



## Process According to Date in The World and Turkey During COVID-19 Pandemic and Effects of Measures Taken to Daily COVID-19 Statistics in Turkey

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### Research Article

#### History

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### ABSTRACT

**Objective:** In this study, it was aimed to update the chronology of the pandemic and to examine the effect of important administrative and political decisions, primarily the curfew, on the number of cases and deaths.

**Materials and Methods:** In this descriptive study, about COVID-19 important developments in Turkey and the world with were given in chronological order. The effect of curfews on the daily number of cases and deaths was calculated. The effect of curfews on the number of daily cases and deaths was calculated. The conformity of the data to the normal distribution was evaluated with the Kolmogorov-Smirnov test. The Mann-Whitney U test was used to evaluate the data that did not fit the normal distribution.

**Results:** There was a gradual relaxation in the tight measures, especially in May, June, July and August. As the number of cases increased again after September, the same measures were gradually introduced again. While curfews are ineffective on the daily number of cases, they cause a decrease in the number of daily deaths. The low number of deaths and significant differences in the days when the curfews were effective show that the people in this group comply with the curfews.

**Conclusions:** Humanity and all states must be prepared for new and more destructive epidemics. For a more effective result, curfews, which will be meticulously followed by all societies and implemented in the form of complete closure, will quickly stop the spread of the epidemic.

**Keywords:** COVID-19, curfew, effects, measures, statistics

## Dünyada ve Türkiye'de COVID-19 Salgını Sırasında Tarihe Göre Süreç ve Türkiye'de Günlük COVID-19 İstatistiklerine Alınan Önlemlerin Etkileri

#### Süreç

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### Öz

**Amaç:** Bu çalışmada, pandeminin kronolojisinin güncellenmesi ve başta sokağa çıkma yasağı olmak üzere önemli idari ve siyasi kararların vaka ve ölüm sayılarına etkisinin incelenmesi amaçlanmıştır.

**Materyal ve Metod:** Bu tanımlayıcı çalışmada COVID-19 ile ilgili Türkiye ve dünyadaki önemli gelişmeler kronolojik sırayla verildi. Sokağa çıkma yasaklarının günlük vaka ve ölüm sayılarına etkisi hesaplandı. Verilerin normal dağılıma uygunluğu Kolmogorov-Smirnov testi ile değerlendirildi. Normal dağılıma uymayan verilerin değerlendirilmesinde Mann-Whitney U testi kullanıldı.

**Bulgular:** Sıkı önlemlerde özellikle Mayıs, Haziran, Temmuz ve Ağustos aylarında kademeli bir gevşeme yaşandı. Eylül ayından sonra vaka sayısının yeniden artmasıyla aynı tedbirler kademeli olarak yeniden uygulamaya konuldu. Sokağa çıkma yasakları günlük vaka sayısı üzerinde etkisiz olmakla birlikte, günlük ölüm sayılarında düşüşe neden olmaktadır. Düşük ölüm sayıları ve sokağa çıkma yasaklarının etkili olduğu günlerdeki önemli farklılıklar, bu gruptaki kişilerin sokağa çıkma yasaklarına uyduğunu göstermektedir.

**Sonuç:** İnsanlık ve tüm devletler yeni ve daha yıkıcı salgınlara hazırlıklı olmalıdır. Daha etkili bir sonuç için tüm toplumlar tarafından titizlikle takip edilecek ve tam kapanma şeklinde uygulanacak sokağa çıkma yasakları salgının yayılmasını hızla durduracaktır.

**Anahtar sözcükler:** COVID-19, sokağa çıkma yasağı, önlemler, etkiler, istatistikler

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## Introduction

Coronaviruses are single stranded, positive polarity enveloped RNA viruses. Coronaviruses are a large family of viruses that cause diseases ranging from the common cold to diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV).<sup>1,2</sup>

When we searched the literature, It was thought that pandemic chronologi should be updated. Cases of pneumonia of unknown etiology were reported on December 31, 2019 in Wuhan, China's Hubei province<sup>3</sup>. China, which was the starting place of the epidemic, was able to contain the epidemic with very few cases and deaths, thanks to the timely and strict measures it took due to its existing experience with epidemics and the appropriate management style<sup>4</sup>. Other countries of the world could not grasp the seriousness and importance of the event in the first place, since such a wide epidemic was seen in the last 1919 Spanish flu pandemic. Southeast Asian countries, especially those that have experienced the SARS and MERS epidemic, took the necessary isolation, quarantine, and treatment measures faster in each epidemic, and they got over the time that could be called the first wave more controlled. Examples of these countries are South Korea, and Singapore. Some countries and societies have not taken the epidemic seriously enough and have suffered the epidemic very heavily when we call the first wave. We can give Italy and Iran as examples to these countries<sup>5,6</sup>.

