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Patient Satisfaction with Emergency Department Care at a Care Center in Saudi Arabia

Atheer A. Aljudaie[1*], Amal A. Alamri[1], Maryam S. Alanzi[1], Amaney A. Alghamdi[1], Amnah M. Alanzi[1], Futoon H. Alsughier[1], and Alaa M. Althubaiti[1] and Ali I. Alfarhan[2]

[1] *King Saud bin Abdulaziz University for Health Sciences (KSAU-HS), Riyadh, Saudi Arabia*

[2] *King Abdulaziz Medical City (KAMC), National Guard Health Affairs, Riyadh, Saudi Arabia*

**Corresponding e-mail: mjeedafaadhel@hotmail.com*

ABSTRACT

Patient satisfaction plays a crucial role in assessments of the effectiveness of healthcare delivery. It is of absolute importance in the quality assessment as its comprehensive analysis can highlight both well-functioning and problematic aspects of a hospital. This descriptive cross-sectional study aimed to assess the satisfaction of 375 patients admitted to the emergency department (ED) of King Abdulaziz Medical City in Saudi Arabia between December 2016 and September 2017 and to determine the related factors. The patients, selected through non-randomized convenience sampling, completed a validated questionnaire in two phases: August-September and December-January. The mean (standard deviation) score of overall satisfaction was 57.59 (8.69) (range: 19-70). The domain that had the highest "excellent" score was admission (171; 45.8%), while that with the highest "poor" score was nursing care (141; 37.6%). Most participants rated their level of satisfaction as good (96; 50.8%). Those who had been hospitalized in the three days prior to filling out the questionnaire and those who waited longer to see the doctor were significantly less satisfied ($p=0.007$ and $p<0.001$, respectively) compared with the other patients. Higher satisfaction levels were observed among patients who were treated in the main ED, were admitted during the morning shift, visited the ED during the slower season (August-September), and had experienced less waiting time to see the doctor. Patients were mostly satisfied with admission and least satisfied with nursing care.

Keywords: Healthcare, Emergency department, Surgical and critical units

INTRODUCTION

Patient satisfaction is an important issue in the healthcare process, which also plays a crucial role in measuring the effectiveness of healthcare delivery [1]. Moreover, patient satisfaction is of absolute importance in the quality assessment as its comprehensive analysis can highlight both the well-functioning and problematic aspects of a hospital [2]. Some researchers believe that improving work processes and hospital quality is not possible without taking patients' requirements, expectations, and satisfaction into consideration [3]. While there is no consensus on how to define the concept of patient satisfaction in healthcare, in Donabedian's quality measurement model, it is defined as a patient-reported outcome measure while the structures and processes of care can be measured by patient-reported experiences [4].

Patient satisfaction is a demand placed on each department of every hospital, especially the emergency department (ED). It is broadly a worthy goal and a potentially important mediator for a range of outcomes [5]. As a variety of factors influence patient perceptions of the care provided, including actual waiting times, the patients' right to receive detailed explanations of and information regarding multiple aspects of diagnosis and treatment, staff cooperation, the ED environment, and department adherence to healthcare standards, its assessment must be multidimensional. Recent studies on patient satisfaction have generally examined factors such as age, race, ethnicity, gender, and social status and many have failed to take age and race into account. However, the triage process is strongly correlated with satisfaction and could be viewed as another indicator of waiting time [6]. The role of the ED in service provision is

undeniable because of its effect on patient satisfaction with the delivery of acute ambulatory and inpatient care. There are several reasons for improving patient satisfaction, including patient compliance, reducing malpractice risk, and improving physician and staff morale [7].

