

ORIGINAL ARTICLE

Comparison of Satisfaction Levels Between COVID-19 and Non-COVID-19 Patients in the Emergency Department

Acil Serviste COVID-19 Hastaları ile COVID-19 Harici Hastaların Memnuniyet Düzeylerinin Karşılaştırılması

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ABSTRACT

Background: Patient satisfaction in the emergency department is an indicator of the quality of healthcare service provided. The increased workload and stress of healthcare workers due to the ongoing pandemic can affect the quality of patient care and thus patient satisfaction. This study compares the satisfaction levels of COVID-19 and non-COVID-19 patients in the emergency department.

Tools and Methods: In this prospective, observational survey study, the brief emergency patient satisfaction scale (BEPSS) was used to establish the satisfaction levels of patients.

Results: Satisfaction levels were significantly higher, while waiting times were quite shorter for COVID-19 patients than for non-COVID-19 patients. The triage categories had no effect on the satisfaction of non-COVID-19 patients, while satisfaction levels were significantly lower in patients with green triage tags than in those with yellow and red triage tags among the COVID-19 patients.

Conclusion: The satisfaction levels of COVID-19 patients were higher than those of non-COVID-19 patients. The short waiting times for COVID-19 patients in the emergency department have a significant impact on patient satisfaction.

Keywords: COVID-19, patient satisfaction, emergency department, health care quality

ÖZ

Amaç: Acil serviste hasta memnuniyeti sunulan sağlık hizmetinin bir göstergesidir. Pandemiyle birlikte sağlık çalışanlarının iş yükünün ve stresinin artması hasta bakım kalitesini, dolayısıyla hasta memnuniyetini etkileyebilir. Bu çalışma acil serviste COVID-19'lu hastalar ile COVID-19 harici hastaların memnuniyet düzeylerini karşılaştırmaktadır.

Araçlar ve Yöntem: Bu çalışma prospektif, gözlemsel bir anket çalışmasıdır. Brief emergency patient satisfaction scale (BEPSS) kullanılarak hastaların memnuniyet düzeyleri belirlenmiştir.

Bulgular: COVID-19 hastalarının memnuniyet düzeyleri COVID-19 harici hastalara göre anlamlı şekilde yüksek olup bekleme süreleri ise tam tersine oldukça kısa bulunmuştur. COVID-19 harici hastalarda triaj kategorisinin memnuniyet üzerinde etki olmadığı ancak COVID-19 hastalarında yeşil triaj kodlu hastaların memnuniyet düzeylerinin sarı ve kırmızı triaj kodlu hastalardan anlamlı şekilde düşük olduğu görüldü.

Sonuç: COVID-19 hastalarının memnuniyet düzeyleri COVID-19 harici hastalardan yüksek bulundu. Bu durum COVID-19 hastalarının bekleme sürelerinin kısa olmasından kaynaklanıyor gibi durmaktadır.

Anahtar Kelimeler: COVID-19, hasta memnuniyeti, acil servis, sağlık hizmeti kalitesi

Introduction

Patient satisfaction is directly related to the quality of the healthcare provided, and increases in direct proportion to the value given to the patient and the increase in the healthcare quality (1,2). Patient satisfaction has gained importance in recent years due to the increasing competition in the provision of healthcare services (3). Patient satisfaction is affected by several factors, such as the number of specialists and nurses, the number of hospital beds, age, communication between the patient and the healthcare worker, waiting time, respect for patients and their families, and patient confidentiality (4-7). High patient numbers and long waiting times in emergency departments are factors that can negatively affect patient satisfaction (8). The fear and panic experienced in the early phases of the pandemic led to a significant decrease in admissions to the emergency department, as well as a reduction in the emergency department crowd, which is among

the factors affecting patient satisfaction (9). In the later phases, however, the number of admissions increased and the emergency department started to become crowded again (10). On the other hand, factors such as the responsibilities imposed on healthcare workers and the burnout syndrome linked to the increased workload during the pandemic can be expected to affect the quality of healthcare and patient satisfaction in emergency departments (11).

The present study compares the satisfaction levels of COVID-19 patients and non-COVID-19 patients in the emergency department.

