

## Original Research Article

# Study on patient satisfaction among patients with trauma admitted to trauma centre and emergency medical services ward

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## ABSTRACT

**Background:** Patient satisfaction is an important key factor for determining the quality health care and services offered by the emergency departments in the hospital. The objectives of the study were to assess the satisfaction of the trauma patients attending the trauma center with the services provided by the KLES Dr. Prabhakar Kore Hospital and Research Centre, Belagavi, Karnataka.

**Methods:** Fifty trauma patients admitted and treated in trauma center and emergency medical services ward (TCEMS) at KLES Dr. Prabhakar Kore Hospital and Research Centre, Belagavi, over a period of 3 months (from November 2014 till January 2015) were interviewed. After obtaining an informed consent, the required data was collected using a pre-designed and pre-tested questionnaire.

**Results:** Out of the 50 patients interviewed, 86% were males and 14% were females. Out of them 74% were road traffic accident victims. 67.5% of these victims were between the age group of 21 and 50 yrs. The overall satisfaction was good with all the services provided at the center. 80% were satisfied with the care provided by the doctors, 80% with communication by doctors, more than 75% with accessory services, more than 65% with the wait times at various levels and more than 85% satisfaction with amenities in the ward.

**Conclusions:** In conclusion our study revealed that the availability of consultant in triage area, improvements in communication, quick service at the Casualty Pharmacy, reducing the perceived waiting times at various levels and improvement in the ambience of the unit would further enhance the patient satisfaction with TCEMS.

**Keywords:** Amenities services, Communication, Health care staff, Patient satisfaction, Trauma, Waiting time

## INTRODUCTION

Trauma is defined as a physical injury or wound caused by an external force, which may cause death or permanent disability.<sup>1</sup> It has become an important issue in several countries due to its morbidity and mortality, affecting all individuals regardless of age, gender, ethnicity, creed or social background.<sup>2</sup>

Emergency department is considered as an important section for hospital care.<sup>3</sup> Trauma patient experiences only the emergency department for initial treatment. During life threatening conditions, emergency

departments in tertiary care centers offers fast diagnosis and treatment. This department provides both clinical and para-clinical services in emergency situations.<sup>4</sup>

Patient satisfaction is defined as sum of all their experiences from time of admission to discharge.<sup>5</sup> From the hospital's perspective, clinical staff and managers, ought to be interested in patient's view of care because patient satisfaction may be a direct or indirect measure of outcome.<sup>6</sup> The American College of Surgeons (ACS) defines a "Trauma System as being composed of four primary patient components:

- Access to care
- Prehospital care
- Trauma hospital care
- Rehabilitation".<sup>7</sup>

The apprehension of the patients and/or the accompanying persons at the time of trauma can be reduced by timely and prompt treatment as it becomes the need of the hour. The availability of treatment and accessibility of related supportive facilities will be a boon to the patients and their attendants. The accident and emergency department of the hospital has a key role to play in this regard. Thus there is a need for a study on patients' satisfaction to assess the department how best it is serving the people. Such study will help the hospital administration to assess the functioning of the department and throw light on the areas requiring improvement.

KLES Dr. Prabhakar Kore Hospital and MRC, in Belgaum is a tertiary care center situated on the National Highway 4. Well established Trauma Center and Emergency Medical Services is functioning at the hospital since April 2006. This hospital stands alone in the whole North Karnataka. The expectations are high as more than 100 patients are availing trauma care services every month. This number is expected to increase in days to come as the RTAs are expected to be 2nd major cause of disease after the ischemic heart disease. All these features lay emphasis on the need for conducting a study on patient satisfaction to assess the functioning of the department and the coordination of the supporting services for the care and treatment. Hence, this study was planned to know the satisfaction of trauma patients regarding services provided at the trauma care center.

