

Emergency Department Patient Satisfaction Survey in a Tertiary Care Hospital of Eastern Nepal

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Abstract

Background: Patient satisfaction is one of the most important indicators of the quality of emergency care. This hospital-based cross-sectional study was performed to assess patient satisfaction in the Emergency department of a tertiary care hospital and identify the factors associated.

Methods: The study was performed on 785 patients visiting Emergency department. Variables under study were satisfaction level, triage score, waiting times, and socio-demographic characteristics. Satisfaction level was measured using a 5-point Likert scale, Cronbach's alpha ($\alpha = 0.86$ overall, inter-item $\alpha = 0.842-0.859$). A score of 47 and above was cut off to denote satisfaction with a sensitivity of 75% and specificity of 81%. Descriptive analysis and Chi-square test was performed to see the association of variables of interests with patient satisfaction. A p value <0.05 was considered statistically significant.

Results: Median age of the patients was 47 years among which 51% were male. Medical emergencies were the most common presentations reported (68.7%). The median (Q1, Q3, maximum) time to first contact with the doctor was 10 (5,15, 240) minutes. The patient satisfaction rate towards the Emergency services was 69%. Behaviour of doctors (54%) and nurses' care (44%) were rated as excellent services while poorer ratings were given for toilet condition (27%) and crowd control (14%). Weekends vs weekdays had a significant association with satisfaction ($p = 0.04$)

Conclusion: Overall acceptable patient satisfaction rate was found in the services provided by the Emergency department. Areas needing improvement were identified.

Keywords: Emergency Department; Patient Satisfaction; Nepal

Declarations

Ethics approval and consent to participate: Ethical clearance was obtained from institutional review committee, BPKIHS, Dharan, Nepal (Ref No.: Acd 1196/074/075) and informed consent was taken from the participants.

Consent for publication: Not applicable

Availability of data and materials: The full data set supporting the research is available upon request by the readers.

Competing interest: None

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Authors' contributions: MP and RB: Contributed in concept, design, data collection, data analysis, and interpretation, manuscript writing and revision, literature review. AY: Data collection, literature search. RC: Data collection, literature search. SU: Data entry, analysis, and interpretation of results. .

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Quality in healthcare is a global issue. Patient satisfaction surveys are an essential tool to evaluate and improve the quality of health care services. With the focus shift from professionals' opinions and practice in modifying the quality of service in the past decade, values are now placed more on perception, expectations and needs of the patient making it necessary to conduct periodic patient satisfaction surveys [1]. Apart from determining the level of satisfaction with the various services of the hospital, these surveys also provide patients' feedback regarding services and hospital facilities which could positively impact the hospital service improvement plans, work process and financial resources [1 – 3]. The Emergency department is one of the important points of entry and the first contact point of clinical care for many patients, ranging across different levels of severity and necessity. Patient satisfaction is one of the most important indicators of the quality of emergency care and health care outcomes. Nepalese hospital emergency services are facing an increasing demand for quality services amid an ever-increasing patient flow and overcrowding in the emergency departments with the improving government insurance services and development in the emergency service capacities. This necessitates attention to patients' perception of emergency care provided. A study from Moroccan emergency shows a satisfaction rate of 66% whereas study from an emergency department in Tabriz shows a satisfaction rate of 63% [3, 4]. Satisfaction with emergency services leads to more chance of compliance with discharge instructions, improved patient care and better job satisfaction and an overall positive public view [4 – 6]. Various factors have been identified to affect patient satisfaction with emergency services, such as admission service, discharge services, nurses' and doctors' behaviour, waiting time in the emergency, the time taken for consultation with a doctor, urgent attendance by a doctor, overcrowding, and an unclean environment in the emergency department [3, 4, 6, 7]. The literature review reveals almost none of the publications touching on this subject from Nepal. Consistent quality service in an emergency department in a busy environment would greatly benefit from periodic satisfaction surveys and feedback. So, a survey was planned with the objectives of assessing overall patient satisfaction as well as identifying factors associated with it in the Emergency department of B. P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal.