Countries have developed their own treatment protocols over time and have taken specific administrative and political measures. On the other hand, vaccination studies have started at an unprecedented pace in history, with the opportunities provided by technology and financial power, and many vaccines have begun to be applied by obtaining permits that can be used in communities. On the other hand, the rapidly spreading mutation especially in the UK and the South African and Brazilian mutations raise concerns about both the growth of the pandemic and the decrease or ineffectiveness of vaccines. Said mutations have started to be seen in almost all countries of the world, including Turkey.

Therefore, one of the most important factors underlying the different reflections of the pandemic in various countries is undoubtedly the parameters such as the health systems of the countries, the budget allocated for health and the rate of benefiting from the health facilities of the people<sup>7</sup>. The most important success factors in the epidemic were not only the economy and political power. USA, Europe which is economically and politically powerful, failed in the epidemic and could not prevent the increase in the number of cases and deaths. This is because the health organization and its infrastructure are not strong. As an exception, Germany, which has a solid health infrastructure, was able to continue the epidemic in a more controlled manner<sup>8</sup>.

Turkey has carried out a much more successful process in some areas compared to the countries that are said to be much stronger economically and politically. Especially after the first epidemic, it has made critical moves such as the supply of protective equipment, domestic PCR test production, domestic respiratory device production, domestic drug production, and rapid domestic vaccine studies. Strengthening the construction and health infrastructure of all country, especially the much-criticized City Hospital before the outbreak of the epidemic has strengthened Turkey's hand too.

In this study, after examining the historical process of COVID-19 in the world chronologically in order to see our general process and situation in the pandemic in the country, it was aimed to evaluate the effects of what happened in our country and the measures primarily curfew taken on daily COVID-19 statistics.

## Material and Methods

Important developments in Turkey and the world about COVID-19 with were given in chronological order. The number of daily new cases and daily new deaths caused by COVID-19 in our country have been entered into the SPSS 21 (IBM SPSS Corp.; Armonk, NY, USA) and Excel program from April 2020 to February 10 2021. The results were expressed using the mean  $\pm$  standard deviation, and number (%) depending on whether the data were parametric or not. Kolmogorov Smirnov test was used to evaluate the suitability of quantitative data for normal distribution. Since the data did not show normal distribution, the Mann-Whitney U test was used for binary groups. Statistical significance level was accepted as  $p < 0.05$  in all tests. Consent form was not prepared as public data were used and no study was conducted on humans or animals. Permission was obtained from the Ministry of Health for the research. Ethical permission was obtained with the decision number 2021-02 / 24, dated 10.02.2021.

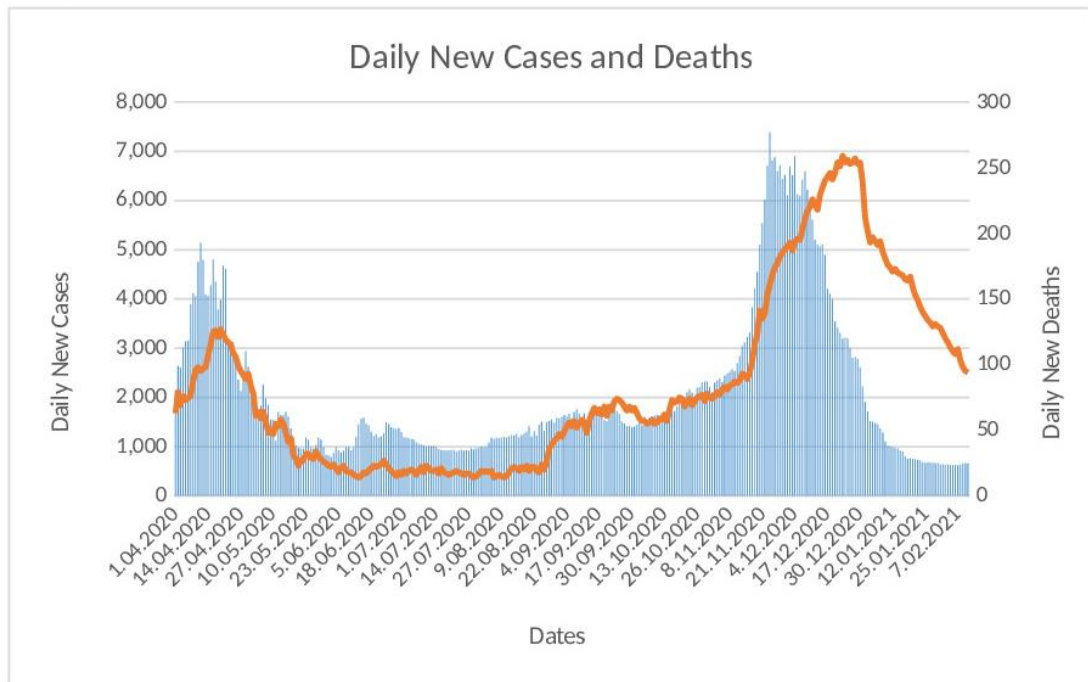
The curfew days taken administratively were determined as dates. For COVID-19, it was calculated that the infectious between 5 and 10 days after contact was accepted and it would be effective on the numbers from the 5th day to the 10th day after the ban days<sup>9</sup>. The daily numbers were taken from the data announced by the Ministry of Health. It was thought that curfews would have the main impact on numbers, as they were a measure that minimizes human contact. For this reason, since the other measures taken were in effect every day, it is accepted as fixed and the effect of the curfew on the numbers was calculated.

