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A DESCRIPTIVE STUDY ON OVERCROWDING IN EMERGENCY DEPARTMENT

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Abstract: This study examined the causes for overcrowding in the Emergency Department (ED). A descriptive study was designed wherein responses were sought from the hospital staff on the causes for overcrowding. The target population was the clinical, allied medical and clerical staff. Convenience sampling technique was used to collect data from the respondents. Questionnaire method was used for data collection. Statistical Package for Social Sciences – version 25.0 was used for data analysis. Findings indicate that majority of the clinical staff, allied medical staff and clerical staff agreed that the causes for overcrowding were non availability of beds, insufficient trained staff, seasonal variation of patient flow, visit by non-emergent patients, lack of access to primary or specialty care, complexity and acuity of patients, lack of advanced diagnostic and treatment facility and lack of proper guidance /training for handling ED patients. The study reports suggest the elimination of delay in the Emergency Department to adequate planning of the systems and processes.

Index Terms - Emergency Department (ED), Overcrowding, Health Care.

I. Introduction

The emergency department of a hospital is the patient's first point of contact with the healthcare system. The emergency department's services must be effective in order to provide high-quality patient care while still maintaining the hospital's credibility. Overcrowding in an emergency department (ED) occurs when the physical or staffing ability of the ED is exceeded by an excessive number of patients waiting to be seen, awaiting examination and care, or waiting to leave.

The Emergency Department (ED) is one of the busiest hospital departments, with many patients admitted with a variety of high-risk medical conditions. (Mehrabian, 2014). Clinicians, allied health professionals, and clerical workers have the first-hand experience in dealing with emergency department's overcrowding. Therefore, this study is an attempt to determine the causes of ED overcrowding based on their (Clinical, Allied Medical and clerical staff) perspective.

The main objectives of the study were as follows:

- i. To assess the causes for overcrowding in the Emergency Department based on the perception of the clinical staff.
- ii. To assess the causes for overcrowding in the Emergency Department based on the perception of the Allied Health staff.
- iii. To assess the causes for overcrowding in the Emergency Department based on the perception of the clerical staff.

II. Review of Literature

Overcrowding in emergency rooms can be caused by a variety of factors. Staff shortages, systemic flaws such as an insufficient number of EDs and EDs with limited internal space are among these causes (Pitts, 2006). Small hospitalization capability, hospital system flaws, epidemics, delayed paraclinical care, and critically ill patients being admitted to the ED (2008, Hoot).

As the number of patients requiring emergency care is growing, ED overcrowding has become a major public health issue. According to a previous survey, the number of elderly patients presenting to EDs has risen significantly. (Ukkonen, 2019). Ebrahimpour et al. (2014) also listed ED overcrowding as a contributing factor to medication errors.

Some studies have also linked ED overcrowding to sociocultural factors such as the presence of a large number of patients' family members. Inappropriate use of emergency services (Puraghaei, 2015). (Carret, 2009), as well as language gaps and cross-cultural

barriers. (Terui, 2017), as well as delayed care, delay in patient shift to other hospital units, and failure to assess and address patients' issues.

Therefore, to provide efficient emergency services, it is necessary to assess the causes for overcrowding in the Emergency Department.

III. Materials and Methods

A descriptive research was adopted to gather information from clinical, allied medical and clerical staff about the causes of overcrowding in the emergency department. A sample size of 75 staff was selected based on convenience sampling technique. Questionnaire method was used to collect data from the staff. The data was analysed using Statistical Package for Social Sciences – version 25.0. Frequency and Percentage were calculated for demographic variables and the causes for overcrowding. Data was presented in the form of tables.

IV. Results

This part consists of the responses and tabulation of the data collected from 75 samples through Questionnaire.

Table 4.1 Distribution of sample based on category of staff
n=75

SL No	Category of staff	Frequency	Percentage
1	Clinical staff	45	60
2	Allied Medical staff	20	27
3	Clerical staff	10	13
	Total	75	100

Table 4.1 shows that majority (60%) of the sample consisted of clerical staff, 27% medical staff and 13% clerical staff.

Table 4.2 Distribution of samples based on gender
n=45+20+10=75

SL No	Category of staff	Frequency		Percentage	
		Male	Female	Male	Female
1	Clinical staff	10	35	22	78
2	Allied Medical staff	13	7	65	35
3	Clerical staff	3	7	30	70

Table 4.2 shows that majority (78%) of the clinical staff were male and 22% were female, majority (65%) of the allied medical staff were male and 35% were female. Majority 70% of the clerical staff were female and 30% were male.

Table 4.3 Distribution of clinical staff based on the responses on causes for Emergency Department overcrowding
n=45

SL No	Possible causes for ED overcrowding	Yes	No	Yes	No
		Frequency	Percentage	Frequency	Percentage
1	Non availability of beds	40	5	89	11
2	Insufficient trained staff	35	10	78	22
3	Seasonal variation of patient flow	23	22	51	49
4	Visit by non emergent patients	30	15	67	33
5	Lack of access to primary or specialty care	38	7	84	16
6	Complexity and acuity of patients	36	11	80	24
7	Lack of advanced diagnostic and treatment facility	41	4	91	9
8	Lack of proper guidance /training for handling ED patients	43	2	96	4

Table 4.3 shows the possible causes for ED overcrowding as perceived by the clinical staff. Majority clinical staff agreed that the causes for overcrowding in the Emergency Department were non availability of beds (89%). Insufficient trained staff (78%), seasonal variation (51%), visit by non-emergency patients (67%), lack of access to primary or specialty care (84%), complexity and acuity of patients (80%), lack of advanced diagnostic and treatment facility (91%) and Lack of proper guidance /training for handling ED patients (96%).

