EFFECTS OF SOCIAL RESTRICTIONS ON THE OUTCOMES OF INPATIENTS WITH CORONAVIRUS DISEASE-19 (COVID-19) IN TURKEY

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Abstract

During the Coronavirus Disease-19 (COVID-19) pandemic, many precautions have been taken in every field in Turkey. Curfews started for people aged 65 and over on March 21, and for people under the age of 20 on April 3 and also on April 23, short-term curfews were only introduced for everyone on weekends, and the normalization process began on June 1. The goal of this research was to evaluate the impact of the social restrictions and normalization applied in our country on the medical outcomes of 953 patients hospitalized with COVID-19 between 15 March and 21 June 2020. Patients' age, gender, symptoms, chest tomography, intensive care and intubation status, mortality rates, laboratory parameters, and polymerase chain reaction (PCR) results were recorded. Patient results were compared in the period of 3 weeks before and 3 weeks after curfews applied to over the age of 65 and under the age of 20 years, curfews applied to everyone for weekends and the beginning of normalization. The sociodemographic characteristics in the 1st and 2nd periods were not different, but the number of female patients increased in the 3rd period. There were some changes in symptoms and laboratory values in all periods. Deaths, admission to intensive care unit, positive PCR and at least one positive PCR or tomography compatible with COVID-19 increased for period 1 ($p<0.05$). While clinical and radiological characteristics didn't vary in the 2nd period, deaths decreased in period 3 (p:0.015). Although the findings of our study don't seem to be positively affected by the restrictions applied in the early phase of the pandemic, we think that these restrictions have a positive impact on the number and severity of patients in the long term and provide time for the management and improvement of the health system.

Key words: COVID-19, social restrictions, curfew.

TÜRKİYE'DE UYGULANAN SOSYAL KISITLAMALARIN KORONAVİRÜS HASTALIĞI-19 (COVID-19) NEDENİYLE YATIRILAN HASTALARIN SONUÇLARINA ETKİSİ

Koronavirüs Hastalığı-19 (COVID-19) salgını sırasında Türkiye'de her alanda birçok önlemler alınmıştır. Yirmi bir Mart'ta 65 yaş ve üzeri kişilere, 3 Nisan'da 20 yaş altındaki kişilere sokağa çıkma yasakları başlamış olup, 23 Nisan'da herkese sadece hafta sonları olan kısa süreli sokağa çıkma yasakları gelmiştir ve 1 Haziran'dan itibaren de normalleşme süreci başlamıştır. Bu çalışmada ülkemizde uygulanan sosyal kısıtlamaların ve normalleşmenin 15 Mart ile 21 Haziran 2020 tarihleri arasında COVID-19 tanısı ile hastaneye yatırılmış 953 hastanın medikal sonuçlarına etkisinin değerlendirilmesi amaçlanmıştır. Hastaların yaşı, cinsiyeti, semptomları, akciğer tomografi bulguları, yoğun bakım ve entübasyon durumları, ölüm oranları, laboratuvar parametreleri ve polimeraz zincir reaksiyonu (PCR) sonuçları kaydedilmiştir. 65 yaş üstü ve 20 yaş altındaki kişilere gelen kısıtlamaların, kısa süreli herkese uygulanan sokağa çıkma kısıtlamalarının ve normalleşmenin başladığı zamanın 3 hafta öncesi ve 3 hafta sonrasındaki hastaların verileri karşılaştırılmıştır. Sosyodemografik özelliklerde 1. ve 2. periodda farklılık saptanmamıştır ancak 3. periyotta kadın hasta sayısında artış saptanmıştır. Dönemlerde semptomlarda ve laboratuvar değerlerinde bazı değişiklikler saptanmıştır. 1. periyotta ölümler, yoğun bakıma yatış, pozitif PCR vakalarının oranı, en az bir PCR pozitif veya bilgisayarlı tomografisi COVID-19 ile uyumlu olgu oranı artmıştır ($p<0,05$). 2. Periyotta klinik ve radyolojik özelliklerde farklılık saptanmamışken 3. periyotta ölümler azalmıştır (p:0,015). Çalışmamızın bulguları, pandeminin erken evresinde uygulanan kısıtlamalardan olumlu etkilenmiş gibi görünmese de, bu kısıtlamaların, uzun vadede hastaların sayısı ve ciddiyeti üzerinde olumlu bir etki yarattığını ve sağlık sisteminin yönetimi ve iyileştirilmesi için zaman kazandırdığını düşünmekteyiz.