## Results

The calendar process of important developments regarding COVID-19 in the World and Turkey presented in Table 1 and Table 2 respectively.

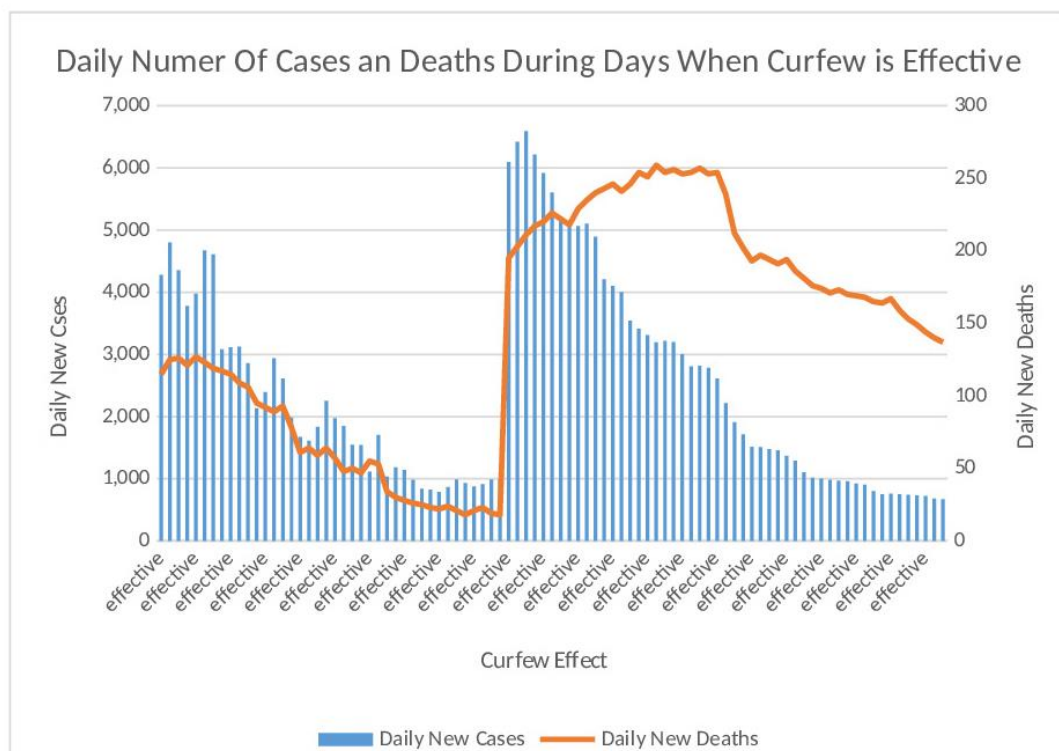
Figure 1 and 2 show that while the figures are expected to be low on the days when curfews are effective, they are high. In addition, when Table 3 is examined, the effect of curfews on the number of cases was found to be meaningless.

