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RESEARCH ARTICLE

What has changed in the Opinions and Behaviors of Patients Admitted to the Pulmonology Outpatient Clinic during the Pandemic Period in one year? A Case Study in Turkey

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ABSTRACT

Introduction and Purpose: Although the information on many aspects of COVID-19 was limited and the long-term consequences were not clear, our knowledge and experience regarding transmission, disease course, virus pathogenicity, treatments, complications, and vaccines increased. In the process, our social life, opinions, and behavior changed.

In this study, we evaluated the pandemic period from the point of view of the patients. For this, the opinion and behavior of patients who were admitted to the chest diseases outpatient clinic were analyzed. Although the time of the end of the process could not be predicted, some predictions were reported. The study might be useful to plan for the pandemic, considering that the effects and course of the COVID-19 disease are not known.

Materials and Methods: Between April 2020 and March 2021, 362 patients admitted to the chest diseases outpatient clinic at the Education Research Hospital were included in the study. The opinion and behavior of 176 patients were recorded in April 2020, and those of 186 patients were recorded in March 2021. The opinions, behaviors, and differences were evaluated in both periods; these characteristics were analyzed for variables such as age, sex, and occupation.

Results: The mean age of the patients who participated in the study at the beginning of the pandemic was 46.1 ± 16.1 years and, in the 12th month of the pandemic, was 45.1 ± 15.1 years. There was no significant difference between the groups regarding the education level and sex. The most common symptoms of patients admitted to the clinic in the second period were chest pain and weakness. The smoking cessation rate was higher in the first period of the pandemic. Compliance with social isolation rules decreased in the 12th month. The rate of patient recovery was 36%, and the drug use rate was 82.1%. Patients found the management of the pandemic to be insufficient in our country in the 12th month, while Turkish physicians evaluated it as successful in both periods. The number of people considering vaccination decreased after 12 months.

Discussion and Conclusion: Social living rules, isolation, and the use of masks decreased over time. Informal social gatherings increased by the end of the first year compared to the first period of the pandemic. Young people paid less attention to the rules of social life and did not stop smoking. In the group of patients with a low education level, compliance with the drugs used in the treatment of COVID-19 and the smoking cessation rate decreased.

Thus, strict restrictions should be imposed on individuals below 65 years. Current data on vaccines, along with the information on their effects and side effects, should be shared. This study showed that managing and controlling a crisis is easier when the level of education in the community is high.

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- Patients
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- Pandemic

Introduction and Aim

On December 31, 2019, the World Health Organization (WHO), China, reported unknown cases of pneumonia, acute respiratory failure, and deaths around a fish

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and livestock market in Wuhan, Hubei Province, China. These incidents started in early December 2019. They also reported that the causative agent might be a new virus. On January 7, 2020, a new virus (SARS-CoV-2) was identified as the causative agent. On January 12, the genetic sequence of the virus was published [1]. On March 13, the first international case was reported in Thailand. The disease caused by the new virus was later identified as COVID-19 (Coronavirus Disease-19 = Coronavirus disease). The virus spread rapidly to other countries. The WHO declared COVID-19 as an “International Public Health Emergency” on January 30; on March 11, a large number of cases of COVID-19 were reported in 113 countries. As of January 2021, more than 100 million cases and more than 2 million deaths were reported worldwide [2].

A large number of sudden and unexpected deaths, the characteristics of the virus, and the unknown course of the disease caused global anxiety. Data on this unknown disease were quickly evaluated, and several studies were published. The knowledge and attitudes of individuals regarding the disease also changed. Therefore, in this study, the opinions and behavioral characteristics of the patients who applied to the chest diseases outpatient clinic at the end of the first period and in the 12th month of the pandemic were evaluated. Over time, the changes in the attitude and behavior of the patients toward the disease were revealed. This study might provide information regarding the measures to be taken in the future if such a situation arises by elucidating the perspective of the patients regarding restrictions, follow-up, and control.

Materials and Methods

Ethics committee approval of the study: The study was approved by the Ethics Committee of the University for Clinical Research with decree no. 2020-22/91. Written consent was obtained from all patients who participated in the study.

Study population

The study was conducted during two different periods of the pandemic. In April 2020, which was the first period of the pandemic, patients who visited the chest diseases outpatient clinic for any reason and volunteered to participate were interviewed face-to-face and evaluated using a questionnaire prepared by the researcher. The second assessment was conducted 12 months after the first interview. Following the same method, randomly selected patients with outpatient applications, who volunteered to participate, were included in the study.

A total of 372 people were initially included in the study. However, in April, 10 people withdrew their participation. Therefore, the final population included 362 patients, with 176 participants in April 2020 and 186 participants in March 2021.

The questionnaire was prepared by the researcher based on the COVID-19 Information platform of the Ministry of Health and prevention and precautionary action recommendations. The questionnaire consisted of two sections and 19 questions in total. These questions were related to the complaints of the patients, their thoughts on the seriousness of COVID-19, smoking habits during the pandemic, compliance with the use of masks and social isolation rules, assessment of the restrictions and importance throughout the country, the ability of the country to deal with the pandemic, thoughts on proposed drugs and their use of drugs, and their opinions about vaccination. The questions were asked face-to-face by the researcher.

Statistical analysis

The descriptive statistics of the data were presented as the mean, Standard Deviation (SD), and the number and % frequencies. The answers from the initial stages of the pandemic and 12 months later were compared by performing Pearson’s chi-squared test or the Fisher-Freeman-Halton test. Independent samples t-test was conducted to compare the age between the groups. All differences among and between groups were considered to be statistically significant at $p \leq 0.05$. The SPSS (ver. 23) program was used to perform all statistical analyses.

Results

The mean age of the patients who participated in the study at the beginning of the pandemic was 46.1 ± 16.1 years, and that of the patients who participated 12 months later was 45.1 ± 15.1 years; there was no significant difference in age between the groups ($p = 0.942$). The distribution of male and female patients in both periods was also similar ($p = 0.889$, Table 1).

