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Research Article

Satisfaction of Patients with Triage and Nursing Practice in Emergency Departments

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ABSTRACT

Aim: This research was carried out to evaluate the satisfaction of triage and nursing practice for emergency patients.

Method: The sample for this descriptive study comprised 198 patients (115 women and 83 men) that visited the emergency department at an education and research hospital between December 01, 2013, and December 31, 2013, and agreed to participate in the study. The participants had been informed about the purpose, content, and methods of this study. Then, the data collection forms (patient information form, Triage Satisfaction Scale, and Newcastle Satisfaction with Nursing Scale) were administered to the patients. Data analysis involved descriptive statistical methods as well as parametric and nonparametric tests.

Results: It was determined that the mean age of the patients in the emergency department was 38.56 ± 17.43 years, and 51.5% (n=102) patients were in the yellow triage category. It was determined that a majority of patients did not wait for triage and indicated that they were receiving treatment in accordance with the triage category. The total Triage Satisfaction Scale mean score was 7.37±2.11 and the total Newcastle Satisfaction with Nursing Scale mean score was 73.34±17.66. It was found that there was a significant difference between the waiting status and satisfaction scores in the triage section of the patients. It was also found that there was a meaningful difference between the dimensions of satisfaction with treatment and care in terms of the triage category.

Conclusion: It was determined that the patients who applied to the emergency unit were generally satisfied by the triage practice and nursing care. The nursing care satisfaction levels of the patient and their family regarding the health status and psychological support were found to be low. It may be advisable to periodically implement satisfaction analyses of the nursing practices in such units in order to make necessary arrangements and to eliminate deficiencies.

Keywords: Emergency department, nursing care, patient satisfaction, triage

INTRODUCTION

When the physical conditions at emergency units are considered in their entirety, they are seen to be the most active, busy, stressful, and complex units in healthcare institutions. In terms of healthcare professionals, these units aim to save lives, evaluate patients requiring emergency intervention, and provide emergency care and treatment, as well as tackle negative factors such as heavy patient circulation, patient deaths, inadequate equipment, long working hours, inadequate number of staff members, problems experienced in the team, dealing with patients requiring rapid diagnosis and treatment, having life risk, dealing with patients' relatives, and disturbed sleep. From the perspective of patients and their relatives, they have apprehensions about the seriousness of the situation due to a foreign environment, many unfamiliar people, appearance and sounds of medical devices, noisy environment, frequently used medical terminology and failure to understand them, and long-lasting silence from healthcare professionals. Because of all these reasons, both emergency healthcare professionals, and patients who applied to the emergency service as well as their relatives are in a privileged position under all circumstances (Gürlek, 2005; Karadağ, 2007; Kebapçı & Akyolcu, 2011).

Patient satisfaction is a multidimensional concept comprising important factors such as guiding, informing, psychosocial support, service speed, timing, and competence of caregivers (Toğun, 2008). Crowds, lack of resources, and interpersonal communication problems among people are frequently encountered in emergency departments causing patient safety problems; this negatively affects the patient's sat-

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isfaction level (Carter, Pouch & Larson, 2014; Çakır, Çevik, Bulut & Güneyses, 2014; Somma, Paladino, Vaughan, Lalle, Magrini & Magnanti, 2015). Since the satisfaction of patients with the given nursing care while their time at the hospital is one of the most important factors affecting their satisfaction about all the hospital's services, it is important to improve, and enhance the nursing services (Demir, Gürol, Eşer & Khorshid, 2011). Being a system used in diagnosis and allowing classification for using resources in healthcare institutions in the right place and at the right time, triage ensures the rapid and safe evaluation of all the patients to identify individuals requiring emergency care and therefore preventing overload in emergency services, reduces morbidity and mortality rates, and ensures the effective use of resources (Gündüz, Asar & Gökçe, 2013; Şanlı, 2013). In this sense, triage application becomes imperative in emergency departments with an increasing number of daily applications (Akyolcu, 2007; Çakır, Çevik, Bulut & Aydın, 2014; Karaçay, 2010; Parenti, Reggiani, Iannone, Percudani & Dowding, 2014; Sungur, Aksoy, Biçer & Aydoğan, 2009; Schuur & Venkatesh, 2012). For the patients applying to the emergency unit, long waiting times, and unqualified nursing care are the most common difficulties. When the literature is examined, it is seen that patient satisfaction in emergency services is related to the waiting time, and nursing care (Messina et al., 2015). Shortening the waiting time for treatment and care (Kabaroğlu, Eroğlu, Ecmel Onur, Denizbaşı & Akoğlu 2013) and the presence of good nursing services increase the level of patient satisfaction (Cerit, 2016; McFarlan, O'Brien & Simmons, 2018; Negarandeh, Bahabadi, & Mamaghani, 2014). This study was planned by considering the fact that evaluating the patient satisfaction level in emergency services and the influencing factors can facilitate the provisioning of better treatment and care services.

