

Impact of COVID-19 pandemic on hand injuries

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ABSTRACT

BACKGROUND: The aim of the study was to evaluate etiologies of hand injuries in emergency department (ED), to compare the etiologies of hand injuries at the time of this study with the previous year, to assess whether novel coronavirus-2019 (COVID-19) pandemic affected the treatment decisions, and to investigate the COVID-19 infection rate within the first 14 days after admission.

METHODS: A total of 229 patients admitted to ED with hand injury between March 15 and April 30, 2020, were included in the study. The control group consisted of 439 ED admissions with hand injury in the previous year (March 15–April 30, 2019). Data including age, sex, cause of trauma, treatment, and COVID-19 infection status within 14 days after ED admission were compared between groups.

RESULTS: The mean age was 32.30±15.63 years in the study group and 30.85±18.54 years in the control group. The number of patients consulted to the surgery department decreased by 52.6% and the number of patients admitted to ED with hand injuries decreased by 47.6% during the pandemic, compared to the previous year ($p=0.0001$). The incidence of home accidents increased and the glass cuts and penetrating/perforating injuries were the most common causes during the pandemic most of which occurred at home.

CONCLUSION: The COVID-19 pandemic-mandated social restrictions led to a significant decrease in the number of ED admissions with hand injuries and the type of injuries. The incidence of home accidents increased with more time spent indoors. This study may be a useful guide for ED admissions of hand injury cases and management planning in the current and future pandemics.

Keywords: COVID-19; emergency department; hand injury; hand surgery; pandemic.

INTRODUCTION

The novel coronavirus-2019 (COVID-19) was first identified in Wuhan, Hubei Province of China in December 2019, rapidly spreading to the whole world, and the World Health Organization (WHO) declared COVID-19 pandemic on March 11, 2020.^[1] The first case of COVID-19 was identified in Turkey on the same day, which caused an unprecedented disruption in work life, social life, academic life, and health-care systems with strict restrictions across the country including school closure and implementation of online learning, social distancing, encouraging remote and/or flexible working, limiting social gatherings, postponing meetings, limiting the number of passengers in public transport vehicles, postponing elective surgeries, and weekend lockdowns.^[2]

Hand injuries account for 25–30% of all emergency department (ED) admissions per year.^[3,4] Hand injuries pose a significant direct and indirect health-care costs.^[5] A number of studies have reported a change in the pattern of acute hand trauma injuries with an increase in do-it-yourself injuries.^[6,7] Hand injuries require long treatment and rehabilitation period and, in some cases, may lead to permanent functional loss, thereby, increasing the time to return to work with a substantial economic and trauma impact with impaired quality of life.^[8,9] Although the etiological factors of hand injuries are comparable worldwide, home accidents, leisure activities, sports, falls, and occupational traumas are the leading cause of hand injuries in developed countries,^[4,10] while road accidents, home accidents, and accidents in the workplace are the main causes of these injuries in developing countries.^[11,12]

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In Turkey, the main causes of acute hand injuries include occupational accidents, road accidents, and home accidents.^[13,14]

Several studies have shown that stress, fatigue, anxiety, depression, and alcohol consumption and suicidal behaviors and attempts tend to increase during the COVID-19 outbreak worldwide.^[15] In parallel with this increase, the rate of hand injuries is expected to increase. The practice and working scheme of ED are evolved to serve an uninterrupted health-care service during natural disasters, epidemics, and pandemics. However, the economic use of health-care resources and to minimize the burden on frontline health-care workers (HCWs) is of paramount importance. Given the possibility of future curfews and lockdowns related to COVID-19 and future pandemics; in the present study, we aimed to evaluate etiologies of hand injuries in the ED, to compare the etiologies of hand injuries at the time of this study with the previous year, to assess whether COVID-19 pandemic affected the treatment decisions, and to investigate the COVID-19 infection rate within the first 14 days after admission.

MATERIALS AND METHODS

Study Design and Study Population

This single-center and retrospective study was conducted at between March 15, 2020, and April 30, 2020. A written informed consent was obtained from each participant. The study protocol was approved by the Marmara University Faculty of Medicine, Ethics Committee with the Approval No. 09.2020.544. The study was conducted in accordance with the principles of the Declaration of Helsinki.