In one previous study, waiting time was found to be an ED characteristic associated with patient satisfaction. Therefore, EDs seeking to improve patient satisfaction scores may consider working on reducing waiting times [8]. In another study, conducted to determine the association between pain management and patient satisfaction among ED patients presenting with acute painful conditions, there was a significant association between patient satisfaction and effective pain management [9]. In a recent study, it was concluded that the most important factors associated with satisfaction included communication, overall experience, speed of treatment, and quality of care. The most common factors associated with dissatisfaction included waiting time, treatment of pain, and nursing staff. Patient satisfaction scores did not vary significantly by patient gender, patient ethnicity, ED disposition, physician gender, physician ethnicity, or patient-physician gender concordance. Patients treated by female physicians were more highly satisfied with ED care [10]. A similar study conducted at King Abdulaziz Medical City (KAMC) in Riyadh found that reducing waiting time had a significant effect on improving satisfaction with healthcare services, especially in emergency care settings [11]. This study aimed to evaluate patient satisfaction with the ED care and services provided at KAMC.

MATERIALS AND METHODS

Design and Setting

This was a cross-sectional study conducted at KAMC between December 2016 and September 2017. This hospital was selected as the study site because its emergency care center is considered one of the best trauma care centers in Saudi Arabia. The hospital has surgical and critical units, including an outstanding burn unit, a surgical intensive care unit, an endoscopy unit, operating rooms, and neurosurgical and surgical units, with 132 beds for emergency access [12].

Sampling and Participants

We used Raosoft [13] to determine the required sample size based on the following inputs: 5% margin of error, 95% confidence level, population size of 21,000 patients/month, and 65% response rate [11]. The minimum recommended sample size was 344 patients. The participants were selected through non-randomized convenience sampling. All adult patients admitted to the ED during the study period were considered for inclusion in the study. Patients with communication difficulties, language barriers, and critical conditions (e.g., major trauma) were excluded. Of the target sample size, 98 (26.1%) were recruited from the flu clinic and the remaining 277 (73.9%) from the main ED. One hundred and ninety-four (51.7%) participants were recruited during summer and the remaining 181 (48.3%) during winter.

Data Collection

Data were collected through a questionnaire developed for this study. In the pilot study, the questionnaire was distributed to members of the target population over two weeks to test its feasibility, and the necessary adjustments were made. Content validity was ensured with the assistance of two physicians. The questionnaire, which can be found in the appendix, is available in two languages (Arabic and English). A back translation was performed to validate the translation. The questionnaire was self-administered; however, researchers or ED staff were present to assist the participant. The questionnaire consisted of two main parts. The first included items on demographic characteristics (e.g., gender, age, nationality, and educational level), day of admission (from Sunday to Saturday), time of admission (from 7 A.M. to 3 P.M., 3 P.M. to 11 P.M., and 11 P.M. to 7 A.M.), an area where the patient was treated (e.g., main ER and/or flu clinic), and whether the patient had previously visited the ER for the same complaint. The second part of the questionnaire contained statements with items scored on a Likert scale. The statements covered four aspects (admission, nurses who treated you in the ED, doctors who treated you in the ED, and others), a yes/no question on whether the patient was admitted to the hospital for further treatment, and three open-ended questions. The data were collected in two phases: August-September (during summer vacation; lowest population numbers) and December-January (during winter; highest population numbers).

The data that support the findings of this study is restricted by the institutional review board (IRB) at King Abdullah International Medical Research Center to protect patient privacy. Data are available on request from the corresponding author for researchers who meet the criteria for access to confidential data.

Ethical Considerations

Ethical approval was obtained from the institutional review board of KAMRC. Participation in the study was voluntary, and every respondent provided written informed consent. Participants were not asked to provide their names or medical record numbers, and confidentiality and anonymity were maintained throughout the study. Only the research team had access to the data.