The aim of this study is to evaluate the satisfaction of patients with triage and nursing practices in emergency units and to provide the obtained data as a reference that can facilitate regulation and care interventions to be made on this subject.

Research Questions

1. What are the descriptive characteristics, mode of transportation, and arrival time of the patients admitted to the emergency department?
2. What are the reports of the triage category and practices of patients admitted to the emergency department?
3. Is there a correlation between the characteristics of the patients admitted to the emergency department and the level of satisfaction with the triage application?
4. Is there a correlation between the characteristics of the patients admitted to the emergency department and the level of satisfaction with nursing?
5. Is there a correlation between the triage care satisfaction levels and nursing care satisfaction level of the patients admitted to the emergency department?

METHOD

Study Design

This study was designed and implemented as being descriptive and correlational.

Sample

This study was conducted to evaluate the factors affecting the satisfaction of individuals who applied to the emergency service and whether or not there is a correlation between the nursing care satisfaction and triage application. The population of this study, which was conducted in a training and research hospital, comprised 13662 individuals who applied to the emergency department between November 01, 2013, and November 31, 2013. In order to determine the sample of the study, a power analysis was performed using the G*Power (v. 3.1.7) program. Based on the calculation results, the effective size was calculated to be d=0.417; further, it was found that the sample group must include a minimum of 184 people with 80% power and α=0.05. The data were collected from 200 individuals who met the inclusion criteria and participated voluntarily, taking into consideration the fact that there might be losses. Two of the forms were canceled due to missing data and therefore the sample group comprised a total of 198 patients.

The inclusion criteria of the study were as follows: being conscious and able to verbally communicate, being 18 years old or over, receiving treatment and care in and being discharged from one of the internal or surgical units of the emergency clinic, and being present in the yellow and green categories in the triage classification. The exclusion criteria were as follows: being in the red triage category, coming for the administration of prescribed intramuscular medication, and being admitted to another service after treatment and care.

Data Collection
The data were collected between December 01, 2013, and December 31, 2013. The data of the study were collected using the information form, Triage Satisfaction Scale (TSS), and Newcastle Satisfaction with Nursing Scale (NSNS).

Information Form: The data from the study were collected by using the patient information form, which was developed by the researcher and was intended to question the demographic characteristics of the patients, type of arrival at the emergency service, time of admission, waiting status for the triage application, and receiving treatment within the time appropriate for their categories.

The time to apply for the emergency service and the time periods for triage application in the patient information form were arranged as follows:

The time to apply to the emergency department was divided into three equal shifts (08:00–16:00/16:01–00:00/00:01–07:59); however, the patients who were admitted in the 00:01–07:59 shift were excluded from the sample of the study due to their lower number, red triage category, and refusal to participate in the study. The time for waiting for triage application was determined as the time from arriving to the emergency department to that arriving at the patient registration point. As stated in T.C. Ministry of Health Emergency Service Regulation (2009), priority treatment (waiting) time appropriate for the triage category was determined to be a maximum of 1 h for the yellow section and 3 h for the green section.

Triage Satisfaction Scale (TSS): In this scale based on the use of the "Visual Analog Scale," where numbers 1 to 10 were placed on a horizontal line and which can be easily understood by patients and can be applied by anyone to many different groups, the patients stated the point corresponding to their satisfaction with emergency triage application by marking an "X" symbol. In the scale, point 1 refers to "extremely unsatisfied," and point 10 refers to "extremely satisfied."

