A STUDY TO ASSESS PATIENT SATISFACTION IN EMERGENCY DEPARTMENT OF A TERTIARY CARE HOSPITAL IN KARACHI

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Abstract

The Emergency Department (ED) is a crucial medical treatment unit of hospital specializing in emergency medicine. EDs are responsible for providing immediate healthcare facilities to patients arriving without prior appointment. Thus, evaluating patient satisfaction is of immense importance for efficient service delivery. Very few studies are found in Pakistan, related to patients' satisfaction and utilization of ED services both from demand and supply perspective of ED-Services Supply Chains (SSCs). Data was collected to assess 200 patient's satisfaction towards quality of healthcare services of ED of Sindh Government Qatar Hospital, Orangi town-a tertiary care hospital in Karachi. Structured questionnaire was developed to interview patients and their attendants. Results of SPSS analysis revealed that 55% of patients were transferred to ED within 5 minutes, which shows efficient patient queues and flow management. 64.5% patient's average LOS was between 40-60 minutes. 71% get the availability of basic facilities in ED. Majority of patients i.e. 96.5% and 90.5%, showed satisfaction with the time spent and treatment given by the doctor. Majority of the patients (96%) are satisfied with the services and performance of ED of a tertiary care hospital and 76% patients showed willingness to recommend ED of Government Qatar Hospital, Karachi to others.

Keywords: Patient satisfaction, service quality, health care services, Karachi, hospitals, emergency department, service supply chain, demand and supply

Introduction

The Emergency departments (ED) is a crucial medical treatment facility of any hospital specializing in emergency medicine for providing timely medical care to patients arriving in ED without prior appointment. It is one of the most significant department of a hospital, and thus needs to serve patients with immediate and critical needs more efficiently, but due to spontaneous nature of patients' arrivals in hospital's ED, it becomes challenging for healthcare provider and specifically for ED staff to deal with the urgency and patients queues with efficiency. This, consequently, leads to overcrowding, long waiting lines, inappropriate care, and eventually results in patient dissatisfaction (Jayaprakash, N., et al,

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2009).[1] Thus, patient satisfaction is crucial issue for EDs (Hall, Melvin F., 1996) and is considered as one of the important factor for the success, evaluation and improvement of health care facility.[2] (Al-Eisa IS, et al, 2005 & Soomro M H, et al, 2018) [3]. Over the years, Health care quality is gaining increasing attention as a global issue. Healthcare industry is witnessing a transformation of healthcare services to meet the growing needs and demands of patients (consumers or hospital clientele) and taking up health system research as a continuous tool essential for refinement and improvement of healthcare globally (V, R., 2005, & Ameryoun A, et al., 2013).[4] Hence, Patient satisfaction is considered as an important tool for measuring quality of healthcare services and critical for system improvement (Woodring S, 2004).[5] Patient satisfaction has been defined as the degree of congruency between a patient's expectations of desired care and his/her perception of the actual care he/she receives (Aragon SJ & Gesell SB., 2003). Whereas Swan JE et.al defined, patient satisfaction as a positive emotional response that is desired from a cognitive process in which patient do comparison of their individual experience to a set of subjective standards. Patient Satisfaction is a multifaceted concept, and represents a crucial key indicator for the quality of healthcare services and is considered as a globally recognized factor, which requires to be studied thoroughly and repetitively for efficient functioning of healthcare system (Prasanna KS, et al, 2009 & Jain A et al. 2016).[6] Various studies have been conducted on patient satisfaction as a quality improvement tool for health care providers. Till date, very few studies have been conducted to identify the satisfaction level of patients towards healthcare delivery system and on the attitude of healthcare providers of ED from Services supply chain- SSC perspective, the main objective of conducting this study was to assess the satisfaction level of patients arriving in the ED of Sindh Government Qatar hospital, Orangi Town, related to the services supply chain of ED both from the demand side (i.e. patients) and supply side (i.e. the availability of doctors and other healthcare professionals) service being provided by the ED of selected tertiary care to the patients visiting ED.

Material and Methods

A cross sectional study was conducted in Sindh Government Qatar Hospital, Orangi Town, a tertiary care hospital in Karachi. The study was conducted from January 2020 till February 2020. The data collection and gathering process was conducted with the consent

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[1] Jayaprakash, N., O'Sullivan, R., Bey, T., Ahmed, S. S., & Lotfipour, S., Crowding and Delivery of Healthcare in Emergency Departments: The European Perspective. *The Western Journal of Emergency Medicine*, *10*(4), (2009), 233–239

[2] Hall, Melvin F; Press, Irwin., Keys to Patient Satisfaction in the Emergency Department: Results of a Multiple Facility Study, Hospital & Health Services Administration; Chicago Vol. 41, Issue, 4, (Winter 1996): 515-532.