Anahtar kelimeler: COVID-19, sosyal kısıtlamalar, sokağa çıkma yasakları.

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Introduction

Review of cases of pneumonia that occurred in Wuhan, China, in December 2019 revealed the presence of a novel form of coronavirus (SARS-Cov-2) that causes disease in humans (1). The outbreak of 2019 novel coronavirus disease was declared by the World Health Organization (WHO) as an emergency for public health on January 30th , 2020 and then as a pandemic on March 11th (2). Countries around the world have imposed a number of protective measures to contain the exponentially increase in spread of COVID-19 (3).

A number of measures have been taken in every field by the establishment of the Scientific Committee in Turkey on January 10th . With the determination of the first case in our country on March 11th, 2020, additional measures have been taken day by day according to the course of the pandemic. Some of the precautions taken in this process were international flight restrictions, closing the borders with border countries, quarantine applications for those coming from abroad, cessation of all national and international scientific open or closed meetings, conferences, congresses, all artistic or sports activities, implementation of online education, closure of public living spaces and places of worship, implementation of working from home for appropriate sectors, giving administrative permission to employees with chronic disease, connecting the intercity transportation to the governorships permits (4-6).

Quarantines were implemented according to the increasing number of cases in many districts, towns, villages and neighbourhoods in our country. One of the most effective of the precaution taken was to apply curfews to certain age groups in order to prevent disease spread and to protect the risky population from the disease. On March 21th, 2020, people aged 65 years and older with chronic diseases were forbidden from leaving their homes unless required. On April 3rd, the same restrictions started to be applied under the age of 20. As of 23 April, due to the increasing number of cases in our country, short-term curfews have been imposed on weekends in 31 provinces where cases have been intensified (7). As a result of all these restrictions and health policies implemented around the country, there has been a serious decline in the number of cases, the number of intubated cases and the death rates. The pandemic process brought heavy burdens to the national economy, social psychology and social life. Following the decreasing number of cases, the normalization process started as a state policy on June 1st, and there was a significant change in the number and profile of patients diagnosed with COVID-19 (7).

On 16 March, our hospital began to function as a Pandemic Hospital, only patients diagnosed with COVID-19 were admitted in all departments and no other patients were accepted, except for emergency cases requiring intervention in the emergency department. These restrictions influenced the numbers, profiles, symptoms, disease weight levels and contagiousness levels of patients with COVID-19. Thanks to the restrictions, the goal is to reduce the situation of being carriers with the isolation of young people who are mostly asymptomatic course, and to decrease

the admissions of severe patients with the isolation of risky groups.

It was aimed to evaluate the effects of the social restrictions applied due to the COVID-19 pandemic in our country on the medical outcomes of patients hospitalized with COVID-19 in this study.

Material and Method

A single-center retrospective cross-sectional study was conducted with 953 patients hospitalized due to COVID-19 in our hospital between March 15th, 2020 and June 21st, 2020. The ethics committee approval was obtained from the Keçiören Training and Research Hospital ethics committee (Approval date and number: 24.06.2020/ 2012-KAEK -15/2136). It was intended to compare the data of patients hospitalized with the diagnosis of COVID-19 according to the 3 different periods. The first period was defined as 3 weeks before and 3 weeks after of April 3rd, (15 March-24 April), when the curfews imposed on individuals aged 65 years and over and under 20 years of age began. The second period was defined as 3 weeks before and 3 weeks after of April 23rd (2 April-21 May), when the short-term curfew restrictions were applied to all people only on weekends. And finally, the third period was defined as 3 weeks before and 3 weeks after the beginning of normalization on June 1st (11 May-21 June). Patients with missing documentation and diagnosed with other diagnoses after hospitalization were excluded. Patients' age, gender, symptoms, chest tomography findings, intensive care and intubation status during hospitalization, mortality due to COVID-19, laboratory parameters (albumin, C-reactive protein (CRP), fibrinogen, hematocrit, hemoglobin, international normalized ratio (INR), partial thromboplastin time (PTT), platelet, D dimer, lymphocyte, white blood cell, procalsitonin, sedimentation, ferritin) and PCR results were recorded from patient files and hospital information system.

