIC PERIOD

We believed that because we live in a technological and industrialized age, infectious diseases would no longer be a threat to anyone, neglecting the world's past human history. And we still believed that; Previous epidemics and pandemics belonged to history, it was a solvable problem in the course of our development (Büken, 2020). The current pandemic has shown us that epidemics, wars, and famine have never gone away in our history; they have always existed in various forms. Home care and old health at home, as described in the chapter's

content, are truly supplied in all countries on the basis of a social state understanding. As a preliminary step, all countries afflicted by COVID-19 have chosen to implement long-term isolation and quarantine of the elderly population. While the top concern was to protect the elderly from sickness, one of the secondary goals was to avoid putting a strain on the already overburdened health system. It is also a fact that the social isolation of the elderly population is a serious public health problem. In addition to the autoimmune system, cardiovascular system, neuro-cognitive, and mental health concerns, older persons' stress and anxiety have worsened as a result of their desire to socially isolate themselves. In addition to these, clinical pictures that do not belong to any disease group are called "Geriatric Syndromes". These pictures result from the combination of multiple elements, and distinct risk factors may have synergistic effects. Geriatric Syndromes are clinical diseases in the aged that do not belong to any disease group, and these tables evolve as a result of the interplay of several causes and the synergistic effects of complex and different risk factors (Kutsal, 2019). Frailty, a geriatric syndrome, is a condition that can lead to disability, hospitalization, morbidity, and even death if the individual is exposed to even minor stressors. We can define the fragile elderly as a group that is dependent on others in daily living activities (Chapman et al, 2014). It is recommended to use the "*Versatile Evaluation*" method given in Table 11 for this group, which is associated with versatile problems and frailty (Johansson et al, 2010; Avelino-Silva et al, 2014). With this method, the physiological consequences of aging and pathological conditions can be more easily distinguished.

Because the control of chronic diseases may be disturbed during the pandemic phase, and there may be difficulties in acquiring the pharmaceuticals that are taken on a regular basis, it is important to remember that the treatment of the elderly and their diseases may deteriorate. The Covid-19 pandemic has a negative impact on conditions such as kidney disease, chronic obstructive pulmonary disease (COPD), coronary artery disease, and diabetes, putting them in danger due to potential complications. During the pandemic, social isolation strategies for the elderly have the potential to disrupt the treatment of individuals with chronic diseases who need to take medications on a regular basis. Patients who have received a previous medication prescription can continue their treatment if their tests are normal. Laboratory tests should be repeated, especially in patients with labile kidney and liver functions and problems in their blood charts, and the results of the tests should be evaluated and a decision made accordingly, especially in patients with labile kidney and liver functions and problems in their blood charts. For convenience, patients should be counseled via internet or telephone communication when necessary. Treatment decisions should not be delayed firstly in high-risk patients throughout the epidemic.

Table 11: Steps of Versatile Geriatric Evaluation

Versatile Geriatric Evaluation Steps
Medical Evaluation
Functional evaluation
Evaluation of cognitive and mental status
Nutrition assessment and planning
Personality traits and mood assessment
Detection of other diseases
Evaluation of activities of daily living
Evaluation of the patient's gait, balance, mobilization and falling down status
Evaluation in terms of incontinence
Evaluation of visual function and hearing function
Evaluating care opportunities/financial situation
Listing problems in order of priority
Organizing medications
Identifying devices that the patient will need for support.
Securing home safety.
Assisting with transportation needs
Monitoring of preventive medicine practices
Making telehealth services available

The table was created by the author.

It is defined as a global concern that necessitates immediate action without sacrificing the older population's protection from COVID-19 now and infectious disease with a different name tomorrow, as well as

managing the infected's long-term impacts or problems (Zhang Q and ark, 2020). These diseases can cause morbidity and even mortality for individuals of advanced age with "chronic medical problems" such as chronic obstructive pulmonary disease (COPD), Asthma, Diabetes mellitus or hypertension, and even at least one-fifth of the patients in this group need supportive treatment in the intensive care unit (Rodriguez-Morales et al, 2020). It is recommended to apply "Original Models" related to elderly health. (Aprahamian et al., 2020).

The recommendations within the scope of the model developed to prevent vulnerability for the COVID-19 pandemic period are as follows (Boreskie et al., 2020);

- ” 1-Socialization- Encouraging elderly individuals to use electronic media,
- 2-Healthy diet- Supporting them to make a diet that includes their daily needs,
- 3- Vitamin D – going out from time to time by taking necessary precautions, providing support in terms of Dvit if necessary,
- 4- Exercise- Supporting an active lifestyle by reducing passive lifestyle and increasing physical activities

4.1. Recommendations of the World Health Organization

The World Health Organization has listed what geriatric individuals can do during the COVID-19 process as follows (WHO, 2020).

