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Dr. Öğr. Üyesi Canan DEMİR YILDIZ

Muş Alparslan University, Faculty of Education, Department of Educational Sciences
canan.yildiz@alparslan.edu.tr
ORCID ID: 0000-0002-5905-9344

Mehmet Cihat DEMİR

Düzce University, Faculty of Medicine, Department of Emergency Medicine
mdcihat@gmail.com
ORCID ID: 0000-0002-0106-3383

COVID-19 PANDEMIC DISASTER AND ROLE OF SCHOOLS

Abstract

Coronaviruses are a family of viruses that circulate among animals, but can also be found in humans. At the end of 2019, a new type of virus, which has not previously been identified in humans, has been detected in Wuhan, China (Hubei province). As the coronavirus spread rapidly in China, by the end of January 2020, the World Health Organization (WHO) declared a state of emergency, announcing that the current disease had reached levels that would threaten public health around the world. The situation has progressed rapidly and more and more cases have been identified, including in Europe and US. Many countries have developed various strategies to intervene in this situation. The main strategy here has been to take measures to slow the spread of viral infections, to reduce the burden on the health system (especially beds and ventilators, etc.), and to provide the time required to develop vaccines or treatments. One of these measures is to close schools to prevent students from becoming infected or to slow down the transmission rate of the virus. Quickly identifying the risk of pandemic formation as well as the role of schools after the pandemic will be a critical indicator. As a result, scientifically there is a long way to go regarding pandemics.

Keywords: Pandemics; coronavirus; covid-19; schools; students; emergency

Introduction

Pandemics refer to the occurrence and the spread of a disease through human-to-human transmission at high rates. Throughout human history, many pandemics have occurred, like Spanish Flu, SARS (Severe Acute Respiratory Syndrome), H5N1, Ebola, affecting large areas and causing the death of many people (Hughes et al., 2010). Therefore, the term pandemic, as Qiu, Rutherford, Mao, and Chu described, is used when the disease has certain features such as being infectious, affecting a wide geographical area, spreading constantly, being new and severe, causing outbreaks at high rates as a small number of people are immune to it (Qiu, Rutherford, Mao, & Chu, 2017). The pandemic diseases experienced in the world refer to crises in which many factors such as health, economy, society, national security, political and social order are affected negatively.

Recently, Corona Virus (Covid-19), which first appeared in Wuhan province of China, has spread rapidly all over the world and has emerged as a global threat. Scientists are concerned about the increasing destruction and are working hard to develop vaccines. Like other pandemic outbreaks in history, Covid-19, as a new type of coronavirus and therefore with no cure and vaccine yet, is worrying due to the fact that it spreads rapidly and affects all areas in the world, results in fatal cases with rapidly increasing mortality rate, and that only a few people has immunity against the virus (Qiu et al., 2017). Therefore, it is inevitable to take some measures based on the pandemics experienced in the past.

During a pandemic, schools can have various effects that can help alleviate the process. Schools can implement effective health practices and inform students, parents, and other personnel about these measures. Individuals who do not contract the disease at the beginning of the pandemic periods and those who get over without getting sick in their early stages can benefit from vaccination and treatment when the vaccine is developed. And most importantly, schools can prevent potential social disruption by continuing their activities as much as possible. If the society feels confident in sending their children to school, then everyone can return to their own jobs and normal order can continue ("Manitoba Health ", 2007). Therefore, the role of schools is very important, especially before and after the pandemic. In this context, there is a need for an assessment on the role of schools with the occurrence Covid-19 pandemic in Turkey

1. What does pandemic mean? Pandemics in History and Their Effects

What is a pandemic? By definition, pandemic means "a worldwide outbreak". Contemporary definitions include "large outbreaks", "outbreaks in a large area and often affecting a large part of the population" and "spreading or occurring in a region, country, continent or globally among others" (Morens, Folkers, & Fauci, 2009;200 (7)).

One of the biggest and most possible threats to public health is the naturally occurring influenza pandemic. For a flu virus to be considered a pandemic, it must be a new virus that rapidly spread among people, causing widespread disease and death ("Manitoba Health ", 2007). Flu outbreaks occur almost every year (often referred to as seasonal flu) and cause an average of 36,000 deaths per year in the United States. Several known virus genes that travel around the world cause influenza outbreaks. Over time, people develop immunity to this virus gene and vaccines to protect people from serious diseases (Sani et al., 2020).

