Original Article

Reasons of Overcrowding in Emergency Department

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Abstract

Objective: To determine the trends in obstetrics and gynaecology patients presenting in the Emergency department.

Place and Duration of Study: Gynae Unit I, Sir Ganga Ram Hospital, Fatima Jinnah Medical University, Lahore, from 1st November 2015 to 30th April 2016.

Study Design: A descriptive study.

Methodology: A prospective study was designed to review the patient presenting in the emergency department of Gynae Unit I, Sir Ganga Ram Hospital. Patients were assessed in terms of demographic features, presenting complaints, admission types (urgent, non-urgent), a referral from outpatient department, from other hospitals or coming from home. The total number of patients admitted and the number of patients sent home was also recorded.

Results: A total of 4778 patients were analyzed prospectively. Majority of the patients 4586 (95.98%) came from home, 128 patients (2.6%) were referred from other hospitals and 74 (1.54%) form outpatient department. 45% of the patient were primigravidas, 49% were between gravida 2 to gravida 4 and 1.8% were multigravida and above parity 5.

Labour pains (28.73%) was the most common presentation. Trauma was the reason for admission in 2.03%, out of 4586. 1523 [31.8%] patients were sent home after evaluation, rest of 3227 [68.1%] were admitted. 145 (3.03%) patients presented with gynecological problems. 620 (12.97%) patients presented with non urgent indications. Rest of all patients presented with indications which were categorized as urgent and were admitted. All data was analysed using SPSS version 20.

Conclusion: To reduce the overcrowding in the emergency department and improve quality of obstetrics and gynae services. Inpatients and Outpatient departments at primary and secondary care levels need to be strengthened. Patients with non-urgent problems should be provided adequate care at primary and secondary health care centers.

Keywords: Obstetrics, Gynaecology, emergency, overcrowding, labour pains.

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Introduction

The international crisis of emergency department crowding has received considerable attention both in political[1,2] and lay venues. [3-7] The unique role of Emergency Department has prompted some to call it

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the safety net of the healthcare system [8,9] However, according to a recent report by the Institute of medicine[2,10,] the increasing problem of crowding has strained this safety net to the 'breaking point'. According to the American college of emergency Physicians[11], 'Crowding occurs when the identified need for emergency services exceeds available resources for patient care in the emergency department, hospital, or both.'[11]

Crowding occurs in all emergency departments and is associated with increased mortality.[11-16] It also reduces the quality of care the patient receives, the length of stay for non-elective admissions rises and the number of serious incidents rise.[17] Emergency departments should be able to measure in real time how crowded they are. There are a number of scales available in literature though none are adequately validated.[18 19]

Escalation of the ED crowding problem has prompted researchers to investigate a number of scientific questions. One literature review characterized the diverse ways in which researchers have defined overcrowding.[20]

Another review characterizes ambulance diversion, whereby an ED advises ambulance to transport patients to other nearby hospitals if possible.[21] another research has divided the causes of overcrowding into input, throughput, and output dactors.[22] The number of patients in emergency department continue to rise not only in tertiary care hospitals of Pakistan but also worldwide. Emergency department are designed to provide a rapid high quality, continuously accessible unscheduled care for a wide range of patients with acute illnesses and trauma

Methodology

A prospective study was carried out in the emergency department of Obstetrics and Gynae unit I of Sir Ganga Ram Hospital, Lahore. It's a 862 bedded tertiary care hospitals associated with Fatima Jinnah Medical University, Lahore.

All patients who presented between 1st November 2015 to 30th April 2016, in the emergency department of Gynae Unit 1, were included in the study and all the data was evaluated and analysed using spss version 20.

After taking approval from hospital's ethical committee and having taken the consent of the patients to utilize the data for research purpose, all the data was collected on a specially designed proforma. Patients were assessed in terms of demographic features presenting complaints, coming from home/outpatient department or referred from the hospital. The staff examining the patient in the emergency department comprises of house officers, resident trainees and senior registrars. All the high-risk patients were further assessed by senior consultants.

Results

A total of 4778 patients were analysed. Out of total number of patients 3255 were admitted and 1523 patients were sent home after emergency treatment and care. (Table I)

Table I: Showing Total Patients Evaluated (N=4778)

Total patients	Number	%
Total patients evaluated	4778	
Total patients admitted	3255	68.12
Total patients sent home	1523	31.87

2157 (45%) patients were primigravida's, 2388 (49%) patient was between gravida II to IV and 88 (1.8%) patients were gravida V and above. Most of the patients 4586 (95.98%) came the from home while 128 (2.6%) were referred from other hospitals. 74 (1.54%) patients were referred from the outpatient department of Sir Ganga Ram Hospital, Lahore. (Table II)