The data obtained were evaluated using IBM-SPSS (Version 22.0) statistical package program in computer environment. Number, percentage, median and quartile values of 25-75 (IQR25-75) were used for descriptive statistics. Initially, the normality of the total scores was tested using the Kolmogorov-Smirnov normality test and graphs. X^2 and Mann Whitney U tests were used because the data were not suitable for normal distribution. For statistical significance, $p \leq 0.05$ was accepted.

Results

The research groups consisted of 643 (34.00%) patients for period 1, 617 (32.63%) for period 2 and 631 (33.37%) for period 3. There was no difference in age or gender between the groups in the 1st and 2nd periods. After normalization in the 3rd period, the number of female patients increased ($p<0.05$). The sociodemographic characteristics before and after of the periods for research group are given in Table 1.

Table 1: The sociodemographic characteristics of the research group before and after the periods.

Category		Period 1			Period 2			Period 3		
		Before	After		Before	After		Before	After	
		n(%)	n(%)	p	n(%)	n(%)	p	n(%)	n(%)	p
Gender	Female	146 (42.9)	128 (42.2)	0.858	130 (42.5)	133 (42.8)	0.944	136 (44.3)	171 (52.8)	**0.033**
	Male	194 (57.1)	175 (57.8)		176 (57.5)	178 (57.2)		171 (55.7)	153 (47.2)	
Age	<65	240 (70.6)	232 (76.6)	0.087	232 (75.8)	249 (80.1)	0.203	254 (82.7)	256 (79.0)	0.235
	>=65	100 (29.4)	71 (23.4)		74 (24.2)	62 (19.9)		53 (17.3)	68 (21.0)	

When the COVID 19 symptoms of individuals were examined, it was found that fever, weakness-fatigue, pain of muscle and joint, dizziness, drowsiness and lack of appetite increased with restrictions in period 1. It was observed that complaints of sore throat, sputum, headache, nausea-vomiting and diarrhea increased in period 2. Fever, cough, weakness-fatigue, pain of muscle-joint, headache and diarrhea symptoms were observed to rise in period 3 compared to before the restrictions. The distribution of COVID-19 symptoms before and after of the periods for research group is presented in Table 2.

Table 2: Distribution of COVID-19 symptoms before and after the periods for research group.

Category		Period 1					Period 2					Period 3				
		Before		After			Before		After			Before		After		
		n	%	n	%	p	n	%	n	%	p	n	%	n	%	p
Loss of taste	(-)	314	94.3	297	95.5	0.671	282	94.8	281	90.5	0.089	244	92.8	196	90.3	0.333
	(+)	19	5.7	14	4.5		15	5.2	29	9.5		19	7.2	21	9.7	
Loss of smell	(-)	319	95.7	295	95.0	0.822	283	95.3	285	91.7	0.123	247	93.9	198	91.2	0.262
	(+)	14	4.3	15	5.0		14	4.7	26	8.3		16	6.1	19	8.8	
Fever	(-)	224	67.1	162	52.0	**0.028**	160	53.9	174	56.1	0.644	165	62.7	103	47.5	**0.001**
	(+)	110	32.9	149	48.0		137	46.1	136	43.9		98	37.3	114	52.5	
Cough	(-)	176	52.9	129	41.6	0.102	118	39.9	151	48.5	0.068	140	53.2	93	42.9	**0.024**
	(+)	157	47.1	182	58.4		178	60.1	160	51.5		123	46.8	124	57.1	
Dyspnea	(-)	252	75.7	206	66.3	0.145	195	65.8	220	70.8	0.252	180	68.4	143	65.9	0.555
	(+)	81	24.3	105	33.7		102	34.2	91	29.2		83	31.6	74	34.1	
Weakness-Fatigue	(-)	248	74.3	178	57.4	**0.012**	174	58.5	155	50.0	0.070	151	57.4	86	39.6	**<0.001**
	(+)	86	25.7	132	42.6		123	41.5	155	50.0		112	42.6	131	60.4	
Throat ache	(-)	281	84.3	246	79.2	0.355	235	79.3	201	64.8	**0.001**	191	72.6	147	67.7	0.244
	(+)	52	15.7	65	20.8		62	20.7	109	35.2		72	27.4	70	32.3	