**Graph 1 Daily New Cases and Deaths**



**Figure 1.** shows the number of daily cases and daily deaths between April 1, 2020 and February 7, 2021.

**Grap 2Daily Number of Cases and Deaths During Days When Curfew Is Effective**



**Figure 2.** shows the number of daily cases and daily deaths between April 1, 2020 and February 7, 2020, during the days when curfews were effective.

**Looking at the process of calendrical developments occurring in Turkey:**

- Until March 11, 2020, many measures such as travel restrictions with the countries with cases, closing borders, setting up field tents, measures taken at airports, measures taken for people coming from Umrah, mandatory isolation in state dormitories for those coming from abroad, field tents on the borders applied.
- With the increase in cases after March 11, 2020, commercial, social, religious, areas and entertainment areas where collective contact could occur were closed.
- The obligation to wear a mask and a distance of 2 meters has been imposed in all areas.
- Schools were closed at all levels and distance education was introduced
- All elective medical practices in healthcare facilities, except emergencies and emergencies, have been postponed. Hospitals have been turned into pandemic hospitals.
- Additional new health facilities have been opened depending on the number of cases
- Quarantine and isolation measures were applied to the cases.

- Domestic and international travel is prohibited.
- According to the number of cases, curfews have been imposed on all citizens, sometimes for risky age groups.
- It is a requirement to play sports competitions without spectators. Sports competitions, meetings, congresses, public, private and military events have been postponed.
- Major economic measures have been taken regarding the epidemic.
- According to the decrease in the number of cases, there was a gradual relaxation in the tight measures, especially in May, June, July and August. Trials have been made with the necessary measures to return to normal life. This period has been called "controlled social life".In this period depending on the number of cases, certain classes resumed education on some days of the week.
- As the number of cases increased again after September, the same measures were gradually introduced again, the schools stopped education again. As of January 2021, the vaccine purchased from China started to be applied primarily to healthcare workers and people in the risk group.

**Table 1.** The calendar process of important developments regarding COVID-19 in the world.

Date	Development
31 December 2019	The first cases reported as pneumonia in China were reported to the World Health Organization.
13 January 2020	For the first time, a new virus case was seen in Thailand, in a country other than China.
21 January 2020	The USA announced its first virus case.
23 January 2020	The 11 million population of Wuhan city was quarantined; entrance and exit to the city were closed.
2 February 2020	The first virus-related death outside of China occurred in the Philippines.
11 February 2020	The disease was named COVID-19
14 February 2020	Egypt became the first country in the African continent to have the disease by announcing the first case in the country. Again on the same date; The first death outside of Asia occurred in France.
19 February 2020	Iran announced the first COVID-19 case.
24 February 2020	Italy topped the list as the country most affected in Europe.
26 February 2020	With the first case detected in Brazil, the virus was seen for the first time in Latin America.
11 March 2020	COVID-19 was seen for the first cases in Turkey and at the same time, the World Health Organization has announced that this was an emerging pandemic virus
24 March 2020	It has been announced that the 2020 Tokyo Olympics have been postponed to the summer of 2021.
6 April 2020	It was reported that there was no new case in China for the first time.
7 April 2020	Quarantine was lifted in the city of Wuhan, where the epidemic first appeared.
11 April 2020	Iran announced that it will open government offices.
28 April 2020	France announced that the measures will be reduced as of May 11.
30 April 2020	South Korea had its first day without new cases. Germany has decided to open churches, museums and zoos.
5 May 2020	The United Kingdom became the country with the highest number of deaths from Covid-19 in Europe, with more than 30 thousand deaths.
18 December 2020	The first vaccination in the USA started today in New York.
23 December 2020	The new variant of the coronavirus, which was first seen in England and thought to be 70 percent more aggressive, virtually isolated the country from the outside world.
28 December 2020	In Beijing, entrances and exits are closed in some districts after the "emergency" was declared due to the sudden increase in the number of COVID-19 cases.
5 January 2021	Prime Minister Boris Johnson announced quarantine measures, urging people not to leave the house so that the new species does not spread
7 February 2021	Israel, which vaccinates 40 percent of its population against Covid-19, exits the 3rd quarantine. <sup>1</sup>
In March	Countries such as the USA, England and Israel continued their rapid vaccination.

