



Medicine

EVALUATION OF EMERGENCY DEPARTMENT OF TERTIARY HEALTH CARE HOSPITAL OF CENTRAL INDIA WITH SPECIAL REFERENCE TO WAITING PERIOD

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ABSTRACT **Background:** The Emergency Department (ED) is known to be one of the most congested units in any hospital that faces greater pressure in terms of patient load and health care resources as compared to other departments of the health care system. Patients who check into a hospital's emergency department often experience long wait times resulting in treatment delay.

Aim: The objective of the present study was to evaluate the ED of tertiary health care hospital of Central India with special reference to waiting period, hurdles in getting services and level of satisfaction among the beneficiaries of ED.

Materials and Methods: This cross-sectional study was conducted in the ED of Indira Gandhi Government Medical College and Hospital (IGGMCH), Nagpur from 08th to 14th April, 2018. The data was obtained from 375 patients by interns in different working shifts of the ED round the clock.

Results: 18.14 % of study subjects had to wait for more than 2 hours for getting treatment. The unavailability of medicines (5.86%) was a major hurdle along with unavailability of wheel chairs/stretchers (4.26%) and attendants (3.73%). Majority (98%) of the patients have rated the services as satisfactory barring few who were dissatisfied with nurses (3.4%). Majority of the patients came to ED after routine OPD hours in the afternoon and very few patients came in the wee hours.

Conclusion: About one in five patients had to wait for more than two hours for getting treatment. Satisfaction was expressed by majority of the study subjects. The unavailability of medicines and other logistics was a major hurdle narrated by study subjects.

KEYWORDS : Emergency department, Waiting period, satisfaction with services, hurdles in getting services

INTRODUCTION

The function of any hospital is to provide the population with complete healthcare, both curative and preventive and whose services reach out to all general population. The Emergency Department (ED) is known to be one of the most congested units in any hospital that faces greater pressure in terms of patient load and health care resources as compared to other departments of the health care system.⁽¹⁾ Overcrowding of emergency departments in hospitals has become a nationwide challenge. There has been an enormous increase in ED visits over the years. The ED of any health care facility works round the clock in all the shifts. Overcrowding can result in delayed treatment, long patient waiting time and stay, overburdened working staff and dissatisfaction among patients. Patients who check into a hospital's emergency department often experience long wait times in a waiting area⁽²⁾. These wait times are due to the triage process that is essential to hospital admission, patient waiting for a bed, a shortage of on-call specialists and the pile-up of emergency patients due to local accidents and disasters. Waiting time can lead to delayed treatment of patients who require immediate medical care & unrest in relatives of patients, so hospitals must focus on reducing the amount of time patients must spend in the waiting area.⁽³⁾

There are very few studies in India on this issue. Considering this fact, this study was undertaken to evaluate the Emergency Department of tertiary health care hospital of Central India with special reference to waiting period, level of satisfaction and hurdles in getting services among the beneficiaries of ED.

METHODOLOGY

This cross-sectional study was conducted in the Emergency Department (ED) of Indira Gandhi Government Medical College and Hospital (IGGMCH), Nagpur. The institute caters to medical care

needs of Vidarbha region and adjacent Chhattisgarh state in Central India. In 2017-18, the institute catered to a yearly load of around 554,145 out-patients and 39,251 inpatients, whereas the ED of the Institute attended to 138,151 out-patients. The objective of this study was to evaluate the Emergency Department of study institute with special reference to waiting period, level of satisfaction and hurdles in getting services among the beneficiaries of ED.