Sputum	(-)	314	94.3	288	92.6	0.628	274	92.2	264	84.8	**0.017**	231	87.8	188	86.6	0.695
	(+)	19	5.7	23	7.4		23	7.8	47	15.2		32	12.2	29	13.4	
Pain of muscle-joint	(-)	286	85.7	222	71.3	**0.016**	209	70.5	205	65.9	0.303	179	68.1	127	58.5	**0.031**
	(+)	48	14.3	89	28.7		88	29.5	106	34.1		84	31.9	90	41.5	
Shiver	(-)	252	75.7	237	76.2	0.929	225	75.6	246	79.2	0.372	221	84.0	182	83.9	0.962
	(+)	81	24.3	74	23.8		72	24.4	65	20.8		42	16.0	35	16.1	
Dizziness	(-)	333	100.0	285	91.6	**0.012**	274	92.2	280	90.2	0.443	246	93.5	195	89.9	0.143
	(+)	0	0.0	26	8.4		23	7.8	31	9.8		17	6.5	22	10.1	
Headache	(-)	295	88.6	257	82.7	0.244	248	83.4	216	69.7	**0.001**	200	76.0	139	64.1	**0.004**
	(+)	38	11.4	54	17.3		49	16.6	94	30.3		63	24.0	78	35.9	
Lack of appetite	(-)	324	97.1	272	87.6	**0.022**	263	88.6	255	82.2	0.059	222	84.4	185	85.3	0.798
	(+)	10	2.9	38	12.4		34	11.4	55	17.8		41	15.6	32	14.7	
Nausea-vomiting	(-)	310	92.9	275	88.6	0.314	266	89.6	248	79.9	**0.005**	224	85.2	174	80.2	0.149
	(+)	24	7.1	35	11.4		31	10.4	62	20.1		39	14.8	43	19.8	
Diarrhea	(-)	310	92.9	294	94.6	0.603	282	94.8	275	88.6	**0.021**	243	92.4	182	83.9	**0.004**
	(+)	24	7.1	17	5.4		15	5.2	35	11.4		20	7.6	35	16.1	
Nasal congession	(-)	329	98.6	302	97.0	0.483	286	96.4	296	95.5	0.627	253	96.2	206	94.9	0.499
	(+)	5	1.4	9	3.0		11	3.6	14	4.5		10	3.8	11	5.1	

* Analysis was made on the records in the patient files.

When the laboratory values of the research group were analyzed, it was found that albumin, hematocrit (HCT), hemoglobin (HGB), lymphocyte values increased with the first restrictions, while international normalized ratio (INR), platelet (PLT), partial thromboplastin time (PTT), white blood cell (WBC) values decreased for period 1. It was observed that the values of fibrinogen, INR, PTT decreased and the values of HCT and PLT increased with period 2 restrictions. It was determined that fibrinogen and sedimentation values increased, while D-dimer decreased in period 3, with the change in the restrictions. The distribution of the laboratory values before and after of the periods for research group is given in Table 3.

Table 3: The distribution of the laboratory values before and after the periods for research group.

