



MASS QUARANTINE EXPERIENCE AFTER UMRAH VISIT

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SUMMARY – This study aimed to determine demographic characteristics, COVID-19 positivity rates of the quarantined individuals, and risk factors between those developing and not developing disease symptoms. The individuals who returned from Mecca, Saudi Arabia to Turkey on March 15, 2020 were transported from the airport to the campus of dormitories and quarantined for 14 days. This study included 2941 passengers who returned from Umrah visit to Turkey and were quarantined between March 15, 2020 and April 2, 2020. There were 1828 (62.2%) women. The polymerase chain reaction (PCR) test was positive in 295 (10%) of those in quarantine, 196 (66.4%) of them women. Among the patients with a positive PCR test result, there was no significant difference between women and men in terms of age and comorbidity. Of the 295 COVID-19 patients detected, 37 (12.5%) had symptoms. There was no significant difference between symptomatic individuals and asymptomatic individuals in terms of age, gender, and comorbidity. Quarantining everyone who has come from risky areas ensures that patients are isolated from the community, which can prevent the spread of the disease.

Keywords: *COVID-19; Quarantine; Public health*

Introduction

Coronavirus disease 2019 (COVID-19), which first emerged as viral pneumonia cases of unknown etiology in Wuhan, China, at the end of 2019, became a pandemic that affected the whole world over time^{1,2}. Although the novel coronavirus, which is the cause of COVID-19, is associated with the severe acute respiratory syndrome (SARS) and Middle East respiratory

syndrome (MERS) coronaviruses that cause acute respiratory failure, it is a different virus³.

Human-to-human transmission of the disease and the fact that it became a worldwide pandemic in a short time, forced governments to take some measures⁴. Turkish government imposed a full-time lockdown for citizens over the age of 65 or under 20, while lockdown applied to weekends for other citizens. In addition, individuals who entered Turkey from abroad were quarantined for 14 days in accordance with recommendations of the World Health Organization⁵.

Umrah implies visiting the Kaaba in Mecca, Saudi Arabia, which is holy for Muslims, outside the pilgrimage period. During this visit, there is a mass worshipping population around the Kaaba. In addition, citizens of every country of those who went to Mecca for Umrah

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Received September 8, 2020, accepted December 7, 2020

act as a group. As of March 15, 2020, there were 103 confirmed cases of COVID-19 in Saudi Arabia⁶. The people who had returned from Umrah visit to Turkey (2941 individuals) were quarantined in a campus of dormitories.

This study aimed to determine demographic characteristics, COVID-19 positivity rates of the quarantined individuals, and risk factors between those developing and not developing the disease symptoms.

Subjects and Methods

The individuals who returned from Mecca, Saudi Arabia to Turkey on March 15, 2020 were transported from the airport to the campus of dormitories and quarantined for 14 days. However, this quarantine period was extended to 16 days in order to wait for the last laboratory test results. In this study, quarantine and follow-up of these patients were evaluated.

As of March 15, 2020, there were 103 confirmed cases of COVID-19 in Saudi Arabia⁷. Therefore, those who came from Saudi Arabia were quarantined for 14 days. These 2941 people were transported from Mecca to Ankara Esenboğa International Airport by 24 planes. When the planes landed, a team of 3 healthcare professionals with personal protective equipment (overalls, n95 mask, glasses, and gloves) firstly scanned the passengers with a thermal camera before they got off the planes. Then, fever of the passengers was measured with a forehead thermometer. When the passengers with high fever were detected, they were taken to the airport health cabin and examined. Passengers who met the possible patient criteria were transported from the airport to hospital by ambulances. Other passengers were transported to the quarantine dormitories by the public transport buses reserved for this task.

For the quarantine, a student dormitory campus has been determined in Ankara, the capital of Turkey. While there were 10 different dormitory buildings on this campus, there were a total of 1000 rooms in these buildings. The rooms had 2 beds, and distance between these beds was 2 meters. The rooms had a toilet and bathroom. Each room was allocated to 2 passengers. The meals of the individuals were served to their rooms. The rooms were cleaned 2 times a day.