Tools and Methods

Study Design and Setting

This prospective survey study was carried out in the

emergency department of a training and research hospital with 400.000 admissions per year in December 2021. The emergency department comprises two main sections: an isolation area dedicated to the care of COVID-19 patients; and a clean area dedicated to the care of non-COVID-19 patients. The isolation area contains a COVID-19 clinic for outpatient care and a COVID-19 follow-up unit for inpatient care, and the clean area is divided into four different parts: a green zone, yellow zone, red zone and trauma unit. Before starting the study, approval was obtained from the hospital ethics committee (GOKAEK-0479).

Study Population

Included in the study were COVID-19 patients over the age of 18 who presented to the emergency department and non-COVID-19 patients, all of whom agreed to participate in the study and provided written consent. Patients who were intubated or on non-invasive mechanical ventilation (NIVM), those who needed to interrupt their treatment for the survey and those who opted out from the survey were excluded from the study.

Study Protocol and Data Collection

Data were collected using *the Brief Emergency Department Patient Satisfaction Scale (BEPSS)* and a data collection form to collect demographic data from the patients.

The BEPSS, developed by Atari et al., measures different aspects of patient satisfaction in the emergency departments (12). The Turkish validity and reliability study of the scale was conducted by Acar et al. (13).

The BEPSS is a Likert-type 20-item scale with each item scored on a scale of 1–4 (1= strongly disagree, 2= mildly disagree, 3= mildly agree, and 4= completely agree). The scale includes five subscales for the evaluation of the emergency department staff (EDS), the emergency department environment (EDE), the physician care satisfaction (PCS), general patient satisfaction (GPS) and the patient's family satisfaction (PFS). The subscale scores and the total emergency department patient satisfaction score are calculated by summing the scores of all items. The data collection form included items on the respondent (patient/patient's relative), the patient's post-emergency status (discharge/hospitalization/other), age, gender, time of admission, time from symptom onset to admission, waiting times until examination in the emergency department and educational level. After obtaining written consent, the study form was completed during face-to-face interviews with the researcher, who was not involved in the provision of healthcare. To aid older adults or visually impaired patients in completing the questionnaire, the form was read aloud by the researcher.

Sample Size

To the best of our knowledge, no similar study has been conducted to date using the BEPPS on COVID-19

patients. Accordingly, we used the effect size method to calculate the sample size. For an effect size of 0.3, a 5% margin of error and 95% power, the sample size was calculated to be 101 patients for each group and 202 patients in total. The study was subsequently conducted with 200 patients in each group and 400 patients in total.

Statistical Analysis

The analysis of the study data was carried out using IBM SPSS Statistics for Windows (Version 20.0. Armonk, NY: IBM Corp.). The study data were assessed based on frequency distribution for categorical variables (counts, percentages) and descriptive statistics for quantitative variables (means, standard deviation). A normality test was conducted for the quantitative variables, and a Student t-test was used to compare the means between two independent groups for the normally distributed data. For the statistical analyses, the Type-1 error was set to $\alpha=0.05$ for statistical significance, and $P<0.05$ was considered statistically significant.

Results

The study included a total of 400 patients (200 COVID-19 patients and 200 non-COVID-19 patients), of whom 210 were male and 190 were female. The mean age of the patients was 45 ± 20 years. The demographic characteristics of the patients, including age, gender, treatment type, time of admission to the emergency department, presence of chronic diseases, and educational level, were similar between the two groups ($p= 0.229$, $p= 0.548$, $p= 0.483$, $p= 0.240$, $p= 0.330$, and $p= 0.781$ respectively) (Table 1).

The mean total scale score was 77 ± 3.3 in the COVID-19 patient group and 72.6 ± 10.3 in the non-COVID-19 patient group. A comparison of the total scale scores revealed that the satisfaction level was significantly higher in the COVID-19 patients than in non-COVID-19 patients ($p<0.001$). Considering the subscales, each of the EDS, EDE, PCS, GPS and PFS scores was significantly higher in the COVID-19 patient group ($p< 0.001$, $p< 0.001$, $p= 0.018$, $p< 0.001$ and $p< 0.001$, respectively). The mean subscale scores are presented in Table 2.

The time spent between emergency department admission and the doctor's examination was significantly shorter in the COVID-19 patient group ($p < 0.001$). In the COVID-19 group, 184 (92%) of the patients waited less than 5 minutes, while none of the patients waited more than 10 minutes. In the non-COVID-19 group, 104 (52%) patients waited less than 5 minutes, while 16 (8%) patients waited more than 60 minutes. (Table 3).