Influenza viruses experience frequent and mild changes in their genetic structures. However, they occasionally undergo a major change (mutation) in their genetic composition. It is

this major genetic change that creates a "new" virus and potential for a pandemic, a global outbreak. The creation of a new virus means that most, if not all, people in the world will be exposed to the new virus gene and will not have any immunity against the disease. It also means that new vaccines need to be developed and will not be available for months and that many people can be infected and seriously ill in this period (Hughes et al., 2010).

Many important pandemics have been recorded in human history, including smallpox, cholera, plague, dengue, AIDS, influenza, severe acute respiratory syndrome (SARS), West Nile disease, and tuberculosis. Flu (influenza) outbreaks are unpredictable but recurrent events that can have serious consequences on societies worldwide. Since the 1500s, influenza outbreaks have occurred about three times in every century or roughly once in every 10-50 years. In the 20th century, there have been three influenza outbreaks called "Spanish flu" in 1918-1919, "Asian flu" in 1957-1958, and "Hong Kong flu" in 1968-1969. Every pandemic has damaged human life and economic development (Qiu et al., 2017). In recent years, at least six large-scale outbreaks have been experienced; hantavirus pulmonary syndrome, severe acute respiratory syndrome, H5N1 influenza, H1N1 influenza, Middle East respiratory syndrome (MERS), and Ebola virus outbreaks (Gostin & Friedman, 2015). Influenza H1N1 2009 virus was the first pandemic influenza in the 21st century. It affected the whole world and caused more than 18,000 deaths (Rewar, Mirdha, & Rewar, 2015). Ebola killed more than 11,000 people, which cost the world \$ 2 billion (Maurice, 2016). Zika virus also threatened the health of people in 34 countries in 2016 (Qiu et al., 2017; Troncoso, 2016). Emerging as a new influenza coronavirus in 2019, Covid-19 has spread rapidly all over the world and has emerged as a global threat. Scientists are concerned about the increasing destruction and are working hard to develop vaccines.

Influenza pandemic has several features that differ from other serious or emergency diseases. First, it has the potential to cause illness in a large number of people, which can easily overcome the national health system. A pandemic outbreak can also endanger basic community services by causing high levels of absenteeism in critical positions in every sector. It is likely that vaccines against the new virus will not be available for six to eight months following the first occurrence of the virus. During a pandemic, basic services such as healthcare, law enforcement, fire, emergency response, communication, transportation, public schools, and public services can be disrupted. Stress, as a result of a potential pandemic or an existing pandemic, will also increase the need for mental healthcare in schools and society in general. Finally, an outbreak, unlike many other emergencies, can last for weeks, if not months. Schools may be suspended for 2 months in such cases.

According to the reports of the World Health Organization (WHO) in 2011, it is stated that a pandemic has 6 stages, a post-peak period, and a post-pandemic period. The stages and definitions of the pandemic are given in Table 1 below (Rubin, 2011).

Table 1. Pandemic Influenza Stages according to the World Health Organization (WHO) The death cases and rates related to the severity index of the pandemic that occurred in America in 2006 are given in the following Figure 1 (Rubin, 2011).

1. Stage	No animal flu virus circulating among animals has been reported to cause infection in humans.
2. Stage	An animal influenza virus circulating among domestic or wild animals is known to cause infection in humans and is therefore considered a specific potential pandemic threat.
3. Stage	An animal or human-animal influenza reabsorbing virus has caused sporadic cases or small clusters of disease in humans but has not resulted in adequate human-to-human transmission for community level outbreaks.
4. Stage	An animal or human-animal influenza reabsorbing virus that can sustain outbreaks at the community level has been confirmed to be transmitted from human to human.
5. Stage	The same detected virus caused continuous outbreaks at the community level in two or more countries in a WHO region.
6. Stage	In addition to the criteria defined in Stage 5, the same virus caused more community-level outbreaks in at least one country in another WHO region.
Post-peak Period	In most countries with adequate surveillance, the pandemic influenza level has fallen below the peak levels; additional waves of the outbreak may repeat in this period
Post-pandemic Period	Influenza activity levels returned to levels seen for seasonal flu in most countries with adequate surveillance

Pandemic Severity Index

Figure 1. Pandemic Severity Index (For the USA 2006 population)

Accordingly, it is stated that the mortality estimated in the USA at a disease rate of 30% is 1,800 thousand and a rate of 2% or more indicates the category where the pandemic is the most severe (Rubin, 2011).