Parameter	Period 1			Period 2			Period 3		
	Before	After		Before	After		Before	After	
	Median (IQR25-75)	Median (IQR25-75)	p	Median (IQR25-75)	Median (IQR25-75)	p	Median (IQR25-75)	Median (IQR25-75)	p
Albumin	38.80 (33.00-42.10)	40.90 (37.50-43.60)	**<0.001**	40.85 (37.50-43.75)	40.65 (37.60-42.70)	0.433	40.60 (37.75-43.10)	40.00 (36.90-42.40)	0.054
C-Reactive Protein	21.99 (5.26- 84.81)	12.93 (3.6143.99)	**0.015**	12.69 (3.63-43.90)	9.98 (2.84-44.82)	0.319	6.42 (1.74-33.78)	8.78 (2.44-27.06)	0.084
Fibrinogen	3549 (2920-4634)	3692 (2920 - 4821)	0.552	3692 (2920-4821)	3353 (2546-4389)	**0.006**	3142 (2412 -4152)	3353 (2741-4289)	**0.027**
HTC	38.30 (33.00-42.40)	40.50 (36.70-43.90)	**<0.001**	40.40 (36.50-43.70)	41.50 (38.40-44.90)	**0.008**	41.30 (38.20-44.80)	40.80 (37.60-44.00)	0.183
HB	12.80 (11.00-14.40)	13.70 (12.10-14.90)	**<0.001**	13.60 (12.10-14.90)	13.60 (12.30-14.80)	0.975	13.60 (12.40-14.80)	13.40 (12.30-14.70)	0.340
INR	1.07 (1.01-1.17)	1.05 (0.99-1.13)	**0.008**	1.05 (0.99-1.12)	1.02 (0.97-1.08)	**0.002**	1.02 (0.96-1.07)	1.00 (0.95-1.06)	0.222
PLT	227.00 (179.00-292.00)	204.00 (156.00-249.00)	**<0.001**	204.50 (157.00-250.00)	223.00 (184.00-265.00)	**0.001**	219.50 (183.00 -266.00)	225.00 177.00-267.00	0.837
PTT	11.60 (11.10-12.60)	11.50 (10.90-12.30)	**0.016**	11.50 (10.90-12.20)	11.20 (10.70-11.80)	**0.002**	11.20 (10.60-11.70)	11.00 (10.50-11.60)	0.292
D-dimer	0.49 (0.35-1.00)	0.55 (0.35-0.99)	0.587	0.55 (0.35-1.00)	0.51 (0.33-0.97)	0.367	0.51 (0.31-0.98)	0.40 (0.27-0.76)	**0.008**
Lymphocyte	19.90 (12.50-30.80)	28.10 (19.80-36.00)	**<0.001**	27.40 (19.05-35.10)	28.30 (20.00-36.70)	0.374	28.40 22.65-38.20)	31.50 (23.00-39.50)	0.108
WBC	8.60 (6.30-12.23	6.38 (5.02-8.21)	**<0.001**	6.38 (5.06-8.32)	6.36 (5.14-8.35)	0.776	5.81 (4.66-7.58)	5.43 (4.37-7.55)	0.066
Procalsitonin	0.06 (0.03-0.45)	0.06 (0.01-0.24)	0.775	0.06 (0.01-0.20)	0.07 (0.01-0.18)	0.842	0.03 (0.01-0.11)	0.04 (0.01-0.07)	0.912
Sedimentation	34.00 (18.00-58.50)	29.00 (17.00-47.00)	0.032	29.00 (18.00-46.00)	26.00 (13.00-48.00)	0.288	19.50 (11.00-42.00)	27.50 (16.00-44.50)	**0.002**
Ferritin	105.10 (43.40-236.40)	110.50 (43.70- 214.40)	0.895	109.10 40.90213.20)	106.15 35.30-220.80	0.642	100.30 (31.80-204.20)	100.60 (40.50-278.70)	0.152

hematocrit (HCT), hemoglobin (HGB), Internationel normalized ratio (INR), platelet (PLT), Partia thromboplastin time (PTT), white blood cell (WBC)

When the clinical and radiological characteristics of the research group were examined before and after the dates specified in the periods; it was determined that deaths, admission to intensive care unit, the number of people with computed tomography (CT) findings consistent with COVID-19 pneumonia, the rate of at least one PCR positive or CT findings compatible with COVID-19 pneumonia and the rate of positive PCR cases increased ($p<0.05$ for each) for period 1. No difference was found in all variables listed in table 4 for period 2 ($p> 0.05$ for each). It was found that only the death rate decreased in period 3 (p: 0.015). The proportions of intubation did not change in all periods. The clinical and radiological characteristics before and after of the periods for research group are given table 4.

