

## Factors affecting patient satisfaction in the emergency department

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### Abstract

**Aim:** The aim of the present study was to investigate patient satisfaction level and affecting factors in the Emergency Department of Ondokuz Mayıs University Hospital, and to contribute to improvements planned to be performed in the future in this regard.

**Methods:** This study was carried out between 01/01/2018 and 03/30/2018 using the revised version of the questionnaire that was used in the study conducted in 2008 in the Emergency Department of Ondokuz Mayıs University Hospital. In the revised version, the questionnaire was applied to both outpatients and inpatients.

**Results:** A total of 18,034 patients applied to the Emergency Department of Ondokuz Mayıs University Hospital during the study period and 284 of whom were followed-up as in patients in the emergency observation unit. The study was carried out with 565 randomly selected patients meeting the inclusion criteria. Of these patients, 187 (33.10%) were treated in the emergency observation unit and 378 (66, 90%) were treated in the emergency outpatient clinic.

The rate of the patients who stated that they were satisfied with the service they received was 80.4% (304) in those receiving treatment in the emergency outpatient clinic while 88.2% (1165) in those receiving treatment in the emergency observation unit.

**Conclusion:** Behaviors of nurses and physicians as well as their care and interventions were determined to be the most influential factors on patient satisfaction. In addition, it was revealed that there was a negative correlation between satisfaction and patient education level, where as a positive correlation between satisfaction and patient age and inpatient follow-up.

**Keywords:** Emergency service; Patient satisfaction; Surveys; Questionnaires

### 1. Introduction

Patient satisfaction is a commonly used critical indicator in the evaluation of health care quality. In this way, patients take an active role in establishing the quality of the service they receive [1]. Quality health care not only provides higher patient satisfaction, but also positively affects patient behaviors such as following the doctor's recommended treatment and not delaying follow-up appointments. Thus, this results in better health outcomes and recommending the service provider to others [2]. An emergency department application is often a patient's first experience with a hospital system and thereby represents a unique opportunity to make a positive first impression. For this reason, emergency departments are the focal areas of administrators [3]. Enhanced patient satisfaction also increases the job satisfaction of physicians and emergency department personnel and creates a positive work environment [4].

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In the present study, it was aimed to investigate the level of patient satisfaction and factors affecting satisfaction in the Emergency Department of Ondokuz Mayıs University Hospital and to contribute the improvements planned to be conducted in this regard.

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## 2. Patients and method

The present research is a survey study consisting of a total of thirty questions. Demographic information of the patients was sought in the first ten questions. In the next eighteen questions, the patients were requested to score their experiences in the emergency room using a 5-point Likert scale to investigate the satisfaction level. In the final two questions, the patients were asked as yes/no questions whether they wanted their relatives to be with them while they were in the emergency department and whether they would like to prefer our emergency service again in the future.

In the study, the revised version of the questionnaire developed in a study that was conducted in the Emergency Department of Ondokuz Mayıs University Hospital in 2008 and published in an international journal was utilized [5]. The questionnaire was modified in a way that it will be applied to both outpatients and inpatients followed up in the emergency observation unit.

We applied our questionnaire to the patients who were followed up in the outpatient clinic and observation unit of the Emergency Department of Ondokuz Mayıs University Faculty of Medicine Hospital between 03/01/2018 - 05/31/2018 from 08:00 to 24:00 hours. The implementation of the questionnaire was carried out by a research assistant who did not wear a white coat and did not participate in the treatment process of the patient, using the face-to-face interview technique.

Among the patients evaluated in two groups, the first group is the patients applied to the emergency outpatient clinic (yellow area). The diagnosis was made in here; for the patients who were decided to be discharged, their medical treatment was arranged, and they were personally interviewed when they came to the discharge stage. On the other hand, the opinion of the patients who were decided to be treated as inpatients regarding the emergency department was taken immediately before either they went to the relevant service or were referred. The second group consisted of the patients hospitalized in the emergency observation unit (inpatient service). This group consisted of the patients who were diagnosed, decided to be admitted to the relevant department, however, as there was no space in the service, they were taken to the inpatient unit of the emergency department and treated there. These patients were either transferred to the service if a space became available or discharged from here in case their treatment was completed. The opinions of the patients in this group were obtained immediately before they were sent to the service or discharged.