Considering the figure above, it is suggested to take the measures given in Table 2 to reduce the severity of the pandemic depending on the level of the cases. Communities, individuals, families, workers, schools, and all other organizations are required to comply with the measures stated below (in Table 2) in order to prevent the spread of the pandemic, prevent diseases and death, reduce their economic impact and maintain the normal functioning of society (Rubin, 2011).

Table 2. Mitigation Strategies for Pandemic

Measures to be Taken in Confined Spaces	Pandemic Severity Index		
	1	2 and 3	4 and 5
Household -Voluntary isolation of adults and children at home, continuing the use of antiviral therapy as shown	Recommended	Recommended	Recommended
-Voluntary quarantine of all family members at home with patients: spending this process with the use of antiviral prophylaxis if it is effective, available, and sufficient.	Generally not recommended	Consider	Recommended
Schools Social distance in children -Taking children out of all activities and off from school, kindergarten, nursery	Generally not recommended	Consider 4 weeks or more	Recommended 12 weeks or more
-Reducing social relations and avoiding crowd out of school	Generally not recommended	Consider	Recommended
Workplaces/Communities Social distance in adults Reducing social relations (i.e. encouraging communication via teleconference, using alternative ways of face-to-face communication)	Generally not recommended	Consider	Recommended
Increasing distance among people (such as density reduction on transport vehicles and in the workplace)	Generally not recommended	Consider	Recommended
Postponing or cancelling meetings to ensure social distance (e.g. to postpone sports events, theater performances)	Generally not recommended	Consider	Recommended
Rearranging workplace programs and applications (eg remote work, flexible work programs, etc.)	Generally not recommended	Consider	Recommended

2. Definition of Corona (Covid-19)

Coronaviruses are a family of viruses that circulate among animals, but can also be found in humans. At the end of 2019, a new type of virus, which has not previously been identified in humans, has been detected in Wuhan, China (Hubei province). While the agent was originally novel coronavirus, it was then analyzed and called SARS-CoV-2 infection and the disease was considered as Covid-19. The new coronavirus, now called SARS-CoV-2, can cause mild, non-specific symptoms including fever, cough, shortness of breath, muscle pain, and fatigue. The virus is transmitted through respiratory droplets. The estimated incubation period is 2-14 days (Covid-19, 2020). Severe pneumonia, acute respiratory distress syndrome, sepsis, and septic shock may develop in more serious cases (Zhou, Zhang, Tian, & Xiong, 2020). No vaccine and treatment has yet been found to prevent the coronavirus disease (COVID-19), which appeared in 2019. However, researchers are working hard to learn more about the coronavirus, which has emerged as a new disease, and to develop vaccines and continue various vaccine development tests.

As the coronavirus spread rapidly in China, by the end of January 2020, the World Health Organization (WHO) declared a state of emergency, announcing that the current disease had reached levels that would threaten public health around the world (WHO, 2020b). The situation has progressed rapidly and more and more cases have been identified, including in Europe. For the first time (as of February 25, 2020), the number of cases reported in countries other than China has exceeded the number of cases in China. The World Health Organization reports the situation on a daily basis. As of April 9, 2020, 1,536,677 confirmed cases were detected worldwide and 89,907 deaths occurred. Iran, Italy, Spain, France, Germany and the United States have experienced the outbreak at the highest levels after China (Worldometer, 2020). The Centers for Disease Control and Prevention (CDC) have developed a test to diagnose COVID-19 in respiratory and serum samples from clinical specimens and the test has begun to be used for the detection of certain cases (NIH, 2020).

3. Impacts of the Corona Outbreak and Measures Taken

The World Health Organization and its partners and Chinese officials have been working with global experts since the first cases of corona were reported to learn how the virus spreads, which populations are at higher risk, its clinical spectrum, and the most effective ways to determine and prevent human-to-human transmission.

Epidemiological evidence suggests that 2019-nCoV can be transmitted from one person to another. During previous outbreaks related to other coronaviruses, including the Middle East respiratory syndrome coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome coronavirus (SARS-CoV), human-to-human transmission was most frequently with droplets, personal contact, and objects carrying virus (fomites). The 2019-nCoV infectiousness may also be similar (WHO, 2020a).

It is not certain yet whether 2019-nCoV is of animal origin or not. The virus was detected on environmental samples from a live animal market in Wuhan, and some human cases were epidemiologically linked to this market. Other coronaviruses, such as SARS and MERS, are also of animal origin and can spread from animals to humans (WHO, 2020a).