Table 4: The clinical and radiological characteristics before and after the periods for research group.

Category		Period 1			Period 2			Period 3		
		Before	After		Before	After		Before	After	
		n(%)	n(%)	p	n(%)	n(%)	p	n(%)	n(%)	p
Death	**(-)**	336 (98.8)	292 (96.4)	**0.040**	294 (96.1)	306 (98.4)	0.079	299 (97.4)	323 (99.7)	**0.015**
	(+)	4 (1.2)	11 (3.6)		12 (3.9)	5 (1.6)		8 (2.6)	1 (0.3)	
ICU	**(-)**	337 (99.1)	293 (96.7)	**0.030**	296 (96.7)	305 (98.1)	0.296	298 (97.1)	320 (98.8)	0.134
	(+)	3 (0.9)	10 (3.3)		10 (3.3)	6 (1.9)		9 (2.9)	4 (1.2)	
Entubation	**(-)**	338 (99.4)	298 (98.3)	0.195	301 (98.4)	308 (99.0)	0.462	301 (98.0)	320 (98.8)	0.469
	(+)	2 (0.6)	5 (1.7)		5 (1.6)	3 (1.0)		6 (2.0)	4 (1.2)	
Torax CT	**Bacterial infection**	1 (0.3)	9 (3.0)	**<0.001**	9 (2.9)	9 (2.9)	0.913	4 (1.3)	3 (0.9)	0.235
	No finding	278 (81.8)	107 (35.3)		109 (35.6)	122 (39.2)		158 (51.5)	147 (45.4)	
	Compatible with COVID-19	20 (5.9)	71 (23.4)		71 (23.2)	68 (21.9)		64 (20.8)	93 (28.7)	
	Mix infection	5 (1.5)	10 (3.3)		10 (3.3)	11 (3.5)		5 (1.6)	4 (1.2)	
	Viral Pnemonia	36 (10.6)	106 (35.0)		107 (35.0)	101 (32.5)		76 (24.8)	77 (23.8)	
At least one PCR (+) or CT compatible with COVID-19	**(-)**	321 (94.4)	143 (47.2)	**<0.001**	155 (50.7)	136 (43.7)	0.085	108 (35.2)	108 (33.3)	0.625
	(+)	19 (5.6)	160 (52.8)		151 (49.3)	175 (56.3)		199 (64.8)	216 (66.7)	
PCR positivity	**(-)**	337 (99.1)	209 (69.0)	**<0.001**	217 (70.9)	205 (65.9)	0.182	148 (48.2)	155 (47.8)	0.926
	(+)	3 (0.9)	94 (31.0)		89 (29.1)	106 (34.1)		159 (51.8)	169 (52.2)	

ICU:Intensive Care Unit, CT: Computerized Tomography, PCR: Polymerase Chain Reaction

Discussion

COVID 19, started in Wuhan city of China, caused by the SARS-Cov-2 virus, requiring close contact and spreading through droplets, has spread easily all over the world, thanks to the increased transportation between the regions (8,9). Several countries, including Turkey, have carried out unprecedented physical distancing strategies, in order to limit and delay the spread of COVID-19 (10-14). The number of patients admitted to hospitals has decreased due to these restrictions (15). In our study, the effect of restrictions on the outcomes of hospitalized COVID-19 patients was evaluated. COVID-19 has a very wide clinical course and fever, cough, exhaustion, mild dyspnea, sore throat, headache, conjunctivitis and gastrointestinal problems are the main signs of it (16). The variety of symptoms was consistent with the literature and there was an increase in the symptoms of the patients at presentation with the restrictions in our study. Increased symptoms after the restrictions may be related to a better understanding of COVID-19 symptoms due to the increased awareness of the public and their admission to hospitals as possible cases.