Permission was granted by the Dean and the medical superintendent of the institution for conducting this study. Data was collected from 08th April to 14th April, 2018 for a period of 7 days. It includes 1 Sunday, 1 public holiday and 5 regular working days. Study subjects were patients attending the ED of IGGMCH, Nagpur. All subjects who gave prior verbal consent were included in the study. Patients who were brought dead were excluded from the study. Total 375 subjects were included in the present study. A pre-designed and pre-tested questionnaire was used to gather the information of study subjects. Total 25 interns working in the tertiary care hospital and not posted in emergency department, were recruited for the study. They were trained for collecting the information with courtesy, patience and proper behaviour. They were divided into 5 batches to work in different working shifts of the ED round the clock. Each shift was covered by 5 interns. Every 5th patient entering the ED was selected and allotted to each intern. If a patient exited from the ED within 2 hours, next patient was allotted randomly to the same intern. Every intern collected the data from 1-3 subjects depending upon the time required for each study subject. Data was validated regularly. The data was collected and compiled using EPI info 7.2 and the analysis was done using social package for statistical software (SPSS) version 20.00 for windows.

RESULTS

The ED has one main entrance for patients and 1 inlet from within the

hospital. There is a registration counter at the entrance, Cash Counter, Medico-legal case (MLC) Counter, X-Ray Room, Resident room, ECG room, Washroom for patients & staff, Plaster room, In-charge sister room, Minor OT, Nursing station, CMO room & Triage room. There are total 30 beds in the ED. Special services like ventilator, defibrillator, intubation and nebulization are available in ED.

Table 1: Socio-demographic characteristics of study subjects

Socio demographic factors		Number (n=375)	%
Age	0-10	56	14.9
	11-20	44	11.7
	21-30	81	21.6
	31-40	70	18.7
	41-50	51	13.6
	51-60	43	11.5
	>60	30	8.0
Gender	Male	231	61.6
	Female	144	38.4
Education	Profession/Honour	1	0.2
	Graduate/ Post graduate	16	4.3
	Intermediate/Post high school diploma	3	0.8
	High school certificate	56	14.9
	Middle school certificate	121	32.3
	Primary school certificate	42	11.2
	Illiterate	27	7.2
	Not revealed	109	29.1
	Occupation	Profession	1
Semi profession		7	1.8
Clerical Shop-owner Farmer		24	6.4
Skilled worker		7	1.9
Semi-skilled worker		67	17.9
Unskilled worker		63	16.8
Unemployed		109	29.1
Not revealed		97	25.9
Residence		Nagpur	322
	Outside Nagpur	53	14.1

Table 1 shows the socio-demographic characteristics of the study subjects. Patients are from all the age groups and both sexes. Mean age of the study subjects was 33.28 ± 19.6 years ranging from 3 months to 90 years. Majority of the patients (85.9%) are from Nagpur city & 14.1% patients are from outside Nagpur.

Table 2: Time period between Arrival and Exit of study subjects

Time Period	No	%
<1 hour	209	55.73
1 to < 2 hours	98	26.13
2 to < 4 hours	54	14.41
≥4 hours	14	3.73
Total	375	100.00

Range: 5 minutes to 9 hours 25 minutes
 Mean ± SD: 1 hour 14 min ± 1 hour 19 min

Table 2 shows the Time period between Arrival and Exit of study subjects. 18.14 % of study subjects had to wait for more than 2 hours for getting treatment.

Table 3: Distribution of service providers as per Level of satisfaction of study subjects

Service providers	Excellent	Good	Average	Poor	Very poor
Registration clerk	63 (16.8)	252 (67.3)	59 (15.7)	1 (0.2)	0 (0)
Security guard	71(18.9)	255 (68)	48 (12.9)	1 (0.2)	0 (0)
CMOs	100 (26.7)	245 (65.4)	27 (7.2)	2 (0.5)	1 (0.2)
Interns/Students	94 (25)	247 (65.8)	34 (9.2)	0 (0)	0 (0)
Residents/Specialists*	55 (28.7)	100 (52)	33 (17.2)	3 (1.6)	1 (0.5)

Nurses	59 (15.8)	236 (62.9)	67 (17.9)	12 (3.2)	1 (0.2)
Technicians/attendants	47 (12.6)	241 (64.3)	82 (21.8)	5 (1.3)	0 (0)

* 192 referred for specialist services

Figures in parenthesis are percentages

Table 3 shows distribution of service providers as per level of satisfaction of study subjects. Majority (98%) of the patients have rated the services as satisfactory barring few who were dissatisfied with nurses (3.4%).