Cases related to Covid-19 disease are determined as follows according to the WHO report: 1. Patients with acute respiratory diseases (at least one sign/symptom of fever and respira-

tory disease (cough, shortness of breath)) and no other chronic disease, and with travel history to regions/countries with Covid-19 cases 14 days before symptoms started; 2 . Patients with acute respiratory diseases who has been in contact with a confirmed or possible Covid-19 case within the last 14 days before symptoms started; 3. Patients with severe acute respiratory diseases (at least one sign/symptom of fever and respiratory disease (e.g. cough, short breath) who must be hospitalized and has no other aetiology (another disease) that fully explains the clinical presentation (WHO, 2020b).

4. The Role of Schools in Pandemic Periods

As of 2019, a new type of coronavirus (Covid-19) emerged in Wuhan province of China and spread rapidly, causing thousands of deaths. It was declared as a pandemic by the World Health Organization as a result of its rapid spread all over the world, starting in China. Many countries have developed various strategies to intervene in this situation. In the world, pandemic diseases occurred in similar ways before and some measures were taken in these periods (Nicoll & Coulombier, 2009). The main strategy here has been to take measures to slow the spread of viral infections, to reduce the burden on the health system (especially beds and ventilators, etc.), and to provide the time required to develop vaccines or treatments. One of these measures is to close schools to prevent students from becoming infected or to slow down the transmission rate of the virus. Studies analyzing the Spanish Influenza in 1918-1919 showed that cities that closed their schools earlier had lower mortality rates. For example, St. Louis proactively closed schools and experienced a 2.2 percent mortality rate (Markel et al., 2007). On the other hand, Pittsburgh waited until the peak levels of the pandemic (peak of the crisis) to close the schools and experienced an approximately three times higher mortality rate (Bailey, 2020). Studies showed that closure of schools would delay the peak level of outbreak during pandemic periods from 1 to 3 weeks at most (Jackson, Mangtani, Hawker, Olowokure, & Vynnycky, 2014). However, another study revealed that the closure of schools did not reduce the peak size of the pandemic, but delayed the peak level for about 100 days (provided that schools remained closed for 140 days), and the peak level of the pandemic was delayed for 5 to 9 days for each week of the closure of schools depending on the spreading rate of the disease (Fung et al., 2015).

The pandemic (H1N1), which was experienced in many countries in 2009, has shown that closing schools has an important role in the spread of the virus both inside and outside the school (Organization, 2009). The contagiousness of the seasonal influenza outbreak in school environment has been well documented and it has been shown to burst, spread quickly, and affect a large proportion of students and staff (Organization, 2009).

Closing schools in pandemic periods has many positive effects. Because, considering that students come together during the day and have close contact with each other, they become excellent virus carriers and cause increased viral infectiousness. When they are infected, they often transmit the virus to their families, and then their families transmit it to their colleagues. Closing schools can help break this chain and create the social distance that helps slow infection rates. Therefore, several studies on the closure of schools show that it is the best way to intervene in a rising pandemic. Some measures, in particular, play a key social role in the spread of a pandemic influenza (Gog et al., 2014). and the closure of schools is effective in preventing not only the increase of the severity of the pandemic and the spread of the disease but also many other situations such as the absenteeism rates because of the disease, teachers being off, and failing to attend courses (Chowell et al., 2011; Copeland et al., 2013). Hence, the issue of clos-

ing schools is seen as a situation that all nations agree in pandemic periods. However, it cannot be said that there is a consensus regarding how long this period should be or under what conditions they should be closed. Yet, it is observed that schools are closed at different times in each country with the recommendation of health officials or scientific boards. For instance, after the Covid-19 outbreak started in Italy and then quickly spread to all countries, Turkey closed all schools across the country for two weeks (14 days) with the occurrence of cases in Turkey. Later, this period has been extended for one month (30 days) in line with the recommendation of the scientific committee (MEB, 2020). At the same time, it has been announced that face-to-face education is terminated for one term in Higher Education and that it will continue through distant education (YOK, 2020). As a matter of fact, on the other hand, schools in the UK have not been suspended during the pandemic. The UK has preferred to try a different way to develop immunity to the disease.