There were some differences in laboratory results in all periods. After the restriction of period 1, it was observed that the lymphocyte count increased and the CRP levels were lower at the time of presentation. At that time, the prevalence of COVID 19 in our country had just begun to increase, there were hospital admissions in the early period and asymptomatic patients were also hospitalized in order to ensure social isolation due to the unknown course of the disease. This situation provided the chance for early treatment and brought the disease under control in the early period. The explanation why laboratory values didn't change in the 3rd period may be related to the fact that our hospital was full with severe patients. Furthermore, no change was found in poor prognostic factors in all periods in our study, and even lower D dimer was found. This supports good awareness and early hospital admissions.

The clinical and radiological characteristics were examined before and after the periods in this study and it was determined that deaths, admission to intensive care unit, CT findings, the rate of at least one PCR positive or CT compatible case and the rate of PCR positive cases increased in period 1. While the spread of the pandemic in our country started to be controlled with restrictions in the first period, we think that the rise in the death rates and the number of cases confirmed by PCR and CT during this period is related to the fact that COVID-19 began to be better recognizable and its spread continued rapidly. In addition, although our mortality rates increased in the first period, early restrictions provided our mortality rate to be lower than in countries in nearby regions (12). Thus, our hospitals occupancy rates did not exceed their capacity limit and adequate healthcare could be provided to all the patients.

No difference was found in period 2 in terms of death rates, intensive care admission, PCR positivity or the rate of CT findings consistent with COVID-19 pneumonia. It was determined that the death rates decreased in period 3. In period 3, implementation of early treatment with the improvement in phylation trials and adding low molecular weight heparin (LMWH) in prophylactic or treatment dosage to the treatment, using

plasma and anti-interleukin therapy and increasing the noninvasive respiratory support may have been effective in decreasing the mortality rates.

PCR positivity and CT compliance with COVID-19 increased compared to the first 2 periods since more severe patients were started to be taken care of in period 3. During the second period, there was no change in the number of cases and critical patients, as well as the rate of intubation and the number of intensive care admissions in our study. Age, gender and intubation rates were similar in all periods. As our hospital functions as an adult pandemic hospital, we can conclude that, according to our results, COVID-19 affects both men and women of all ages. In the literature, COVID-19 affects both genders and different age ranges but at different rates (17,18).

In addition to all precautions taken and treatment options, compliance of the individuals to the measures is also extremely important.

In the survey study conducted by Alıcılar et al. in Turkey, the rate of leaving the house except for mandatory needs was determined as 10%, and these rates were found to be around 5% for those under 20 and over 65 years of age (19). In China, this rate was found to be less than 5% (20). “Stay at home” messages, masks, social distance and hygiene suggestions also had an impact on the society in this period, and studies showed that attention was paid to personal protective measures (21,22).

National differences have also been observed in the implementation of the measures taken to combat COVID-19 by governments. While in some countries coercive measures were limited to education and corporate life, in countries where the effects of the pandemic are particularly severe, limitations have spread to most areas of life. During the COVID 19 pandemic, there were no large-scale protests in our country against the measures taken to prevent and control the spread of the disease, and there was no obvious civil disobedience (23). High public compliance against restrictions is very important in achieving success in epidemic control.

The most important step in combating infectious diseases that cause pandemics is to break the transmission chain, and this may be achieved by personal hygiene, usage of masks, physical distance, isolation of sick individuals, vaccination and effective treatment (11). From the beginning, verbal and written warnings about masks, distance and personal hygiene have had a positive effect on Turkish population and this has been reflected in the patient outcomes.

Conclusions

The whole world is struggling with COVID-19 pandemic, regardless of language, religion, race, gender, and ethnicity. In order to reduce and control the transmission rate of the virus, individual, social and environmental measures have been implemented in our country. Although the findings of our study do not seem to be positively affected by the restrictions applied in the early phases of the pandemic, we conclude that these restrictions have had a positive impact on the long-term number and seriousness of patients and have saved time for the management and improvement of the health system.

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