## METHODS

This was a cross-sectional study performed on 50 patients admitted for treatment to the trauma at KLES' Dr. Prabhakar Kore Hospital and Medical Research Center, Belgaum during a period of 3 months from November 2014 to January 2015. After getting approval for the study from Medical Director and CEO, KLES' Dr. Prabhakar Kore Hospital and MRC, Belgaum patients with trauma who were being treated/or admitted for treatment to the trauma center during the study period were included.

An analytical approach was adopted for this study. In case the trauma patients were unconscious or unable to provide the necessary information, their attendants were interviewed. Trauma patients treated elsewhere in the hospital other than the trauma care unit, patients or attendants who declined to be a part of the study, patients who were unable to respond, Burns, poisoning, suicides and homicide cases were excluded from the study.

A pre-tested, pre-designed questionnaire was given to the patients/their attendants, after obtaining the consent from

them. The questionnaire contained seven sections that includes:

1. Socio demographic data of the patient,
2. The nature of trauma and transportation of the patient to the KLES Trauma center.
3. Reception counter and casualty department communication,
4. Investigations and diagnostics,
5. Behavior of the health care professionals,
6. Physical facilities,
7. The overall performances of the department.

After conducting the pilot study on 5 trauma patients in TCEMS, the final structured questionnaire was administered to assess the satisfaction of the trauma patients admitted and being treated in trauma ward.

## Statistical analysis

The data was collected by interview method. All the data was analysed and presented in number and percentages-demographic (age groups, occupation) and trauma (nature of trauma) variables and the patients' satisfaction.

## RESULTS

The study included 50 patients admitted to the trauma and emergency department during November 2014 to January 2015. Majority of patients were in the age group of 21-30 yrs (20%) followed by 31-40 yrs (18%). Patients attended the TCEMS were from Karnataka (84%). The profession of all the patients was considered. Professionals include doctors, advocate and private employees, teachers, Govt. employees, retired employees. Among them majority are farmers (36%). Most of the patients paid the fee by cash (90%) at the time of admission and discharge.

Trauma and hospital related characteristics are given in Table 2. Commonest cause of the trauma patients attending TCEMS was road traffic accident (RTA) (74%). The maximum victims (25, 67.5%) of road traffic accidents belonged to the age group 21-50 years. There were 33 medico legal cases and 4 non medico legal cases. As per the source of information about the trauma center 50% of the patients knew about the hospital's TCEMS by word of mouth. 40% of the cases were referred by other doctors. About 64% patients had chosen the trauma center because of the quality care provided by the center and few patients had more than one reason as shown in Table 2.

The site of trauma was within 50kms from the hospital in 31 (62%) incidents. Most of the patients (50%) had arranged for their own vehicle to reach the hospital. Private ambulances from the referred centers were used to transport the patient in 5 cases. Cost of service was considered as high by about 26 patients.

**Table 1: Demographic characteristics of study participants (n=50).**

Characteristics	N (%)	
<b>Age in years</b>	1-10	2 (4)
	11-20	8 (16)
	21-30	10 (20)
	31-40	9 (18)
	41-50	8 (16)
	51-60	4 (8)
	61-70	6 (12)
	71-80	1 (2)
	81-90	2 (4)
<b>Sex</b>	Male	43 (86)
	Female	7 (14)
<b>State wise distribution</b>	Andhra Pradesh	3 (6)
	Gujarat	1 (2)
	Karnataka	42 (84)
	Maharashtra	3 (6)
	Tamil Nadu	1 (2)
<b>Occupation</b>	Farmers	18 (36)
	Professionals	14 (28)
	Coolie	4 (8)
	Students	8 (16)
	Business	4 (8)
	Housewives	2 (4)
	<b>Mode of payment of billing</b>	Self-paying
Credit		5 (10)