4.1. Measures to be Taken in Schools during Pandemics

With the emergence of any pandemic, it should be considered to take some measures in schools in order to prevent the pandemic from rapidly transmitting from human to human. First of all, WHO advises individuals who do not feel well in schools (such as those suffering from high fever, cough, or sore throat, etc.) to stay home and stay away from the school environment until their symptoms disappear (WHO, 2009a). This is one of the most important measures to prevent a pandemic influenza-type disease from transmitting to students, teachers, and other employees in the school environment. In this sense, it is necessary for parents, teachers, and other personnel to have sufficient information about the symptoms of the pandemic influenza disease for the measure mentioned above to be successful. In this way, the spread of the disease can be prevented by keeping those who show symptoms of disease at home and away from the school environment until they recover. At the same time, WHO published a guide on when to go to the hospital and what antiviral treatment to receive with the increased severity of the disease (WHO, 2010).

Promoting hand hygiene and respiratory etiquette in school environments accurately and consistently requires training that should be available for all age groups and all types of education institutions. In addition, schools must have necessary supplies (napkins, dustbin, soap and water, wet wipes, etc.) to provide good hand hygiene and proper respiratory etiquette (etiquette to be followed when sneezing, coughing, etc.) (WHO, 2009b).

WHO reported also a number of measures to be taken in the school environment in pandemic periods. Some issues should be considered in this regard. For example, during a pandemic, schools should plan the possibility of people getting sick during school hours with fever and other typical flu symptoms. Infected students and personnel should be moved to a separate room as quickly as possible and a medical mask should be provided when making arrangements to send them home or seek medical aid. Necessary materials should be available in the room to facilitate hand hygiene and respiratory etiquette. Additionally, school staff attending sick people can wear a mask and dispose it immediately after contact, and then clean hands thoroughly (WHO, 2009c).

In addition, surfaces or objects shared by students and staff should be cleaned regularly with soap and water or with routine household cleaning products or disinfectants. To ensure natural ventilation in classrooms and other areas, it is necessary to keep the windows open as much as possible to improve air flow; this is especially important in rooms where sick people

are isolated. Most importantly, crowded groups of students should be avoided especially in places with poor ventilation in schools by minimizing collective activities like seminars and conferences during a pandemic. In the cafeterias, fewer students should be present at the same time by keeping the lunch time wider.

Schools should follow the recommendations of health institutions and authorities, and should be able to provide the necessary guidance to students and the whole society by reducing anxiety, stress, and panic.

In addition to the measures mentioned above, the authorities can analyze the situation and decide to close schools and suspend classes. Indeed, Turkey decided to close the schools in the Covid-19 outbreak. However, when it comes to the closure of schools, authorities should be consistent in this regard. Care should be taken to prevent discrimination based on nationality, ethnicity, religion, gender, disability, and other related factors. WHO briefly summarized the previous studies on the effectiveness of closing schools to prevent the spread of pandemic (H1N1) influenza disease (WHO, 2009d).

- There are limited data indicating that the closure of kindergartens and primary schools reduces pandemic in some countries.
- If parents are going to have to stay home to take care of their children, the economic cost of closing schools can be very significant (Sadique et al, 2008; Sander et al, 2009)
- “Significant” reductions in intensive outbreak rates (and thus reduced demand for healthcare systems during peak periods) can be achieved with a relatively short school closure period.
- Unless natural or vaccinated immunization against the disease is achieved, it is very likely for outbreaks to repeat when schools are opened as a result of the contact of students and personnel in schools.

Based on the experiences of different countries, it may be considered to cancel or suspend classes for 1-2 incubation periods. Although the closure of schools and the suspension of courses reduce the peak rates of pandemic influenza in the society, they can have significant effects and secondary consequences (WHO, 2009d; Sadique et al, 2008; Cauchemez, 2009). These are briefly summarized as follows:

- Increased absenteeism regarding the need for childcare at home may have a significant economic impact on both the country's gross domestic product and the income of an individual family, due to loss of pay and/or job.
- When nurses, doctors, and other key workers stay at home to care for their children, disruptions may occur in healthcare and other essential services or they may not be adequately provided.
- If multi-purpose school-based social programs (eg school meal programs, distance education) are not available or young children are left unattended at home, their health and well-being may be at risk.
- Educational development of students may be endangered if they miss key exams or long-term studies without any alternative learning strategy.
- Announcing the closure of schools in the media can raise fears and concerns about the pandemic in the local community.

To avoid the risks mentioned above, and especially to ensure students spend this period at home without falling behind in the class, public and private educational institutions in Turkey

have launched distance education strategies. However, in such a situation, those who do not have computer and internet facilities may be lag behind in terms of individual education. Also, distance education is not effective enough for kindergartens and primary schools.