When the results of the answers given to the questions in the 2nd and 12th months of the pandemic were compared (Table 1).

In both pandemic periods (the 2nd and 12th months of the pandemic), the most common reason for visiting the chest diseases outpatient clinic was that the patients had at least one respiratory complaint; there was no significant difference between the periods. The administration of drugs was significantly different between the periods ($p = 0.049$). The most common complaints were shortness of breath, cough, and chest pain. The referral rate due to phlegm extraction and back pain was significantly higher in both periods ($p = 0.020$ and $p = 0.007$, respectively). The referral rate due to chest pain and weakness was significantly higher in the 12th month of the pandemic ($p = 0.001$ and $p = 0.001$, respectively) (Table 1).

Of the 130 people who smoked at the beginning of the pandemic, 46 (35.4%) said their habits had not changed, 73 (56.2%) had decreased smoking, and 11 (8.5%) had

Table 1: The distribution of the answers to the questions in the 2nd and 12th months of the pandemic.

| | | Application Time of Survey | | | | | | p | |
|----------------------|-------------------------------|----------------------------------|------------|---|------------|------------|------------|-------|-------|
| | | At the Beginning of the Pandemic | | In the 10 th Month of the Pandemic | | Total | | | |
| | | n | % | n | % | n | % | | |
| Sex | F | 73 | 42.40 | 76 | 43.20 | 149 | 42.80 | 0.889 | |
| | M | 99 | 57.60 | 100 | 56.80 | 199 | 57.20 | | |
| | TOTAL | 172 | | 176 | | 348 | | | |
| Educational status | Illiterate | 6 | 3.60 | 4 | 2.40 | 10 | 3.00 | 0.227 | |
| | Primary School | 53 | 31.90 | 66 | 39.50 | 119 | 35.70 | | |
| | Middle School | 19 | 11.40 | 17 | 10.20 | 36 | 10.80 | | |
| | High school | 51 | 30.70 | 35 | 21.00 | 86 | 25.80 | | |
| | Associate/Undergraduate | 33 | 19.90 | 43 | 25.70 | 76 | 22.80 | | |
| | Master/Doctorate | 4 | 2.40 | 2 | 1.20 | 6 | 1.80 | | |
| | TOTAL | 166 | | 167 | | 333 | | | |
| Reason for Admission | Being diagnosed with COVID-19 | No | 54 | 40.90 | 41 | 30.40 | 95 | 35.60 | 0.072 |
| | | Yes | 78 | 59.10 | 94 | 69.60 | 172 | 64.40 | |
| | | TOTAL | 132 | | 135 | | 267 | | |
| | Medication Report | No | 115 | 87.10 | 127 | 94.10 | 242 | 90.60 | 0.049 |
| | | Yes | 17 | 12.90 | 8 | 5.90 | 25 | 9.40 | |
| | | TOTAL | 132 | | 135 | | 267 | | |
| | Presence of Chronic Disease | No | 92 | 69.70 | 104 | 77.00 | 196 | 73.40 | 0.175 |
| | | Yes | 40 | 30.30 | 31 | 23.00 | 71 | 26.60 | |
| | | TOTAL | 132 | | 135 | | 267 | | |
| | Risky job | No | 127 | 96.20 | 128 | 94.80 | 255 | 95.50 | 0.582 |
| | | Yes | 5 | 3.80 | 7 | 5.20 | 12 | 4.50 | |
| | | TOTAL | 132 | | 135 | | 267 | | |
| Your complaint | Fever | Risky job | 68 | 98.60 | 113 | 100.00 | 181 | 99.50 | 0.379 |
| | | | 1 | 1.40 | 0 | 0.00 | 1 | 0.50 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| | Sputum | No | 65 | 94.20 | 113 | 100.00 | 178 | 97.80 | 0.020 |
| | | Yes | 4 | 5.80 | 0 | 0.00 | 4 | 2.20 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| | Cough | No | 54 | 78.30 | 88 | 77.90 | 142 | 78.00 | 0.952 |
| | | Yes | 15 | 21.70 | 25 | 22.10 | 40 | 22.00 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| | Back pain | No | 64 | 92.80 | 113 | 100.00 | 177 | 97.30 | 0.007 |
| | | Yes | 5 | 7.20 | 0 | 0.00 | 5 | 2.70 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| | Dyspnea | No | 27 | 39.10 | 53 | 46.90 | 80 | 44.00 | 0.357 |
| | | Yes | 42 | 60.90 | 60 | 53.10 | 102 | 56.00 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| | Chest Pain | No | 60 | 87.00 | 75 | 66.40 | 135 | 74.20 | 0.001 |
| | | Yes | 9 | 13.00 | 38 | 33.60 | 47 | 25.80 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| | Weakness | No | 63 | 91.30 | 76 | 67.30 | 139 | 76.40 | 0.001 |
| | | Yes | 6 | 8.70 | 37 | 32.70 | 43 | 23.60 | |
| | | TOTAL | 69 | | 113 | | 182 | | |
| Smoking | No | 99 | 56.90 | 111 | 61.00 | 210 | 59.00 | 0.403 | |
| | Yes | 75 | 43.10 | 71 | 39.00 | 146 | 41.00 | | |
| | TOTAL | 174 | | 182 | | 356 | | | |