**Table 2: Trauma and hospital related characteristics (n=50).**

Characteristics	N (%)	
<b>Distribution of patients based on type of trauma</b>	RTA	37 (74)
	Assault	3 (6)
	Occupational accidents	1 (2)
	Fall	9 (18)
<b>Distribution of patients according to the sources of information about KLE trauma centre</b>	Word of mouth	25 (50)
	Employer	5 (10)
	Other physician	20 (40)
<b>Distribution of patients based on reasons for choosing KLE trauma centre for treatment<sup>a</sup></b>	Quality of care	32 (64)
	Convenience	13 (16)
	Easy accessibility	10 (20)
	Reputation of the hospital	10 (20)
	Credit facility	5 (10)
<b>Distance from the site of trauma to hospital (kms)</b>	Others	8 (16)
	Less than 50	31 (62)
	51-100	9 (18)
	More than 101	10 (20)
<b>Distribution of patients as per the modes of transportation</b>	KLE ambulance	5 (10)
	Own vehicle	25 (50)
	Police vehicle	5 (10)
	Private ambulance	15 (30)
<b>Patients' opinion regarding cost of services</b>	Costly	26 (52)
	Reasonable	14 (28)
	Not aware	10 (20)

<sup>a</sup>Total is exceeding 50, as few patients had more than one reason.

**Table 3: Patient satisfaction with medical care and staff (n=50).**

Patient satisfaction parameters	Satisfied N (%)	Not satisfied N (%)
<b>With health care staff</b>		
Prompt care at casualty	45 (90)	5 (10)
Nursing care in ward	42 (84)	8 (16)
Ward boys and ayammas responding to patients' needs	38 (76)	12 (24)
<b>With communication</b>		
Guided properly in completing the paper work	40 (80)	10 (20)
<b>Initial counseling by the staff</b>		
a. Nature of trauma	39 (78)	11 (22)
b. Diagnosis	35 (70)	15 (30)
c. Approximate cost of treatment	28 (56)	22 (44)
d. Possible length of stay	24 (48)	26 (52)
e. Prognosis	32 (64)	18 (36)
Communication with doctors about the procedures	40 (80)	10 (20)
<b>With hospital staffs</b>		
Doctors	40 (80)	10 (20)
Nurse	37 (74)	13 (26)
Ward boys/ Ayammas	34 (68)	16 (32)
Technicians	35 (70)	15 (30)
Receptionists	34 (68)	16 (32)
<b>With accessory services</b>		
Reception counter	37 (74)	13 (26)
Laboratory <sup>a</sup>	33 (66)	4 (8)
Diagnostics (CT/MRI/USG scan) <sup>b</sup>	34 (68)	6 (12)
Blood bank <sup>c</sup>	21 (42)	8 (16)
Casualty pharmacy	41 (82)	9 (18)
Radiology <sup>d</sup>	38 (76)	8 (16)
Hospital food <sup>e</sup>	19 (38)	13 (26)
Hospital equipments	46 (92)	4 (8)
<b>Satisfaction with waiting times</b>		
Reaching TC-EMS from the entrance	46 (92)	4 (8)
Completion of paper work	28 (56)	22 (44)
To be seen at triage area	35 (70)	15 (30)
MRI/CT scan <sup>f</sup>	29 (58)	10 (20)
<b>With amenities (physical facilities and premises)</b>		
Linen	48 (96)	2 (4)
Trauma ward	39 (78)	11 (22)
Bed pans and urine pots <sup>g</sup>	34 (68)	7 (14)
Toilets <sup>h</sup>	30 (60)	10 (20)
<b>Cleanliness at TC-EMS</b>		
Waiting areas	42 (84)	8 (16)
Corridors	47 (94)	3 (6)
Toilets	30 (60)	20 (40)

<sup>a</sup>13 patients did not avail the services; <sup>b</sup>10 patients did not avail the services; <sup>c</sup>only 29 patients had availed the services;

<sup>d</sup>4 patients did not avail the services; <sup>e</sup>32 patients had taken food; <sup>f</sup>11 patients did not undergo the investigation; <sup>g</sup>41 used bed pans and urine pots; <sup>h</sup>not used toilets.