In the present study, the total number of patients targeted to be reached between the dates of 01/01/2018 and 03/30/2018 was 565, with 187 in the emergency observation unit and 378 in the emergency outpatient clinic. Sample size calculation: On average, 7,000 patients apply to our emergency department monthly and among those 120 patients are hospitalized in the emergency observation unit. The duration of the study was planned to be three months, and accordingly, the sample size was calculated using the 5% precision method, taking into account these patient numbers.

### *Inclusion criteria*

- Volunteering to participate in the study
- Being to have been received treatment in the emergency department
- Knowing to speak Turkish
- Being adult (aged 18 years and over)

### *Exclusion criteria*

- Patients with impaired consciousness
- A condition of an illness that interferes with communication
- Patients who require emergency transfer or intervention
- Failure to obtain consent from the patient for the study
- Not being adult (aged under 18 years)

The ethical approval of our study was obtained from the ethics committee of Ondokuz Mayıs University Faculty of Medicine (B.30.2.ODM.0.20.08/1455 decision number 2018/ 83).

The statistical analysis of the study was performed using the SPSS 23.0 software. The Kolmogorov-Smirnov test was used for the normality analysis of the quantitative variables. For the variables showing normal distribution, the independent groups t-test was applied. The chi-square test was used in the statistical analysis of the non-parametric data. The descriptive statistics were presented as mean  $\pm$  standard deviation. To show the qualitative data, the frequency and percentage values were calculated. The limit of significance for all statistical analysis was selected as  $p < 0.05$ .

### 3. Results

During the period in which the study was conducted (01.01.2018-03.30.2018), a total of 18,034 patients applied to Ondokuz Mayıs University Emergency Department, and 284 of them were followed up as an inpatient in the emergency observation unit. The study was carried out with randomly selected 565 patients who met the inclusion criteria. Of these patients, 187 (33.10%) were treated in the emergency observation unit, and 378 (66.90%) were treated in the emergency outpatient clinic.

In the patients included in the study, the ages of the patients treated in the emergency outpatient clinic ranged from 18 to 95 years, and their mean age was  $49.6 \pm 20.8$  years. The patients in the emergency observation unit, on the other hand, were between the ages of 18 and 90 and their mean age was  $54.6 \pm 20.1$  years. The demographic data of the patients are summarized in Table 1.

**Table 1** Demographic Data

Variable	Emergency Outpatient Clinic		Emergency Observation Unit	
	Number	Percentage	Number	Percentage
<b>Gender</b>				
Male	195	65.9	101	34.1
Female	183	68	86	32
<b>Marital Status</b>				
Married	234	64.8	127	35.2
Single	144	70.6	60	29.4
<b>Education Level</b>				
Illiterate	74	56.5	57	43.5
Primary School	112	65.5	59	34.5
Middle School	33	60	22	40
High School	63	66.3	32	33.7
Vocational School	18	81.8	4	18.2
University	78	85.7	13	14.3
<b>Occupation</b>				
Civil Servant	51	83.6	10	16.4
Worker	25	67.6	12	32.4
Tradesman	11	52.4	10	47.6
Farmer	12	80	3	20
House Wife	110	66.7	55	33.3
Retired	102	61.8	63	38.2
Self-employed	24	54.5	20	45.5

Unemployed	43	75.4	14	24.6
<b>Monthly Income Level</b>				
Below 400 \$	199	66.1	102	33.9
400–1,000 \$	156	66.4	79	33.6
1,000–2,000 \$	21	77.8	6	22.2
Above 2,000 \$	2	100	0	0
<b>Place of Residence</b>				
City	223	71.9	87	28.1
Town	134	61.5	84	38.5
Small Town	2	40	3	60
Village	18	60	12	40
Abroad	1	50	1	50

The way the patients included in the study came to the hospital as follows: Of the patients who applied directly to our hospital, 262 (71.6%) received their emergency treatment in the emergency outpatient clinic and left the hospital, while 104 (28.4%) were hospitalized in the emergency observation unit to continue their treatment for a while, and their follow-up and treatment continued. On the other hand, in the patients referred from other institutions, 116 (58.3%) received their emergency treatment in the emergency outpatient clinic and left the hospital, whereas 83 (41.7%) were admitted in the emergency observation unit and their follow-up and treatment continued.