A total of 1799 surgical consultations were requested by the ED throughout the study period. Of these patients, 229 (12.7%) with hand injury were included in the study. The control group consisted of 439 (11.7%) of 3,793 consultations for hand injury in the previous year (March 15, 2019, and April 30, 2019). Data including age, sex, cause of trauma, treatment, and the COVID-19 infection status within 14 days after ED admission were retrieved from the hospital records. Demographic and clinical characteristics of the patient and control groups were compared. Since different pandemic restrictions were implemented according to age groups in our country, we included broad age groups such as 0–20, 21–64, and ≥65 years.

Study Variables

The causes of hand injury were classified as traffic accidents, penetrating/perforating injuries with foreign bodies, glass cuts, squeezing the hand, falls, violence/assault, crush injuries due to heavy object falling on the hand, injuries related to the use of machinery or equipment, gunshot injuries, or human/animal bites. The settings where the injury occurred including home, workplace, traffic, public places, and school were documented. Injuries of the soft tissue, bone, tooth, and mucosa were noted. Soft tissue, tendon, arterial, nerve, and bone injuries after the hand trauma and amputations were recorded. Treatments applied, conservative treatments and recommendations, interventions in the ED setting, operation in the operating room, referral of the patient to an external center, and refusal of the treatment by the patient were assessed. Those having a complication after surgery and those having infections were excluded from the study.

All patients admitted to the ED were questioned regarding COVID-19 infection using a screening questionnaire (Table 1). Physical examination findings including body temperature, and finger oxygen saturation, and complete blood count and biochemistry test results were documented. The patients suspected of COVID-19 underwent reverse transcriptase polymerase chain reaction (RT-PCR) analysis to confirm the diagnosis. The patients requiring hospitalization were taken to the single-patient wards and caregivers and/or companions were not allowed. The patient rooms were visited by the HCWs, when necessary, wearing personal protective equipment (PPE) such as face mask, gloves, goggles, glasses, face shields, and gowns. All caregivers and/or companions were asked to wear a mask in the patient room. All patients admitted to ED with a hand injury were followed for COVID-19 infection symptoms for 14 days.

Statistical Analysis

Statistical analysis was performed using the SPSS version for Windows 15.0 software (SPSS Inc., Chicago, IL, USA). Continuous variables were expressed in mean±standard deviation (SD), median (min–max), while categorical variables were expressed in number and percentage. The unpaired t-test was used to compare continuous random variables between the time periods, while the Chi-square test was used to compare discrete random variables. A $p < 0.05$ was considered statistically significant.

Table 1. COVID-19 infection screening questionnaire

Question	Yes	No
Have you had a new onset of fever, cough, or diarrhea within the past two weeks?		
Have you travelled overseas or been in contact with a traveller within the past two weeks?		
Have you been exposed to someone known to have had COVID-19 infection within the past two weeks?		

COVID-19: Novel coronavirus-2019.

RESULTS

Of a total of 229 patients, 178 were males and 51 were females with a mean age of 32.30 ± 15.63 years (range, 6 months to 78 years). Of the control group, 330 were males and 107 were females with a mean age of 30.85 ± 18.54 years (range, 5 months to 94 years). There was no statistically significant difference in the sex and age of the patient and control groups between the time periods ($p=0.588$ and $p=0.289$, respectively). The number of patients consulted to the surgery department decreased by 52.6% and the number of patients admitted to ED with hand injuries decreased by 47.6% during the pandemic, compared to the previous year ($p=0.0001$) (Table 2).

The most common injury sites were soft tissues in 85.2% and tendons in 22.3% of the study group and the bones in 57% and soft tissues in 53.5% of the control group during the pandemic. The rate of soft tissue and tendon injuries increased, while the bone fractures decreased during the pandemic, compared to the previous year. However, the rate of nerve and arterial injuries and amputations did not significantly differ between the time periods. The majority of hand injuries (72%) were treated in the ED setting in both time periods. The rate of patients treated in the ED setting slightly decreased, while the rate of patients operated in the operating room slightly increased during the pandemic (Table 2).

The most common cause of hand injuries were penetrating/perforating injuries in 38% of the patients during the pandemic, while falls were the most frequent cause of hand injuries in 36.2% of the patients in the previous year. During the pandemic, the rate of hand traumas caused by glass cuts and penetrating/perforating injuries increased from 28.9 to 57.7%. However, the rate of injuries due to falls and violence/assaults significantly decreased from 42.8% to 14.8%, compared to the previous year. Etiological factors of hand injuries according to age and time periods are shown in Table 3.