| | | | | | | | | | |
|-----------------------|---------------|--------------|------------|------------|------------|------------|------------|-------|-------|
| Severe in smokers | No | 28 | 19.90 | 32 | 21.30 | 60 | 20.60 | 0.756 | |
| | Yes | 113 | 80.10 | 118 | 78.70 | 231 | 79.40 | | |
| | TOTAL | 141 | | 150 | | 291 | | | |
| Smoking habit | Didn't change | 19 | 27.90 | 32 | 46.40 | 51 | 37.20 | 0.027 | |
| | Decreased | 45 | 66.20 | 30 | 43.50 | 75 | 54.70 | | |
| | Increased | 4 | 5.90 | 7 | 10.10 | 11 | 8.00 | | |
| | TOTAL | 49 | | 37 | | 86 | | | |
| Smoking Cessation | No | 35 | 51.50 | 54 | 72.00 | 89 | 62.20 | 0.015 | |
| | Yes | 33 | 48.50 | 21 | 28.00 | 54 | 37.80 | | |
| | TOTAL | 68 | | 75 | | 143 | | | |
| Leaving the house | No | 109 | 66.90 | 100 | 56.50 | 209 | 61.50 | 0.049 | |
| | Yes | 54 | 33.10 | 77 | 43.50 | 131 | 38.50 | | |
| | TOTAL | 163 | | 177 | | 340 | | | |
| Meeting for chat | No | 138 | 84.10 | 116 | 65.90 | 254 | 74.70 | 0.001 | |
| | Yes | 26 | 15.90 | 60 | 34.10 | 86 | 25.30 | | |
| | TOTAL | 164 | | 176 | | 340 | | | |
| Mask | No | 8 | 4.70 | 3 | 1.70 | 11 | 3.20 | 0.129 | |
| | Yes | 161 | 95.30 | 177 | 98.30 | 338 | 96.80 | | |
| | TOTAL | 169 | | 180 | | 349 | | | |
| Precautions necessary | No | 6 | 3.60 | 17 | 9.40 | 23 | 6.60 | 0.029 | |
| | Yes | 162 | 96.40 | 164 | 90.60 | 326 | 93.40 | | |
| | TOTAL | 168 | | 181 | | 349 | | | |
| Precautions enough | No | 52 | 32.10 | 82 | 45.80 | 134 | 39.30 | 0.011 | |
| | Yes | 110 | 67.90 | 97 | 54.20 | 207 | 60.70 | | |
| | TOTAL | 162 | | 179 | | 341 | | | |
| Virus dangerous | No | 3 | 1.80 | 3 | 1.70 | 6 | 1.70 | 0.927 | |
| | Yes | 165 | 98.20 | 178 | 98.30 | 343 | 98.30 | | |
| | TOTAL | 168 | | 181 | | 349 | | | |
| Exaggerated | No | 148 | 88.10 | 143 | 81.70 | 291 | 84.80 | 0.132 | |
| | Yes | 20 | 11.90 | 32 | 18.30 | 52 | 15.20 | | |
| | TOTAL | 168 | | 175 | | 343 | | | |
| Vaccine | No | 15 | 9.10 | 31 | 17.70 | 46 | 13.50 | 0.020 | |
| | Yes | 150 | 90.90 | 144 | 82.30 | 294 | 86.50 | | |
| | TOTAL | 165 | | 175 | | 340 | | | |
| Turkish Dr. | No | 2 | 1.20 | 4 | 2.20 | 6 | 1.70 | 0.686 | |
| | Yes | 164 | 98.80 | 174 | 97.80 | 338 | 98.30 | | |
| | TOTAL | 166 | | 178 | | 344 | | | |
| Which Country | Turkey | No | 17 | 10.00 | 44 | 25.40 | 61 | 17.80 | 0.001 |
| | | Yes | 153 | 90.00 | 129 | 74.60 | 282 | 82,20 | |
| | | TOTAL | 170 | | 173 | | 343 | | |
| | China | No | 161 | 94.70 | 142 | 82.10 | 303 | 88,30 | 0.001 |
| | | Yes | 9 | 5.30 | 31 | 17.90 | 40 | 11,70 | |
| | | TOTAL | 170 | | 173 | | 343 | | |
| | Germany | No | 155 | 91.20 | 146 | 84.40 | 301 | 87,80 | 0.050 |
| | | Yes | 15 | 8.80 | 27 | 15.60 | 42 | 12,20 | |
| | | TOTAL | 170 | | 173 | | 343 | | |
| | Korea | No | 167 | 98.20 | 173 | 100.00 | 340 | 99,10 | 0.121 |
| | | Yes | 3 | 1.80 | 0 | 0.00 | 3 | 0,90 | |
| | | TOTAL | 170 | | 173 | | 343 | | |

| | | | | | | | | |
|-----------------------|--------------|--|--|------------|-------|------------|-------|-----|
| COVID-19 | No | | | 112 | 64.00 | 112 | 64.00 | --- |
| | Yes | | | 63 | 36.00 | 63 | 36.00 | |
| | TOTAL | | | 175 | | 175 | | |
| Taking medication | No | | | 22 | 17.90 | 22 | 17.90 | --- |
| | Yes | | | 101 | 82.10 | 101 | 82.10 | |
| | TOTAL | | | 123 | | 123 | | |
| Medication beneficial | No | | | 28 | 23.30 | 28 | 23.30 | --- |
| | Yes | | | 92 | 76.70 | 92 | 76.70 | |
| | TOTAL | | | 120 | | 120 | | |

increased smoking. Smoking habits were largely answered as “increased” or “unchanged” in the 12th month of the pandemic. The proportion of those who mentioned a decrease in smoking was significantly higher at the beginning of the pandemic ($p = 0.027$). The proportion was significantly higher in the second month of the pandemic. Additionally, 98 (73.7%) smokers and 133 (84.2%) non-smokers thought that COVID-19 was more severe in smokers. The results showed that non-smokers answered “yes” to this question at a higher rate ($p = 0.028$) (Table 1).