Newcastle Satisfaction with Nursing Scale (NSNS): NSNS was developed by Thomas, McColl, Priest, Bond & Boys (1996) in order to determine patients' satisfaction and experiences with nursing care from their perspective. The scale, which was structured as a self-report, was formed by individual and focus group interviews with the patients. At the end of these interviews, "reaching to nurses," "nurses' attention," "approaching to patients as individuals," "eliminating worries," "giving information," and "sincere approach of nurses to patients" were found to be the most important concepts. The other concepts that were less frequently expressed were "professionalism of nurses," "knowledge of nurses," "organization," and "ward environment." The scale developed in line with these concepts is composed of three parts. The first part is composed of 26 items (Nursing Care Experience Scale) adopting a 7-item Likert-type questionnaire investigating the patients' experiences about nursing care during hospitalization. The second part is composed of 19 items (Nursing Care Satisfaction Scale) measuring the patients' satisfaction with nursing care with a 5-item Likert-type questionnaire. The third part is composed of questions for obtaining data about the demographic characteristics and hospitalization (Thomas et al., 1996).

In the present study, only the second part of the NSNS, all items, of which are positive, was used. The scores ("quite dissatisfied" =1 point; "rarely satisfied" = 2 points; "satisfied" = 3 points; "very satisfied" = 4 points; and "completely satisfied" = 5 points) given to the questions were collected; the obtained score was transformed into a 100-point system and then evaluated. By obtaining the mean value of the scores of the individuals from this scale, their satisfactions were evaluated, and the increase in the total score obtained from the scale indicated the increase in the patients' satisfaction with nursing care.

In the original study, the Cronbach's alpha value for NSNS was found to be 0.96 and the correlation between each item and total item score ranged from 0.53 to 0.82 (Thomas et al., 1996). In Turkey, the reliability analysis of NSNS was conducted by Akın and Erdoğan (2007), and the alpha value was found to be 0.96. In this study, the Cronbach's alpha value was found to be 0.955.

Information about the study and its purpose was given to the patients who were appropriate for the sample group. Treatment and care interventions of the patients who agreed to participate in this study were expected to be completed. After this process, the areas in the service (triage area, registration

desk, treatment, unit, etc.) and treatment (waiting) times were explained to the discharged and voluntary patients. A room with physical suitable conditions close to the emergency room exit was shown to the patients and they were asked to fill out the questionnaire (patient information form, TSS, and NSNS). Forms were collected at the end of the period (15–20 min), which was assumed to be sufficient for filling. The researcher filled the questionnaire forms of the patients who stated that they were illiterate; this was done in the form of questions and answers.

Statistical Analysis

For statistical analysis, Statistical Package for Social Sciences (IBM SPSS Corp.; Armonk, NY, USA) for Windows 20.0 2007 and Power Analysis and Sample Size (PASS) 2008 statistical software (Utah, USA) programs were used. The following methods were used to assess the study data: descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, and maximum) as well as the Student's t-test in the two-group comparison of parameters showing normal distribution and Mann–Whitney U test in the two-group comparison of parameters not showing normal distribution in comparing quantitative data. One-way analysis of variance (ANOVA) test in the comparison of three or more groups showing normal distribution and Tukey's Honestly Significant Difference test in determining the group causing the difference were used. Kruskal–Wallis test was used in the comparison of three or more groups that were not showing normal distribution and Mann–Whitney U test was used in determining the group causing the difference. Pearson's correlation analysis and Spearman's correlation analysis were used to evaluate the relationships between the parameters. Significance was evaluated at $p<0.01$ and $p<0.05$ levels.