<sup>1</sup> <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>

**Table 2.** The calendar process of important developments regarding COVID-19 in Turkey.

Date	Development
11 March 2020	The Minister of Health announced that a Turkish man who was infected with the virus while traveling to Europe was the country's first COVID-19 case. The patient was isolated in an undisclosed hospital.
23 March 2020	The Minister of Health announced that a drug (Favipiravir), was brought from China and started to be administered to patients in intensive care.
3 April 2020	President Recep Tayyip Erdogan announced that a curfew was imposed across the country for those born on January 1, 2000 and above, a mask requirement was imposed in public areas such as markets and markets, and entry and exit to 30 metropolitan cities and Zonguldak were stopped for 15 days.
10,16,19,21 April and 19 May 2020	The Ministry of Interior imposed a curfew in 30 metropolitan cities and Zonguldak provinces.
28 May 2020	The Ministry of Internal Affairs imposed a curfew in 15 provinces between 24.00 on 29.05.2020 and 24.00 on 31.05.2020.
30 May 2020	With the circular of the Ministry of Interior, it was decided to end the travel restrictions in 15 provinces as of May 31, 24:00.
1 December 2020	With the circular issued by the Ministry of Internal Affairs, until a new regulation is made, between 21:00 and 05:00 on weekdays, on weekends from 21:00 on Friday until 05:00 on Monday. curfew has been imposed.
16 December 2020	In the circular sent to the 81 Provincial Governorship, the details of the curfews to be applied between 31 December 2020 - 4 January 2021 were announced.
21 December 2020	Britain, Denmark, the Netherlands, from South Africa to Turkey flights were temporarily halted for mutant virüs.
14 January 2021	Following the Emergency Use Approval, the first CoronaVac vaccine was administered to the Minister of Health Fahrettin Koca at Ankara City Hospital.
4 February 2021	Health Minister Koca said, "The UK mutation in our country has become 196. There were two South African variants and one Brazilian variant." <sup>1</sup> Turkey were vaccinated a total of 21,161,586 people as of the end of April. First dose vaccine was administered to 13,200,108 people. Second dose vaccine was administered to 7,961,478 people. <sup>2</sup>

<sup>1</sup>[https://tr.wikipedia.org/wiki/t%c3%bcrckiye%27de\\_covid-19](https://tr.wikipedia.org/wiki/t%c3%bcrckiye%27de_covid-19)  
<sup>1</sup>[https://www.milliyet.com.tr/gundem arşiv](https://www.milliyet.com.tr/gundem-arşiv)  
<sup>2</sup><https://covid19asi.saglik.gov.tr/>

**Table 3.** Distribution of the mean number of daily COVID-19 cases and deaths by curfew status

Curfew	Days (n)	Days (%)	Daily Case (X ± SD)	Daily Death (X ± SD)
Yes	107	33.9	2176.3 ± 1657.8	140.4 ± 74.2
No	209	66.1	2078.9 ± 1501.9	56.7 ± 43.4
Total	316	100.0	2111.9 ± 1554.5	85.0 ± 68.3
			U= 10061.5 p= 0.145	U= 18549.5 p= <b>0.001</b>

X: Mean, SD: Standard Deviation, U: Mann-Whitney U Test

## Discussion

In the COVID-19 pandemic, different countries had different strategies in testing and quarantine applications. For example, South Korea showed that high testing capacity can be used to control epidemics, while the People's Republic of China's aggressive quarantine measures and ability to control the spread showed that country-specific solutions should be developed in outbreaks. In the study conducted at Ankara Yıldırım Bayezit University on the effect of many tests on the pandemic process, it was concluded that the disease can be caught in the early stages and hospitalizations can be reduced by over-testing. However, the cost effectiveness of this method should be investigated separately<sup>10</sup>. In addition to country-specific successful practices, there had been countries where the epidemic had gotten much worse as a result

of wrong decisions and wrong practices. When we look again, believing in conspiracy theories about anti-mask and epidemic in Brazil<sup>11</sup>. Delay in taking quarantine and effective isolation measures and implementing closure practices in Europe and especially in Italy in the first days of the pandemic<sup>12</sup>. Late closure measures in France<sup>13</sup>. The theory of herd immunity, which was tried to be applied in the first place in the United Kingdom<sup>14</sup>, the theory of herd immunity, which was tried to be applied in Scandinavian countries<sup>15</sup>, Iran and Russia's late implementation of isolation and quarantine, and the United States' late measures due to political events and conspiracy theories can be given as examples. At the beginning of the pandemic, researchers have identified possible drug regimens based on their experience from past coronavirus outbreaks. Chloroquine, a malaria drug, antivirals faripiravir,