METHODS

This hospital-based cross-sectional study was conducted from June 2019 to May 2020 in the adult General Emergency department at BPKIHS. Ethical approval was obtained from the Institutional Review Committee of BPKIHS. Informed consent was taken from all the participants and coding was done. The total calculated sample size was 785 considering the 35% prevalence of satisfaction, 95% confidence interval, 90% power with an added 10% for non-response rate [2]. The duration for sample recruitment was 90 days, and at an expected patient flow of around 150 patients/day approximately 13500 patients were expected to visit the Emergency department over 90 days based on past data. Hence, every seventeenth patient (dividing the total population of 13500 by sample size) from the emergency census record was recruited into the study daily. The next patient (i.e., the eighteenth patient) was recruited in case of failure to give consent and/ or failure to respond verbally by the selected patient. Interviews were conducted during patients' stay in the Emergency department after the rounds.

A predesigned questionnaire was used for the interview and pretested in 10% of the sample until a satisfactory version was reached. Socio-demographic profile and clinical details including triage score (urgency to treatment from one to five) were recorded along with the time of patient's arrival to emergency and time to first contact with doctor. Three questions inquiring the overall rating of emergency, willingness to return in the future, and what could be improved were added in addition to the measure of satisfaction level. A set of 12-item questions employing a 5-point Likert scale to measure satisfaction was used where a score of 5 indicated excellent satisfaction and a score of 1 indicated poor satisfaction. These items assessed satisfaction levels for information, behaviour, communication, time to care and with other service-related facilities. The internal consistency of the questionnaire was tested using Cronbach's alpha (0.86 overall, inter-item 0.842 – 0.859). A Receiver Operating Characteristics (ROC) curve plot was built to find the dictating power of the 12-item questionnaire which showed a score of 47 to satisfactorily discriminate between satisfaction and non-satisfaction with a sensitivity of 75% and a specificity of 81%, (area under the curve (AUC) 0.861%; 95% CI: 0.834-0.887) and was taken as the cut off level for satisfaction (Fig. 1).

Data was entered into Microsoft Excel and further statistical analysis was done using Statistical Package for the Social Sciences (SPSS) software version 17. The data was presented using frequency, proportions, median with quartiles and minimum/ maximum values as per the nature of the data. An association between emergency service satisfaction and patient characteristics was analysed using Chi-square test with a p-value considered significant at 5%.

RESULTS

A total of 785 patients from the Emergency department were interviewed with the median (Q1, Q3) age of 47 (34, 63) years, out of which 51% were male. Around two-fifth (42%) of the sample population had an education level up to primary level and more than one-third (37%) were illiterate. Most of the patients (61%) arrived at the Emergency department during the night shift of eight pm to eight am and were labelled as triage score of 3 (59%). The commonest presenting complaint was pain and trauma (40%) followed by fever (24%), shortness of breath (22%), toxicology-related problems (9.5%), and other problems (3.5%). Medical emergencies constituted the largest proportion (68.7%) of the problems. The median (Q1, Q3, maximum) time to first contact with the doctor was 10 (5,15, 240) minutes with 79% of patients being seen within 15 minutes. The median (Q1, Q3, maximum) emergency stay time of the participants was 19 (11, 26, 120) hours at the time of the interview. Slightly more than two fifth (42%) of the patients were admitted to the Emergency department for less than 12 hours, and 25% of the patients had stayed for more than 24 hours at the time the interview was conducted (Table 1).

The median (Q1, Q3) patient satisfaction score was 53 (46, 53) out of a total score of 60. The patient satisfaction rate was reported to be 69% after dichotomizing the satisfaction score into satisfied and unsatisfied using the cut off value of 47. The highest proportion of excellent ratings was observed for communication and information namely behaviour of doctors (54%), nurses (44%), and information (49%). Poorer ratings were more commonly given for toilet condition (27%), and crowd control (14%). (Table 2).

