

Factors predicting patient satisfaction in the emergency department: a single-center study



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Abstract

Objective: Patient satisfaction (PS) is a major quality assessment index for the emergency department (ED) which affects patient safety, litigation, reimbursements, and consumer satisfaction. In this study we aimed to recognize the factors affecting PS in our center.

Methods: Random shifts during a week were selected and all patients disposed from the ED were asked to fill out a revised and validated Persian version of the Press-Ganey questionnaire with the help of a research assistant. Results were analyzed using a linear regression model by SPSS software version 21.

Results: Findings reaffirmed some of the factors previously described. These included longer door to treatment area times having a negative effect on satisfaction ($P < 0.001$), and providing vivid discharge information improving PS ($P < 0.001$). Other important factors were also found that had not previously been focused on, namely cleanliness of the area ($P < 0.0001$) and courtesy of the staff in charge of patient transfer ($P = 0.03$). We also found that men had a more satisfying ED experience ($P = 0.002$).

Conclusion: Cultural expectations may have an important effect on PS. Thus, every institution should determine and alter the expectations most relevant to them.

Keywords: Emergency department, Patient satisfaction, Waiting times, Gender

Introduction

Patient satisfaction (PS) is the ultimate goal of any medical institute. Evidence shows that satisfied patients are more compliant with their treatments and are more likely to return for future care (1). The primary goal of caregivers should be providing quality care; and PS is not always in line with quality care. Nonetheless, PS determines many outcomes that are important to physicians and managers alike, which make it an important goal for all. There is an ongoing debate over the relationship between clinical outcomes and indices of PS (2, 3). Regardless of this debate, such indicators have been incorporated into the assessment and reimbursement processes of emergency departments (EDs). Therefore, many management decisions aim to improve these indices. Moreover, PS surveys allow insurance companies and health ministries to evaluate physicians, while consumer-oriented Web sites often report PS scores and influence consumer choice (2,4).

In the ED, achieving PS is very difficult. The encounter between caregivers and patients in the ED is often complicated by many factors. These complexities often lead to a discrepancy between quality service, as perceived by caregivers, and PS (4,5). In the ED, time and resources

are often limited and caregivers cannot fulfill the patients' discretionary needs just to improve their satisfaction. Therefore, a comprehensive consideration of the factors predicting PS can help us make improvements. Often, the perception and interpretation of satisfaction is closely related to the cultural and socio-economic context and the strategies needed for its improvement are not universal. In this study, we aimed to assess patients' satisfaction in the ED of a major trauma center in the city of Qom in Iran.

Methods

This cross-sectional study was designed to assess the factors affecting PS in Nekoe hospital, a regional trauma center in Qom, Iran. Samples were collected randomly from different shifts during a one week period in the summer of 2015. All patients disposed from the emergency department during each shift were included in the study. Patients were excluded if they were unable to answer questions (significant cognitive impairment, were unable to communicate in Farsi) or were unwilling to participate. The questionnaires were completed prior to disposition from the ED. The patients or their designated relatives were introduced to the study by a member of the research team which was not involved in the patient's treatment



and was not wearing a uniform. It was explained that participation in the study would not have any effect on the care provided to the patients. Patients or relatives were asked to fill out the form in a safe environment without the presence of the treatment staff. In case of any assistance in filling out the form (illiteracy, physical limitations, etc), an interviewer helped accordingly.

The questionnaire used in our study was a modified version of Press Ganey survey. This instrument is both reliable and valid within the Iranian population (6). The questionnaire was slightly revised to improve coherency and items like number of visits and waiting times were expressed in actual numbers rather than Likert scales. The validity of the final questionnaire was obtained by emergency physicians and tested in a pilot study with 50 patients. The final questionnaire included three main sections. The first section encompassed demographic information such as the time of admission categorized by work shift intervals, sex, age, educational level, place of residence, type of admission, and being a local resident or a traveler. The second section included questions regarding the length of stay before going to an exam room, amount of time the doctor spent with patient, and frequency of visits by a physician. The third section included questions about comfort of the waiting area, courtesy of nurses, nursing skills, courtesy of security staff, respect to patients' privacy during examination, courtesy of staff who transfer the patients, friendliness/courtesy of the physicians, doctors explanations to patients about the disease and their conditions, concerns that care provider showed for patients' questions or worries, involving patients in decision making for their treatment, patient education before disposition, overall satisfaction, and the possibility of recommending the ED of this center to others. Participants were asked to answer the statements on a Likert scale ranging from 1 (very poor) to 5 (very good).

