

## Patient Satisfaction Analysis in Emergency Department in Imam Reza Hospital of Mashhad

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ARTICLE INFO	ABSTRACT
<p><b>Article type:</b> Original Article</p> <hr/> <p><b>Article history:</b> Received: 19-Sep-2014 Accepted: 12-Oct-2014</p> <hr/> <p><b>Keywords:</b> Emergency department Patient satisfaction Physicians</p>	<p><b>Introduction:</b> Patient satisfaction is an accurate assessment factor for evaluating the performance of health policies in the community. The purpose of this study is to assess patients' satisfaction with emergency department of Imam Reza hospital of Mashhad Iran.</p> <p><b>Materials and Methods:</b> In this cross-sectional study, during six months period from April to October 2012, 420 patients were entered to study in morning, evening and night shifts before being discharged or transferred from emergency department. The Press Ganey questionnaire of patient satisfaction was completed.</p> <p><b>Results:</b> 420 patients in three work shifts of morning (140 patients) evening (140 patients) and night (140 patients) participated in our research. 226 (53.8%) of participants were male and 194(46.2%) were female. The average of patients' time waiting for doctors' visit was 10.7±6.1 minutes. The mean score of satisfaction during attendance in Emergency Department (ED), during physicians' visit and overall satisfaction was 25.24±5.04, 25.32±5.42, 8.52±1.91 respectively. The highest level of satisfaction is related to speed of admission (81%), medical treatment (76%), nursing skills for doing medical orders (71.4%) and lowest level of satisfaction is related to comfort and pleasantness of the waiting area (45.9%), time the physician spent with the patient (56.5%) and length of wait before going to an exam room (62.8%).</p> <p><b>Conclusion:</b> Attempt for reducing waiting time, providing comfort environment, increasing the time of visit with emergency physicians and enhance service quality based on patient needs can reduce the patient dissatisfaction.</p>

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### Introduction

Patient Satisfaction (PS) may be considered to be one of the desired consequences of care, information about PS should be as essential to assessments of quality as to the arrangement and management of health care systems(1). PS is one of the major indices of emergency care quality and health care services outcome (2). The Emergency Department (ED) is considered to act as a protector of treatment for patients. Thus, ED must achieve patient satisfaction by providing quality services (3). Emergency care can make an important contribution to reduce avoidable deaths and disability in low and middle income countries and in this field, greater attention is needed

(4). Assessing health care quality and improving PS have become increasingly widespread, particularly among health care suppliers and customers of health care due to more knowledgeable customers(5).

Soleimanpour's study in Tabriz indicates that (34.9%) of the patients showed high general satisfaction with regard to ED performance (3). There are a number of reasons why emergency physicians and ED groups would want to improve scores including the patient is more likely to be compliant with the care provided, it reduces malpractice risk, it improves physician and staff morale, if patients are satisfied they will return for their next episode of care. It may be

important part of the negotiation if your group contracts with the hospital for providing services (6). Although it may seem impossible to keep all patients satisfied, we can get a high level of satisfaction on related factors and trying to improve them (3). In this research, we assessed the patient satisfaction that referred to ED of Imam Reza Hospital in Mashhad-Iran in 2012.

## Materials and Methods

This analytic cross sectional study conducted in Mashhad-Iran in 2012 on 420 patients referred to ED of Imam Reza teaching Hospital (with 918 beds).

Mashhad is the second metropolis in Iran that located in northeast of Iran with 2,749,374 population according to census of 2011. Sample size was calculated according to Soleimanpour's study (3) using estimation of a proportion formula with regarding general satisfaction rate of (63%) (p),  $\alpha=0.05$  and  $d=0.08$ . 420 eligible patients selected by two-stage (stratified-systematic random) sampling for the study.