Patient satisfaction with medical care and staff was presented in Table 3. Majority of the patients were satisfied with health care staff. About 80% of the patients were satisfied with the communication by the health care staff about the patient's treatment and help in completing

the paper work. Majority of the patients were satisfied with health care professionals rating maximum with the doctors (80%) followed by the nursing staff (74%). The patient satisfaction towards accessory services was more than 70%. Only 56% satisfaction was seen with hospital

food. About 70% patients had encountered inconvenience at the casualty pharmacy with over-crowding. Many patients (95%) were satisfied with the services of TC-EMS from the entrance. 26 patients (76%) were attended by the staff in triage within 10 min. The satisfaction ranged from 92.5% to 99% for quality of housekeeping. The satisfaction was less for the entities in the premises, least being the toilet facilities (40%).

## DISCUSSION

The present study was a cross sectional study undertaken in the Trauma Center and Emergency Medical Services of the KLES Dr. Prabhakar Kore Hospital and Medical Research, Belgaum. Patient satisfaction towards hospital facilities is a key factor in determining the quality care provided by the tertiary centers. Furthermore, nursing care among all the services plays an important role because nurses are responsible for most features of patient care.<sup>8</sup> The present study was done with the aim to examine the effect of trauma intervention on patient satisfaction in the trauma and emergency department.

In this study, participants constituted of 86% males and 14% females with trauma. Majority of patients belonged to age group 21-30 years (20%), followed by 18% in 31-40 years. 70% of the population belonged to the age 11 to 50 years. This was similar to the findings of Joshipura et al.<sup>9</sup> The study showed that majority of the people availing the services was from Karnataka. The reason for people from different states getting admitted was the site of trauma or the referral from other hospitals.

There was wide range of occupations of the patients. They were farmers (18), professionals (14; which included doctors, advocate, teachers, and private and government employees both in-service and retired), coolie (4) students (8), businessmen (4), housewives (2). In a study done by Zakerimoghadam et al, majority patient's profession was workers.<sup>10</sup> Majority of the patients were self-payers (90%) and the remaining (10%) were either government employees, hospital employees insured with organizations or with the insurance companies.

In this study, it was found that RTAs (74%) topped the list followed by fall due to various reasons (18%) and assaults (6%) and occupational accident (2%). Among RTAs, the victims were 46 men and 4 women who are in the ratio of almost 10:1 which is very close to the observation by 9:1 made by Singh et al.<sup>11</sup>

The sources of information about KLES Dr. Prabhakar Kore Hospital as told by the patients were word-of-mouth (50%), referred by other physicians (40%) and through the employers (10%). In a study conducted by Hull et al, emergency departments in the United Kingdom, found that 80% patients were referred by general physicians suggesting that the patients had visited the other clinics before attending the emergency departments.<sup>12</sup>

There were multiple reasons for choosing the hospital. Majority of the patients appreciated the quality of care (64%), conveniently situated on the National Highway 4 (26%), easy accessibility (20%), reputation the hospital (20%), acceptance of the credit patients (10%) and other reasons (16%) like referred by the physicians, brought by the police and advised by the employer. The hospital is a tertiary care teaching hospital with all the facilities available round the clock. In a study conducted by Sharma et al, 72% of the patients were satisfied with the convenient to reach the OPD.<sup>13</sup>

As majority of the patients had come by their own means and the KLE ambulance was used in just five cases. Much of the data could not be collected upon the number of health care staff present in the ambulance, their attitude and any first aid given at the site or on the way to the hospital, and the availability of the necessary equipment in the ambulance.