When the mean scores of the non-COVID-19 patients were compared based on their assigned triage category in the emergency department, the mean EDS, EDE, PCS, GPS and PFS subscale scores and the mean total scale score were similar between the groups ($p= 0.832$, $p= 0.780$, $p= 0.439$, $p= 0.449$, $p= 0.942$ and $p= 0.770$, respectively). In the COVID-19 group,

in turn, the mean EDE subscale score and the mean total scale score were significantly lower in the green coded patients than in yellow and red coded patients ($p= 0.034$ and $p= 0.025$, respectively). The mean EDS, PCS, GPS and PFS scores of the COVID-19 patients were similar in all triage groups ($p= 0.203$, $p= 0.784$, $p= 0.099$ and $p= 0.534$, respectively) (Table 4).

Table 1. Sociodemographic Characteristics

		COVID-19	Non- COVID-19	P
Age (mean \pm SD)		44 \pm 19	47 \pm 21	0.229
Gender	Female	98 (49%)	92 (46%)	0.548
	Male	102 (51%)	108 (54%)	
Type of Treatment	Outpatient	165 (83%)	157 (78%)	0.483
	Ward	29 (14%)	33 (17%)	
	ICU	6 (3%)	10 (5%)	
Time of admission	08-12	52 (26%)	44 (22%)	0.240
	12-16	55 (27%)	47 (23%)	
	16-24	68 (34%)	88 (44%)	
	24-08	25 (13%)	21 (11%)	
Chronic Disease	No	148 (74%)	140 (70%)	0.330
	Yes	52 (26%)	60 (30%)	
Education	Illiterate	4 (2%)	8 (4%)	0.781
	Primary School	68 (34%)	65 (33%)	
	Secondary School	32 (16%)	33 (16%)	
	High School	43 (22%)	49 (25%)	
	Undergraduate	48 (24%)	41 (20%)	
	Graduate	5 (3%)	4 (2%)	

Table 2. Comparison of Total Scale Score and Scale Subgroup Scores Between The Subject Groups

	COVID-19	Non-COVID-19	P
EDS /24	23 \pm 2	22 \pm 4	<0.001
EDE/12	12 \pm 1	10 \pm 2	<0.001
PCS/16	16 \pm 1	15 \pm 2	0.018
GPS/20	19 \pm 1	18 \pm 3	<0.001
PFS/8	8 \pm 1	7 \pm 2	<0.001
TOTAL/80	77 \pm 3	73 \pm 10	<0.001

EDS: emergency department staff, EDE: emergency department environment, PCS: physician care satisfaction, GPS: general patient satisfaction, PFS: patient family satisfaction

Table 3. Comparison of Patient Waiting Times Between Groups

	Waiting time				Total	p
	<5 min	5-10 min	11-60 min	>60 min		
COVID-19	184 (92%)	16 (8%)	0 (0%)	0 (0%)	200 (100%)	<0.001
NON-COVID-19	104 (52%)	35 (17%)	45 (23%)	16 (8%)	200 (100%)	
TOTAL	288 (72%)	51 (13%)	45 (11%)	16 (4%)	400 (100%)	

Table 4. Comparison of BEPSS score between triage categories

Subject Group	BEPSS/ SUBGROUPS	Triage Category			p
		Green (N:102)	Yellow (N:70)	Red (N:28)	
Non-COVID-19	EDS /24	22 \pm 4	21 \pm 5	22 \pm 3	0.832
	EDE/12	10 \pm 2	10 \pm 2	11 \pm 2	0.780
	PCS/16	15 \pm 2	15 \pm 2	15 \pm 1	0.439
	GPS/20	18 \pm 3	18 \pm 3	19 \pm 2	0.449
	PFS/8	7 \pm 2	7 \pm 2	7 \pm 1	0.942
	BEPSS/80	72 \pm 10	72 \pm 11	74 \pm 7	0.770
Subject Group	BEPSS/ Subgroups	Green (N:157)	Yellow (N:32)	Red (N:11)	P
COVID-19	EDS /24	23 \pm 2	23 \pm 1	23 \pm 1	0.203
	EDE/12	11 \pm 1	12 \pm 0	12 \pm 1	0.034
	PCS/16	16 \pm 1	16 \pm 1	16 \pm 1	0.784
	GPS/20	19 \pm 1	20 \pm 1	19 \pm 2	0.099
	PFS/8	8 \pm 0	8 \pm 0	8 \pm 0	0.534
	BEPSS/80	77 \pm 3	78 \pm 2	78 \pm 4	0.025