[3] Al-Eisa IS, Al-Mutar MS, Radwan MM, Al-Terkit AM., Patients' Satisfaction with Primary Health Care Services at Capital Health Region, Kuwait: Middle East J Fam Med. 2005; 3:277-300. 9

[4] V, R., A Grounded Theory for Patients' Satisfaction with Quality of Hospital Care, ICUS NURS WEB J, 2005(22)

[5] Woodring S, Polomano RC, Haagen BF, Haack MM, Nunn RR, Miller GL, et al. Development and Testing of Patient Satisfaction Measure for Inpatient Psychiatry Care. *Journal of Nursing Care Quality*. 2004;19(2):137-48

[6] Prasanna KS, Bashith MA, Sucharitha S. Consumer Satisfaction about Hospital Services: A Study from the Outpatient Department of a Private Medical College Hospital at Mangalore, *Indian J Community Med* (2009); 34: 156-59

of Hospital management using structured interviewer administered questionnaire, consisting of questions related to patient admission process, doctors and paramedics staff behavior and the availability of Basic facilities in the ED of a tertiary care hospital. The questionnaire was pretested on 20 respondents and was also translated into Urdu language, to make questionnaire understandable for respondents and to have quick and easy response.

Selection of Study participants

A total of 200 patients or their attendants, who visited Emergency Department of the selected hospital during the period of two weeks from January 2020-Febuary 2020, were selected using convenience sampling technique. Out of which 106 were male respondents and 94 were female respondents. Public sector hospital, selected, is the only hospital catering and serving to the medical and emergency care needs of more than 3 million population with only one OPD and ED. Respondents who fulfilled our inclusion criteria were included in the study and those respondents who spent less than 24 hours in ED of selected hospitals were excluded from the study.

Inclusion criteria

This study included those patients who visited ED with Length of Stay (LOS) of more than 24 hours. It also included patients who have already undergone treatment and were about to get discharged, shifting to other hospital wards, or were being referred or transferred to other hospitals for further treatment. Our target population were patients available in the emergency wards at the time of data collection.

Exclusion criteria

Patients with length of stay of less than 24 hours. We also excluded patients, who died in ED during treatment or died at the time of arrival in ED. Furthermore, patients who showed disagreement for being a part of this research study were also excluded.

Collection of Data

Data was collected with the consent and help of hospital administration, by interviewing patients (or their attendants) admitted in the emergency department of a tertiary care hospital. Relevant demographic variables like age, gender, and other patient satisfaction variables related to the hospital infrastructure, facilities, behavior of doctors and other paramedic staff were recorded. A pre-tested structured questionnaire was used to collect the data on patient satisfaction. The respondents were guaranteed the confidentiality of their responses.

Ethical Considerations

The data was collected after seeking written consent from emergency department staff and administration. Respondents were informed about data collection purpose before interviewing them and were assured of their complete confidently.

Observations

Table 1
Mode of Transport

Total no. of patients interviewed	No. of patients using Ambulance		No. of patients using public transport		No. of patients using personal transport	
200	No.	%age	No.	%age	No.	%age
	n=50	25%	n= 90	45%	n=60	30%

Table 1 shows that among 200 patients, interviewed, only 25% patients used Ambulance services to reach ED of Qatar Hospital, a tertiary care hospital, 30% patients used personal transport and majority of patients i.e. 45% used public transport.

Table 2
Pathway to ED

Total no. of patients interviewed	Number of patients found ED Pathway in hospital		Number of patients unable to find ED Pathway in hospital	
200	No.	%age	No.	%age
	n=173	86.5%	n= 27	13.5%

Table 2 shows that majority of patients i.e. 86.5% were aware of the Pathway to ED and easily found ED in hospital, whereas only 13.5% were unable to find ED facilities in hospital.