According to the setting of hand injuries, the majority of injuries occurred at home in 48% of the patients in both time periods. The rate of hand injuries caused by home accidents increased from 42.6% to 58.5% during the pandemic, compared to the previous year. However, the hand injuries occurring in the public places decreased from 24% to 7% during the pandemic, compared to the previous year. The injury sites according to the age groups are shown in Table 4. The rate of hand injuries occurring in the road remained unchanged. The distribution of injury sites and injury settings is shown in Table 5.

One male and one female patient suspected of COVID-19 underwent RT-PCR analysis to confirm the diagnosis and the test results were negative. Both patients were operated in the operating room and considered COVID-19-positive during surgery. After the operation, the patients were followed for COVID-19 symptoms for 14 days; however, none

of the patients showed infection signs and/or symptoms. During 14-day follow-up, seven patients were suspected of COVID-19 infection and underwent RT-PCR. Two of these patients tested positive for COVID-19. Both patients were those who were treated in the ED setting with minor surgical interventions (Table 6).

DISCUSSION

The COVID-19 has, to a varying extent, affected every aspect of daily living all over the world. One of the most immediate and visible impact of the pandemic is on the health-care systems. During the first peak of the pandemic between March and April 2019, strict restrictions were implemented in Turkey to ensure staying indoors more often. Whether the changes in daily living activities of the individuals, that is, time spent mostly at home and decreased rush hour traffic, affect the injury rates have become a matter of interest to researchers. In the present study, we also evaluated etiologies of hand injuries in the ED, compared the etiologies of hand injuries at the time of this study with the previous year, and assessed whether COVID-19 outbreak affected the treatment decisions. Our study results showed that the number of patients admitted to ED with hand injuries decreased by 47.6% during the pandemic, compared to the previous year. The previous studies also reported that the number of ED admissions for hand injuries decreased by 32–64.9% during the pandemic.^[12–18] Of all surgery consultations, the rate of hand injuries was 12% in our study, compared to the previous studies.^[3,4] However, our study included all surgery consultations, rather than trauma consultations only. Consistent with our findings, male patients were reported to be at a higher risk for hand injuries during the pandemic with a mean age of 25–35 years.^[12,19] Although the mean age of the patients was comparable during the pandemic and in the previous year in our study, some authors reported an increased age,^[17,18] while some others reported a decline in the mean age of patients with hand injuries.^[20]

In our study, the glass cuts and penetrating/perforating injuries were the most common causes during the pandemic. Most of these types of injuries occurred at home. This can be attributed to the higher time spent at home due to COVID-19 restrictions, increased need and attention to cooking and baking, and increased time spent for leisure activities at home (i.e., gardening or home renovation and repair). The dark side of home isolation during curfews and lockdowns may indicate domestic violence, suicidal behaviors and attempts, and injuries from punching glass. Similarly, the previous studies have shown that home isolation may increase the suicidal attempts and completed suicides due to stress, anxiety, and the fear of loneliness or fear of becoming infected.^[15] To minimize the effect of COVID-19 on mental health, remote national and local counseling platforms are available in our country. However, no public service announcement or campaign has been released for home accidents, yet.