EDS: emergency department staff, EDE: emergency department environment, PCS: physician care satisfaction, GPS: general patient satisfaction, PFS: patient family satisfaction

Discussion

Patient satisfaction, which is directly associated with the quality of patient care, is a very important and challenging factor for emergency departments (13). Although the increased workload and stress due to the pandemic on healthcare workers was expected to have a negative effect on patient satisfaction (14), the present study found that the satisfaction level of the patients who were cared for in the emergency department due to COVID-19 was significantly higher than that of non-COVID-19 patients.

Studies exploring the relationship between COVID-19 and patient satisfaction in the emergency department have tended to compare the overall patient satisfaction levels before and during the pandemic (15,16). In contrast, the present study compares the satisfaction levels of patients treated in the COVID-19 designated area and those treated in the clean area at the emergency department during the pandemic, and is, to the best of our knowledge, the first study to take this approach. The study by Aguirre et al. reported similar rates of patient satisfaction in the emergency department in the pre-pandemic and pandemic periods (16). The study by Grissom et al., on the other hand, established a higher level of satisfaction in patients presenting to the emergency department during the pandemic than in the pre-pandemic period. The present study recorded a significantly higher rate of satisfaction with emergency department staff, the emergency department environment and the doctor, and greater levels of general satisfaction among the COVID-19 patients and their families than in non-COVID-19 patients in the emergency department. Since the study hospital was a COVID-19 referral hospital, dedicated COVID-19 wards were available for the patients. The empty bed rate was higher than in other services, reducing the patient waiting time in

the emergency department until hospitalization, and enabling patients to be placed in the hospital without being referred. This contributed to satisfaction levels, especially in those presenting to the yellow and red triage zones who had a high hospitalization rate.

Studies evaluating patient satisfaction in emergency departments have shown patient waiting times before seeing the doctor to be an important factor in satisfaction, while prolonged times reduce satisfaction (17,18). Grissom et al. reported that the number of patients and the patient waiting times in the emergency department was lower during the pandemic than in the pre-pandemic period, and that patient satisfaction increased accordingly (15). The present study found that patient waiting times in the designated COVID-19 area were significantly shorter than those in the clean area, with none of the patients in the designated COVID-19 area needing to wait more than 10 minutes. This explains the high rate of satisfaction in the designated COVID-19 area.

Bourdeux et al. reported that the triage category had no effect on patient satisfaction in the emergency department (19). To the best of our knowledge, there has been no study to date examining the relationship between triage category and patient satisfaction among the studies conducted during the pandemic. The present study failed to identify any relationship between triage category and patient satisfaction in non-COVID-19 patients, while the satisfaction rate was lower in green triage-coded patients than in yellow and red triage-coded patients among the COVID-19 patients. While yellow- and red-coded patients are treated by one doctor and one nurse in the COVID-19 isolation area, green-coded patients come into contact only with the doctor during swab collection. The contact time with the doctor in this area is reduced due to the high patient volume for swab collection and the long queues, and this affects the level of patient satisfaction with the care received, and explains the lower satisfaction levels in the green zone.

The present study has some limitations, the main one being its single-center design. Our hospital is a tertiary COVID-19 referral hospital, and patient satisfaction may be different in non-referral hospitals that have no beds assigned specifically for COVID-19 patients. Multicenter and comparative studies are needed in this regard. The second limitation is that the patients were evaluated based solely on their diagnosis of non-diagnosis with COVID-19, with no separate comparison made within the same diagnostic groups. A future study may compare COVID-19 (+) and COVID-19 (-) patients with the same diagnosis (e.g. COVID-19 (+) patients diagnosed with appendicitis and COVID-19 (-) patients diagnosed with appendicitis), which would minimize the differences in satisfaction levels resulting from diagnostic differences.

Conclusion

It was observed that the satisfaction levels of COVID-19 patients admitted to the emergency department were

significantly higher than non-COVID-19 patients, and this may be related to the shorter waiting time in the COVID-19 patient group. In order to increase patient satisfaction in the emergency department, shortening the waiting period can be effective. In future studies, attempts to shorten the waiting time of patients in the emergency department can be discussed.

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