Table 3
Availability of basic facilities (Like stretcher/wheelchair) upon arrival

Total no. of patients interviewed	Number of patients find basic facilities in ED on arrival		Number of patients unable to find basic facilities in ED on arrival	
200	No.	%age	No.	%age
	n=45	22.5%	n= 155	77.5%

Table 3 depicts that out of total no. of 200 patients interviewed, 77.5% patients responded that they were unable to find basic facilities (Like stretcher/wheel chair facility) in ED while, 22.5% patients showed satisfaction and were able to find basic facilities in ED upon arrival.

Table 4
Efforts consumed in obtaining basic facilities in ED

Total no. of patients interviewed	Number of patients find basic facilities in ED easily		Number of patients find basic facilities in ED with efforts	
200	No.	%age	No.	%age
	N=48	24%	N= 152	76%

It has been noted in table 4 that majority of patients i.e. 76% made maximum efforts in acquiring basic facilities like stretcher, wheel chair etc. in ED, while only 24% were satisfied and found basic facilities in ED easily with little efforts.

Table 5
Time taken by reception staff to transfer you to ED

Total no. of patients interviewed	Less than 1 min		1 to 5mins		More than 5 mins	
200	No.	%age	No.	%age	No.	%age
	N=18	9%	N= 110	55%	N=72	36%

Upon arrival in ED, 9% of the patients were usually transferred to ED within 1 min, 55% of patients were transferred to ED within 5 minutes, while reception staff took more than 5 minutes to transfer 36% patients to ED.

Table 6
Upon arrival in ED who attended you first?

Total no. of patients interviewed	Doctor		Nurse		Paramedics	
200	No.	%age	No.	%age	No.	%age
	N=123	61.5%	N= 20	10%	N=57	28.5%

Table 6 reveals that, majority i.e. 61.% of the patients were immediately attended and treated by the doctor as soon as they arrived in ED, 10% patients were received by nurses and 28.5 % cases were initially received by paramedics' staff in ED and later on transferred to doctors upon their availability.

Table 7
Satisfaction with Behavior of doctor and clinical care

Satisfaction Variable	Fully Satisfied	Partially Satisfied	Not Satisfied
Doctor Visiting Time	50.5% (n=101)	43% (n=86)	6.5% (n=13)
Time spent by doctor in treatment	67.5 % (n=135)	29% (n=58)	3.5% (N=07)
Treatment given by doctor	62.5% (n=125)	28% (n=56)	6% (N=12)
Services of Hospital's ED	58% (n=116)	38% (n=76)	4% (n=8%)

Clinical care was considered as an important indicator of quality healthcare services delivered by the hospital. In above table, majority of the patients (i.e. 50.5%) were fully satisfied with immediate care provided by doctor, while 43% were partially satisfied and only 6.5% patient showed dissatisfaction. Moreover 67.5% patients showed full satisfaction with time spent by doctor in giving treatment, while 29% were partially satisfied and 3.5% patients were not satisfied. Likewise, 62.5% patients showed full satisfaction with the treatment and care given by doctors, 28% were partially satisfied and 6% patients were not satisfied. Regarding services patients received in hospital, 58% patients showed full satisfaction, while 38% patients were partially satisfied and only 4% patients showed dissatisfaction. This revealed that majority of patients are satisfied with the services and the performance of ED. However, few missing values were also reported in aforementioned variables.

Table 8
Satisfaction with behavior and attitude of ED Staff

Satisfaction Variable	Fully Satisfied	Partially Satisfied	Not Satisfied
Doctor	67.5% (n=135)	29.5% (n=59)	3% (n=6)
Nurse	37.5% (n=75)	51.5% (n=103)	8% (n=16)
Paramedics	36% (n=72)	57.5% (n=115)	6.5% (N=13)
Reception staff	43.5% (n=87)	42.5% (n=85)	14 % (n=28%)

The behavior and attitude of ED staff is of immense importance for patients in delivering healthcare service to patients. In table 8, it has been noted that majority of patients, 67.5% have full satisfaction with doctor's behavior and attitude and 29% patients showed partial satisfaction, while very less percentage of people i.e. 3% showed dissatisfaction. 51.55% patients are partially satisfied with behavior and attitude of nurses, while 37.5% were fully satisfied with Nurse's behavior and attitude and only 8% patients were not satisfied with nurses. Satisfaction behavior towards paramedics also showed that majority of patients i.e. 57.5% (like Nurses case) are partially satisfied with paramedics. 36% patients revealed full satisfaction while, 6.5% said they are not satisfied with Paramedics attitude and

behavior in ED. Respondents rate reception staff attitude and behavior as 43.5% fully satisfied, 42.5% partially satisfied and 14% not satisfied.