Table 2. Demographic and clinical characteristics and treatments applied

		2019	2020	Total	
Age (years), n (%)	0–20	159 (36.2)	48 (21.0)	207	
	21–64	261 (59.7)	176 (76.9)	437	
	≥65	18 (4.1)	5 (2.2)	23	
	Total	437 (100)	229 (100)	666	
	P-value	0.0001*			
Sex, n (%)	Female	107 (24.5)	51 (22.3)	158	
	Male	330 (75.5)	178 (77.7)	508	
	Total	437 (100)	229 (100)		
	P-value	0.588			
Etiological factor, n (%)	Fall	158 (36.2)	31 (13.5)	189 (28.4)	
	Squeezing	69 (15.8)	38 (16.6)	107 (16.1)	
	Penetrating/perforating	92 (21.1)	87 (38.0)	179 (26.9)	
	Glass cut	34 (7.8)	45 (19.7)	79 (11.9)	
	Assault	29 (6.6)	3 (1.3)	32 (4.8)	
	Heavy object falling on the hand	27 (6.2)	5 (2.2)	32 (4.8)	
	Related to the use of machinery or equipment	24 (5.5)	15 (6.6)	39 (5.9)	
	Human/animal bites	2 (0.5)	1 (0.4)	3 (0.5)	
	Traffic accident	1 (0.2)	1 (0.4)	2 (0.3)	
	Gunshot	1 (0.2)	3 (1.3)	4 (0.6)	
	Total	437 (100)	229	666	
		P-value	0.0001*		
	Injury setting	Home	186	134	320
		%	42.6	58.5	48
Workplace		111	71	182	
%		25.4	31.0	31	
Public places		105	16	121	
%		24.0	7.0	18.2	
Road		15	8	23	
%		3.4	3.5	3.5	
School		20	0	20	
%		4.6	0	3.0	
Total		437	229	666	
		P-value	0.0001*		
Injury site, n (%)		Soft tissue	234 (53.5)	195 (85.2)	429 (p=0.0001*)
	Artery	28 (6.4)	19 (8.3)	47 (p=0.722)	
	Nerve	31 (7.1)	25 (10.9)	56 (p=0.123)	
	Tendon	56 (12.8)	51 (22.3)	107 (p=0.002*)	
	Bone	249 (57.0)	84 (36.7)	333 (p=0.0001*)	
	Amputation	25 (5.7)	21 (9.2)	46 (p=0.132)	
	Total	437	229		
Treatment, n (%)	Conservative treatment and recommendations	59 (13.5)	28 (12.2)	87	
	Intervention in ED setting	319 (73)	161 (70.3)	480	
	Hospitalization and operation	44 (10.1)	32 (14.0)	71	
	Referral	4 (0.9)	1 (0.4)	5	
	Treatment refusal	11 (2.5)	7 (3.1)	18	
	Total	437	229	666	
		P-value	0.006*		

Data are given in number and percentage, unless otherwise stated. *P<0.05 indicates statistical significance. ED: Emergency department.

Table 3. Etiological factors of hand injuries according to age groups

Etiological factor		Age group (years)								p-value
		0–20		21–64		≥65		Total		
		n	%	n	%	n	%	n	%	
Traffic accident	2019	0	0	1	0.4	0	0	1	0.2	
	2020	0	0	1	0.6	0	0	1	0.4	
Penetrating / perforating	2019	15	9.5	74	28.4*	3	16.7	92	21.1	0.0001*
	2020	13	27.1	72	40.9*	2	40.0	87	38	
Glass cut	2019	12	7.6	22	8.4*	0	0	34	7.8	0.0001*
	2020	17	35.4	28	15.9*	0	0	45	19.7	
Related to the use of machinery or equipment	2019	2	1.3	22	8.4*	0	0	24	5.5	0.0001*
	2020	1	2.1	14	8.0*	0	0	15	6.6	
Squeezing	2019	28	17.7	39	14.9*	2	11.1	69	15.8	0.0001*
	2020	7	14.6	30	17*	1	20	38	16.6	
Fall	2019	78	49.4*	69	26.4	11	61.1	158	36.2	0.0001*
	2020	7	14.6*	22	12.5	2	40	31	13.5	
Assault	2019	11	7.0	18	6.9*	0	0	29	6.6	0.0001*
	2020	1	2.1	2	1.1*	0	0	3	1.3	
Heavy object falling on the hand	2019	11	7.0	15	5.7*	1	5.6	27	6.2	0.0001*
	2020	2	4.2	3	1.7*	0		5	2.2	
Human/animal bites	2019	1	0.6*	0		1	5.6	2	0.5	0.0001*
	2020	0*	0	1	0.6	0	0	1	0.4	
Gunshot	2019	0	0	1	0.4	0	0	1	0.2	
	2020	0	0	3	1.7	0	0	3	1.3	

Data are given in number and percentage, unless otherwise stated. *P<0.05 indicates statistical significance.

More intriguingly, the rate of ED admissions for hand injuries occurring at home increased during the pandemic, although the number of patient admissions decreased compared to the previous year. However, we anticipated an increase in the number of ED admissions due to home accidents, as many spent time at home during the pandemic. In our study, the rate of penetrating/perforating injuries and glass cuts at home setting increased, while the rate of hand injuries due to falls decreased. Unsurprisingly, having a fear of being infected with COVID-19 in the hospital setting and avoiding to visit hospitals during the pandemic may have reduced the number of admissions. Further studies evaluating late admissions for hand injuries during the pandemic would provide more accurate information on this issue, which is beyond the scope of this study.