Data Analysis

Descriptive statistics such as percentages, means, medians, and standard deviations (SD) were used. Analytical statistics were used to test the associations between patient satisfaction and certain demographic and healthcare characteristics. Pearson's chi-square test and Fisher's exact test were used for categorical data, and the independent samples t-test, Mann-Whitney test, analysis of variance, and Pearson's correlation coefficient were used for numerical data. Self-reported satisfaction was indicated using a five-point Likert scale (range: 1-5) where 1=Poor, 2=Fair, 3=Good, 4=Very Good, and 5=Excellent. The responses were then recoded into three categories: 4 and 5 were considered to indicate "very good to excellent," 3 "good," and 1 and 2 "fair to poor." For some questions, there was a sixth option indicating that the question was not applicable. In a logistic regression analysis, overall satisfaction was recoded into two levels: "good to excellent" and "fair to poor." Independent variables included in the model were demographic characteristics (e.g., age and educational level) and characteristics of the hospital inpatient care (e.g., day and time of visit). Only variables that showed statistical significance in the chi-square tests were included in the model. The data were analyzed using SPSS, version 20.0 (IBM Corporation, Armonk, NY, USA). A P-value of less than 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

Patient Characteristics

Table 1 presents a summary of participant characteristics. A total of 375 patients were included in the study, the majority of whom (340; 90.7%) were Saudi. One hundred and eighty-nine (50.4%) were female. As the main ED serves the maximum number of patients, that was where most of the participants (277; 73.9%) were recruited from. Of all the patients, 320 (85.3%) had not been to the ED in the past three days with the same complaint, and 108 (28.8%) were hospitalized during the morning shift, 160 (42.7%) during the evening shift, and 52 (13.8%) during the night shift.

Table 1 Patient characteristics

Variable	Descriptive Statistics
Age, y	n (%)
15-24	62 (16.5%)
25-49	117 (31.2%)
50-64	131 (34.9%)
≥ 65	65 (17.3%)
Gender	
Male	186 (49.6%)
Female	189 (50.4%)
Nationality	
Saudi	340 (90.7%)
Non-Saudi	35 (9.3%)
Level of education	
Illiterate	61 (16.3%)
Primary-high school	191 (50.9%)
Higher education	123 (32.8%)
Treatment Area	

Main ED	277 (73.9%)
Flu clinic	98 (26.1%)
Time of Visit	
Morning shift	108 (28.8%)
Evening shift	160 (42.7%)
Night shift	107 (28.5%)
Hospitalization for the Same Reason in the Past 3 days	
Yes	55 (14.7%)
No	320 (85.3%)
Phase	
Winter	181 (48.3%)
Summer	194 (51.7%)
Day of Visit	
Sunday	10 (2.7%)
Monday	109 (29.1%)
Tuesday	76 (20.3%)
Wednesday	16 (4.3%)
Thursday	164 (43.7%)
Waited >15 min. to See the First Doctor	
Yes	152 (40.53%)
No	223 (59.46%)
Waited >1 hour to See the Second Doctor	
Yes	101 (26.93%)
No	274 (73.06%)

Satisfaction with the ED by Domains

Tables 2 and 3 depict the mean satisfaction scores of the four domains as well as the total satisfaction score. The mean score of ED patients' overall satisfaction was 57.59 (8.69) (range: 19-70). The domain that had the highest "excellent" score was admission (171; 45.8%), while the domain with the highest "poor" score was nursing care 141(37.6%). The overall satisfaction was mostly good (96; 50.8%).

Table 2 Mean satisfaction scores in each domain

Domain (n)	Mean (SD), Range
Admission (373)	8.67 (1.61), 2-10
Nursing Care (367)	17.03 (2.989), 6-20
Doctor Care and Treatment (352)	12.95 (2.285), 4-15
Other Services (196)	19.02 (4.168), 5-25
Overall Satisfaction (189)	57.49 (8.69), 19-70

Table 3 Percentages of satisfaction in each domain

Domain	Fair/Poor	Good	Excellent/Very good
Admission	47 (12.6%)	155 (41.6%)	171 (45.8%)
Nursing Care	141 (37.6%)	78 (20.8%)	148 (39.5%)
Doctor Care and Treatment	128 (34.1%)	94 (25.1%)	130 (34.7%)
Other Services	49 (13.1%)	52 (13.9%)	94 (25.1%)
Overall Satisfaction	52 (27.5%)	96 (50.8%)	41 (21.7%)