Table 4.4: Distribution of Allied Medical staff based on the responses on causes for Emergency Department overcrowding
n=20

SL No	Possible causes for ED overcrowding	Yes	No	Yes	No
		Frequency		Percentage	
1	Non availability of inpatient beds	13	7	65	35
2	Insufficient trained staff	10	10	50	50
3	Seasonal variation of patient flow	11	9	55	45
4	Visit by non emergent patients	14	6	70	30
5	Lack of access to primary or specialty care	12	8	60	40
6	Complexity and acuity of patients	16	4	80	20
7	Lack of advanced diagnostic and treatment facility	17	3	85	15
8	Lack of proper guidance /training for handling ED patients	15	5	75	25

Table 4.4 shows the possible causes for ED overcrowding as perceived by the Allied Medical Staff. Majority of the Allied Medical staff agreed that the causes for overcrowding in the Emergency Department were non availability of beds (65%). Insufficient trained staff (50%), seasonal variation (55%), visit by non emergency patients (70%), lack of access to primary or specialty care (60%), complexity and acuity of patients (80%), lack of advanced diagnostic and treatment facility (85%) and Lack of proper guidance /training for handling ED patients (75%).

Table 4.5 Distribution of clerical staff based on the responses on causes for Emergency Department overcrowding
n=10

SL No	Possible causes for ED overcrowding	Yes	No	Yes	No
		Frequency		Percentage	
1	Non availability of inpatient beds	8	2	80	20
2	Insufficient trained staff	7	3	70	30
3	Seasonal variation of patient flow	5	5	50	50
4	Visit by non emergent patients	7	1	70	30
5	Lack of access to primary or specialty care	6	4	60	40
6	Complexity and acuity of patients	6	4	60	40
7	Lack of advanced diagnostic and treatment facility	8	2	80	20
8	Lack of proper guidance /training for handling ED patients	6	4	60	40

Table 4.5 shows the possible causes for ED overcrowding as perceived by the clerical Staff. Majority of the clerical agreed that the causes for overcrowding in the Emergency Department were non availability of beds (80%). Insufficient trained staff (70%), seasonal variation (50%), visit by non-emergency patients (70%), lack of access to primary or specialty care (60%), complexity and acuity of patients (60%), lack of advanced diagnostic and treatment facility (80%) and Lack of proper guidance /training for handling ED patients (60%).

V. Discussion

The aim of this research was to figure out what cause's emergency room overcrowding. The majority of clinical, allied medical, and clerical staff agreed that lack of beds, inadequate skilled staff, seasonal variations in patient traffic, visits by non-emergent patients, lack of access to primary or specialty care, complexity and acuity of patients, lack of advanced diagnostic and treatment facility and lack of proper guidance /training for handling ED patients were all contributing factors to overcrowding. Staff preparation, environmental planning (i.e., limiting the number of people entering an environment), and discharge management are all part of overcrowding management (i.e., facilitating and accelerating the process of discharge). Since these components may have synergistic effects on patient protection, it's difficult to assess their individual effects.

Many strategies have been developed for easing ED overcrowding. For instance, one strategy is to minimize the number of patients who refer to the department through building adjacent primary health care centres (Gentile, 2010), referring patients with

nonemergency conditions to other units or centres, and providing counselling services. (Hoot, 2008) Boyle et al. (2012) also suggested developing discharge lounge as a strategy to ease ED overcrowding. (Boyle, 2012)

Yancer et al. (2006) also implemented a capacity management intervention and found that strategies such as regularly assessing patients' medical records by nurses, performing patient discharge before midday, and preventing discharge delay were effective in easing ED overcrowding.

Appropriate resource management, with a scheduling and-control approach, could speed up patient handling procedures. This would reduce the amount of time that patients spend in the ED, thereby improving service quality, increasing patient throughput. To develop an effective resource management approach, it is first necessary to identify the dominant factors that influence a patient's length-of-stay and crowding in an ED. Many of these factors are well known and have been empirically studied, including, for example, non-urgent visits, so-called "frequent-flyer" patients, low staffing and resource levels, and time of year (e.g., crowding is expected during the influenza season). (Nathan, 2008).

Broos, et al., (2013), used an integrated nurse staffing and scheduling approach to analyse longer-term nursing staff allocation problems. They proved that staffing multiple nursing departments simultaneously, and integrating nurse characteristics into staffing decisions, can lead to substantial improvements in schedule quality in terms of cost, personnel job satisfaction, and effectiveness in providing high-quality care.

He, et al., (2014) compared several scheduling strategies that are often discussed in the literature, including the fast-track approach, first-in-first-out (FIFO) with priority, and physician and/or team triage. The authors concluded that adoption of triage physician and triage team strategies can enhance the overall performance of the ED.

Claudio, et al., (2014) looked at the above approach as a decision-making model that could be used in conjunction with modern technologies. They found that combining this approach with technology improves triage nurses' ability to prioritise patients in the emergency department. To prevent overcrowding, appropriate steps must be taken to improve emergency department programmes and procedures.

VI. Conclusions

The study analyzed the reasons for hospital overcrowding. Overcrowding in emergency departments can be prevented, according to the study's findings, by providing adequate beds, preparation for emergency room personnel, sufficient services and arrangements for non-emergency staff outside the emergency department, primary care, patient triage, and proper training to staff in handling emergency patients.

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