Table 4: Hurdles narrated by patients in getting services

Hurdles	No (N=375)	%
Medicine not available	22	5.86
Wheel chair/stretchers not available	16	4.26
Attendants not present	14	3.73
Investigation procedure time consuming	13	3.46
Referred to OPD	8	2.13
Parking staff arrogant & abusive	7	1.86
Long waiting period	7	1.86
No money for purchasing medicines	5	1.33
Documents for registration	5	1.33
Specialist came late	5	1.33
Overcrowding	5	1.33
No relatives	3	0.8
No water cooler	3	0.8
No dental/skin services	2	0.53
Others	5	1.33

Table 4 shows the hurdles narrated by patients in getting services. The unavailability of medicines (5.86%) was a major hurdle along with unavailability of wheel chairs/stretchers (4.26%) and attendants (3.73%).

DISCUSSION

In the present study, it was found that 18.14% of patients coming to the ED had to wait for more than 2 hours for getting medical services. Similar findings were found in a study done by Susan Lambe et al where patients waited for an average of 56 minutes & 42% waited longer than 60 minutes⁽⁴⁾. A study done by Ali Kemal Erenler found a mean length of stay of 164.1 minutes.⁽⁵⁾ Similar results were found by Grace Chang et al⁽⁶⁾ and Farzad Mahmoodian et al⁽⁷⁾. In a study conducted by Mohammad A. Tashkandy et al in Makkah, Saudi Arabia, the mean length of stay of delayed subjects was 256 minutes.⁽⁸⁾ In a study done by Sreekala P et al, waiting time ranged from 2.25 Hrs to 2.67 hours with mean waiting period of 2.46 Hours.⁽³⁾ Our results corresponded to study done at Koforidua Regional Hospital in Ghana.⁽¹²⁾

In the present study, 99.8% patients were satisfied with registration clerk & security guards. 99.3% of patients rated Casualty medical Officers as satisfactory while interns were found to be 100% satisfactory. 97.9 % of patients found services rendered by Resident Doctors as satisfactory. Nurses and Attendants were found to be satisfactory by 96.9 % and 98.7 % of patients respectively. In a study done by Susan Jalali et al, majority (90%) of patients or attendants were satisfied with the behaviour of security personnel posted in Emergency. Behaviour of Medical Records Department (MRD) staff and their services at emergency were also considered satisfactory by majority (95%). Majority (90%) of patients were satisfied with quick approach of doctors towards them.⁽⁹⁾ Similar results were found in a study done by Fekadu Assefa et al⁽¹⁰⁾, by Kauser Aftab Khan et al⁽¹¹⁾, by Ofosu-Kwarten et al⁽¹²⁾, by Celia Dana Beciu⁽¹³⁾ and by Bishwalata Rajkumari et al⁽¹⁴⁾. In a study done by M V Kulkarni et al, at NKP Salve Institute of Medical Sciences, a tertiary care hospital in Nagpur, patients were more satisfied with behaviour of doctors (87.76 %) as compared to the behaviour of nurses and Class III & Class IV workers (70.01%, 59.09% respectively).⁽¹⁵⁾ In a study done at Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow by Aanchal Jain et al, patients were found to be highly satisfied with doctors followed by appointment process which was followed by other services such as registration process, behaviour of registration staff, seating facility, cash counter staff, account staff & sample collection.⁽¹⁶⁾

CONCLUSION:

In the present study, study subjects are from all the age groups and both sexes. Majority of the patients are from Nagpur city and rest of them

are from outside Nagpur. There was a high waiting period for getting treatment. Majority of the patients have rated the services as satisfactory barring few who were dissatisfied with nurses. The unavailability of medicines was a major hurdle narrated by study subjects along with unavailability of wheel chairs/stretchers and attendants. So, there is a scope for improvement in the services. This study will inform the hospital administrators and policy makers in effectively designing a system so as to reduce waiting period and hence overcrowding in ED. These will in-turn benefit the patients by increasing their satisfaction rate.