During the quarantine, a health cabin was installed in each building block, and regular medical

examinations and fever follow-ups were performed. Individuals with complaints were evaluated on-site, and transported to hospital if needed. To manage this process, a crisis center was set up on the campus, and follow-ups were done there. Two ambulance teams were kept ready in front of each block.

The polymerase chain reaction (PCR) test was performed by taking oropharyngeal and nasopharyngeal swab samples from those who had symptoms during the quarantine period and from all individuals at the end of the quarantine period. Those with positive test results were transported to hospital by ambulance, and their follow-up was continued at the hospital. Individuals who stayed in the same room with those whose test results were positive were transported to the clinical practice hotel of the Ankara City Hospital for follow-up. These people were also followed-up in line with recommendations of the Science Board of the Ministry of Health of Turkey.

After 14 days of follow-up, individuals with negative PCR test results and no active complaints were transported to their homes by buses. They were told to stay in quarantine for 14 more days at home.

All data were analyzed using IBM SPSS for Windows version 25. In addition to descriptive statistics (frequency, percentage, mean, standard deviation, median, min-max), χ^2 -test was used to compare qualitative data. The consistency of continuous data to normal distribution was evaluated by the Kolmogorov-Smirnov test ($p=0.074$) and Shapiro-Wilk ($p=0.073$) test. As a result of the tests, it was found that data were consistent with normal distribution. Independent samples t-test was used for comparison between groups. Critical alpha value of 0.05 was accepted for clinical significance.

Results

This study included 2941 passengers who returned from Umrah visit to Turkey and were quarantined between March 15, 2020 and April 2, 2020. There were 1828 (62.2%) women and 1113 (37.8%) men. The mean age of all passengers was 57.9 ± 13.5 years. The youngest of those under quarantine was 1 year old, while the oldest was aged 95 years. Of the quarantined ones, 501 (17%) subjects had comorbidities, while 295 (10%) were COVID-19 positive (Table 1).

Passengers with symptoms were examined by doctors in the health cabins at the entrance to the country. On this examination, 37 passengers were detected to have positive COVID-19 PCR test results. Although the PCR test was positive in 18.0% (n=11) of the 61 patients who stayed in the same room with these patients, they did not have any disease symptoms.

Scanning was performed by taking oropharyngeal and nasopharyngeal swab samples before the subjects were sent to their homes at the end of quarantine.

The PCR test was positive in 295 (10%) of those in quarantine. There was no difference between those who had positive test results and those who had negative test results in terms of age, gender, and comorbidity (Table 2).

Table 1. Demographic characteristics of those under quarantine

		N=2941	%
Gender	Women	1828	62.2
	Men	1113	37.8
Test result	Negative	2646	90.0
	Positive	295	10.0
	Diagnosed at scanning	247	8.4
	Have symptoms	37	1.3
	Contacted a positive patients	11	0.4
Comorbidity	No	2440	83.0
	Yes	501	17.0
	Hypertension	130	26.0
	Diabetes mellitus	61	12.0
	Asthma, COPD	19	4.0
	Dysrhythmia	3	1.0
	CAD	2	0.0
	2 comorbidities	183	36.0
≥3 comorbidities	103	21.0	

COPD = chronic obstructive pulmonary disease; CAD = coronary artery disease

Table 2. Characteristics of study subjects according to PCR test results

		Negative (n=2646)	Positive (n=295)	p
Gender	Women	1632 (61.7%)	196 (66.4%)	0.110 ^a
	Men	1014 (38.3%)	99 (33.6%)	
Age (years), mean ± SD		57.9±13.6	58.6±12.8	0.401 ^b
Comorbidity	No	2200 (83.1%)	240 (81.4%)	0.438 ^a
	Yes	446 (16.9%)	55 (18.6%)	
	Hypertension	115 (4.3%)	15 (5.1%)	
	Diabetes mellitus	51 (1.9%)	10 (3.4%)	
	Asthma, COPD	14 (0.5%)	5 (1.7%)	
	Dysrhythmia	3 (0.1%)	0 (0.0%)	
	CAD	2 (0.1%)	0 (0.0%)	
	2 comorbidities	88 (3.3%)	12 (4.1%)	
≥3 comorbidities	173 (6.5 %)	13 (4.4%)		