Table 9
Patient Length of Stay (LOS) in ED

Total no. of patients interviewed	40-60 mins		1-2 hour		More than 2 hours	
200	No.	%age	No.	%age	No.	%age
	N=129	64.5 %	N= 45	22.5%	N=26	13 %

Table 9 shows observations of patient's length of stay (LOS), which is an important indicator of hospital's efficiency. Results shows that majority of patients i.e. 64.5% have LOS of 40-60 minutes, while 22.5% had 1-2 hours of LOS and only 13% had LOS of more than 2 hours.

Table10
Satisfaction with the services of Hospital ED

Satisfaction Variable	Fully Satisfied	Partially Satisfied	Not Satisfied
Hospital ED services	58% (n=116)	38% (n=76)	4% (n=8)

Table 10 indicates respondent's satisfaction level with the services of hospital's ED, which reveals 58% patients are fully satisfied with the services of ED, while 38% showed partial satisfaction and only 4% showed complete dissatisfaction with Hospital's ED services.

Table11
After treatment in ED, where were you sent?

Total no. of patients interviewed	Sent home after treatment		Transferred to hospital ward after treatment		Referred to other hospital	
200	No.	%age	No.	%age	No.	%age
	N=163	81.5 %	N=26	13%	N=11	5.5 %

Table 11 shows, where patient was sent after treatment from ED, 81.5% patients were sent home after complete treatment, while 13% patients were transferred to hospital ward after treatment in ED, and 5.5% patients were referred to other hospital.

Table 12
Summary table: Availability of Basic Facilities in ED

Basic Facilities in ED	Rating Scale				
	Yes	No	Fully Satisfied	Partially Satisfied	Not Satisfied
Q1: Drinking water availability in ED	n=142 (71%)	n=58 (29%)	-	-	-
Q2: Seating arrangement availability for patients and their attendants in ED	n=128 (64%)	n=72 (36%)	-	-	-
Q3: Telephone facility in ED	n=42 (21%)	n=158 (79%)	-	-	-
Q4: Cleanliness and general condition of ED	-	-	N=44 (22%)	N=128 (64%)	N=26 (13%)
*Rating Scale	Q1-Q3	Yes /No			
	Q4	Fully satisfied/Partially satisfied /Not satisfied			

Above table shows responses of patients & respondents on availability of basic facilities in ED. Majority of patients (71%) said they had drinking water facility in ED, while 29% did not get drinking water facility in ED. Likewise, 64% i.e. majority of patients and their attendants did get proper seating arrangement in ED, whereas 36% said they did not get appropriate seating arrangements while they were in ED. Moreover, table reveals that majority of respondents didn't get telephone facility in ED. Among 200 patients and their attendants, who were interviewed 64% showed partial satisfaction with cleanliness and general conditions of ED, while 22% were fully satisfied, while only 13% were not satisfied.

Discussion

This study attempts to assess the satisfaction of the patients from demand and supply side of Hospital ED services supply chain with regards to various aspects of ED healthcare services provided in a tertiary care hospital of Karachi. Selected public sector hospital. Sindh Government Qatar hospital, Orangi Town is the only private sector hospital, providing medical and emergency care services to over 3 million population in Karachi, completely free of cost with one OPD and ED. Hospital's ED has highest patient volume, since it is the only hospital providing medical care and ED services to the residents of Oragni Town, Banaras, Qasba Colony, SITE, North Karachi, Ittehad Town and other nearby vicinities of Megacity Karachi. Despite such a huge patient flow on daily basis, the results indicate that most of the respondents interviewed i.e 58%, showed full satisfaction and 38% showed partial satisfaction with the services they received at the tertiary care hospital. It has also been revealed from the studies, though not much

significant for results, very less percentage of patients interviewed (4%) expressed dissatisfaction with the services of tertiary care hospital ED. This indicates that hospital' administration in order to enhance service quality, needs to do more efforts to improve quality of services delivered by ED up to desired expectation level of patients. In this regard, very few studies have been conducted on patient satisfaction and services they receive at the selected tertiary care hospital, hence there is lack of data availability for comparison.