The proportion of patients who complied with social isolation rules (necessary situations, including going to the market and hospital and meeting other people for informal interactions) was found to be significantly higher in the 12th month of the pandemic ($p = 0.049$ and $p = 0.001$, respectively). The measures and necessities in our country were found to be significantly higher in the second month of the pandemic ($p = 0.011$ and $p = 0.029$, respectively). The proportion of people considering vaccination was significantly higher in the second month of the pandemic ($p = 0.020$). At the beginning of the pandemic, Turkey successfully controlled the pandemic; in the 12th month of the pandemic, the proportion of those who replied that China controlled the pandemic more effectively was significantly higher ($p = 0.001$ and $p = 0.001$, respectively). In the second month of the pandemic, the most successful country in the fight against the virus was “Germany”, while in the 12th month of the pandemic, the proportion of those who answered “other country (USA, Italy, Cuba, UK, and other)” was significantly higher ($p = 0.050$ and $p = 0.050$, respectively) (Table 1).

While evaluating the patients in the 12th month of the pandemic, only three questions were added (Table 1). There were 63 patients (36%) diagnosed with COVID-19, 101 patients (82.1%) who used the recommended drug treatment, and 92 patients (76.7%) who found the drugs to be beneficial.

Relationship between the sex, education status, and behavior with COVID-19

When the answers were evaluated according to gender differences, we found that the frequency of smoking, leaving the house except when necessary, and informal socializing were higher among men; the frequency of those who took

the Turkish vaccine and those who were diagnosed with COVID-19 was significantly higher among women (Table 1).

When the distribution of answers was evaluated according to age group, the incidence of cough was significantly higher among 31-65-year-old individuals than in those in the other age groups. The complaints in the other category were significantly higher in the 16-30-year-old individuals. Additionally, the proportion of individuals who thought the disease was more severe among smokers was higher in the age groups of > 65 years and 16-30 years. The smoking habits decreased significantly among individuals above 65 years and increased in those who were 16-30 years old. The highest smoking cessation rate was among those above 65 years, followed by those aged 31-65 years, and it was the least among those who were 16-30 years. The highest frequency of informal socializing was found among those aged 16-30 years.

Vaccination preference was significantly higher among individuals who were 30 years old. Vaccines from other countries were preferred among those who were 16-30 and 65 years old. The proportion of participants diagnosed with COVID-19 was significantly higher over the age of 30 (Table 2).

When the distribution of the answers was examined according to professional groups, the rate of weakness was significantly higher among health workers. The smoking rate was high among workers and self-employed, non-working individuals, students, and retirees. The proportion of interviewees was significantly higher in the student group and non-working individuals in the labor and self-employed groups. The use of masks was higher in the retired, non-working, and student groups. The proportion of individuals who said “Yes” to the Turkish vaccine was the highest among housewives (Table 3).

The highest smoking rate was found in middle school graduates. While smoking decreased in non-literate people, it increased in non-literate people. Smoking cessation was found to be similar. The frequency of informal socializing was the highest in high school and university graduates. The Turkish vaccine was selected more often by high school students and individuals with six levels of education. The highest rate of choosing the Chinese vaccine was among

Table 2: The distribution of the answers based on gender differences.

| | | Sex | | | | p |
|-----------------------------|-----|-----|-------|-----|-------|--------------|
| | | F | | M | | |
| | | n | % | n | % | |
| Diagnosed with COVID-19 | No | 40 | 35.1 | 53 | 36.1 | 0.872 |
| | Yes | 74 | 64.9 | 94 | 63.9 | |
| Presence of Chronic Disease | No | 81 | 71.1 | 109 | 74.1 | 0.577 |
| | Yes | 33 | 28.9 | 38 | 25.9 | |
| As a companion | No | 112 | 98.2 | 147 | 100.0 | 0.107 |
| | Yes | 2 | 1.8 | 0 | 0.0 | |
| Risky job | No | 113 | 98.3 | 137 | 93.8 | 0.077 |
| | Yes | 2 | 1.7 | 9 | 6.2 | |
| Fever | No | 80 | 100.0 | 96 | 99.0 | 0.362 |
| | Yes | 0 | 0.0 | 1 | 1.0 | |
| Sputum | No | 78 | 97.5 | 95 | 97.9 | 0.845 |
| | Yes | 2 | 2.5 | 2 | 2.1 | |
| Cough | No | 61 | 76.3 | 76 | 78.4 | 0.739 |
| | Yes | 19 | 23.8 | 21 | 21.6 | |
| Back pain | No | 77 | 96.3 | 97 | 100.0 | 0.054 |
| | Yes | 3 | 3.8 | 0 | 0.0 | |
| Dyspnea | No | 33 | 41.3 | 44 | 45.4 | 0.583 |
| | Yes | 47 | 58.8 | 53 | 54.6 | |
| Chest pain | No | 59 | 73.8 | 72 | 74.2 | 0.943 |
| | Yes | 21 | 26.3 | 25 | 25.8 | |
| Weakness | No | 66 | 82.5 | 69 | 71.1 | 0.077 |
| | Yes | 14 | 17.5 | 28 | 28.9 | |
| Smoking | No | 111 | 75.5 | 93 | 47.4 | 0.001 |
| | Yes | 36 | 24.5 | 103 | 52.6 | |
| Leaving the house | No | 96 | 69.1 | 106 | 55.8 | 0.015 |
| | Yes | 43 | 30.9 | 84 | 44.2 | |
| Meeting for chat | No | 121 | 84.6 | 125 | 67.6 | 0.001 |
| | Yes | 22 | 15.4 | 60 | 32.4 | |
| Mask | No | 3 | 2.1 | 8 | 4.2 | 0.275 |
| | Yes | 143 | 97.9 | 183 | 95.8 | |
| Precautions necessary | No | 8 | 5.5 | 13 | 6.8 | 0.637 |
| | Yes | 137 | 94.5 | 179 | 93.2 | |
| Precautions enough | No | 62 | 44.3 | 65 | 34.6 | 0.074 |
| | Yes | 78 | 55.7 | 123 | 65.4 | |
| Virus dangerous | No | 1 | 0.7 | 5 | 2.6 | 0.184 |
| | Yes | 145 | 99.3 | 186 | 97.4 | |
| Exaggerated | No | 124 | 86.1 | 157 | 84.0 | 0.587 |
| | Yes | 20 | 13.9 | 30 | 16.0 | |
| Vaccine | No | 22 | 15.7 | 22 | 11.6 | 0.283 |
| | Yes | 118 | 84.3 | 167 | 88.4 | |
| Turkish Dr. | No | 2 | 1.4 | 4 | 2.1 | 0.637 |
| | Yes | 140 | 98.6 | 186 | 97.9 | |
| COVID-19 | No | 40 | 54.1 | 66 | 71.0 | 0.024 |
| | Yes | 34 | 45.9 | 27 | 29.0 | |
| Taking medication | No | 9 | 17.6 | 13 | 19.7 | 0.778 |
| | Yes | 42 | 82.4 | 53 | 80.3 | |
| Medication beneficial | No | 10 | 21.7 | 18 | 26.5 | 0.565 |
| | Yes | 36 | 78.3 | 50 | 73.5 | |