Table 1. Distribution of the descriptive characteristics of individuals applying to the emergency department (N=198)

		Min-Max	Mean±SD
Age (year)		18-75	38.56±17.43
		n	%
Gender	Female	115	58.1
	Male	83	41.9
Marital status	Single	61	30.8
	Married	127	64.1
	Widow	10	5.1
Education status	Illiterate	16	8.1
	Literate	8	4.0
	Primary school	56	28.3
	Secondary school	24	12.1
	High school	61	30.8
	College	33	16.7
Occupation	Officer	22	11.1
	Worker+self-employed	58	29.3
	Housewife	78	39.4
	Other	40	20.2
Triage department	Yellow	102	51.5
	Green	96	48.5

Min: Minimum; Max: Maximum; SD: Standard deviation

Ethical Considerations

In order to carry out this study, institutional permissions were obtained from the ethics committee (Istanbul University, Cerrahpasa Medical Faculty Clinical Trials Ethics Committee; Date: November 12, 2013; No: 31871) and the institution where the study was conducted. Permission to use the scale was obtained from the researcher who conducted the Turkish validity–reliability study using NSNS. Written informed consent was obtained from the patients who participated in this study, and it was ensured that they voluntarily participated in this study.

RESULTS

It was determined that the mean age of the individuals in the sample group was 38.56±17.43 years; out of them, 58.1% were female, 64.1% were married, 30.8% were high school graduates, 39.4% were housewives, and 51.5% decided to receive treatment in the yellow triage department (Table 1).

Regarding the way of arrival to the emergency service and triage applications, 91.9% patients applied between 08:00 and 16:00, 42.9% came with their own car, and 88.9% expressed that they did not wait much until the triage application; triage classifications of 88.9% were correctly made depending on the severity of their disease and 84.8% stated that they received the treatment and care in a time appropriate for the category (Table 2).

According to the TSS structure needed to determine the triage application satisfaction level of the individuals applying to the emergency department, it was found that the mean level of satisfaction was 7.37±2.11, and their satisfaction levels were above the moderate level (Table 3). According to the distribution of responses obtained from the NSNS evaluating the satisfaction of patients with nursing care, the overall satisfaction mean score was found to be 73.34±17.66 out of 100 points (Table 4). It was determined that 51.5% (n=102) participants were completely satisfied with the fact that nurses respected patient confidentiality while providing care, 42.9% (n=85) participants were completely satisfied with the helpfulness of nurses, and 40.4% (n=80) participants were completely satisfied with the fact that the nurses were aware of the patients' needs; however, 14.1% (n=28) participants were not satisfied with the content of information about their own health conditions and treatments by nurses and 13.1% (n=26) participants were not satisfied with being equally informed about the health conditions by the nurses, and their listening to the patients' sadness (Table 5).

A statistically positive moderate and significant correlation at the 30.0% level was determined between the NSNS and TSS mean scores of the individuals who applied to the emergency department (as the NSNS score increased, the TSS score increased, too) (r: 0.300; p<0.01) (Table 6).

When the results related to the nursing care and triage satisfaction mean scores of the individuals who applied to the emergency service and their descriptive characteristics were examined, it was determined that male patients had higher satisfaction scores than female patients, but there was no significant difference between them; similarly, there was no significance between the other variables (p<0.05) (Table 7).

When the NSNS scores of the patients were compared, those who applied to the emergency service between 08:00 and 16:00 had significantly higher scores than those who applied between 16:00 and 00:00 (p=0.012; p<0.05); however, there was no significant difference between their TSS mean

Table 2. Distribution of information about the application type of patients to the emergency service and triage applications (N=198)

		n	%
Application time	08:00-16:00	182	91.9
	16:01-24:00	16	8.1
	24:01-08:00	0	0
Arrival to the emergency department	Own car	85	42.9
	Walking or by bus	70	35.4
	Taxi	29	14.6
	Ambulance	14	7.1
Waiting for a longer time until triage application	Yes	22	11.1
	No	176	88.9
Thinking of being referred to the correct triage category	Yes	176	88.9
	No	22	11.1
Treatment in a time appropriate for the category	Yes	168	84.8
	No	30	15.2

Table 3. Satisfaction mean scores of the patients who applied to the emergency department for triage applications according to the Triage Satisfaction Scale (N=198)

	Min-Max	Mean±SD (Median)
Triage Satisfaction Scale	1-10	7.37±2.11 (8)
	n	%
Quite dissatisfied	5	2.5
Satisfied 2	1	0.5
Satisfied 3	6	3.0
Satisfied 4	4	2.0
Satisfied 5	21	10.6
Satisfied 6	18	9.1
Satisfied 7	35	17.7
Satisfied 8	46	23.2
Satisfied 9	28	14.1
Completely satisfied	34	17.2