Data were analyzed using SPSS software version 21. For continuous variables we used mean and standard deviation. Concerning discrete variables, frequency and mode were applied accordingly. The score of patients' overall satisfaction and the willingness to recommend the ED to others were considered as the primary outcomes. Using a forward linear regression model, the effects of demographic variables and different items of the questionnaire on these two outcomes were analyzed. A *P* value less than 0.05 was considered significant. The study was reviewed and approved by the research and ethic center of Qom University of Medical Sciences.

Results

Overall 499 patients were included in the study. Over 60% were male and almost half of the patients had previously attended the hospital. Most patients had arrived during the evening hours and only 5.6% had arrived during the night shift. Most of the participants had high school education. Almost 90% of the participants were residents of Qom. Nineteen to 35 year olds were the most common group

of patients. This was closely followed by pediatric patients under the age of 18. About 80% of the patients were discharged from the ED, while 4 (0.8%) left the ED against medical advice. Table 1 summarizes the demographics of the participants.

All items answered on the Likert scale either received good (speed of registration, condition of the waiting area, information provided by caregiver) or very good ratings. More information is provided in Table 2. The mean time between triage and arriving at the treatment area was 60.7 ± 95.6 minutes. The average time from arrival to the treatment area until physician's visit was 9.4 ± 22.8 minutes. The mean time spent by the physician with patients was 7.3 ± 3.8 and the average number of visits was 2.0 ± 0.8 . Regarding the suggestion of the ED to others, 36.5% answered very likely and 35.7% answered likely. Findings showed that factors contributing to patients' overall satisfaction of the ED services were cleanliness of the area, information provided by the physician on follow-

Table 1. Demographic distribution of participants^a

	Number	Percent
Person answering		
Self	263	52.7
Relative	236	47.3
Time of attendance		
Morning	175	35.1
Evening	296	59.3
Night	28	5.6
History of previous attendance		
Had previously attended our ED	247	49.5
First time attending our ED	252	50.5
Gender		
Male	301	60.3
Female	198	39.7
Level of education		
Primary	85	17.0
Secondary	219	43.9
University	49	9.8
Other	146	29.3
Place of residence		
Qom	443	88.8
Suburbs	39	7.8
Other	12	2.4
Age groups		
Below 18	163	32.7
19 to 35	197	39.5
36 to 60	106	21.2
Over 60	33	6.6
Disposition		
Discharged	395	79.2
Admitted	98	19.6
Transferred	2	0.4
Leaving against medical advice	4	0.8

^aMissing data not included.

Table 2. Satisfaction with 16 items

	Very poor	Poor	Fair	Good	Very good
Speed of the registration process	6.4	6.6	15.0	36.9	34.7
Courtesy of registration staff	5.6	6.4	14.4	35.7	37.3
Comfort of the waiting area	4.8	7.0	13.8	37.9	35.1
Attention to patient privacy	4.6	7.0	13.4	36.1	37.3
Courtesy of the nursing staff	4.2	6.8	12.8	36.5	37.7
Quality of nursing care	4.4	6.6	14.2	34.9	36.3
Courtesy of the security staff	4.8	6.8	12.6	35.1	36.9
Courtesy of staff who transfer patients	4.8	6.6	11.8	34.9	37.9
Courtesy of the physician	5.2	6.2	10.0	33.5	40.9
Physician's explanations	5.0	6.4	11.4	34.5	38.3
Physician's response to questions	5.4	6.2	9.8	34.5	37.5
Involving patients in treatment decisions	5.0	7.8	10.8	33.1	33.3
Information provided about medication	4.6	6.4	10.8	34.5	32.3
Information on follow up	4.4	6.4	10.0	32.7	35.1
Overall satisfaction	4.0	6.0	12.2	33.9	41.9
Satisfaction with cleanliness	4.0	6.6	12.8	35.3	38.1

up care, satisfaction with staff in charge of transferring patients, and a shorter time from triage to treatment area. The factors associated with a patient's willingness to recommend the ED to others were: satisfaction with cleanliness of the treatment area, satisfaction with speed of the registration process, satisfaction with staff in charge of transferring patients, a shorter wait from triage to treatment area, and male gender. We did not observe any relationship between other demographic data and the outcomes. Table 3 shows the results of the linear regression analysis.