Factors Associated with Overall Patient Satisfaction

Depicts that patients visiting the ED between 7 A.M. and 3 P.M. were significantly more satisfied than those visiting between 3 P.M. and 11 P.M. ($p<0.001$). Those visiting on Sunday were significantly less satisfied than those visiting

on Monday and Thursday (p=0.002, 0.047, respectively). Also, those visiting on Monday were more satisfied than those visiting on Tuesday (p=0.043). Those who had been hospitalized in the past three days were significantly less satisfied than those who had not been hospitalized in the past three days (p=0.007), and those who had to wait longer to see the doctor were significantly less satisfied than those seen immediately (p<0.001). Nationality was associated with satisfaction level, in that non-Saudi patients were significantly more satisfied than Saudi patients (p=0.023).

Factors Associated with Patient Satisfaction with Admission

Significantly higher satisfaction with admission was observed among those who were treated in the main ED (p<0.001), those admitted during the morning shift (p<0.001), and those admitted on Monday (p<0.001). Patients who visited the ED during the slow season and those who did not wait long to be seen by the doctor were also more satisfied than their counterparts (p=0.014 and p<0.001, respectively).

Factors Associated with Patient Satisfaction with Nursing Care

Significantly higher satisfaction with the nursing care provided was observed in those who were treated in the main ED (p=0.004), those who were treated during the morning shift (p=0.004), those who were treated during winter (p=0.010), and those who were treated on Mondays (p=0.022). Waiting time to be seen by the doctor was associated with satisfaction levels. Those who did not wait long were more satisfied with nursing care (p<0.001).

Factors Associated with Patient Satisfaction with Doctor Care

The highest levels of satisfaction with the care provided by doctors were observed among patients who received care during the morning shift (p<0.001), those who received care during winter (p=0.003), and those who waited less than 150 minutes to be seen by a doctor (p<0.001).

Factors Associated with Patient Satisfaction with Other Services

Patients who were hospitalized in the past three days for ED services (p<0.001) and those who had to wait to be seen (p=0.001) were found to be less satisfied than their counterparts. Patients who were non-Saudi (p=0.008), illiterate (p=0.017), and treated during the morning shift (p<0.001) all had significantly higher levels of satisfaction than their counterparts.

Written Complaints

The majority of the complaints were regarding nurses (language barrier-related issues), waiting time for specialist consultation, and poor explanation of laboratory and imaging results. The special nature of the ED calls for a sound understanding of the factors associated with patient satisfaction. This study examined patient satisfaction with care provided in the ED in the context of several domains: admission, nursing care, doctor care, and treatment, and other services. Patient evaluation of care is important as it presents opportunities for improvement, such as through the strategic framing of health plans. Our results have identified areas that could be targeted to facilitate improvement in the provision of emergency care.

Waiting time was a major factor associated with patient satisfaction. Those who did not wait long to be seen by the doctor were found to have higher satisfaction. Several previous studies have also found waiting time to be strongly correlated with patient satisfaction [14-17], in that longer waiting times were associated with less satisfaction.

Those treated during the morning shift (p<0.001) had significantly higher levels of satisfaction. Little research has been conducted on the relationship between patient satisfaction and specific hospital shifts. Shift work can disrupt human circadian rhythms, which can lead to changes in hormonal levels, increasing the risk of cardiovascular disease, producing sleep-cycle disturbances, and resulting in significant fatigue [18]. One study in the context of emergency medical practice considered the effects of shift work on the patient-doctor relationship from the patient's perspective, finding higher satisfaction scores among patients who had received care during the morning shift and the lowest scores among those treated in the afternoon. Patients treated at night had lower satisfaction scores than those treated in the morning [18]. Another study found that working a series of five-night shifts resulted in a substantial decline in cognitive performance in physicians working in the ED [19].