Min: Minimum; Max: Maximum; SD: Standard Deviation

Table 4. Mean scores of patients who applied to the emergency unit according to the Newcastle Satisfaction with Nursing Scale (N=198)

	Min-Max	Mean±SD	Cronbach's Alpha
Newcastle Satisfaction with Nursing Scale Score	29.47-100.00	73.34±17.66	0.955

Min: Minimum; Max: Maximum; SD: Standard Deviation

scores. It was found that the patients who stated that they did not wait in the triage department had higher NSNS (p=0.028; p<0.05) and TSS mean scores (p=0.004; p<0.05) than those who stated that they waited, and the difference between them was significant. Similarly, the patients who said that they received treatment and care in time appropriate for their triage category had higher NSNS (p=0.034; p<0.05) and TSS mean scores (p=0.001; p<0.01) than those who said that they did not, and there was a significant difference between them (Table 8).

Table 5. Distribution of responses of the patients who applied to the emergency unit as per the Newcastle Satisfaction with Nursing Scale about nursing care (N=198)

	Quite dissatisfied		Rarely satisfied		Satisfied		Very satisfied		Completely satisfied	
	n	%	n	%	n	%	n	%	n	%
From the time allocated by the nurses for you	4	2	20	10.1	71	35.9	45	22.7	58	29.3
Nurses' competence in their work	1	0.5	11	5.6	70	35.4	54	27.3	62	31.3
The presence of a nurse when you need someone	11	5.6	18	9.1	57	28.8	44	22.2	68	34.3
Knowledge level of nurses about your care	7	3.5	12	6.1	66	33.3	54	27.3	59	29.8
Nurses' quick response when you call them	7	3.5	19	9.6	48	24.2	54	27.3	70	35.4
How much the nurses make you feel at home	16	8.1	28	14.1	40	20.2	54	27.3	60	30.3
Being informed by the nurses about your conditions and treatment	26	13.1	27	13.6	46	23.2	46	23.2	53	26.8
The frequency of nurses checking your well-being	16	8.1	23	11.6	50	25.3	52	26.3	57	28.8
From the helpfulness of nurses	6	3	17	8.6	43	21.7	47	23.7	85	42.9
From the explanation way of nurses	17	8.6	22	11.1	49	24.7	37	18.7	73	36.9
Nurses' efforts to eliminate worries of your relatives and friends about you	19	9.6	33	16.7	43	21.7	49	24.7	54	27.3
Attitudes of nurses while doing their jobs	11	5.6	20	10.1	48	24.2	52	26.3	67	33.8
The content of information they provided about your condition and treatment	28	14.1	28	14.1	50	25.3	46	23.2	46	23.2
Nurses' behaviors toward you as an individual	11	5.6	16	8.1	41	20.7	56	28.3	74	37.4
Nurses listening to your worries and concerns	26	13.1	27	13.6	47	23.7	47	23.7	51	25.8
Freedom given to you in the service	8	4	23	11.6	41	20.7	65	32.8	61	30.8
Nurses' willingness to meet your wishes	8	4	21	10.6	54	27.3	45	22.7	70	35.4
Nurses' respect for your privacy	5	2.5	10	5.1	32	16.2	49	24.7	102	51.5
Nurses' awareness about your needs	9	4.5	11	5.6	50	25.3	48	24.2	80	40.4

Table 6. Correlation between the mean scores of Newcastle Satisfaction with Nursing Scale and Triage Satisfaction Scale Score of the patients who applied to the emergency department (N=198)

	r	p
Newcastle Satisfaction with Nursing Scale Score * Triage Satisfaction Scale Score	0.300	0.001**

r: Pearson's Correlation Coefficient; p: Pearson's Correlation Significance; **p<0.01

DISCUSSION

Due to developing technology and increasing requirements, many developments are taking place in the fields of social, political, and engineering, as well as in the healthcare field. Considering from general to private, the "quality of life–health satisfaction–emergency unit triage" series is one of the best examples that can be given to such developments.