Table 3: The distribution of answers based on the education level.

| | | Educational Status | | | | | | | | | | | | p |
|-------------------------|-----|--------------------|-------|----------------|------|---------------|------|-------------|------|-------------------------|------|------------------|------|-------|
| | | Illiterate | | Primary School | | Middle School | | High School | | Associate/Undergraduate | | Master/Doctorate | | |
| | | n | % | n | % | n | % | n | % | n | % | n | % | |
| Diagnosed with COVID-19 | No | 2 | 25.0 | 29 | 36.7 | 10 | 38.5 | 21 | 30.0 | 24 | 39.3 | 3 | 60.0 | 0.677 |
| | Yes | 6 | 75.0 | 50 | 63.3 | 16 | 61.5 | 49 | 70.0 | 37 | 60.7 | 2 | 40.0 | |
| Medication Report | No | 8 | 100.0 | 70 | 88.6 | 23 | 88.5 | 65 | 92.9 | 58 | 95.1 | 4 | 80.0 | 0.557 |
| | Yes | 0 | 0.0 | 9 | 11.4 | 3 | 11.5 | 5 | 7.1 | 3 | 4.9 | 1 | 20.0 | |

| | | | | | | | | | | | | | | |
|-----------------------------|---------------|----|-------|-----|-------|----|-------|----|-------|----|-------|---|-------|--------------|
| Presence of Chronic Disease | No | 7 | 87.5 | 52 | 65.8 | 17 | 65.4 | 58 | 82.9 | 43 | 70.5 | 3 | 60.0 | 0.182 |
| | Yes | 1 | 12.5 | 27 | 34.2 | 9 | 34.6 | 12 | 17.1 | 18 | 29.5 | 2 | 40.0 | |
| As a companion | No | 7 | 87.5 | 79 | 100.0 | 26 | 100.0 | 69 | 98.6 | 61 | 100.0 | 5 | 100.0 | 0.009 |
| | Yes | 1 | 12.5 | 0 | 0.0 | 0 | 0.0 | 1 | 1.4 | 0 | 0.0 | 0 | 0.0 | |
| Risky job | No | 8 | 100.0 | 79 | 98.8 | 26 | 100.0 | 65 | 94.2 | 55 | 90.2 | 5 | 100.0 | 0.143 |
| | Yes | 0 | 0.0 | 1 | 1.3 | 0 | 0.0 | 4 | 5.8 | 6 | 9.8 | 0 | 0.0 | |
| Fever | No | 5 | 100.0 | 52 | 100.0 | 13 | 100.0 | 49 | 98.0 | 46 | 100.0 | 4 | 100.0 | 0.789 |
| | Yes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 2.0 | 0 | 0.0 | 0 | 0.0 | |
| Sputum | No | 4 | 80.0 | 51 | 98.1 | 13 | 100.0 | 50 | 100.0 | 45 | 97.8 | 4 | 100.0 | 0.055 |
| | Yes | 1 | 20.0 | 1 | 1.9 | 0 | 0.0 | 0 | 0.0 | 1 | 2.2 | 0 | 0.0 | |
| Cough | No | 2 | 40.0 | 40 | 76.9 | 11 | 84.6 | 42 | 84.0 | 35 | 76.1 | 3 | 75.0 | 0.328 |
| | Yes | 3 | 60.0 | 12 | 23.1 | 2 | 15.4 | 8 | 16.0 | 11 | 23.9 | 1 | 25.0 | |
| Back pain | No | 5 | 100.0 | 52 | 100.0 | 12 | 92.3 | 48 | 96.0 | 46 | 100.0 | 4 | 100.0 | 0.306 |
| | Yes | 0 | 0.0 | 0 | 0.0 | 1 | 7.7 | 2 | 4.0 | 0 | 0.0 | 0 | 0.0 | |
| Dyspnea | No | 2 | 40.0 | 20 | 38.5 | 4 | 30.8 | 23 | 46.0 | 26 | 56.5 | 0 | 0.0 | 0.171 |
| | Yes | 3 | 60.0 | 32 | 61.5 | 9 | 69.2 | 27 | 54.0 | 20 | 43.5 | 4 | 100.0 | |
| Chest pain | No | 3 | 60.0 | 35 | 67.3 | 9 | 69.2 | 42 | 84.0 | 37 | 80.4 | 2 | 50.0 | 0.241 |
| | Yes | 2 | 40.0 | 17 | 32.7 | 4 | 30.8 | 8 | 16.0 | 9 | 19.6 | 2 | 50.0 | |
| Weakness | No | 5 | 100.0 | 41 | 78.8 | 9 | 69.2 | 42 | 84.0 | 31 | 67.4 | 3 | 75.0 | 0.322 |
| | Yes | 0 | 0.0 | 11 | 21.2 | 4 | 30.8 | 8 | 16.0 | 15 | 32.6 | 1 | 25.0 | |
| Smoking | No | 8 | 80.0 | 66 | 56.4 | 14 | 38.9 | 56 | 65.1 | 45 | 60.8 | 6 | 100.0 | 0.017 |
| | Yes | 2 | 20.0 | 51 | 43.6 | 22 | 61.1 | 30 | 34.9 | 29 | 39.2 | 0 | 0.0 | |
| Severe in smokers | No | 4 | 50.0 | 20 | 20.6 | 5 | 16.1 | 13 | 18.3 | 10 | 17.2 | 0 | 0.0 | 0.278 |
| | Yes | 4 | 50.0 | 77 | 79.4 | 26 | 83.9 | 58 | 81.7 | 48 | 82.8 | 4 | 100.0 | |
| Smoking habit | Didn't change | 0 | 0.0 | 17 | 37.8 | 7 | 33.3 | 11 | 40.7 | 12 | 41.4 | 0 | 0.0 | 0.002 |