- “1-Learn about the services you can take for emergencies in addition to the precautions in the community you live in,
- 2- Make sure that there are no problems with missing payments etc. related to your mobile phone, and determine a point where you can safely charge your phone. In case of need, it may be possible to use this place. In this way, you can make urgent calls,
- 3- List the basic materials that will sustain you for two weeks and have them available and ready.
- 4- Prepare and list the important telephone numbers for emergencies (such as the COVID-19 local hotline, nearby hospital and health emergency numbers, hotline for victims of abuse, psychosocial support line). List and prepare people/institutions that can support you (such as family members and friends, caregivers, aged support associations). If you live alone, share the list with your relatives, caregivers or neighbors and ask them to contact you regularly by phone or video call.
- 5- Discuss how your health consultant will contact you during the epidemic. Postponing non-urgent appointments, speaking with your doctor or healthcare professional over the phone or video chat rather than meeting in person, and/or adjusting your vaccine schedule are just a few examples.

- 6-Get support from family members, neighbours, caretakers for the order and supply of your food and medicines.
- 7- If you want to create a care plan for your treatment and care requests, talk to your healthcare worker or someone you trust and share your wishes.
- 8- If you have a caregiver and you trust her/his support, determine a second alternative support person if this person is unable to continue his/her service. Take note of all your personal care requests that you may need together and share your list with this person if needed.
- 8- If you are caring for someone else (for example, a mother, an old husband, or a disabled kid), choose someone you can trust to take over your employment and obligations if you become ill, and you can also seek help from local authorized and voluntary organizations.
- 9- If a large number of people live in your house, prepare an area, a room to isolate the person who is sick with COVID-19. If you do not have the appropriate conditions, please contact the local authorities and inform them of this situation.
- 10-Consider and discuss these circumstances, as well as what kind of technique and support, including medical treatment, would be

appropriate for you if anything happened to you and you were unable to make your own decisions.

4.2. The COVID-19 Period and ethical dilemmas related to the elderly

It is seen that the COVID-19 pandemic period significantly affects elderly people aged 60 and over. During the pandemic, the elderly, who are the most vulnerable population, have become more vulnerable. Measures such as staying in quarantine and applying isolation were mostly applied to the elderly, causing them to experience stress by feeling imprisoned. It would be meaningful to look at some items from an ethical point of view. Article 8 of UNESCO's Declaration of Bioethics and Human Rights deals with "respect for human vulnerability and personal integrity" and "human sensitivities should be taken into account in the application and development of scientific knowledge, medical practice and associated technologies." Their substances have been forgotten and the elderly have experienced various problems in different parts of the world. They couldn't get the medical care they needed, they were neglected, abandoned. For example, in Italy elderly patients were not resuscitated and died alone without receiving palliative care. In the city of Daegu, South Korea, they could not even be admitted to the hospital for treatment because all the hospital beds were full, and they died while waiting at home (Emanuel et al, 2020).

In the statements made by the Council of Europe, it is seen that most of the deceased are individuals in long-term care homes or nursing homes

for the elderly. In many countries where the virus has spread, individuals staying in these elderly care homes have lost their lives without the knowledge of their families. The elderly living in nursing homes in Spain were also infected with COVID-19, were not treated and cared for, and were neglected and abandoned. It is not even known whether end-of-life services are provided to the elderly living in these institutions in the last period of their lives.

In the reports of some countries, it was reported that the elderly who were brought to the hospital from the elderly care homes were not admitted to the hospital and the emergency room, even if the hospitals were available. In France, some families have filed criminal complaints due to similar situations (<https://www.coe.int/en/web/com-missioner/-/lessons-to-be-drawn-from-the-rav-ages-of- the-covid-19-pandemic-in-long-term->).

In Section 2, article 1 of the European Convention on Human Rights, it is expressly stated that "The right to life of all people is guaranteed by law. Except for the execution of a court-ordered sentence for an offense punishable by the death penalty, no one shall be put to death on purpose." During the COVID-19 Pandemic, behaviors like as equal moral regard, responsibility of care, and not leaving were criticized in the behavioral examples for the elderly group.

Negative discrimination was made against the elderly in the use and distribution of limited medical resources. However, medical resources must be spent fairly. Prioritizing access to medical resources for people

under the age of 65 has not been fair for individuals over 65 (Büken, 2010).