Discussion

A new coronavirus disease (COVID-19; previously known as 2019-nCoV) has emerged in the Wuhan province of China in December 2019, has effected 26 countries, and has been declared a pandemic by WHO. In general, COVID-19 is an acutely resolved disease but this pandemic can be fatal with 2% case death rate (Xu et al, 2020). Consequently, certain measures have been taken all over the world and schools have been suspended to reduce the spread of pandemic and the burden in hospitals, working conditions have been flexible, and people have been encouraged to stay at home.

For short-term interruption in education, schools can consider using online curriculum options such as LearnZillion, Zearn, Kiddom, Duolingo, Outschool, Tutor.com, and Khan Academy. Video conferencing has also progressed over the past decade with services that can be used to provide low-cost, real-time instruction such as Zoom, Google Hangout, and Microsoft Teams. Online platforms such as Google Classroom, Canvas, and Blackboard can help facilitate instruction and communication between teachers and students (Bailey, 2020). Considering that not every student equally have access to computer and the Internet, it can be said that distance education is not effective enough in Turkey.

Many provinces in the U.S. and China have developed various measures for the state of schools and education in the case of a possible pandemic. In the light of various epidemic diseases experienced in the past and the studies carried out during pandemic periods, pandemic emergency action plans have been created in many states and schools (Arizona, 2020). Turkey act quickly and suspended schools during the outbreak of the new type coronavirus, which emerged in 2019. Unfortunately, preparations in the period before suspension and the measures taken are not clear. Therefore, it is important to consider measures that can be taken in advance in the face of a possible pandemic threat in Turkey. Quickly identifying the risk of pandemic formation as well as the role of schools after the pandemic will be a critical indicator. After a pandemi an influenza or similar pandemic can cause a change in student enrollment and staff due to illness and / or death, and can significantly affect the ability of schools to reopen (Arizona, 2020).

With outbreaks all over the world and the declaration of pandemic, the following points are prominent for schools in Turkey:

- ✓ Schools play an important role in the prevention or increase of outbreaks.
- ✓ Children are super carriers in the spread of infectious diseases.
- ✓ When an outbreak occurs, schools should be able to quickly transfer information about the disease and education programs and necessary measures to be taken to children and all school personnel while the education still continues.
- ✓ It is important to pay attention to hygiene rules in schools not only for pandemic periods but also for children's health and community health.
- ✓ Having soaps in schools and toilets and providing natural ventilation conditions are critical for children's health and hence the wellbeing of the whole society.
- ✓ It is an important public health responsibility for schools to develop and implement an emergency action plan for pandemics.

- ✓ With the awareness of social responsibility, it is essential for all staff and administrators responsible for maintenance and repairs in schools to make necessary investments in the hygiene budget and provide the necessary materials (soap, napkins, wipes, etc.).
- ✓ Parent-Teacher Associations are expected to support the school in all efforts and action plans in terms of hygiene and health.
- ✓ Finally, and most importantly, by holding preliminary meetings and preparing a schedule, all school staff should try to apply the most appropriate approaches in the process of adaptation of the students to the new order after the pandemic in order to conduct the process in the correct way both pedagogically and socially when schools reopen.
- ✓ Before reopening a school, changes in student enrollment and staff should be evaluated to determine which schools can be reopened and when. This may require additional consideration of reassignment of basic functions, skills and staff responsibilities to adapt to staff shortages in any area.
- ✓ For the Ministry of Education, it would provide positive results to offer training for administrators, teachers, and other personnel and to prepare a schedule for the first week of the school after the pandemic, considering the pedagogical approach, the children who have experienced the process with various difficulties, and the risks of disease re-spread.
- ✓ Scientists working in universities have great responsibilities in pandemic periods. Increasing the research carried out in this process, the active operation of laboratories, and taking necessary measures in the light of scientific results obtained by scientists in all fields will make a significant contribution to overcome the crisis more effectively.

Conclusion

Very little progress has been made regarding the Covid-19 pandemic and there are many issues to be examined in this regard. It is suggested to investigate many issues such as the reflections of pandemics on the education-training process, the success of distance education in this process, the feelings of students and their perceptions about the future. Pandemic diseases will have effects on many issues including economy, social life, trade, transportation, and education. Researches should be encouraged to identify these effects in the future. As a result, scientifically there is a long way to go regarding pandemics.

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