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REFERENCES:

- Goel S, Singh A, Tiwari Y. Arrival time pattern and waiting time distribution of patients in the emergency outpatient department of a tertiary level health care institution of North India. *J Emerg Trauma Shock* [Internet]. 2014;7(3):160. Available from: <http://www.onlinejets.org/text.asp?2014/7/3/160/136855>
- Khan BA, Shakeel N, Siddiqui EU, Kazi G, Khan IQ, Khursheed M, et al. Impact of delay in admission on the outcome of critically ill patients presenting to the emergency department of a tertiary care hospital from low income country. *J Pak Med Assoc*. 2016;66(5):509–16.
- Sreekala P, Dan A, Varghese EM. Patient Waiting Time in Emergency Department. 2015;5(5):8–10.
- Lambe S, Washington DL, Fink A, Laouri M, Liu H, Fosse JS, et al. Waiting Times in California's Emergency Departments. 2003;(January).
- Erenler AK, Akbulut S, Guzel M, Cetinkaya H, Karaca A, Turkoz B, et al. Reasons for overcrowding in the emergency department: Experiences and suggestions of an education and research hospital. *Turkiye Acil Tıp Derg* [Internet]. Emergency Medicine Association of Turkey; 2014;14(2):59–63. Available from: [http:// dx.doi.org/ 10.5505/ 1304.7361.2014.48802](http://dx.doi.org/10.5505/1304.7361.2014.48802)
- Grace Chang, Anthony P. Weiss, E. John Orav, Jennifer A. Smallwood, Stephanie Gonzalez, Joshua M. Kosowsky SLR. NIH Public Access. *Gen Hosp Psychiatry*. 2012;6(4):247–53.
- Mahmoodian F, Eqtesadi R. Waiting Times in Emergency Department After Using the Emergency Severity Index Triage Tool. 2014;3(4):3–7.
- Tashkandy MA, Gazzaz ZI, Farooq MU, Dhafar KO. Reasons For Delay In Inpatient Admission At An Emergency Department. 2008;20(1):38–42.
- Jalali S, Jan FA, Rashid H, Hamid S. Evaluation of Patient satisfaction in Emergency Department of a tertiary care hospital in North India. 2016;4(May):3634–9.
- Assefa F, Mosse A, Michael YH. ASSESSMENT OF CLIENTS ' SATISFACTION WITH HEALTH SERVICE DELIVERIES AT JIMMA UNIVERSITY SPECIALIZED HOSPITAL. (1):101–9.
- Khan KA, Khan SA, Qureshi Z, Khan MA, Gill FN. Client Satisfaction towards Quality of Health Services : An Assessment at Primary Healthcare of District Gujranwala. *Int J Public Heal Sci*. 2017;6(1):7–12.
- Ofosu-Kwarteng J. Healthcare Delivery And Customer Satisfaction In Ghana . A Case Study Of The Koforidua Regional Hospital . by Thesis submitted to the Institute Of Distance Learning , Kwame Nkrumah University of Science and Technology in partial fulfillment of the requi. 2012;(June):1–98.
- Beşciü CD. Patient Satisfaction in the Hospital's Emergency Units in Bucharest. *Procedia Econ Financ* [Internet]. 2015;32(15):870–7. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S2212567115015348>
- Bishwalata Rajkumari PN. Patient's satisfaction with care in a government health facility in North East India: A cross-sectional study. *J Med Soc*. Volume 31(Issue 2):86–9.
- Kulkarni M V, Dasgupta S, Deoke AR. Study of Satisfaction of Patients Admitted in a Tertiary Care Hospital in Nagpur. *Natl J Community Med*. 2011;2(1):37–9.
- Jain A, Mishra N, Pandey CM. A study to assess patient satisfaction in out patient department of a tertiary care hospital in north India. *Int J Community Med Public Heal*. 2016;3(1):328–34.