| | Decreased | 0 | 0.0 | 27 | 60.0 | 11 | 52.4 | 15 | 55.6 | 13 | 44.8 | 1 | 100.0 | |
| | Increased | 2 | 100.0 | 1 | 2.2 | 3 | 14.3 | 1 | 3.7 | 4 | 13.8 | 0 | 0.0 | |
| Smoking Cessation | No | 2 | 100.0 | 24 | 48.0 | 14 | 70.0 | 17 | 58.6 | 24 | 82.8 | 1 | 100.0 | 0.034 |
| | Yes | 0 | 0.0 | 26 | 52.0 | 6 | 30.0 | 12 | 41.4 | 5 | 17.2 | 0 | 0.0 | |
| Leaving the house | No | 7 | 77.8 | 75 | 68.8 | 23 | 65.7 | 46 | 56.1 | 38 | 50.0 | 4 | 66.7 | 0.111 |
| | Yes | 2 | 22.2 | 34 | 31.2 | 12 | 34.3 | 36 | 43.9 | 38 | 50.0 | 2 | 33.3 | |
| Meeting for chat | No | 8 | 88.9 | 89 | 80.9 | 27 | 81.8 | 53 | 63.1 | 55 | 72.4 | 5 | 100.0 | 0.035 |
| | Yes | 1 | 11.1 | 21 | 19.1 | 6 | 18.2 | 31 | 36.9 | 21 | 27.6 | 0 | 0.0 | |
| Mask | No | 0 | 0.0 | 5 | 4.3 | 1 | 2.8 | 3 | 3.5 | 1 | 1.3 | 0 | 0.0 | 0.863 |
| | Yes | 9 | 100.0 | 110 | 95.7 | 35 | 97.2 | 82 | 96.5 | 74 | 98.7 | 5 | 100.0 | |
| Precautions necessary | No | 0 | 0.0 | 4 | 3.5 | 2 | 5.6 | 6 | 7.1 | 10 | 13.2 | 0 | 0.0 | 0.159 |
| | Yes | 9 | 100.0 | 110 | 96.5 | 34 | 94.4 | 79 | 92.9 | 66 | 86.8 | 5 | 100.0 | |
| Precautions enough | No | 3 | 33.3 | 32 | 29.6 | 17 | 48.6 | 32 | 38.6 | 38 | 50.7 | 2 | 40.0 | 0.084 |
| | Yes | 6 | 66.7 | 76 | 70.4 | 18 | 51.4 | 51 | 61.4 | 37 | 49.3 | 3 | 60.0 | |
| Is the virus dangerous? | No | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 2.4 | 3 | 3.9 | 0 | 0.0 | 0.325 |
| | Yes | 9 | 100.0 | 114 | 100.0 | 35 | 100.0 | 83 | 97.6 | 73 | 96.1 | 5 | 100.0 | |
| Exaggerated | No | 7 | 77.8 | 91 | 82.7 | 30 | 83.3 | 74 | 88.1 | 67 | 90.5 | 5 | 100.0 | 0.533 |
| | Yes | 2 | 22.2 | 19 | 17.3 | 6 | 16.7 | 10 | 11.9 | 7 | 9.5 | 0 | 0.0 | |
| Vaccine | No | 1 | 11.1 | 6 | 5.3 | 7 | 19.4 | 12 | 15.2 | 13 | 17.6 | 1 | 20.0 | 0.091 |
| | Yes | 8 | 88.9 | 108 | 94.7 | 29 | 80.6 | 67 | 84.8 | 61 | 82.4 | 4 | 80.0 | |
| Turkish Dr. | No | 0 | 0.0 | 2 | 1.8 | 1 | 2.9 | 0 | 0.0 | 3 | 3.9 | 0 | 0.0 | 0.574 |
| | Yes | 9 | 100.0 | 111 | 98.2 | 34 | 97.1 | 83 | 100.0 | 73 | 96.1 | 5 | 100.0 | |
| Turkey | No | 2 | 20.0 | 10 | 8.9 | 5 | 14.3 | 11 | 13.3 | 27 | 37.0 | 2 | 40.0 | 0.001 |
| | Yes | 8 | 80.0 | 102 | 91.1 | 30 | 85.7 | 72 | 86.7 | 46 | 63.0 | 3 | 60.0 | |
| China | No | 8 | 80.0 | 106 | 94.6 | 31 | 88.6 | 74 | 89.2 | 58 | 79.5 | 5 | 100.0 | 0.041 |
| | Yes | 2 | 20.0 | 6 | 5.4 | 4 | 11.4 | 9 | 10.8 | 15 | 20.5 | 0 | 0.0 | |
| Germany | No | 10 | 100.0 | 103 | 92.0 | 33 | 94.3 | 74 | 89.2 | 55 | 75.3 | 4 | 80.0 | 0.008 |
| | Yes | 0 | 0.0 | 9 | 8.0 | 2 | 5.7 | 9 | 10.8 | 18 | 24.7 | 1 | 20.0 | |
| KOREA | No | 10 | 100.0 | 111 | 99.1 | 35 | 100.0 | 83 | 100.0 | 72 | 98.6 | 4 | 80.0 | 0.001 |
| | Yes | 0 | 0.0 | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 | 1 | 1.4 | 1 | 20.0 | |
| COVID-19 | No | 1 | 25.0 | 43 | 70.5 | 10 | 62.5 | 16 | 47.1 | 32 | 74.4 | 1 | 100.0 | 0.059 |
| | Yes | 3 | 75.0 | 18 | 29.5 | 6 | 37.5 | 18 | 52.9 | 11 | 25.6 | 0 | 0.0 | |
| Taking medication | No | 3 | 75.0 | 7 | 16.7 | 3 | 21.4 | 2 | 8.3 | 7 | 24.1 | 0 | 0.0 | 0.034 |
| | Yes | 1 | 25.0 | 35 | 83.3 | 11 | 78.6 | 22 | 91.7 | 22 | 75.9 | 0 | 0.0 | |
| Medication beneficial | No | 1 | 25.0 | 7 | 16.3 | 4 | 33.3 | 7 | 30.4 | 8 | 29.6 | 0 | 0.0 | 0.579 |
| | Yes | 3 | 75.0 | 36 | 83.7 | 8 | 66.7 | 16 | 69.6 | 19 | 70.4 | 0 | 0.0 | |