The majority of occupational accidents occur due to the violation of occupational safety requirements and negligence.^[21] The previous studies have demonstrated that stress levels of employers tend to increase with adverse psychological consequences during the pandemic.^[22] In our study, the increased rate of occupational accidents during the pandemic despite closure of workplaces or having a limited number of staff can

be attributed to the increased stress and negligence of the workers. Furthermore, none of the hand injuries occurred in the school setting in our study, as the schools were closed in accordance with the pandemic restrictions. However, this rate was 3.4% in the previous year. The implementation of lockdowns and stay-at-home campaigns issued by the Republic of Turkey, Ministry of Health may have dramatically decreased the rate of hand injuries which mostly occur in the outdoors.

In the literature, there are many studies showing that hand injuries are treated with conservative modalities during the pandemic.^[12] In our study, however, the rate of patients operated in the operating room increased compared to the previous year. This can be attributed to the fact that many patients apply self-care and self-remedy at home for mild soft tissue injuries and/or closed non-displaced fractures during the pandemic, while only those who need surgery visit the hospital. The higher rate of ED admissions among the injuries with tendon lacerations can be explained by the fact that tendon lacerations cannot be treated at home setting with self-remedy regimens. Similarly, Pichard et al.^[17] investigated

Table 4. Injury sites according to age groups

Age (years)	n	Mean age	±SD	Injury setting					
				Workplace	Home	Road	Public places	School	Total
0–20									
2019	159	11.80	5.16	10	77	3	48	20	158
%	36.2			6.3	48.7	1.9	30.4	12.7	100.0
2020	48	11.42	6.19	5	39	0	4		48
%	21.0			10.4	81.3	0	8.3		100.0
12–64									
2019	261	39.23	8.58	100	97	11	53	0	261
%	59.7			38.3	37.2	4.2	20.3	0	100.0
2020	176	36.93	11.20	65	91	8	12		176
%	76.9			36.9	51.7	4.5	6.8		100.0
≥65									
2019	18	76.61	8.58	1	12	1	4	0	18
%	4.1			5.6	66.7	5.6	22.2	0	100.0
2020	5	70	5.70	1	4	0	0		5
%	2.2			20.0	80.0	0	0%		100.0
Total									
2019	437	30.85	18.54	111	186	15	105	20	437
%	100			25.4	42.6	3.4	24.0	4.6	100.0
2020	229	32.30	15.63	71	134	8	16		229
%	100			31.0	58.5	3.5	7.0		100.0
P-value	0.0001*	0.289					0.0001*		

Data are given in mean±SD or number and percentage, unless otherwise stated. *P<0.05 indicates statistical significance. SD: Standard deviation.

the impact of COVID-19 on activity-related emergencies in hand and upper limb trauma and reported an increase in the rate of surgical management. Another possibility for the increased rate of operated patients is that patients may have visited outpatient clinics, rather than ED, due to the fear of being infected with COVID-19.

The outbreak of COVID-19 has substantially affected medical treatment protocols in the practice of hand surgery worldwide.^[23] In our clinic, the decision for surgery remained unchanged during the pandemic and all HCWs complied with the donning/doffing procedures of PPE. All patients were asked to wear a face mask and no visitors were allowed. Sanitizers and/or disinfectants were used before and after having a direct contact with the patient. After the operation, the patients were followed for COVID-19 symptoms for 14 days and none of the patients showed infection signs and/or symptoms. These findings indicate that the preventive measures implemented in the hospital setting are effective. In addition, during 14-day follow-up, seven patients were suspected of COVID-19 infection and underwent RT-PCR. Two of these patients tested positive for COVID-19 who were treated in the ED setting with minor surgical interventions. Although

this finding alone does not suggest that the patients became infected in the ED setting, it should be kept in mind that the risk of infection is higher in the crowded settings.

Review of the literature reveals a decreasing trend in the number of ED admissions for maxillofacial injuries, coronary artery disease, and acute appendicitis during the pandemic.^[24,25] This enables the use of health-care resources in a cost-effective manner; thus, allowing HCWs to focus on right patients (i.e., infected ones) at the right time. In addition, the cost of hand injury is about €420 per patient in developed countries,^[4] it increased up to \$1,260 in developing countries.^[22] In Turkey the mean direct cost for each patient is \$1772, accounting for 47% of total cost.^[13] The decrease in the rate of hand injuries by 43.3% during the pandemic in our study may have reduced the total cost of pandemic.