Every work shift was considered as a stratum and five digits considered as sampling interval. Inclusion criteria were all of the patients that hospitalized in emergency department of Imam Reza Hospital from April to October 2012. Children, patients with loss of consciousness and who received Cardio Pulmonary Resuscitation (CPR) were excluded. Before discharging from ED or transferring to other departments of hospital patients were questioned by trained interviewer who didn't have any uniform or label. The Persian version of the satisfaction questionnaire of Press Ganey which is used in most American hospitals with more than 100 beds was used and its validity and reliability was approved in Soleimanpour's study (3). The questionnaire had 31 questions with likert scale (from one for very poor to 5 for very good) that divided into four sections: identification and waiting time, assessment of satisfaction during attendance in ED and assessment of satisfaction during physicians' visit as well as assessment of overall satisfaction. Part one consisted of nine questions about admission work shift, sex, age, educational level, living location, type of admission, native or passenger and how to refer to ED (EMS or not). Part two consisted of nine questions about speed of admission, courtesy of staff in registration, comfort and pleasantness of the waiting area, courtesy of nurses, nursing skills for doing medical orders, courtesy of security staff, length of wait before going to an exam room, respect to patients' privacy during examination, courtesy of staff who transfer the patients. Part three also had nine questions about: friendliness/courtesy of the physicians, doctors explanations to patients about their disease and conditions, concerns that care provider showed for patients questions or worries, involving patients in decision making for their treatment, information that care provider gave patients about instructions of medications, its complications and follow-up care, amount of time the doctor spent with patient, frequency

of being visit by physician and degree of care provider talks with patients using words that patients could understand. Finally part four consisted of three questions: overall satisfaction rate of ED, overall satisfaction rate of ED's cleanliness and likelihood of patients recommending ED of this center to others. The scores of 9-45 were determined for part two and part three, 3-15 for part four. The poor, average and good scores were defined for each section as following: for part two 9-20, 21-32 and 33-45 and for part three 3-7, 8-11 and 12-15 respectively. Ethics Committee of Mashhad University of Medical Sciences approved the study. The interviewers explained the objectives of research for patients and were assured about the privacy of their personal data and after getting the consent they filled the questionnaires. All analyses were performed with SPSS Version 11.5. Continuous data were presented as the mean  $\pm$  standard deviation and description of qualitative variables was performed by frequency tables. Normal distribution of variables was analyzed by Kolmogorov-Smirnov test. To assess correlation between continuous data, if the distribution was normal Pearson correlation test was used and if not, spearman correlation was used. Determinants of patient satisfaction were performed using linear regression. The significance level was considered less than 0.05( $p<0.05$ ).

## Results

Frequency distribution of participant's demographic characteristics is fully indicated in table 1.

**Table 1: Participation demographic characteristics**

Characteristics	Nom(percent)	
Admission shift	Morning	140(33.3)
	Evening	140(33.3)
	Night	140(33.3)
First visit	Yes	316(75.2)
	No	104(24.8)
Gender	Female	194(46.2)
	Male	226(53.8)
Education	Illiterate	54(12.9)
	Under Diploma	132(31.4)
	Diploma	139(33.1)
	Technician	76(18.1)
Residential place	Bachelor & Higher	19(4.5)
	Urban	332(79)
Origin	Rural	88(21)
	Native	303(72.1)
Transportation to hospital	Passenger	117(27.9)
	Ems	139(33.1)
Patients disposition	Others	281(66.9)
	Discharge	145(34.5)
	Admission	275(65.5)
Age (Median)	45	
Waiting time (Mean $\pm$ SD)	10.7 $\pm$ 6.1	

420 patients in three work shifts of morning (140 patients), evening (140 patients) and night

(140 patients) participated in our research. The data showed that 226(53.8%) of participants were male and 194(46.2%) were female. Median age of participants was 45 years with maximum of 99 and minimum of 20 years.

The mean waiting time of patients was  $10.7 \pm 6.1$  minutes with a maximum of 44 minutes and minimum of two minutes. The average score of total patients satisfaction from sum of 3 aspects of questionnaire was  $59.07 \pm 11.46$  and the mean score of satisfaction during attendance in ED, during physician's visit and overall satisfaction was  $25.24 \pm 5.04$  (min: 9, max: 41),  $25.32 \pm 5.42$  (min: 9, max: 45),  $8.52 \pm 1.91$  (min: 3, max: 15) respectively. Frequency distribution of responses to questionnaire divided into 3 sections (satisfaction of attendance in ED, of physician's visit and overall satisfaction) were shown in table 2.