The patients were asked to provide an overall rating of emergency services on a scale of 1 to 5 where score 1 meant

poor satisfaction and score 5 meant excellent satisfaction. An overall rating with a median score (Q1, Q3) of 4 (3, 4) was reported and around 42% rated very good patient satisfaction followed by 27% good, and 23% Excellent satisfaction. (Fig. 2)

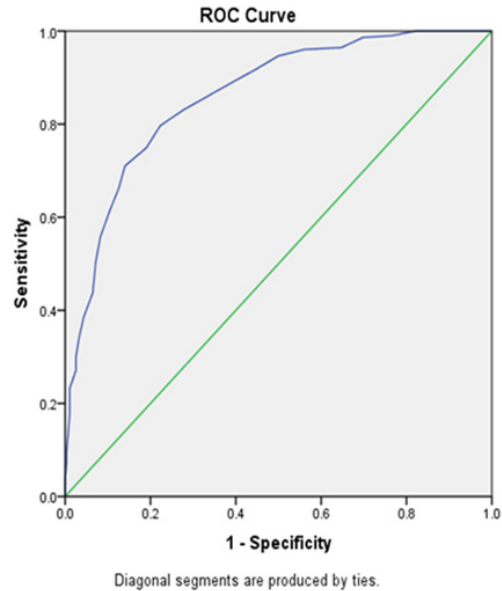


Figure 1: ROC curve of 12 item questions to assess satisfaction, area under curve 0.861 (0.834-0.887)

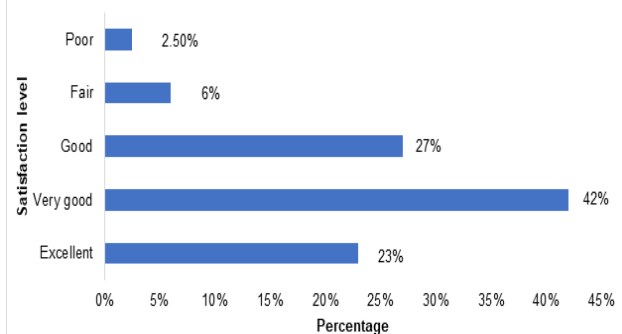


Figure 2: Overall patient satisfaction rating of services at Emergency department (n = 785)

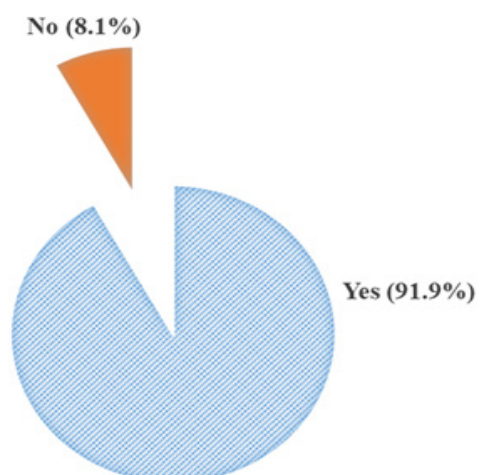


Figure 3: Willing for future emergency visits (n = 785).

Table 1: Socio-demographic characteristics and information related to Emergency department visits (n=785)

Characteristics		Frequency	Percentage
Age Group (y)	15 - 44	338	43.1
	45 - 64	273	34.8
	65 and above	174	22.2
Education status	Illiterate	292	37.2
	Primary	328	41.8
	Secondary and above	165	21.0
Time to first contact with doctor (minutes)	Less than 15	623	79.1
	15 to 30	121	15.4
	More than 30	43	5.5
Patient arrival time	8 am to 8 pm	307	39.1
	8 pm to 8 am	478	60.9
Triage Score (Australasian Triage Score)	1	27	3.4
	2	246	31.3
	3	464	59.1
	4	41	5.2
	5	7	0.9
Arrival Day	Weekday	673	85.7
	Weekend	112	14.3
Duration of stay in emergency at time of interview (hours)	1 to 11	333	42.4
	12 to 23	259	32.9
	24 and above	193	24.5
Plan after staying in ER	Decided further admission/OT	536	68.2
	Not yet decided	249	31.7
Diagnostic category	Medical emergency	539	56.1
	Surgical Emergency	138	17.5
	Trauma	108	13.7