^aχ²-test, ^bindependent samples t-test; PCR = polymerase chain reaction; SD = standard deviation; COPD = chronic obstructive pulmonary disease; CAD = coronary artery disease

Among those with positive PCR test results, there were 196 (66.4%) women and 99 (33.6%) men. Their mean age was 58.6 ± 12.8 years. Of the people who had positive PCR test result, 55 (18,6%) had one or more comorbidities. Among the patients with positive PCR test result, there was no significant difference between women and men in terms of age and comorbidity (Table 3).

Of the 295 COVID-19 patients detected, 37 (12.5%) had symptoms. The mean age of patients with symptoms was 59.0 ± 13.2 years. In this group, there were 21 (56.8%) women. One or more chronic disease comorbidities were detected in 7 (18.9%) symptomatic patients. There was no significant difference between symptomatic individuals and asymptomatic individuals in terms of age, gender, and comorbidity (Table 4).

Table 3. Characteristics of subjects with COVID-19

		Women (n=196)	Men (n=99)	p
Age (years), mean \pm SD		58.1 \pm 12.7	59.5 \pm 13.0	0.389 ^b
Comorbidity	No	155 (79.1%)	85 (85.9%)	0.210 ^a
	Yes	41 (20.9%)	14 (14.1%)	
	Hypertension	10 (5.1%)	5 (5.1%)	
	Diabetes mellitus	4 (2.0%)	6 (6.1%)	
	Asthma, COPD	3 (1.5%)	2 (2.0%)	
	2 comorbidities	21 (10.7%)	0 (0.0%)	
≥ 3 comorbidities	3 (1.5%)	1 (1.0%)		

^a χ^2 -test; ^bindependent samples t-test; SD = standard deviation; COPD = chronic obstructive pulmonary disease

Table 4. Comparison of COVID-19 patients by symptom status

		No symptoms (n=258)	Symptoms exist (n=37)	p
Gender	Women	175 (67.8%)	21 (56.8%)	0.251 ^a
	Men	83 (32.2%)	16 (43.2%)	
Age (years), mean \pm SD		58.5 \pm 12.7	59.0 \pm 13.2	0.815 ^b
Comorbidity	No	210 (81.4)	30 (81.1%)	1.000 ^a
	Yes	48 (18.6%)	7 (18.9%)	
	Hypertension	12 (4.7%)	3 (8.1%)	
	Diabetes mellitus	9 (3.5%)	1 (2.7%)	
	Asthma, COPD	5 (1.9%)	0 (0.0%)	
	2 comorbidities	19 (7.4%)	2 (5.4%)	
≥ 3 comorbidities	3 (1.2%)	1 (2.7%)		

^a χ^2 -test; ^bindependent samples t-test; SD = standard deviation; COPD = chronic obstructive pulmonary disease

Discussion

Quarantine is an ancient but effective method for controlling infectious diseases. It is possible to prevent rapid spread of diseases such as COVID-19 by isolating people who have come from a risky area. There is no guideline for the conditions of the buildings where those coming from abroad will be quarantined. The quarantine period is recommended to be 14 days⁸. Turkish citizens having returned from Umrah visit were quarantined for 14 days in accordance with recommendations in the literature.

The PCR test was positive in 712 (19.2%) of 3711 passengers or crew on the Diamond Princess Cruise ship, which departed from Japan after January 2020. On the other hand, the COVID-19 positivity rate was 16.6% on the Grand Princess Cruise ship departed from San Francisco, California⁸. In the quarantine included in our study, 295 (10%) subjects had COVID-19. The reasons why COVID-19 positivity rate was lower in the quarantine included in our study than in some other ones may be as follows: (a) this quarantine was a planned organization, (b) the rooms were well ventilated, (c) there were no more than 2 individuals in a room, and (d) there was at least a 2-meter distance between the beds. Although this rate is considered to be high by the society, we think that these results have occurred due to high contamination in those who were in close contact for a long time. However, we think that if this quarantine process was not implemented, patients would have increased the number of COVID-19 patients by transmitting the disease to the community.