**Table 2: Patient satisfaction level according to 21 items of the questionnaire**

Question	Very poor N (%)	Poor N (%)	Fair N (%)	Good N (%)	Very good N (%)
Speed of admission	6(1.4)	74(17.6)	214(51)	115(27.4)	11(2.6)
Courtesy of staff in the registration area	17(4)	105(25)	205(48.8)	85(20.2)	8(1.4)
Comfort and pleasantness of the waiting area	35(8.3)	184(48.3)	139(33.1)	55(13.1)	7(1.7)
Comfort and pleasantness during examination	29(6.9)	115(27.4)	187(44.5)	80(19)	9(2.1)
<b>Attendance in ED</b>					
Friendliness/courtesy of the nurse	32(7.6)	94(22.4)	197(46.9)	89(21.2)	8(1.9)
Nursing skills for doing medical orders	29(6.9)	91(21.7)	187(44.5)	107(25.5)	6(1.4)
Courtesy of security staff	22(5.2)	112(26.7)	192(45.7)	87(20.7)	7(1.7)
Courtesy of staff who transfer the patients	26(6.2)	98(23.3)	188(44.8)	96(22.9)	12(2.9)
Length of wait before going to an exam room	57(13.6)	95(22.6)	159(37.9)	101(37.4)	8(1.9)
Friendliness/courtesy of the physician	8(1.9)	89(21.2)	185(44)	128(30.5)	10(2.4)
Explanations the care provider gave you about your condition	14(3.3)	116(27.6)	209(49.8)	77(18.3)	4(1)
Concern the care provider showed for your questions or worries	32(7.6)	101(24)	190(45.2)	94(22.4)	3(0.7)
Care provider's efforts to include you in decisions about your treatment	38(9)	112(26.7)	186(44.3)	82(19.5)	2(0.5)
<b>Physician's visit</b>					
Information the care provider gave you about medications	35(8.3)	98(23.3)	206(49)	78(18.6)	3(0.7)
Instructions the care provider gave you about follow-up care	29(6.9)	103(24.5)	181(43.1)	104(24.8)	3(0.7)
Degree to which care provider talked with you using words you could understand	29(6.9)	112(26.7)	216(51.4)	60(14.3)	3(0.7)
Amount of time the care provider spent with you	39(9.3)	144(34.3)	175(41.7)	57(13.6)	(1.2)
Frequency of being visit by physicians	52(12.4)	89(21.2)	222(52.9)	51(12.1)	6(1.4)
<b>Overall satisfaction</b>					
Overall cheerfulness of our practice	10(2.4)	66(15.7)	219(52.1)	118(28.1)	7(1.7)
Overall cleanliness of our practice	27(6.4)	114(27.1)	230(54.8)	47(11.2)	2(0.5)
Likelihood of your recommending our practice to others	25(6)	135(32.1)	209(49.8)	48(11.4)	3(0.7)

There was a small statistically significant reverse correlation between waiting time and satisfaction rate during attendance in ED ( $r=-0.15$ ,  $p=0.003$ ), during physician's visit ( $r=-0.12$ ,  $p=0.01$ ), overall performance of emergency ( $r=-0.1$ ,  $p=0.04$ ) and totally satisfaction score ( $r=-0.14$ ,  $p=0.003$ ). In addition, there was a small positive correlation between the age of patients and satisfaction score of attendance in ED ( $r=0.1$ ,  $p=0.04$ ), but there was not any correlation between satisfaction score of physician's visit and overall performance with age of participants ( $p=0.12$ ,  $p=0.47$ ).

To predict concerning factors related to higher satisfaction linear regression by forward method applied. Age and disposition ( $p=0.04$ ,  $p=0.001$ ) were identified as predictors of satisfaction during attendance in ED. disposition, sex and waiting time ( $p=0.02$ ,  $p=0.02$ ,  $p=0.03$ ) were predictors of satisfaction during physician's visit and merely disposition ( $p=0.002$ ) was the predictors of overall satisfaction rate (Table 3).

**Table 3: Predictors of patient's satisfaction**

		B	SE	Beta	t	p
Attendance in ED*	(Constant)	26.24	1.16		22.57	0.00
	Disposition	-1.67	0.51	-0.16	-3.26	0.001
	AGE	0.04	0.02	0.1	2.09	0.04
Physician's visit**	(Constant)	26.71	1.38		19.42	0.00
	Disposition	-1.32	0.55	-0.12	-2.40	0.017
	Gender	1.24	0.53	0.11	2.35	0.019
	Waiting time	-0.1	0.04	-0.1	2.24	0.026
Overall Satisfaction ***	(Constant)	9.53	0.33		28.57	0.00
	disposition	-0.61	0.19	-0.15	-3.14	0.002

\*adjusted R2: 0.03

\*\* Adjusted R2: 0.03

\*\*\* Adjusted R2: 0.02

## Discussion

Patient satisfaction is one of the most important indicators of emergency care quality that delivered by staff of emergency department and outcomes of health care services (2). Assessment of health care quality and improving patient's satisfaction has become increasingly prevalent particularly among health care providers and purchasers of health care system (5).