**Table 2** Satisfaction Evaluation

		Very bad	Bad	Moderate	Good	Very good	p
Physicians' attitude towards patients	Emergency Outpatient Clinic	2 (0.5)	3 (0.8)	30 (7.9)	94 (24.9)	249 (65.9)	<0.001
	Emergency Observation Unit	3 (1.6)	1 (0.5)	7 (3.7)	22 (11.8)	154 (82.4)	
	Total	5 (0.9)	4 (0.7)	37 (6.5)	116 (20.5)	403 (71.3)	
Physicians' medical care and intervention	Emergency Outpatient Clinic	2 (0.5)	5 (1.3)	30 (7.9)	91 (24.1)	250 (66.1)	0.034
	Emergency Observation Unit	2 (1.1)	1 (0.5)	7 (3.7)	31 (16.6)	146 (78.1)	
	Total	4 (0.7)	6 (1.1)	37 (6.5)	122 (21.6)	396 (70.1)	
Information provided by physicians	Emergency Outpatient Clinic	2 (0.5)	10 (2.6)	43 (11.4)	81 (21.4)	242 (64)	0.001
	Emergency Observation Unit	4 (2.1)	3 (1.6)	9 (4.8)	23 (12.3)	148 (79.1)	
	Total	6 (1.1)	13 (2.3)	52 (9.2)	104 (18.4)	390 (69)	
Nurses' attitude towards patients	Emergency Outpatient Clinic	4 (1.1)	4 (1.1)	33 (8.7)	88 (23.3)	249 (65.9)	0.002
	Emergency Observation Unit	3 (1.6)	1 (0.5)	7 (3.7)	23 (12.3)	153 (81.8)	
	Total	7 (1.2)	5 (0.9)	40 (7.1)	111 (19.6)	402 (71.2)	
Nurses' medical care and intervention	Emergency Outpatient Clinic	4 (1.1)	3 (0.8)	25 (6.6)	96 (25.4)	250 (66.1)	<0.001
	Emergency Observation Unit	2 (1.1)	0 (0)	8 (4.3)	20 (10.7)	157 (84)	
	Total	6 (1.1)	3 (0.5)	33 (5.8)	116 (20.5)	407 (72)	
Attitudes of other assisting personnel towards patients	Emergency Outpatient Clinic	10 (2.6)	3 (0.8)	44 (11.6)	98 (25.9)	223 (59)	0.005
	Emergency Observation Unit	1 (0.5)	1 (0.5)	14 (7.5)	31 (16.6)	140 (74.9)	
	Total	11 (1.9)	4 (0.7)	58 (10.3)	129 (22.8)	363 (64.2)	