There are some limitations to this study. Late admissions for hand injuries and admissions to the outpatient clinics were not included in this study. Further studies evaluating late admissions for hand injuries during the pandemic would provide a better understanding of the true incidence. In addition, only state hospitals were authorized by the Ministry of Health for

Table 5. Distribution of etiological factors and injury settings

Injury setting	Etiological factor										Total
	Traffic accident	Penetrating/perforating	Glass cut	Related to the use of machinery or equipment	Squeezing	Fall	Assault	Heavy object falling on the hand	Human/animal bites	Gunshot	
Workplace											
2019											
n	0	35	2	23	28	12	1	10	0	0	111
%	0	31.5	1.8	20.7	25.2	10.8	0.9	9.0	0	0	100.0
2020											
n	0	31	1	14	22	2	0	1	0	0	71
%	0	43.7	1.4	19.7	31.0	2.8	0	1.4	0	0	100.0
Home											
2019											
n	0	50	24	0	36	57	7	9	2	1	186
%	0	26.9	12.9	0	19.4	30.6	3.8	4.8	1.1	0.5	100.0
2020											
n	0	52	43	1	13	19	2	3	1	0	134
%	0	38.8	32.1	0.7	9.7	14.2	1.5	2.2	0.7	0	100.0
Road											
2019											
n	1	0	0	0	0	14	0	0	0	0	15
%	6.7	0	0	0	0	93.3	0	0	0	0	100.0
2020											
n	1	1	0	0	1	5	0	0	0	0	8
%	12.5	12.5	0	0	12.5	62.5	0	0	0	0	100.0
Public places											
2019											
n	0	7	8	1	2	58	21	8	0	0	105
%	0	6.7	7.6	1.0	1.9	55.2	20.0	7.6	0	0	100.0
2020											
n	0	3	1	0	2	5	1	1	0	3	16
%	0	18.8	6.3	0	12.5	31.3	6.3	6.3	0	18.8	100.0
School											
2019											
n	0	0	0	0	3	17	0	0	0	0	20
%	0	0	0	0	15.0	85.0	0	0	0	0	100.0
2020											
n	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0
Total											
2019											
n	1	92	34	24	69	158	29	27	2	1	437
%	0.23	20.82	7.78	5.49	15.56	36.16	6.63	6.18	0.46	0.23	100.00
2020											
n	1	87	45	15	38	31	3	5	1	3	229
%	0.43	37.99	19.65	6.55	16.60	13.54	1.31	2.18	0.43	1.31	100.00

Data are given in number and percentage, unless otherwise stated.

RT-PCR test at the beginning of the pandemic in our country, and most of the patients with hand injuries may have visited

private hospitals and clinics due to the fear of being infected in state hospitals, which underestimated the true incidence.

Table 6. Distribution of injury types and treatment settings

		Affected tissue											
		Soft tissue		Artery		Nerve		Tendon		Bone		Amputation	
		n	%	n	%	n	%	n	%	n	%	n	%
Injury setting													
Workplace	2019	82	35	13	46.4	15	48.4	24	43.6	51	20.5	15	60
	2020	69	35.4	8	42.1	11	44	15	29.4	30	35.7	12	5.7
Home	2019	121	51.7	15	53.6	16	51.6	23	41.8	87	34.9	9	36
	2020	114	58.5	9	47.4	12	48	32	62.7	38	45.2	9	42.9
Road	2019	5	2.1	0	0	0	0	1	1.82	11	4.4	0	0
	2020	3	1.54	0	0	0	0	1	1.96	6	7.1	0	0
Public places	2019	25	10.7	0	0	0	0	8	14.5	81	32.5	1	4
	2020	9	4.6	2	10.5	2	8	3	5.9	10	11.9	0	0
School	2019	1	0.43	2	7.14	0	0	0	0	19	7.6	0	0
	2020	0	0	2	10.5	0	0	0	0	0	0	0	0
Treatment setting													
Conservative treatment and recommendations	2019	23	9.83	0	0	0	0	3	5.45	36	14.5	0	0
	2020	15	7.7	0	0	0	0	0	0	14	16.7	0	0
Intervention in ED setting	2019	164	70.1	6	21.43	6	19.4	20	36.4	184	73.9	16	64
	2020	141	72.3	6	31.6	7	28	29	56.9	52	61.9	14	66.7
Hospitalization and operation	2019	33	14.1	16	57.14	19	61.3	25	45.5	25	10.0	7	28
	2020	31	15.9	12	63.2	16	64	20	39.2	16	19.0	6	28.6
Referral	2019	4	1.71	2	7.14	2	6.5	3	5.5	2	0.8	1	4
	2020	1	0.51	1	5.26	1	4	1	1.96	1	1.2	0	0
Refusal	2019	10	4.27	4	14.29	4	12.9	5	9.1	2	0.8	1	4
	2020	7	3.59	0	0	1	4	1	1.96	1	1.2	1	4.8
Total	2019	234	100	28	100	31	100	55	100	249	100	25	100
	2020	195	100	19	100	25	100	51	100	84	100	21	100