Patient satisfaction, which has an important place in the evaluation of modern health services, is a multidimensional concept that includes the interaction between the patients and service providers. Further, it includes the provision, existence, and continuity of service; adequacy of the service providers and their communication skills; and the fact that this concept is a perpetual, and dynamic process that gains another dimension every day (Raper, Davis & Scott, 1999; Senitan, Alhaiti & Gillespie, 2018; Tuğut & Gölbaşı, 2013). The triage reduces the number of patients who return and wait in the emergency department for hours, especially in crowded emergency services without evaluation, even though they are emergency cases. This can layer the diagnosis process into steps and bring the care desired by both the patient and healthcare professionals and therefore quality and satisfaction.

Table 7. Results regarding the comparison of descriptive characteristics of the individuals who applied to the emergency service with regard to the Newcastle Satisfaction with Nursing Scale and the Triage Satisfaction Scale Score (N=198)

	n	NSNS Score	Test value	p	TSS	Test value	p
Age (year)	198	r=0.111		[e]0.119	r=0.043		[f]0.550
	n	**Mean±SD**			**Mean±SD (Median)**		
Gender							
Male	83	74.10±17.77	t=0.516	[a]0.606	7.40±1.97 (8.0)	z=-0.224	[b]0.822
Female	115	72.79±17.64			7.35±2.21 (8.0)		
Marital Status; (Median)							
Single	61	71.22±17.32 (69.5)			7.33±2.02 (8.0)	χ2=0.245	[d]0.885
Married	127	73.78±18.04 (75.8)	F=2.962	[c]0.227	7.42±2.09 (8.0)		
Widow	10	80.74±13.36 (87.3)			7.00±2.94 (7.5)		
Occupation							
Worker + self-employed	58	74.36±17.93			7.71±1.67 (8.0)		
Officer	22	72.20±19.80	F=1.114	[c]0.345	6.59±2.67 (7.0)	χ2=4.880	[d]0.181
Housewife	78	75.07±17.67			7.46±2.28 (8.0)		
Other	40	69.11±15.86			7.13±1.94 (7.5)		
Education level							
Primary school and below	80	75.96±15.61			7.38±2.36 (8.0)		
Secondary school	24	73.11±20.07	F=1.225	[c]0.299	7.38±1.84 (7.5)	χ2=0.815	[d]0.846
High school	61	69.42±18.17			7.52±1.65 (8.0)		
College	33	74.39±19.04			7.06±2.44 (7.0)		
Triage department							
Yellow	102	74.28±17.14	t=0.775	[a]0.439	7.34±2.13 (8.00)	z=-0.190	[b]0.849
Green	96	72.33±18.23			7.40±2.09 (8.00)		

[a]Student's t-test; [b]Mann–Whitney U Test; [c]One-way ANOVA test; [d]Kruskal–Wallis Test; [e]r: Pearson's Correlation Coefficient; [f]Pearson's Correlation Significance Min: Minimum; Max: Maximum; SD: Standart Deviation; NSNS: The Newcastle Satisfaction with Nursing Scale; TSS: Triage Satisfaction Scale

Table 8. Results regarding the comparison of application types of patients to the emergency unit, arrival type, and acceptance with the Newcastle Satisfaction with Nursing Scale and Triage Satisfaction Scale Score mean scores (N=198)