Discussion

There are many reasons to consider PS as a primary goal in the ED. Satisfied patients are more likely to comply with treatment, thus, their well-being will improve. Satisfied patients are also less likely to claim liability. Furthermore, financial reimbursements and future return

of "consumers" depend on PS (1). Iran enjoys subsidized global healthcare but still administrators and researchers look at PS as an indicator of success in a medical institute (6-11). Our study found that the cleanliness of ED was a significant predictor of both overall satisfaction and patient's willingness to suggest ED to others. By the same token, the courtesy of staff transferring patients indicated that the non-medical aspects of patient care play a significant role in the satisfaction of patients. Moreover, two time-related factors (speed of the registration process and time from triage to treatment area) were shown to be significant predictors of PS in our study. This shows that processing times before patients initially receive treatment are key to their satisfaction. Last but not least doctor-patient interactions, as presented by the doctor's willingness to offer follow-up information, had an undeniable effect on overall satisfaction of patients. Early studies by Sun et al identified six factors in the

Table 3. Factors influencing outcomes based on linear regression analysis

Outcomes	Factors influencing outcome	B	SE	Standardized Coefficients (Beta)	t	P
Overall satisfaction	Satisfaction with ED cleanliness	0.392	0.068	0.390	5.782	0.000
	Satisfaction with staff in charge of patient transfers	0.311	0.058	0.327	5.379	0.000
	Satisfaction with information provided about follow-up	0.149	0.044	0.190	3.384	0.001
	Duration of time from entrance to treatment area	-0.001	0.001	-0.095	-2.112	0.036
Tendency to suggest the ED to others	Satisfaction with ED cleanliness	0.728	0.056	0.659	12.889	0.000
	Satisfaction with speed of the registration process	0.179	0.061	0.153	2.944	0.004
	Duration of time from entrance to treatment area	-0.002	0.001	-0.123	-3.475	0.001
	Gender	-0.311	0.098	-0.111	-3.187	0.002
	Satisfaction with staff in charge of patient transfers	0.121	0.055	0.117	2.225	0.027

Abbreviations: ED, emergency department; SE, standard error.

ED associated with poor satisfaction. They included not receiving help when needed, poor explanation about the problem or test results, lack of information on waiting times, time to resume normal activities, and not understanding when to return to the ED (12,13). Boudreaux and O'Hea conducted a systematic review on PS in the ED in 2004 (1). They found interpersonal interactions with ED providers to be the most strongly associated factor with overall PS in the ED. Interpersonal interactions were classified as either expressive quality (i.e. the ability of the caregiver to show empathy and demonstrate proper courtesy) or information delivery (i.e. the willingness and ability of staff to provide information regarding the care process). The authors also pointed to few studies where doctors' and nurses' technical skillfulness were the primary contributor to PS (14), but they stated that from a patient's perspective, caregivers who had better interpersonal skills were considered as more skillful. Boquiren et al found that patient's satisfaction with the doctor is the most important aspect of care. The authors named five domains as determinants of PS with a doctor: Communication Attributes, Relational Conduct, Technical Skill and Knowledge, Personal Qualities, Availability and Accessibility. They also proposed that a physician's training should focus on these domains (15). The review by Taylor and Bengner points out two service factors in this domain that seem to affect PS. They are: interpersonal skills and perceived staff attitudes, provision of information and explanation (16). In our study we found two factors of this sort which had an effect on PS. They included doctors' dedication to provide follow up information to patients, and the courtesy of the staff in charge of patient transfers. We also found logistic factors such as cleanliness and speed of the registration process as important factors.