Patients who visited the ED during the low season had a higher level of satisfaction than patients treated during the high season. During the high season, there is an increase in the number of patients who visit the ED, which may

affect the level of services delivered by ED staff. Other studies have shown that increased crowdedness is significantly associated with reduced patient satisfaction [17,20]. Patients who were treated in the flu clinic were less satisfied than those treated in the main ED, perhaps for fear of picking up a respiratory tract infection in the flu clinic.

The patients offered several suggestions on how to improve the services provided, including physician identification (which has been found to increase patient satisfaction, coordination with the specialist consultant to decrease consultation waiting times, improved communication between the ED and imaging department (because there were many postponed imaging requests), improving nurses' communication skills, providing chairs for patient attendants, and valet parking.

Limitations

Despite its strengths, this study has certain limitations. As the data were obtained from only one institution, they reflect patient satisfaction only with the services provided in the ED of KAMC in Riyadh. The triage system aims to optimize patients' waiting times according to the severity of their medical condition [21]. The triage system used in the KAMC's ED is the Canadian Emergency Department Triage and Acuity Scale. In this study, we enrolled only patients from triage level III (urgent), which is for conditions that could potentially progress to a serious problem requiring emergency intervention. This level may be associated with significant discomfort or a compromised ability to function at work or about activities of daily living [22]. Level IV (less urgent or semi-urgent) involves patients with conditions that are related to age, distress, or potential for deterioration or complications, who would benefit from intervention or reassurance within an hour or two [22]. Compared with triage levels I and II, there is increased waiting time for patients from levels III and IV. Increased waiting time has been found by many studies to negatively affect patient satisfaction. Additionally, our study may be susceptible to time bias because we collected the data before discharge, while the patients were receiving treatment, which may have led to an underestimation of satisfaction level.

CONCLUSION

Patient satisfaction is an indicator of the quality of care provided by EDs and it is affected by several domains. Nursing care, doctor care, waiting time, and time of visits are the key factors that drive satisfaction with EDs. The satisfaction domain that had the highest "excellent" score was admission (171; 45.8%) while that with the highest "poor" score was nursing care (141; 37.6%). The overall satisfaction was mostly good (96; 50.8%). Those who received care in the morning were more satisfied compared with those who visited between 3 P.M. and 11 P.M. Areas in which satisfaction could be improved were identified. (1) There was lower satisfaction with Sunday ED visits compared with Monday and Thursday visits. Patients who visited on Monday had higher satisfaction than those who visited on Tuesday. (2) Patients who had been hospitalized in the past three days were significantly less satisfied compared with those who had not. (3) Patients who had to wait longer to see the doctor were significantly less satisfied compared with those seen immediately.

Higher overall satisfaction levels were found among patients who (1) were treated in the main ED, (2) were admitted during morning shifts, (3) were admitted on Monday, (4) visited the ED during the slow season (August-September), and (5) experienced less waiting time to be seen by a doctor.

With regard to patient satisfaction with nursing care, higher levels of satisfaction were found among those who (1) were treated in the main ED, (2) were treated during the morning shift, (3) were treated in winter, (4) were treated on Monday, and (5) experienced less waiting time to be seen by a doctor.

With regard to patient satisfaction with doctor care, higher levels of satisfaction were found among those who (1) were treated during the morning shift, (2) were treated in winter, and (3) waited less than two and a half hours to be seen by a second doctor. Other patient-related factors, such as nationality and educational level, were associated with patient satisfaction. Non-Saudi patients and illiterate patients showed higher satisfaction than others. Further research is needed to assess specific aspects of medical care and their provision. Patient satisfaction reports can complement other sources of information used to assess quality. There is a need for the development of a standardized tool to reflect positively on the main goals of patient satisfaction.

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Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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