Data are given in number and percentage, unless otherwise stated.

In conclusion, COVID-19 pandemic-mandated social restrictions led to a significant decrease in the number of ED admissions with hand injuries and the type of injuries. The incidence of home accidents tended to increase with more time spent indoors and the glass cuts and penetrating/perforating injuries were the most common causes during the pandemic most of which occurred at home. All international and national organizations should make efforts for the pandemic preparedness planning which includes ED organization, operating rooms, workforce, and medical equipment supply for both COVID-19 and future pandemics. In addition, public announcements and campaigns should be provided to increase the awareness on home accidents and to ensure indoor safety. Based on these findings, we believe that the spread of COVID-19 infection in the hospital setting can be minimized with effective precautions in patients undergoing hand surgery. Although there are still many unknowns about the COVID-19 and many attempts are at a nascent stage,

the present study may be a useful guide for ED admissions of hand injury cases and management planning in the future pandemics.

Ethics Committee Approval: This study was approved by the Marmara University Faculty of Medicine Clinical Research Ethics Committee (Date: 08.05.2020, Decision No: 09.2020.544).

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ORİJİNAL ÇALIŞMA - ÖZ

COVID-19 pandemisinin el cerrahisi üzerine etkisi

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AMAÇ: Bu çalışmanın amacı, COVID-19 pandemisinde acil serviste değerlendirilen el travması geçirmiş hastaların etiyolojik faktörlerinde bir önceki yılın aynı dönemine göre değişiklik olup olmadığı, tedavi kararlarının etkilenip etkilenmediği ve hastaneye başvuran hastalarda başvuru sonrası ilk 14 gün COVID-19 enfeksiyonu geçirme oranlarının saptanmasıdır.

GEREÇ VE YÖNTEM: On beş Mart–30 Nisan 2020 tarihleri arasında acil servise 229 el travması başvurmıştır. Kontrol grubu olarak alınan bir önceki yılın aynı döneminde (15 Mart–30 Nisan 2019) acil servise 439 el yaralanması başvurmıştır. Her iki grup arasında yaş, cinsiyet, travma nedeni, tedavi seçimi açısından kıyaslama yapılmış ve pandemi boyunca acil servise başvuru sonrası 14 gün içinde COVID-19 enfeksiyonu geçirme oranı hesaplanmıştır. **BULGULAR:** Pandemi dönemindeki hastalarda yaş ortalaması 32.30±15.63 yaş, kontrol grubunda ise 30.85±18.54 yaştır. Acil servise toplam başvuran hasta sayısının pandemi döneminde %52.6 oranında, el yaralanması şikayeti ile başvuran hasta sayısının %47.6 oranında azaldığı görülmektedir (p=0.0001). Evde meydana gelen yaralanmalarda artış olduğu ve cam kesici ve kesivi/delici alet ile yaralanma oranlarının arttığı saptanmıştır.

TARTIŞMA: COVID-19 pandemi döneminde uygulanan kısıtlamalar hem acil servise başvuran el travmalarını belirgin şekilde azaltmakta hem de yaralanma şeklini değiştirmektedir. Vatandaşların evde daha fazla zaman geçirmesi ile ev kazaların oranında artma ve buna bağlı olarak kesici delici alet ve cam kesicilerinde artmalar meydana gelmektedir. Bu çalışma, mevcut ve gelecek dönemde yaşanabilecek pandemilerde acil serviste el yaralanmalarına yaklaşım konusunda yol gösterici olabileceği kanatındadır.

Anahtar sözcükler: Acil servis; COVID-19; el cerrahisi; el yaralanmaları; pandemi.

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