Service Quality is one of the essential indicator of high performing health care system and public health (Williams G & Nolte E, 2018).[7] Quality of care services should always be delivered to patient in a timely manner, as it is a basic right of patient. In recent times, measuring quality of care can be done easily. Patient satisfaction is an important tool for hospitals and healthcare systems for measuring service quality of health service in all levels and departments of hospitals (Aanchal Jain et al. 2016).[8] Accessing patient satisfaction is easy and cost effective way of evaluating healthcare services, likewise of ED.

Our studies show that majority of people used public transport (i.e. 45%) instead of personal cars (i.e. 30%) or Ambulances (i.e. 25%) to reach hospital, this is might be because mostly patients are coming from low income group areas(strata) of Karachi, and are unable to afford personal cars. This also reveals that government and hospital need to improve the ambulance services, for patient's convenience and easy accessibility of healthcare services. Furthermore, it has also been revealed from analysis of the work of Zia, N., Shahzad et al, 2015, that Utilization of ambulances services in Pakistan is exceptionally low.[9]

Present study shows that majority of patients i.e. 86.5% easily found the way to ED. This reveals that adequate attention has been given in the outlook of ED to facilitate patients. However, 13% patients reported they encounter difficulty in finding ED, this might be because of the stress, anxiety and low level of educational background of patients, it has also been noted and as also mentioned by ED doctors, that general public lacks awareness about the functioning and purpose of ED and OPD (out-patient department) and generally arrives in ED for all kinds of treatment. This is also consistent with the study done by Mahfouz AA, et al, 2007, involving 30 primary healthcare centers of Saudi Arabia, study reported that the most unsatisfactory element identified by 35% patients were the lack of sign boards in hospital leading way to Emergency rooms.

This study revealed that majority of patients and their attendants showed satisfaction with the availability of basic facilitates in ED like wheelchair, stretcher at the time of admission

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[7] Williams G, Nolte E. Assuring the Quality of Public Health Services. In: Rechel B, Jakubowski E, McKee M, et al., editors. Organization and Financing of Public Health Services in Europe [Internet]. Copenhagen (Denmark): *European Observatory on Health Systems and Policies*; 2018. (Health Policy Series, No.50.) 6. Available at: https://www.ncbi.nlm.nih.gov/books/NBK535719/

[8] 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 Health 2016; 3: 328-34.

[9] Zia, N., Shahzad, H., Baqir, S.M. *et al.* Ambulance use in Pakistan: an analysis of surveillance data from emergency departments in Pakistan. *BMC Emerg Med* 15, S9 (2015). https://doi.org/10.1186/1471-227X-15-S2-S9

process in ED, however, also revealed that they had to put in a lot of efforts in finding these facilities upon arrival in ED, which is comparable with the studies conducted by (Susann Jalali, et al, .2016).[10]

Present study revealed that 55% patients immediately got ED Department access at the reception i.e. within 5 minutes and 36% patients spent more than 5 minutes to get ED access. The reason for delay was possibly because of overcrowding in ED as mostly patients entering hospitals rush towards emergency unit and from ED they are directed towards the concerned departments for admissions and consultation clinics. Usually, it is noticed that patients with less severity wait in ED queues for much longer time than patient with immediate care. Previous studies have revealed that such delay is due to shortage of resources, limited number of beds in ED and because they have wait in long queues before getting access of ED bed.[11]

In our study, upon arrival in ED, 61.5% patients were attended by doctors and majority showed full satisfaction with Doctor visiting time, time spent in treatment and treatment. 28% were attended by paramedics and only 10% were attended by nurses, this is due to the shortage of right supply of nurses in ED of a tertiary care hospital. From past researches, it has been noted, that mostly patients want to have first contact and medical examination with doctors rather than nurses or students, as noted by (Qidwai W et. al. 2005).[12] This indicates that there is a need of appropriate supply of doctors in ED to manage the demands of patients.

The current study shows patient satisfaction towards availability of medicines in hospitals and reveals that 86.5% patients received free of cost medication from the hospital. However, 13.5% had to go outside to private pharmacy shop because of the unavailability of medicines in hospital. This indicates that being a tertiary care hospital of government, hospital needs to make sure the availability of all types of medicines in hospital. Studies conducted by de Brun C et al, (2002) and Mahfouz AA, et al, (2007) indicates that the availability of medicines and pharmacy shop is of immense importance for delivering smooth healthcare services.[13]

Most of the patients in our study were found partially satisfied with the services provided by nurses. Among 200 respondents interviewed, 51.5% were partially satisfied and 37.5% were fully satisfied with the services of nursing staff. And 8% respondents showed dissatisfaction with nursing staff. This is in consistent with the study of Baalbaki, Imad