In the literature, advanced age (>60) and comorbidity were found to cause the risk of transmission^{9,10}. In our study, no significant difference was found between the group diagnosed with COVID-19 and the group with negative PCR test result in terms of age and chronic disease comorbidity. Considering PCR test results, the mean age was <60 years both in the positive and negative group. In addition, the comorbidity rate was low in both the positive (16.9%) and negative (18.6%) group. Therefore, we think that the 10% positivity rate we found is lower than that in other quarantine samples.

According to the study, the median age of COVID-19 patients was 56 (range 43-68) years, while 54.3% of all patients were males¹⁰. In another study, the median age of COVID-19 patients was 49.0 years, while 73% of them were males¹¹. In that study, the mean age of COVID-19 patients in quarantine was 58.6±12.8 years, while the majority of patients (66.4%) were women. In our study, unlike the literature, the mean age of COVID-19 patients was higher and the majority of individuals were women. This was due to the study population. The mean age of those who returned from Umrah visit was higher, and the majority of this group were women. These characteristics of the group also affected the result of positive patients.

In the study by Nishiura *et al.*, the positivity rate of asymptomatic individuals was found to be 1.2%¹². Kimball *et al.* report on 56.5% of the study population to be asymptomatic although their PCR tests were positive, and these individuals became symptomatic 10 days after the test¹³. In our study, only 37 subjects with positive PCR test result had disease symptoms. We think that the rate of asymptomatic patients was high in this study because those who were in contact with PCR positive patients were scanned immediately and early diagnosed, and many patients were detected on screening at the end of quarantine.

In addition, with this study, we tried to identify the risk factors and differences between patients who developed COVID-19 and those who had negative PCR test results, and found no significant difference in risk factors between patients and others. Since we were not able to identify patients likely to develop COVID-19, which was one of the most important aims of this study, we suggest that it is appropriate to quarantine all those coming from risky areas.

Conclusion

No significant difference was found between the COVID-19 developing group and the non-developing group in terms of comorbidity. Therefore, quarantining everyone who has come from risky areas ensures that patients are isolated from the community, which can prevent the spread of the disease.

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Sažetak

ISKUSTVA S MASOVNOM KARANTENOM NAKON HODOČAŠĆA UMRAH

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Cilj istraživanja bio je utvrditi demografske značajke, stope pozitivnih nalaza na COVID-19 kod osoba u karanteni te rizične čimbenike u osoba kod kojih su se razvili simptomi ove bolesti i kod onih bez tih simptoma. Osobe koje su se vratile iz Mecce u Saudijskoj Arabiji u Tursku 15. ožujka 2020. prevezene su iz zračne luke u kampus sa spavaonicama i zadržane u karanteni 14 dana. U studiju je uključen 2941 putnik koji se vratio s hodočašća Umrah u Tursku i zadržan u karanteni od 15. ožujka do 2. travnja 2020. godine. Bilo je 1828 (62,2%) žena. Test lančanom reakcijom polimeraze (PCR) bio je pozitivan u 295 (10%) osoba u karanteni, od kojih su 196 (66,4%) bile žene. Kod bolesnika s pozitivnim rezultatom PCR testa nije bilo značajne razlike u dobi i supostojećim bolestima između žena i muškaraca. Od 295 otkrivenih bolesnika s COVID-19 simptome je imalo njih 37 (12,5%). Nije bilo značajne razlike prema dobi, spolu i supostojećim bolestima između simptomatskih i asimptomatskih osoba. Stavljanjem u karantenu svih osoba koje dolaze iz rizičnih područja osigurava se izolacija bolesnika iz šire zajednice, čime se može spriječiti širenje bolesti.

Ključne riječi: *COVID-19; Karantena; Javno zdravstvo*