Table 2: Satisfaction rating scores for items in 5-point Likert scale (n = 785). Values are expressed in numbers (%)

Variables for satisfaction	Excellent	Very good	Good	Fair	Poor
Information by emergency doctor	384 (48.9)	291 (37.1)	92 (11.7)	9 (1.1)	9 (1.1)
Behavior of nurse	345 (43.9)	298 (38.0)	112 (14.3)	23 (2.9)	7 (0.9)
Behavior of doctors	426 (54.3)	265 (33.8)	77 (9.8)	14 (1.8)	3 (0.4)
Information given during rounds	292 (37.2)	319 (40.6)	125 (15.9)	31 (3.9)	18 (2.3)
Privacy	280 (35.7)	249 (31.7)	180 (22.9)	38 (4.8)	38 (4.8)
Time of stay in ED	215 (27.4)	293 (37.4)	192 (24.5)	47 (6.0)	37 (4.7)
Cleanliness of toilet	56 (7.2)	121 (15.4)	221 (24.2)	172 (22.0)	213 (27.1)
Crowd control and security	106 (13.5)	175 (22.3)	246 (31.3)	146 (18.6)	112 (14.3)
Bed facilities	122 (15.5)	192 (24.5)	250 (31.8)	121 (15.4)	100 (12.7)
Time to lab reports	198 (25.2)	249 (31.7)	202 (25.7)	82 (10.4)	54 (6.9)
Nursing facilities	269 (34.3)	309 (39.4)	150 (19.1)	38 (4.8)	19 (2.4)
Treatment received	272 (34.6)	302 (38.5)	148 (18.9)	45 (5.7)	18 (2.3)

ED: Emergency department

Table 3: Association of patient satisfaction status visiting Emergency department with various patient characteristics (n=785)
Values are presented as number (%)

Variables		Unsatisfied	Satisfied	Total	p-value
Age (y)	15 to 44	131 (38.8)	207 (61.2)	338	0.61
	45 to 64	110 (40.3)	163 (59.7)	273	
	65 and above	62 (35.6)	112 (64.4)	174	
Gender	Male	142 (35.8)	256 (64.2)	397	0.09
	Female	161 (41.50)	227 (58.5)	388	
Literacy	Illiterate	105 (36)	187 (64)	292	0.40
	Primary Level	129 (39.3)	199 (60.7)	328	
	Secondary Level	69 (41.8)	96 (58.2)	165	
Time to first contact doctor (minutes)	Less than 15	190 (36.8)	327 (63.2)	517	0.30
	15 to 30	87 (42.9)	116 (57.1)	203	
	More than 30	26 (40.0)	39 (60.0)	65	
Visit days	Weekday	250 (37.1)	423 (62.9)	673	0.04
	Weekend	53 (47.3)	59 (52.7)	112	
Emergency stay duration at interview	Less than 12 hours	174 (41.5)	245 (58.5)	419	0.07
	More than 12 hours	129 (35.2)	237 (64.8)	366	
Plan status	Conveyed to patient	194 (36.2)	342 (63.8)	536	0.42
	Not conveyed	109 (43.8)	140 (56.2)	249	
ATS Score	I	14 (51.9)	13 (48.1)	27	0.43
	II	96 (39)	150 (61)	246	
	III	172 (37.1)	292 (62.9)	464	
	IV	19 (46.3)	22 (53.7)	41	
	V	2 (28.6)	5 (71.4)	7	
Arrival shift	Morning	106 (40.6)	155 (59.4)	261	0.28
	Evening	105 (40.5)	154 (59.5)	259	
	Night	92 (34.7)	173 (65.3)	265	
Diagnosis	Medical Emergency	200 (37.1)	339 (62.9)	108	0.57
	Surgical Emergency	60 (43.5)	78 (56.5)	138	
	Trauma Related	43 (39.8)	65 (60.2)	108	

ATS: Australasian Triage Score

When asked about their willingness to return to our emergency again if required, 92% responded that they would return to the emergency again if an emergency arises (**Fig. 3**). When asked about what could be improved, no response was obtained from 41.5%, admission-related issues like lack of bed (including critical beds) and time to admission were mentioned by 28%, emergency facilities were mentioned by 18%, staff behaviour by 8% and time to specific treatment and interventions were mentioned by 4.5%.