Table II: Referral of Patients

Patients	Number	%
Came from home/self-referral	4586	95.98
Referred from outpatient department	74	1.548
Referred from other hospitals	128	S2.678

145 (3.03%) patients were not pregnant and presented with heavy menstrual bleeding and other Gynaecological symptoms. 620(12.97%) patients presented with nonurgent indications. (Table III) rest of all patients presented with indications classified as urgent **(Table III)**

Table III: Showing Indications/Reasons for Presentation		
Signs and symptoms	**No. of patients**	**%**
Labour pains	1373	28.73
P/v leaking	864	18.08
Sluggish fetal movements	474	9.92
Raised blood pressure	384	8.036
P/v discharge	309	6.46
Antepartum hemorrhage	257	5.37
Postdated pregnancy	246	5.14
Urinary tract infection	204	4.26
Pregnancy with diarrhea	155	3.24
Heavy menstrual bleeding	145	3.03
Came for antenatal checkup	117	2.44
Pregnancy with vomiting	104	2.17
Pregnancy with trauma	97	2.03
Missed abortion on scan	49	1.02
Total patients	4778	

Most common presenting complaint was labour pains with rate of 28.73% while patient presenting with peR vaginal leaking were 18.08%. 5.37% patients presented with antepartum haemorrhage. 9.92% patients presented with sluggish fetal movements. 8.036% patients presented with raised blood pressure in pregnancy. 5.14 patients presented with post-dated pregnancy. 4.26% patients presented with pregnancy and urinary tract infection. 3.24% patients presented with pregnancy and loose motions. 2.17% patients presented with pregnancy and vomiting. Trauma contributes to a small proportion of patients 97(2.03%).

Discussion

A substantial body of evidence exists in the literature describing the causes, effects, and solutions of ED crowding. The main causes of crowding in literature includes non-urgent visits, frequent flyer patients, influenza season,
inadequate staffing, inpatient boarding, and hospital bed shortage. The major effects of crowding are patient mortality, transport delays, treatment delays, ambulance diversion, patient elopement and financial effect. The major solutions of crowding include additional personnel, observation units, hospital bed access, non-urgent referrals, ambulance diversions, destination control, crowding measures, and queuing theory.[23]

A large number of high-quality articles have been published about ED crowding. [24,25] However literature reviews show that randomized controlled trials are lacking, perhaps because many ED operational changes involve the entire department, rather than the individual patient who may be randomized to experimental and control groups.[26] We believe that crowding literature would benefit from more randomized trials examining patient-focused interventions.

The major concern in developing countries like Pakistan is the increasing population rate which results in day by day increasing number of patients in emergency thus compromising care of mother and Foetus and increasing the maternal and Foetal morbidity and mortality.

A significant proportion of patients presented in emergency department with health problems which are classified as non-urgent. This single factor has been suggested as an important Contributor to overcrowding not only in Sir Ganga Ram Hospital, Lahore but also in many other hospitals worldwide.

Another cause of overcrowding is the use of emergency as the source of primary health care by most of the patients in our hospital. 117 (2.44%) patients came for a routine antenatal checkup. The %age of patients presenting with non-urgent indication is 620 (12.9%) while in other countries of the world like Turkey the ratio of patients presenting in the hospital is 28% - 76% for non-urgent indications [27] in pediatric department, while its 31% for obstetric and gynae emergency department.[28] In Europe the %age of these patients is 40% while in USA it's between 9 – 54% [29]

Most of the patients in our study were in the age group 25 to 35 years. This is due to the fact that obstetric population includes young women in their childbearing age.

Trauma during pregnancy is the leading cause of maternal mortality in different parts of the world with 20% of maternal deaths directly attributable to injury .[27] Trauma was the cause of presentation in 97 (2.03%) cases in this study. In another study known lethal injuries occur in 1:12 pregnant patients due to the roadside accident and domestic violence. Other causes of trauma are fall and other injuries.[31,32] In other countries like Canada 15 maternal deaths were reported due to trauma from 1997 – 2000.[33] A report by national trauma data bank study quoted that trauma-related mortality

among pregnant women is lower than non-pregnant. This is due to the protective mechanical and physiological effects of pregnancy.

The effects of crowding are numerous and adverse. Many targeted solutions to crowding have shown to be effective, and further studies may demonstrate new innovations .and subsequently protect the fragile safety network of health care system.

Conclusion

To reduce the overcrowding in the emergency department and improve obstetrics and gynae services, we have to strengthen not only our outpatient department in tertiary care hospitals but also make improvements at primary and secondary health care level, so that patients with non-urgent problems can be dealt in primary and secondary health care centers.

Recommendations: Further advanced studies of patient's demographic properties and other characteristics may provide new innovations which may improve patient care and help the researchers to find new ways and techniques to formulate strategies which may help to decrease burden of emergency in tertiary hospitals and hence improving patient care.

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