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[10] Jalali, Susan, Farooq Ahmed Jan, Haroon Rashid and Shahnawaz Hamid. "Evaluation of Patient satisfaction in Emergency Department of a tertiary care hospital in North India." (2016) Sch. J. App. Med. Sci., 2016; 4(10B):3634-3639

[11] McMillan JR, et al, 1986 & Rehmani R., 2004 & Olshaker JS, Rathlev NK., 2006

[12] Qidwai W, Ali SS, Baqir M, Ayub S. Patient Expectations from an Emergency Medical Service Service. J Ayub Med College, Abbottabad, 2005;17:3-6

[13] De Brun C, Howell F, Bedford D, Corcoran R, Kelly A. Outpatient experiences in acute hospitals. Irish journal of medical science. 2002 Apr 1; 171(2):89-93.

[13]Mahfouz AA, Abdelmoneim I, Khan MY, Daffalla AA, Diab MM, El-Gamal MN, Al-Sharif A. Primary health care emergency services in Abha district of southwestern Saudi Arabia. East Mediterr Health J. 2007 Jan-Feb;13(1):103-12. PMID: 17546912.

et. al ,2008 & Demir C. et al, 2002, which presents that satisfaction with nursing staff is the most important act of satisfaction with the service encounter.[14] Moreover, as observed during hospital visit for research data collection, it was noted that there is a need to allocate more nursing staff in ED as the ED is functioning with 6 nursing students on training.

Present study also included research about Patient's LOS, Length of stay, which is an important indicator of evaluating hospital's efficiency. Study revealed majority i.e. 64.5% patients LOS was within 40-60 minutes i.e. patients spent less than an hour in ED.

Study Limitation

Present study is however subject to a few research limitations. Firstly, since the data was only collected from the ED of hospital, and due to the sensitive nature of patient's arrival in ED, and complex nature of cases being handled in ED, it was difficult to gain complete access of patients and their attendants, hence study is based on a limited sample size. Moreover, it was also difficult to communicate and interview patients and their respondents, the data was collected through and with the help of hospital ED administration. Also, the present study is conducted in Karachi's tertiary care hospital so the similar study can be extended to other healthcare providers and in different cities of Pakistan as well. Despite several limitations, uniqueness of this study is found in the fact that till date very few studies are conducted and published on ED's patient's satisfaction with the demand and supply side of ED services supply chain management, especially in Karachi's government healthcare facility, this study was an attempt to do so.

Conclusion

Overall, the study revealed that majority of patients showed good level of satisfaction and were fully satisfied with the quality of ED services of Sindh Government Qatar hospital, Orangi Town - a tertiary care hospital in Karachi both from demand and supply perspective of ED- SSCM. During our visit to selected tertiary care hospital and our research work we have identified potential obstacles and facilitators that may impact patient's satisfaction and therefore can be further improved for increasing the overall satisfaction level of patients. As in our study we have found that hospital need to make sure, the availability of ambulance services is available at the hospital it was identifies very few patients were seen using ambulances. Furthermore, we also identified that patients were not fully satisfied with availability of basic facilities like stretcher and wheelchairs, telephone, and less number of Nursing, and paramedics staff, thus these aforesaid facilities and availability of adequate number of ED staff needs due consideration of hospital's management for efficient and effective treatment of patients visiting ED. Furthermore, our future research extension of this study is based on assessing

[14] Demir C, Celik Y. Determinants of patient satisfaction in a military teaching hospital. Journal for Healthcare Quality. 2002 Mar 4; 24(2):30-4.
[14]Baalbaki, Imad et al. "Patient Satisfaction with Healthcare Delivery Systems." International Journal of Pharmaceutical and Healthcare Marketing 2.1 (2008): 47–62. Web.

patient satisfaction both from demand and supply side perspective of ED services supply chain of a selected tertiary care hospital during COVID 19 pandemic.

Bibliography

Al-Eisa IS, Al-Mutar MS, Radwan MM, Al-Terkit AM. (2005) Patients' satisfaction with primary health care services at capital health region, Kuwait. Middle East J Fam Med. 2005;3:277-300. 9

Ameryoun A, et al., Outpatient and inpatient services satisfaction in Iranian Military Hospitals. Iranian Red Crescent Medical Journal, 2013. 15(9): pp. 843-847.