		NSNS Score			TSS Score		
	n	Mean±SD (Median)	Test value	p	Mean±SD (Median)	Test value	p
Application time							
08=00-16=00	182	74.40±16.91 (75.2)	z=-2.513	[b]0.012*	7.42±2.10 (8.0)	z=-1.242	[b]0.214
16=00-24=00	16	61.25±21.82 (56.3)			6.81±2.23 (7.0)		
24=00-08=00	0						
Type to arrive emergency department							
Ambulance	14	77.22±12.55 (78.4)			7.00±2.45 (7.0)		
With own car	85	73.21±19.83 (74.7)	χ2=1.436	[d]0.697	7.54±2.00 (8.0)	χ2=0.979	[d]0.806
Taxi	29	70.38±16.86 (72.6)			7.14±2.42 (8.0)		
Waling-Bus	70	73.94±16.11 (72.6)			7.33±2.06 (8.0)		
Practices after admission							
Only the blood pressure was measured	65	73.57±17.92			7.62±2.13 (8.0)		
Only fever was checked	42	75.84±17.37	F=1.677	[c]0.173	7.12±2.04 (7.0)	χ2=5.661	[d]0.129
Fever. pulse. respiration and blood pressure were measured	32	67.24±19.89			6.94±1.85 (7.0)		
Nothing done	59	74.61±15.93			7.51±2.25 (8.0)		
For you. what is the severity level of your condition?							
Very serious	33	71.74±18.53			6.33±2.67 (7.0)		
Serious	121	73.18±17.99	F=0.327	[c]0.721	7.59±1.91 (8.0)	χ2=6.317	[d]0.042*
Not serious	44	74.98±16.28			7.55±1.98 (8.0)		
Waiting for a longer time in triage department							
No	176	74.31±17.51	t=-2.216	[c]0.028*	7.52±2.02 (8.00)	z=-2.216	[b]0.004*
Yes	22	65.55±17.29			6.14±2.44 (6.00)		
Believing to be directed to the correct triage department							
Yes	176	73.54±17.55	t=0.454	[a]0.650	7.53±1.94 (8.0)	z=-2.029	[b]0.042*
No	22	71.72±18.89			6.09±2.91 (7.0)		
Treatment and care in a time appropriate for the triage category							
Yes	168	74.46±17.59	t=2.136	[a]0.034*	7.68±1.83 (8.0)	z=-4.213	[b]0.001**
No	30	67.05±17.00			5.60±2.66 (5.0)		

[b]Mann–Whitney U test; [c]One-way ANOVA test; [d]Kruskal–Wallis Test;*p<0.05; **p<0.01
Min=Minimum; Max= Maximum; SD= Standart deviation; NSNS= The Newcastle Satisfaction with Nursing Scale; TSS= Triage Satisfaction Scale

General satisfaction rates were found to be 64.2% in the study conducted by Şahbaz-Karagün (2006) in an emergency department of a university hospital, 74.6% in a study conducted by Aşılıoğlu, Akkuş and Baysal (2009) in the pediatric emergency department of a university, and 97% in a similar study conducted by Topal, Şenel, Topal and Mansuroğlu (2013). In the study by Cerit (2016), the mean score of the patients' satisfaction with nursing care was found to be 76.61. In this study, the TSS patient satisfaction score was found to be 7.37±2.11 and the overall satisfaction score of NSNS was 73.34±17.66. A statistically positive and statistically significant correlation at the 30.0% level was found between the NSNS and TSS scores (as the NSNS score increased, the TSS score also increased). The result, which is similar to the results of an earlier study, can be considered as a positive reflection of the arrangements made in the recent years for patients in emergency departments.

In the studies examining the effect of patients' sociodemographic characteristics regarding satisfaction, different results have been obtained regarding the gender factor. Along with the studies indicating that there is a significant difference between the gender and patient satisfaction (Hekkert, Cihangir, Kleefftra, Berg & Kool, 2009; İçyeroğlu & Karabulutlu, 2011; Quintana, 2006), there are also studies indicating no significant difference (Bölükbaş & Türköz, 2002; Çelikalp, Temel, Saraçoğlu & Demir, 2011; Sezgin, 2010). Demir et al. (2009) stated that the satisfaction levels of male patients were higher than those of female patients, but the difference between them was not significant. Similarly, in the study of Demir et al. (2009), this study revealed that male patients had higher NSNS and TSS scores, but the difference between them was insignificant ($p=0.606$; $p>0.05$).

Study results from the literature have revealed that the correlation between the education and patient satisfaction is generally not directly proportional (Kayrakçı & Özşaker, 2014; Şişe & Altınel, 2012). Demirci, Öztürk, and Hatipoğlu (2018) found that as the education level increased in the hospitalized patient group, the satisfaction score decreased. In the studies by Nesanir and Dinç (2008) and Kabaroğlu et al. (2013), they found that there was no significant difference between the educational status and satisfaction of the patients. Similarly, in this study, no significant difference was determined between the education and satisfaction of patient individuals with nursing services ($p=0.299$; $p>0.05$).