The findings showed that patient satisfaction scores during attendance in ED, during physician's visit and during overall assessment were in the average level was similar to Zohrevandi's research and it suggests many unmet needs (2). The highest satisfaction of patients was from speed of admission, courtesy of the physician and nursing skills for performing medical orders, respectively. The lowest satisfaction was from comfort and pleasantness of the waiting area, amount of time spent with doctors and length of waiting time before physicians visit, respectively. As the study by Zohrevandi shows that total score of five assessed sections related to Patients comfort and residential aspects, physicians care, nurse care, behavioral aspects and waiting time for services are on average level but the nurse care aspects have the best level among five sections and waiting for services and behavioral aspects gained the maximum dissatisfaction (2). Also in Soleimanpour's study, the highest satisfaction was from physicians' courtesy and behavior with the patients, security guard's courtesy and nurse's courtesy with patients, the lowest level of satisfaction refers to the care provider's efforts to get the patients involved in making decisions about their own treatment, waiting time for the first visit and cleanliness and neatness (3).

A significant correlation was seen between satisfaction scores of attendance in ED and age of patients, this may be because of low level of expectations and reasonable attitude of elder people.

Similar to Davis's study that reported a significant relationship between age of patients and their satisfaction (7) but Hall's and Press study shows that age of patients doesn't have a profound impact on satisfaction scores (8).

There was significant association between gender and mean score of satisfaction and was higher in females that probably because the higher level of tolerance in women. Mckinley's study have mentioned that satisfaction rate was different among individuals with various social class, age and gender (9), similar to Hargrave's study (10).

Also in San's study satisfaction score of women was higher than men because of the more patience of women than men (11). On the other hand most of caring personnel and nurses were female and might make better communication with female patients and better understanding of their pains and problems lead to more satisfaction among female patients. However in Soleimanpour's, Hall's, Aragon's and alexius's studies there was no statistically significant difference between gender and satisfaction (2, 8, 12, 13). A systematic review by Taylor's found that patients age and race influenced satisfaction in some but not all studies (14).

However in this report, there was not statistically significant association between place of residence and satisfaction score but urban residents somewhat have higher satisfaction rate, probably due to the problems of remoteness and lack of facilities and accommodation for the rural residents. In Soufi's study, urban residents have mentioned more satisfaction too (5).

There was no significant relationship between work shifts, educational level, type of admission and satisfaction level similar to Soleimanpour's and Soufi's studies (3,5), but in Damghi's study patients with a lower educational level were less satisfied, may be high educational persons more likely to accept that rescue was dependent on good management despite uncomfortable situations(4).

However in our report there was no significant reverse association between educational level and satisfaction probably due to low level of expectation and lack of knowledge about their rights among them.

Despite our findings, in some studies like Zohrevandi and Press Ganey reports (2,15), the highest satisfaction of emergency department was in morning admission shift may be because the morning shift is the most crowded work shift and thus the waiting time is shorter than in the night shift. In Soufi's study also there was an association between patient satisfaction and type of admission (5). Consistent with other studies, our findings also indicated that there is a reverse correlation between patient satisfaction and waiting time. Those who waited longer were less satisfied. Zohrevand's, Damghi's, Press Ganey and Topacoglu's studies all reported a direct association between waiting time and patient dissatisfaction (2, 4, 15, 16, 17).

There are some limitations in our study; first, the research was done in one site so the results can not be generalized to all hospitals. Second, the staff was not blinded about the study. Third, we didn't consider some confounding factors like patients with various clinical manifestations might have diverse satisfaction rate.

Finally we used interviewer questionnaire and



interviewer filled up the questionnaire so the patients may be influenced by attitudes of the interviewers and it may include potential biases.

## Conclusion

Successfully delivering services required by patients admitted in emergency department, depending on service provider meet the needs of patients and they have to know that providing the best services in the shortest possible time is one of the most important responsibility. Present study showed that the lowest satisfaction of patients was from comfort and

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