Only the patients' visits during weekends vs. weekdays showed an association with patient satisfaction status ($p = 0.04$). Other variables did not show an association with satisfaction status at p value less than 5% (**Table 3**).

DISCUSSION

Patient satisfaction is an essential quality indicator in the Emergency department and helps in service improvement [2]. Periodic assessment of patient

satisfaction using a valid tool is needed as the process is dynamic and helps in continuous quality improvement of the Emergency department and its services. This research finds a favourable satisfaction rate while identifying areas needing improvement and developing a tool for future use in our emergency. The current overall patient satisfaction rate towards the emergency services was 69.4%, comparable to Damghi but lower than Takele (82%) and Dada (90.5%) [3, 9, 10]. Lower rates have also been reported by other researchers for an example, Sachedewa from India reported a satisfaction rate of 51% [11]. Similarly, the satisfaction rate reported by Abass G from Saudi Arabia (50%) and Akhtar K (46%) from Bangladesh were also slightly lower than the finding of this study [11–13]. The wide variation in patient satisfaction rate at emergency services could be because of the use of different tools to measure the satisfaction level. This variation could also be affected by the quality of services provided, facilities and development in the department, and population demographics. The domains of service required may also differ in different settings.

Various factors have consistently been shown to be associated with satisfaction levels like waiting times, communication, physical facilities, and clinical care provided [9–12]. Other factors like relative resource deficiency, illiteracy, and special services like interpreter service may be unique to institutions giving care and may impact the satisfaction level [10–13]. Various authors report that an increase in the waiting time for patients results in lesser satisfaction towards emergency services [3, 4, 9, 14]. This study did not find any association between waiting time and satisfaction status. However, the patients who contacted the doctor within 15 minutes of arrival in the emergency department (63.2%) were found to be more satisfied than patient who contacted within 15-30 minutes (53.1%) and more than 30 minutes (60.0%).

Lower satisfaction rates for poor physical facilities, such as toilets, physical environment, and physical facilities have also been shown to affect satisfaction [7]. Sachdeva et al. reported almost three-fifths of the study population showed dissatisfaction towards the physical environment like the cleanliness of the toilets whereas Jalali S et al. showed less than one-third were satisfied with the cleanliness of the environment and toilets [11, 15]. Similar findings with a satisfaction rate of 7.2% for the cleanliness of toilets, 13.5% for crowd control and 15.5% for bed facilities have been reported by a study done in Tabriz [4]. The lowest

rating for satisfaction with toilet facilities and physical facilities was also observed by this study compared to other variables. Proper information and communication go a long way towards a satisfactory visit to the Emergency department for the patients and this study showed a high rating for satisfaction towards behaviour, communication and provision of information to the patients. Past literature has also noted similar findings [4, 7].

The overall rating of the emergency services and willingness to return to the same emergency in the future were higher compared to satisfaction with individual dimensions and questions. Previous studies have reported 76% to 86% of recruited samples willing to return to the Emergency department in the future and also recommend it to their friends [16, 17]. An overall higher rating and willingness to return can be taken as an overall indicator of patient satisfaction. This should however, be looked at in combination with other factors that can be improved for a better emergency stay for the patient and quality emergency care.

CONCLUSION

Satisfaction with an emergency service is variable for different dimensions of care and can vary by individual needs and expectations. We found that satisfaction with our emergency was acceptable and identified the areas that could be discussed and improved in the future. Communication and information received good ratings for satisfaction in the current study and a consistent and better approach could lead to improved patient experience in emergency. Periodic studies would be helpful to identify areas of improvement and strategize accordingly. This is a study performed in an adult non obstetric emergency of a teaching institute and results should be interpreted in that context.

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