In a study evaluating the emergency service applications, the rates of applying the patients to the emergency unit were found to be 39.4% between 08:00 and 16:00, 44.5% between 16:00 and 00:00, and 15.9% between 00:01 and 07:59 (Çiftçi & Topoyan, 2005). In a similar study, it was found that the time period including the most frequent application time was between 16:00 and 00:00, and there was a significant decrease in the number of patients after midnight (Kılıçaslan, Bozan, Oktay & Göksu, 2005). In this study, information about the application time to the emergency department was obtained in the time periods of 08:00–16.00 and 16:00–00:00. Unlike earlier studies, the NSNS scores of the patients whose application time was between 08:00 and 16:00 were found to be significantly higher than those whose application time was between 16:00 and 00:00 ($p=0.012$; $p<0.05$). This result supports the results of the study by Sandovski et al. (2001), stating that the patients who came to the hospital in the morning hours were more satisfied, in addition to a similar result proposed by Al et al. (2009) in their study. It can be asserted that this result was associated with the fact that the emergency units provided service with more healthcare professionals between 08:00 and 16:00.

Waiting time in the emergency department affects patient satisfaction. In their study, Aaronson, Mort, Sonis, Chang and White (2018) determined that as the waiting time of the patients increased, their satisfaction scores decreased, and there was a significant difference between them. When examining earlier studies conducted on the waiting status of the individuals who applied to the emergency department until the triage application, in the study conducted by Yiğit, Oktay and Bacakoğlu (2010) to evaluate the complaint forms in the emergency unit of a university hospital, they found that the most frequent cause of complaint was longer waiting time in the triage area. In the study by Gültekin-Akkaya, Bulut and Akkaya (2012), a significant correlation was determined between the patients' satisfaction with the triage time and their overall satisfactions. In this study, it was found that NSNS ($p=0.028$) and TSS ($p=0.004$) scores of patients who stated that they did not wait in emergency unit until triage application were higher than those of the patients who stated that they waited, and the difference between

them was significant (p<0.05). The study results obtained concerning both the waiting period until triage application and treatment and care procedures performed within appropriate time can be evaluated as a required and expected situation, considering the fact that the individuals were admitted to the hospital due to an emergency case.

In this study, it was determined that the difference between performing treatment and care procedures within the appropriate time as per the category and NSNS (p=0.034) and TSS (p=0.001) scores concerning satisfaction was significant (p<0.05).

Study Limitations

The researcher filled out questionnaires about illiterate patients, who agreed to participate in the study, in the same tone in the form of question and answer. This situation should be considered in future studies so that the answers given to questions may be subjective; accordingly, they might affect and change their satisfaction scores.

CONCLUSION AND RECOMMENDATIONS

In this study evaluating the satisfaction levels of patients applying to the emergency unit regarding triage applications and nursing care, the patients were found to be generally satisfied. While some parameters that were determined for evaluating the category in the triage department by healthcare professionals (fever, pulse, respiration, and blood pressure) and nursing practices (taking anamnesis, etc.) were not effective on patient satisfaction, their statuses toward receiving treatment and care within a time appropriate for the category they were referred to after triage were found to affect their satisfaction level in both the dimensions (i.e., TSS and NSNS).

In line with these results obtained from our study, the following can be recommended:

- To develop similar systematic approaches along with the effective application (correct category, correct time, and correct area) of triage predicted can prove to be a solution to increasing emergency unit applications,
- To have other healthcare professionals, particularly nurses, pay attention to provide psychological support by informing the patient and his/her family (whose satisfaction levels for treatment and care applications in emergency units were low) about the patient's health condition,
- To synthesize modern developments and to periodically apply the satisfaction analysis related to nursing and nursing practices, which can be integrated with patient care and therefore are continuously developed, particularly in emergency units where individuals with a health problem having a dynamic structure that develops suddenly and may cause a risk, as well as conduct necessary arrangements and eliminate deficiencies.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Istanbul University, Cerrahpasa Medical Faculty (Clinical Trials Ethics Committee; Date: November 12, 2013; No: 31871).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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