Even if one has to make difficult choices, human dignity should be respected by adhering to basic ethical principles without forgetting that every person's right to health is their right to life.

Such an unethical situation should not be allowed, and even if difficult choices have to be made, basic ethical principles should always be adhered to. It should be highlighted again that every person has health rights and human dignity must be respected in all circumstances.

CONCLUSION

Globally, the elderly population will increase day by day. Based on this foresight fact, it is important and even a necessity to design and implement different care models such as community-based and community-supported for the problems of the elderly.

Planners of every stage of the lives of older adults, those who develop health policies, health policymakers, associations, scientific societies and, most importantly, governments play an important role. Strategies to support older adults and prevent harm in emergencies are important in long-term planning. Age-friendly and humane approaches are needed while planning. It will be meaningful for politicians, legislators, scientists, service providers, insurance and non-governmental

organizations to do their part in their roles and responsibilities regarding elderly health.

Healthy aging policies can be implemented by implementing the care insurance application that covers all citizens in the country. Although these policies are partially implemented in our country, it can be ensured that taking these applications to higher levels.

In the early stages of the COVID-19 epidemic, the elderly were not well cared for, resulting in their being damaged, broken, and unhappy all across the world. Involving the elderly in the system, especially in unusual circumstances, can be a good step for us to benefit from their expertise and talents. Technological platforms can be rearranged for the easy use of the elderly and their active use can be ensured.

Exercises

1- What is the age limit for the World Health Organization's definition of the elderly? Please tick the correct option below.

- a) Age 70
- b) Age 65
- c) Age 75
- d) Age 80
- f) Age 85

Answer: b

2- Which of the following is not one of the reasons for the increase in the elderly population?

- a- Preventing many diseases by providing early diagnosis and treatment opportunities with technological and scientific developments in the field of health.
- b- Increase in the fertility rate
- c- Decrease in infant mortality rates
- d- Increasing education level of women and women taking more part in business life.
- e) Developments in preventive health services

Answer: b

3-Which of the following is among the subgroups of the aging process?

- a- Chronological aging
- b-Psychological aging
- c-Sociological aging
- d-Biological aging
- e-All of them

Answer: e

4-Which of the following is not a change associated with aging?

- a-Decreased muscle strength
- b- Decreased visual acuity
- c- Decreased hearing ability
- d- Congenital genetic diseases
- e-Sleep disorders

Answer: d

5-Which of the following is not a characteristic of home care services?

- a- Provide care only by healthcare professionals
- b- Increasing need for home care services by population aging
- c- Least affecting the order that people are accustomed to
- d- Providing the needed care in the home environment
- e- Reducing the financial burden

Answer: a

6-Which is among the program options in-home care and support services?

- a-Social assistance support services
- b-Food supply
- c-Transfer assistance services related to daily life
- d-Daily care practices according to individual needs
- e-All of them

Answer: e

7- Which of the following is not one of the characteristics of home care services in the Ottoman period?

- a- Elderly care services were carried out by foundations.
- b- Health services were provided by physicians in bazaars, markets and homes.
- c- Kızılay and Hospice were opened.
- d- Health services were carried out mostly for the army.
- e- Healing houses and hospitals established by benevolent people (including sultans) are quite common.

Answer: b

8- Which of the following is not one of the aims of home elderly care services?

- a- Reductioning the functional capacity
- b- Strengthening social relations
- c- Increasing the quality of life
- d- Meeting the care needs.
- e- Supporting the elderly person in providing their own care

Answer: b

9- Which of the following is not one of the patient safety targets of the “The JCI Accreditation Standards for Home Care”?

- a- Reducing the risk of infection
- b-To increase safety to prevent the use of dangerous drugs
- c- Limiting the communication with the patient
- d- Knowing the patient correctly who will receive care,

e- Identifying unsuitable situations for home care services,

Answer: c

10- Which of the following caused an increase in-home care services during the Second World War?

- a- Diminishment in the number of personnel
- b- Legal reasons
- c- Psychological Reasons
- d- Economic Causes
- e- Increasing the number of personnel

Answer: a

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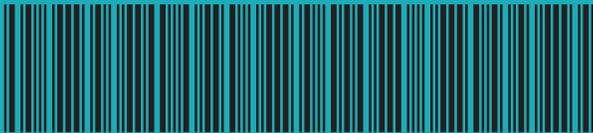
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<https://www.oecd-ilibrary.org/> <http://dx.doi.org/10.1787/888933973420>

<https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklerle-Yaslilar-2020-37227>



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ISBN: 978-625-8423-51-8