Team work of emergency department personnel	Emergency Outpatient Clinic	11 (2.9)	1 (0.3)	31 (8.2)	111 (29.4)	224 (59.3)	0.003
	Emergency Observation Unit	2 (1.1)	1 (0.5)	10 (5.3)	32 (17.1)	142 (75.9)	
	Total	13 (2.3)	2 (0.4)	41 (7.3)	143 (25.3)	366 (64.8)	
Adequacy of Emergency department technical equipment and device	Emergency Outpatient Clinic	15 (4)	45(11.9)	51 (13.5)	112 (29.6)	155 (41)	0.005
	Emergency Observation Unit	7 (3.7)	13 (7)	15 (8)	45 (24.1)	107 (57.2)	
	Total	22 (3.9)	58(10.3)	66 (11.7)	157 (27.8)	262 (46.4)	
Emergency department patient admission and secretarial procedures	Emergency Outpatient Clinic	4 (1.1)	7 (1.9)	56 (14.8)	127 (33.6)	184 (48.7)	0.001
	Emergency Observation Unit	3 (1.6)	4 (2.1)	12 (6.4)	41 (21.9)	127 (67.9)	
	Total	7 (1.2)	11 (1.9)	68 (12)	168 (29.7)	311 (55)	
Comfort of the emergency department physical environment	Emergency Outpatient Clinic	33 (8.7)	47(12.4)	68 (18)	92 (24.3)	138 (36.5)	<0.001
	Emergency Observation Unit	14 (7.5)	15 (8)	14 (7.5)	43 (23)	101 (54)	
	Total	47 (8.3)	62 (11)	82 (14.5)	135 (23.9)	239 (42.3)	
Overall emergency department cleaning	Emergency Outpatient Clinic	15 (4)	45(11.9)	61 (16.1)	105 (27.8)	152 (40.2)	0.001
	Emergency Observation Unit	10 (5.3)	8 (4.3)	20 (10.7)	43 (23)	106 (56.7)	
	Total	25 (4.4)	53 (9.4)	81 (14.3)	148 (26.2)	258 (45.7)	
Emergency department toilet and bathroom cleaning	Emergency Outpatient Clinic	36 (9.5)	59(15.6)	74 (19.6)	84 (22.2)	125 (33.1)	<0.001
	Emergency Observation Unit	30 (16)	17 (9.1)	18 (9.6)	33 (17.6)	89 (47.6)	
	Total	66 (11.7)	76(13.5)	92 (16.3)	117 (20.7)	214 (37.9)	
Respect shown for privacy in the emergency department	Emergency Outpatient Clinic	4 (1.1)	10 (2.6)	46 (12.2)	148 (39.2)	170 (45)	0.003
	Emergency Observation Unit	4 (2.1)	2 (1.1)	11 (5.9)	57 (30.5)	113 (60.4)	
	Total	8 (1.4)	12 (2.1)	57 (10.1)	205 (36.3)	283 (50.1)	
Emergency department ventilation condition	Emergency Outpatient Clinic	32 (8.5)	52(13.8)	53 (14)	100 (26.5)	141 (37.3)	0.003
	Emergency Observation Unit	14 (7.5)	20(10.7)	12 (6.4)	41 (21.9)	100 (53.5)	
	Total	46 (8.1)	72(12.7)	65 (11.5)	141 (25)	241 (42.7)	
Emergency department food and beverage opportunities	Emergency Outpatient Clinic	22 (5.8)	55(14.6)	67 (17.7)	101 (26.7)	133 (35.2)	0.006
	Emergency Observation Unit	15 (8)	17 (9.1)	21 (11.2)	42 (22.5)	92 (49.2)	
	Total	37 (6.5)	72(12.7)	88 (15.6)	143 (25.3)	225 (39.8)	
Emergency department noise level	Emergency Outpatient Clinic	26 (6.9)	41(10.8)	78 (20.6)	101 (26.7)	132 (34.9)	0.003
	Emergency Observation Unit	15 (8)	21(11.2)	21 (11.2)	37 (19.8)	93 (49.7)	
	Total	41 (7.3)	62 (11)	99 (17.5)	138 (24.4)	225 (39.8)	
Overall satisfaction felt for the services provided in emergency department	Emergency Outpatient Clinic	6 (1.6)	10 (2.6)	58 (15.3)	123 (32.5)	181 (47.9)	0.008
	Emergency Observation Unit	2 (1.1)	5 (2.7)	15 (8)	46 (24.6)	119 (63.6)	
	Total	8 (1.4)	15 (2.7)	73 (12.9)	169 (29.9)	300 (53.1)	

The distribution of the patients based on their social security status was as follows: In the patients with social security coverage by the Social Security Institution (SGK), 351 (68.8%) were treated in the emergency outpatient clinic; 159 (31.2%) were treated in the emergency observation unit. In the patients who stated that they had no social security coverage, 27 (49.1%) were treated in the emergency outpatient clinic, 28 (50.9%) were admitted in the emergency observation unit.

The duration of stay in the emergency outpatient clinic of the patients enrolled in the study ranged 1-72 hours, with a mean duration of  $9.5 \pm 11.0$  hours. The length of time the patients stayed in the emergency observation unit varied between 2 and 192 hours, and the mean was  $60.2 \pm 31.2$  hours. All satisfaction evaluation results are presented in Table 2.

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#### 4. Discussion

In the study we conducted in the Emergency Department of Ondokuz Mayıs University Hospital, it was detected that the overall satisfaction rate of the patients who stated that they were satisfied with the service they received was 80.4% in the emergency outpatient clinic and 88.2% in the emergency observation unit. The difference between the two patient groups was found to be statistically significant. The fact that the patients requiring hospitalization for the continuation of their treatment were taken to an inpatient service where they can receive the same treatment, even if the relevant department service was full, significantly increase their satisfaction. In the study conducted by Yardan et al. [5] at the same center, which included only patients who applied to the emergency outpatient clinic, the overall rate of satisfied patients was also similarly found as 90.3%.

Based on the satisfaction evaluation results of the patients, the factors in which the satisfaction was highest are in respective order as follows:

- Satisfaction felt towards medical care and intervention services provided by nurses (92.5%). The study conducted by Gray and Boshoff [6] for the service quality of the private hospital sector revealed that nursing personnel is the one providing the highest patient satisfaction and positively affecting overall patient satisfaction. Danielsen et al. [2], on the other hand, reported that physician and nurse care provided the highest patient satisfaction, respectively. In the study carried out in our clinic by Yardan et al. [5], which included only patients who applied to the emergency outpatient clinic, the satisfaction with the medical intervention and skills of the nurses was found to be 84%. It was determined in a study performed in the emergency department of Istanbul Marmara University Training and Research Hospital that patient satisfaction with the medical intervention and skills of nurses was 84% [7].
- Satisfaction because of the attitude of physicians towards patients (91.8%). In a study conducted in our clinic in 2012 by Yardan et al. [5], in which only patients in the emergency outpatient clinic were included, the satisfaction level with the behavior of physicians towards patients and their relatives was 86% as well. According to the results of the research conducted in the emergency department of Istanbul Marmara University Training and Research Hospital, patient satisfaction in relation to the behavior of physicians towards patients and their relatives was detected to be 90.4% [7].
- Satisfaction with medical care and intervention services provided by physicians (91.7%). In a study by Danielsen et al. [2], it was reported that physician intervention ranked in the first place in the highest patient satisfaction. The study carried out in the emergency department of Istanbul Marmara University Training and Research Hospital found that patient satisfaction felt for physician's medical care and intervention was 86.8% [7].

According to the evaluation of the patients, the factors in which the satisfaction was lowest, respectively:

- Satisfaction felt for emergency department toilet and bathroom cleaning (58.6%). It was determined that the physical environment and cleanliness in which healthcare service are delivered affected customer service performance evaluation, including customer satisfaction [1].
- Satisfaction with the noise level in the emergency department (64.2%). Enkhjargal et al. concluded in their study that the physical environment potentially affects patient satisfaction [8]. Physical environment aspects anticipated to be associated with patient satisfaction include ventilation, room comfort, bed clothing, cleanliness, noise level, temperature appropriateness, ease of lighting, food service, bathroom comfort, sign and direction clarity, arrangement of equipment and facilities, and car parking.
- Satisfaction with food and beverage opportunities for patients and their relatives in and around the emergency department (65.1%). It has been found that satisfaction with certain service dimensions, such as foods and their prices, positively affects cumulative patient satisfaction [6]. Two different studies have revealed that the quality of meals is strongly correlated with overall satisfaction. Moreover, in one of these studies, it has been

concluded that the correlation between meal service temperature and satisfaction is stronger than the correlation between meal choice and satisfaction [9].

In our clinic, only patients who are hospitalized and followed up in the emergency observation unit can benefit from hospital meals, other patients and their relatives have to use other cafes and restaurants in the vicinity. Therefore, the satisfaction rate among the patients in the emergency observation unit is high enough to make a significant difference.

When all satisfaction criteria were evaluated according to age and education level, it was observed that patient satisfaction increased as the patient's age progresses, but decreased with increasing patient education level. This situation may depend on the fact that expectations decrease as age progresses, and that satisfaction increases with being well-seasoned. Many studies covered in the review by Naidu et al. [1] revealed that age is the most significant and consistent variable that determines patient satisfaction among demographic variables. They concluded that elderly patients are more satisfied with health services than young people. The studies by Bjertnaes et al. [10] and Danielsen et al. [2] also showed that education level is inversely correlated to patient satisfaction level, as in our study. Similarly, Caroline et al. [11] in their study on patient satisfaction of patients with chronic diseases demonstrated that satisfaction levels are likely to be lower in studies with a higher proportion of well-educated patients. The results of a recent study conducted by Cati et al. [11] regarding health literacy indicated that the increase in the level of health literacy knowledge adversely affects patient satisfaction. Considering the assumption that the level of health literacy will increase, it becomes inevitable for health enterprises to take some initiatives to increase patient satisfaction.

It was determined that the factors that most affected patient satisfaction in the emergency department were behavior and medical care and interventions of physicians and nurses. Therefore, patient-personnel relations should be tried to be improved in emergency departments, and hospital personnel should be given training in relation to communication skills if necessary.

It was revealed that patient satisfaction correlated positively with patient age and negatively with patient education level.

In order to increase the satisfaction of patients whose emergency intervention has been completed in the emergency department, they should be taken to an environment in service conditions and their subsequent follow-up and treatment should be performed. Because it was found that physical conditions are among the significant determinants of patient satisfaction.

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## 5. Conclusion

Today, with the high number of applications, emergency services are the showcase of hospitals. Therefore, patient satisfaction is important. In our study, we showed a way to prevent patient dissatisfaction in prolonged applications. Thus, we aimed to reduce the violence that occurred in the emergency services.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare that they have no conflict of interest.

### *Statement of ethical approval*

The ethical approval of our study was obtained from the ethics committee of Ondokuz Mayıs University Faculty of Medicine (B.30.2.ODM.0.20.08/1455 decision number 2018/ 83).

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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