Boudreaux and O'Hea did not find any association between gender, marital status, insurance status, presence of pain, number of previous ED visits, time/day of arrival, satisfaction with registration and other demographic variables with the overall satisfaction of patients (1). Conversely, we found gender and courtesy of the staff transferring patients as important factors. Gender has rarely been recognized as a significant variable affecting PS in the ED. It has been noted that female patients are more likely to respond to PS questionnaires (17) and the role of gender in settings other than ED has been suggested (18, 19). Zohrevandi and Tajik also recognized that female patients were more satisfied (11), a finding that was replicated by Reihani et al (9), Son and Yom (20), and Abolfotouh et al (21). This may be due to the fact that females are more tolerant. In our study, on the other hand, female gender was significantly associated with less satisfaction. This can be related to different expectations of women in a highly religious environment like Qom which cannot be met in the ED setting. Moreover, we believe that the effect attributed to the staff in charge of transferring patients may have two reasons. First, these staff spend a longer time with patients compared to other caregivers.

Second, they are involved in an intimate and physical act of helping patients which is more obvious than the efforts of other staff members. It appears that in our setting, if this aspect of care is done with courtesy and respect, it may be a source of gratitude and satisfaction.

Time-oriented indicators have been introduced as influential factors in PS. This study found the speed of registration and time from triage to arrival at the treatment area as significant factors in predicting outcomes. Welch proposes that time from entering the ED until a visit made by the physician is the most important duration in PS (4). Other studies have reported similar findings in which the time elapsed from arrival and triage to a visit by the physician is a major determinant of satisfaction (6,22). In other words, longer wait times lead to dissatisfaction (21,23). Yet, in a study performed by Arab and colleagues in Tehran EDs, no significant correlation was found between time-to-provider, left-without-treatment and length-of-stay time variables and overall PS (7). It has been suggested that aspects related to waiting times, particularly perceived waiting time, is a predictor of PS (16). In our study we found the speed of registration to be an important item. This is obviously due to the fact that patients prefer to be attended as soon as possible and see any paper work as unnecessary. This may be fueled by the perception that a faster registration process may lead to a faster visit by the physician. Triage level, another frequently reported predictor of PS, may actually be a reflection of shorter waiting times for sicker patients (16). Factors that have previously been shown to affect PS are not limited to those discussed here. Zohrevandi and Tajik reported a correlation between PS and the time of admission (11). In a separate study Damghi et al named the following 3 items as independent variables predictive of less satisfaction: living distance from the hospital, admission during weekdays and level of education (24). Soleimanpour et al also reported that higher education was correlated with more dissatisfaction (6). Several studies have noted that older patients are more likely to be satisfied with the care they receive (9,20,22,25). Another interesting factor recorded by Abolfotouh et al was symptom improvement as reported by the patient (21). Pines et al also reported a robust association between indicators of ED overcrowding and lower PS scores (23). In our study we did not find any relationship between main outcomes and most demographic data. This is in line with previous studies (1,16). The demographic data in our study included patients' place of residence, education level, age, gender, and the time of day attending the ED. None of these variables were found to affect our main outcomes except for gender. This shows that many variables which affect PS in the ED are the ones which can be altered and improved.

Conclusion

Factors affecting PS are numerous. Some of these factors even contradict what caregivers see as best clinical practice. Therefore, one must admit that patients are not the best

assessors of clinical quality (26). Nonetheless, achieving PS has many merits that make it one of the top goals of any medical institute. Literature has revealed many factors associated with PS. These range from bedside manner and empathy to physician gender and attire, acceptable wait times, technical skills, pain management, use of bedside ultrasonography, privacy, cleanliness, and safety (4). Some factors are hard to change but others may be easily altered to improve satisfaction. Fortunately, interventions have been effective accordingly (17,27-29). For some institutions depending on the population they serve, some of these factors may be more important than others. In our center we found that the factors most closely related to PS may be logistic (cleanliness), staff-related (courtesy of transferring staff), process related (speed of registration process), and physician-related (providing information on follow up).

Limitations

There are several limitations to our study. Because we used a previously validated questionnaire, we were unable to assess all factors that may have an effect on PS. As we wanted to pool and compare the results of different studies, we did not expand the items of the questionnaire. Still the external validity of our study may be limited because of the unique characteristics of the study population. Overall, each ED should take its own predictors of satisfaction into consideration and devise a plan to address the shortcomings in the most practical manner. In our study we recognized the factors most relevant to our institution. As with other satisfaction studies; generalization of these results must be considered with caution.

Ethical issues

The study was approved by the ethical committee at Qom University of Medical Sciences.

Author's contribution

All authors contributed to the study concept, design, data gathering, and manuscript preparation. Doctor Tabatabaey also contributed in data analysis.

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