Aragon SJ, Gesell SB. A Patient Satisfaction Theory and Its Robustness across Gender in Emergency Departments: A Multigroup Structural Equation Modeling Investigation. American Journal of Medical Quality, 2003.

Baalbaki, Imad et al. "Patient Satisfaction with Healthcare Delivery Systems." International Journal of Pharmaceutical and Healthcare Marketing 2.1 (2008): 47–62. Web.

De Brun C, Howell F, Bedford D, Corcoran R, Kelly A. Outpatient experiences in acute hospitals. Irish journal of medical science. 2002 Apr 1; 171(2):89-93.
Demir C, Celik Y. Determinants of patient satisfaction in a military teaching hospital. Journal for Healthcare Quality. 2002 Mar 4; 24(2):30-4.

Hall, Melvin F; Press, Irwin. Keys to patient satisfaction in the emergency department: Results of a multiple facility study, Hospital & Health Services Administration; Chicago Vol. 41, Iss. 4, (Winter 1996): 515-532.

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 Health 2016; 3: 328-34.

Jalali, Susan, Farooq Ahmed Jan, Haroon Rashid and Shahnawaz Hamid. "Evaluation of Patient satisfaction in Emergency Department of a tertiary care hospital in North India." (2016) Sch. J. App. Med. Sci., 2016; 4(10B):3634-3639
Jayaprakash, N., O'Sullivan, R., Bey, T., Ahmed, S. S., & Lotfipour, S. (2009). Crowding and Delivery of Healthcare in Emergency Departments: The European Perspective. *The Western Journal of Emergency Medicine*, *10*(4), 233–239.

Mc Millan JR, Younger MS, Dewine LC. Satisfaction with Hospital Emergency Department as a Function of; Patient Triage, Health Care Manage Rev 1986;11;21-7.

Mahfouz AA, Abdelmoneim I, Khan MY, Daffalla AA, Diab MM, El-Gamal MN, Al-Sharif A. Primary health care emergency services in Abha district of southwestern Saudi Arabia. East Mediterr Health J. 2007 Jan-Feb;13(1):103-12. PMID: 17546912.

Olshaker JS, Rathlev NK. (2006), Emergency Department Overcrowding and Ambulance Diversion: The Impact and Potential Solutions of Extended Boarding of Admitted Patients in the Emergency Department. *J Emerg Med.* 2006 Apr;30(3):351-6.

Prasanna KS, Bashith MA, Sucharitha S. Consumer Satisfaction about Hospital Services: A Study from the Outpatient Department of a Private Medical College Hospital at Mangalore, *Indian J Community Med* (2009); 34: 156-59.

Qidwai W, Ali SS, Baqir M, Ayub S. Patient Expectations from an Emergency Medical Service Service. J Ayub Med College, Abbottabad, 2005;17:3-6

Rehma;54;233-6 ni R. Emergency Section and overcrowding in a University Hospital of Karachi, Pakistan, JPMA 2004

Soomro M H , Magsi M , Lahmar O, (2018) Patient Satisfaction With Health Care Services In Outpatient Department Of A Dental College Hospital In Pakistan, Update Dental College Journal UpDCJ | Vol. 8 No. 1 | April 2018. Pg 55-60

Swan JE, et al., Deepening the understanding of hospital patient satisfaction: fulfillment and equity effects. J Health Care Mark, 1985. 5(3): p. 7-18.

V, R., A Grounded Theory for Patients' Satisfaction with Quality of Hospital Care. ICUS NURS WEB J, 2005(22).

Williams G, Nolte E. Assuring the Quality of Public Health Services. In: Rechel B, Jakubowski E, McKee M, et al., editors. Organization and Financing of Public Health Services in Europe [Internet]. Copenhagen (Denmark): *European Observatory on Health Systems and Policies*; 2018. (Health Policy Series, No.50.) 6. Available at: https://www.ncbi.nlm.nih.gov/books/NBK535719/

Woodring S, Polomano RC, Haagen BF, Haack MM, Nunn RR, Miller GL, et al. Development and testing of patient satisfaction measure for inpatient psychiatry care. Journal of Nursing Care Quality. 2004;19(2):137-48

Zia, N., Shahzad, H., Baqir, S.M. *et al.* Ambulance use in Pakistan: an analysis of surveillance data from emergency departments in Pakistan. *BMC Emerg Med* 15, S9 (2015). https://doi.org/10.1186/1471-227X-15-S2-S9