52% of the patients told that the cost of treatment was costly, 28% told that the charges were reasonable and 20% of the patients were not aware of the treatment charges as they were credit patients. The results were comparable with the observations of Carter et al.<sup>14</sup>

In this study, 90% of the patients were satisfied with the promptness of the treatment they received at triage by the staff. 84% were satisfied with the nursing care in the ward. This was in accordance with the findings of Sachdev et al. In their study majority of the subjects (49%) reported satisfaction with availability of doctors and nurses in emergency department.<sup>15</sup>

In the present study, 80% were satisfied with the proper guidance received to complete the paper work. More than 50% of the patients were counselled either by the CMO, RMO or the PRO (public relation officer) about the condition of traumatic injuries, diagnosis, approximate cost of the treatment and prognosis. 80% of the patients were satisfied by the doctors that they were well informed about the treatment and procedures to be done on them. In a study done by Joshi et al explanation of the disease and treatment was satisfactory in 91% of the patients and it was 81.6% in a study done by Acharya et al.<sup>16,17</sup> In another study by Sharma et al the level of patient satisfaction was 62% towards explanation of the disease and treatment given by the doctor.<sup>13</sup>

Research of the study showed 74% of the patients' satisfactory level with the staff at reception. In a study done at France 92.5% patients gave the highest scores to the quality of reception. Out of 37 patients, only 4 patients told that there was delay in giving the samples for laboratory investigations due to long queue in the department. Rest 89% patients were happy with the lab services. 70% patients had encountered inconvenience at the casualty pharmacy with overcrowding. Similar reports were noticed by Jadhav et al.<sup>18</sup> In his study, 77.71% patients could find easily pharmacy or

laboratory. In another study by Sharma et al 52% respondents were satisfied in getting the medicines from the pharmacy.<sup>13</sup> In this study, 32 of the patients had taken the hospital diet. Among them, 19 patients (59%) were satisfied with the food and 13 (41%) non satisfied patients told that the food was very bland. This is in line with the previous research findings of Mishra et al.<sup>19</sup>

Overall satisfaction based on the perceived wait time at various stages was satisfactory. 92% satisfaction observed in time taken to reach TCEMS from the hospital entrance. In the TCEMS the patients are looked after first as soon as they arrive at the center and then the paper work is done. In 76% cases patients were attended by the staff in triage within 10 minutes. In an observational study on 318 patients conducted by Clare Taylor and others found that there was median time difference of 2 mins 11 secs (range being 5 secs to 21 mins 45 secs) from the arrival time of the ambulance to actual arrival time of the patients from the ambulance into the emergency department.<sup>20</sup>

Regarding the ward environment, 96% patients were satisfied with cleanliness and daily changing of linen, 78% showed complete satisfaction for cleanliness of the trauma ward, 83% with cleanliness of bed pans and urine pots and 75% with ward toilets. 89% were satisfied with ward maintenance, 16% were not satisfied with the cleanliness in waiting room and 6% not satisfied with cleanliness of corridors. On contrary to this in a study conducted by Sharma et al on-patient satisfaction about facilities provided by the tertiary center in Jabalpur, 68% of respondents were unsatisfied with the toilet facilities.<sup>13</sup>

In regarding to the facilities to attendants few of them were not happy with the gowns. They complained that they were not washed regularly. The waiting areas were not clean. As discussed earlier there was no control over the human crowd passing through the casualty entrance and using the corridor to exit. As a result, there is obstruction for easy transportation of the patients and difficulty to maintain the premises clean. The attendants requested for a luggage keeping room so that they can concentrate on the patient peacefully. Demand for toilets in the TCEMS premises was a major one.

## CONCLUSION

Results of this study showed that patients were satisfied with medical care provided to them, appreciable satisfaction with the information received at various stages during their stay. Anyhow, this has to be further improved. The hospital had all the facilities under one roof. The availability of the pharmacy and blood bank services, the diagnostics in the vicinity, whole organization of the trauma unit in terms of the ward management and OT complex attached to it, added to their satisfaction. For providing more quality services the hospital should develop patient feedback services to increase the satisfaction levels in drawback areas.

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