oseltamivir, lopinavir / ritonavir, remdesivir, an immunomodulatory agent colchicine, an antibiotic azithromycin, an antiparasitic drug ivermectin, steroids, high-flow oxygen, immune plasma, and many experimental treatments was tried<sup>16</sup>. Turkey and many countries began to develop vaccine rapidly. At the end of 2020 and in January 2021, all countries of the world started to vaccinate their people with vaccines produced by different companies. The whole world is waiting to ensure herd immunity by applying the vaccinations. Herd immunity is a form of indirect protection from infectious diseases that occurs when a large percentage of a society becomes immune to infection by vaccination or previous recoveries from infections<sup>17</sup>. The problems facing countries are the supply of vaccines and the effect of vaccines on mutant strains emerging in England, Brazil and South Africa. Rich countries of the world are ordering more vaccines than they need, and backward countries are deprived of vaccine. They are even experiencing vaccine wars among themselves. Even the WHO director expressed this situation. It should not be forgotten that no country will be safe after all countries of the world do not recover from a pandemic-level epidemic<sup>18</sup>. Publications explain that existing vaccines are effective for emerging mutations. While this is gratifying, as mentioned, new mutations are likely to occur as the virus continues to circulate in the larger population. Countries must finish vaccinations quickly before vaccine-resistant mutations emerge<sup>19,20</sup>.

When the first COVID-19 case in the world was heard, our Turkey's rapid measures. The National Pandemic Preparation Plan, which was prepared in 2019 with the recommendation of WHO, was updated quickly. There has been a roadmap in this epidemic<sup>21</sup>. While there are great problems in personal protective equipment and disinfectants in all countries of the world, the fact that they can be produced quickly with the support of the private sector has relieved our country in the epidemic. Turkey; it both tried to manage the health system effectively by combating this epidemic inside and also tried to respond to their needs by providing medical supplies to approximately 44 countries outside itself<sup>10</sup>. The lack of a full curfew for a certain period of time as applied in some countries created difficulties in epidemic control. It was also found in this study that intermittent curfews do not have a significant effect on the number of cases. Turkey, which firmly carry out the vaccination, contact follow-up studies with isolation and quarantine with the decision, the number of cases, the hospital was able to control the load.

WHO has recommended to increase the number of tests rapidly each day. Turkey has been unable to complete it. Public officials, especially healthcare workers, and risky age groups were not tested at certain intervals<sup>22</sup>. At the beginning of the epidemic, the contacts were tested, then applied to those with this symptom, and then the practice of testing the

contacts was abandoned. If we cannot detect asymptomatic cases, we cannot conduct a healthy fillation study. In 79% of existing cases, it is estimated that the source is asymptomatic cases<sup>23</sup>.

As of May 11, the curfews and other measures were quickly relaxed and the efforts to start normalization caused an increase in the number of cases and deaths again. With the increase in social activity with the effect of the Feast of Sacrifice, a second peak heavier than the first was experienced again in September-October-November. WHO recommends that if all conditions is suitable. Gradual transition should be provided<sup>24,25</sup>.

#### **The study has some limitations;**

-Since the curfews were applied to the whole country when the curfews were imposed, the daily deaths and other factors that could affect the daily number of cases were considered fixed.

-Some of the important developments about Covid-19 could not be given due to word limits

In conclusion although the most effective options in epidemics are vaccines and drugs, the measures to be applied in the absence of these are our main weapons. The use of masks, hygiene and distance rules are precautions that must be strictly followed. Humanity and all states with all their systems must be prepared for new and more destructive epidemics. For a more effective result, curfews, which will be meticulously followed by all societies and implemented in the form of complete closure, will quickly stop the spread of the epidemic.

and the most important ones were chosen.

#### **Main points of this article are;**

-Articles containing developments on covid-19 in the literature are out of date, so it would be useful to write an article containing current developments.

-The fastest and most effective measure to reduce the number of cases is curfews. The number of countries implementing a ban in the form of complete closure is small. Curfews are declared on certain days and times. Investigating the effect of this situation on the daily number of cases and daily deaths will contribute to how the prohibitions should be implemented.

-Deaths due to Covid-19 usually occur in people over the age of 65 and with chronic diseases.<sup>26</sup> If the number of daily deaths drops significantly during curfews, it is understood that risky groups comply with the prohibitions.

-If there is no meaningful change in the number of daily cases in the intermittent curfews, it is understood that the prohibitions are not fully complied with and inspections are not carried out adequately.

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