the non-literate individuals and university graduates. The German vaccine was selected by a higher proportion of university graduates and those with higher educational qualifications. Most of the individuals with graduate-level education said “Yes” to the Korean vaccine.

Discussion and Conclusion

In the study, the opinions and behaviors of patients admitted to the chest diseases outpatient clinic for COVID-19 were evaluated separately in the 2nd and 12th months of the pandemic. We found that within one year, there were significant changes in the approach and behavior of the patients during the pandemic. The changes we reported might provide important information for monitoring and instructing sick and non-sick individuals to manage a future pandemic.

The absence of significant differences in age, sex, and level of education in the patient population in both periods increased the objectivity of the results, which revealed the opinions and behaviors of the patients. The results also showed that on the second day of the pandemic, among the patients who visited the chest outpatient clinic in April, occupational distribution was the most common and included housewives, retired individuals, and worker/non-working individuals, while 12 months later, the most common patients were housewives, self-employed individuals, and retired individuals/students. On the second day of the pandemic. The majority of the patients who applied for outpatient clinics in the 12th month of the pandemic were primary school graduates. No significant difference in the education level was found between the two groups ($p = 0.227$).

During the pandemic, the most common reason for visiting the outpatient clinic was the presence of respiratory complaints. The rate of application due to rest and drug reports was lower. In both pandemic periods, the most common symptom for visiting the clinic was dyspnea, followed by cough and chest pain in the second month of the pandemic; in the 12th month of the pandemic, chest pain and weakness were the most common reasons for visiting the clinic. This was because 12 months after the pandemic, the number of patients affected by COVID-19 increased. On the second day of the pandemic. The patients with suspected symptoms of COVID-19 in the COVID polyclinic when applying for 12. Most of the symptomatic patients, whose treatment was completed in the 12th month, visited the clinic with symptoms of chest diseases [3,4]. The complaints of cough were significantly more frequent among the patients over 65 years and those who were 16–30 years old.

Admission to the clinic only “due to the drug report” was significantly different between the two periods ($p = 0.049$). Thus, the ministry’s strategy of supplying lach during the pandemic was effective. According to this strategy, during the pandemic period, the reporting times of the patients

who were provided drugs in the previous visit and the reporting times of the patients over the age of 65 years were automatically uploaded to the system. Hospital admissions based on the drug report of patients were prevented. Our results also showed that this approach was effective. On the 12th day of the pandemic. Hospital admissions decreased in the following year, and hence, this was an effective strategy to regulate hospital admissions and prevent disease transmission.

At the beginning of the pandemic, the smoking rate was 43.10% ($n = 75$), and it was 39% ($n = 71$) 12 months after the pandemic. A significant change in the attitude toward smoking was found when both periods were compared ($p = 0.403$). The smoking rate decreased at the beginning of the pandemic, and there was no change in attitude in the 12th month. The smoking cessation rate was 48% ($n = 33$) at the beginning of the pandemic, compared to 12% of the pandemic; 28% ($n = 21$) in the month, and the rate decreased. The difference between the groups was significant ($p = 0.015$). The smoking cessation rate at the beginning of the pandemic was found to be higher than that in the following period. In both periods, patients stated that they thought that the disease was severe in smokers. This is known as the general blood; the negative effect of smoking on the respiratory tract and the presence of respiratory complaints and pulmonary involvement might aggravate the symptoms of COVID-19. Some studies have shown that there is a higher rate of disease progression among smokers than those who have never smoked, and smoking is a risk factor for the progression of COVID-19 [5,6]. In other studies that evaluated the relationship between the smoking status and the severity, prognosis, and mortality of the disease, the effect of smoking on the severity of the disease, hospital stay, Non-Invasive Mechanical Ventilation need (NIMV), the requirement for Intensive Care Unit (ICU), and mortality was not statistically significant [7].

Due to transmission of the virus through respiratory contact (presence in the same environment, scattering saliva through speech or laughter, coughing, and sneezing), and the declaration of a pandemic, limitations were imposed to ensure social isolation [8–10]. Individuals were recommended not to go outside except when necessary and to wear a mask [11]. Although the rate of staying in the house except when necessary in both periods (66.9% and 56.5%, respectively) was similar, the rate of eviction increased significantly (from 33.1% to 43.5%, $p = 0.049$). Informal social gatherings increased significantly from 15.9% to 34.1% ($p = 0.001$). Although there was a shortage of masks at the beginning of the pandemic, the rate of mask usage while leaving the house was high in both periods. Although the number of cases decreased in less than 12 months, there was an increase in the number of cases in a year, and mutant forms of the virus were detected. Although the risk was similar to the early stages of the pandemic, the sensitivity of the patients to prevention and performing acts of prevention

decreased. Therefore, to manage health problems in society, the behaviors and attitudes should be managed through legal processes (such as strict supervision, rules, and sanctions) after considering the individual approaches of the patients.

After the pandemic was declared in Turkey, measures and restrictions were implemented in commercial and residential neighborhoods, schools, and workplaces. The patients thought that these measures taken in the country were necessary during both periods. While the number of patients who felt that the measures taken at the beginning of the pandemic were insufficient, 32.1% of them thought it was sufficient in the 12th month of the pandemic ($p = 0.029$). Regarding the decisions taken, the lack of supervision and sanctions was prominent. Individual modification of the rules was condoned [12,13].

In Turkey, the number of patients who died in April 2020 was around 3,000, and in March 2021, it was over 30,000 [12]. The patients included in the study were 12 at the beginning of the pandemic. They thought that the virus was dangerous and that the situation was out of control. However, some people also believed that these measures were not needed, and this issue was frequently raised on social media.

By January 14, 2021, the administration of the vaccine among health workers had started in Turkey. We found that the patients had abandoned the idea of getting vaccinated in the 12th month. There was a significant difference in the willingness to get vaccinated in one year. In the second period, the number of people who did not intend to be a celebrity increased (9.1% and 17.7%, $p = 0.02$). This rate increased because there might be additional information about vaccine studies and applications, comments, and the protective effect of vaccines. The duration of the effect and long-term side effects might be because of unknown factors. The ability to assess the vaccine was limited in this study. It is not known whether the vaccination program is conducted according to the priorities of age and occupational risk groups in society. You can also use the; it should not be overlooked that there are patients who have not been vaccinated and will be vaccinated when it is their turn. Therefore, the attitude and behavior of the people toward the vaccine might be revealed in future studies.

A study on vaccines also found that 100,000 people were vaccinated against the disease. The healthcare professionals involved in the care of COVID-19-positive patients and individuals who considered themselves at risk of the disease were more likely to get the COVID-19 vaccine. In contrast, parents who did not care for positive patients, nurses, and health workers had greater hesitation in taking the vaccine [13,14]. In a study conducted in France, 48% of those who wanted to be vaccinated were identified [15]. In the U.S., the rate of acceptance of the vaccine among adults was 69% [16]. In our study, three health workers visited the outpatient clinics at the beginning of the pandemic, and in

the 12th month, no health worker visited. This was because a separate COVID outpatient clinic was established in our unit for medical personnel. Therefore, we could not determine the behavior and attitudes of health workers infected in the study population regarding vaccination.

In the study, the patients found Turkish doctors to be highly successful in both periods. However, the opinions of the patients regarding the management of the pandemic in Turkey changed significantly over time. While 90% of the people thought that the process was well-managed at the beginning of the pandemic, only 74.6% of the people thought the same way in the 12th month ($p = 0.001$). Therefore, while Turkey, Germany, and China were the most successful countries in fighting the pandemic at the beginning, in the 12th month of the pandemic, China and Germany were considered to be successful in controlling the pandemic.

According to the ministry's general coronavirus page, on average, 92% of the patients in Turkey recovered in March 2021 [13,15]. In the study, in the 12th month of the pandemic, 36% ($n = 63$) was detected in patients who applied to the outpatient clinics and were diagnosed with COVID-19; the recommended drug use rate was 82.1%. These patients used both drugs (favipiravir and Plaquenil) following the recommended dose and duration. The percentage of patients who thought the drugs were not useful was 23.3%. During the pandemic, the official Turkish data on drug use rates were announced. According to the results of this study, the number of patients treated was sufficient. However, on social media, the view that patients did not use drugs and did not find them useful was quite common.

When the answers were evaluated based on gender differences in both periods, the rates of smoking, leaving the house, and attending informal social gatherings were higher in men than in women. Additionally, men thought Turkey was successful in managing the situation more often than women. However, 45.9% of women ($n = 34$) and 29% of men ($n = 27$) were diagnosed with COVID-19. Interestingly, Turkish women, who had a low smoking rate, did not leave the house except when necessary, had a low rate of informal interactions, did not invite guests, and did not visit others, were infected at a higher rate than men. This was because more men were carriers and more women were susceptible to the disease. Another reason might be the difference in individual sensitivity to personal protection and precautionary assessment. For example, a person might use a mask, but he may not use it properly to cover his nose. However, during the evaluation, he would mention that he used a mask. This was the biggest limitation of the study. The behaviors, attitudes, and the suitability of the criteria could not be evaluated. Although the study presented cross-sectional community data, it provided valuable information on patient opinions, attitudes, and behaviors related to COVID-19.

The results showed that during the early stages of the pandemic, patients strictly followed the social life rules and used masks to reduce or even prevent transmission of the disease, while sensitivity to these issues decreased in 12 months. Informal interactions, except when necessary, increased in 12 months compared to that in the early period of the pandemic. Young people paid lesser attention to the rules of social life and did not stop smoking. In the patient group with low education levels, COVID-19 drugs were not used adequately, and smoking did not decrease. Based on the data, we showed that stricter restrictions should be imposed on individuals below 65 years. We found that managing and controlling the pandemic becomes easier as the education level of the people increases. At least in social events, behaviors and attitudes should not be left to an individual approach. More intense monitoring and harsher punishment should be imposed.

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Conflict of interest

The Author declares that there is no conflict of interest.

Ethics committee approval and permit document number

Ahi Evran University, Faculty of Medicine Ethics committee with decree no: 2020-22/91.

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Data Availability

"Data Availability" is possible for the data used in the article.

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