HOSPITAL BURDEN IN TERMS OF BED OCCUPANCY DUE TO NON-PAKISTANI PATIENTS: A MAJOR CONCERN IN A TERTIARY CARE HOSPITAL, PESHAWAR, PAKISTAN

Muhammad Yousaf[1], Hamza Ali Khan[2], Iqbal Haider[3]

[1]Post Graduate Resident of Medicine, MTI Khyber Teaching Hospital, Peshawar - Pakistan

[2]Department of Medicine, MTI Khyber Teaching Hospital, Peshawar - Pakistan

[3]Department of Medicine, MTI Khyber Teaching Hospital, Peshawar - Pakistan

ABSTRACT

Objective: Patients who fulfill the criteria for admission should be admitted for a proper workup and better management. Several factors such as the vast number of patients from nearby countries, cause difficulty in getting a chance of admission.

Materials and methods: This retrospective data analysis was conducted between December 1, 2021, and November 30, 2022, at the Khyber Teaching Hospital in Peshawar. From the hospital's electronic database, 89186 patients were identified and analyzed using the statistical program SPSS 20.

Results: A total of 89186 patients were admitted to the hospital in one year, with 50167 (56.2%) women and 38997 (43.2%) men. The majority of patients (98.3%) came from Pakistan, followed by 1419 (1.6%) from Afghanistan, and 98 (0.1%) from Albania, El Salvador, Heard and McDonald Islands, Panama, Reunion, St. Lucia, Yemen, and Zambia. With a standard deviation of 6.37 (SD+6.37), the average length of stay was 3.98 days.

Conclusion: Foreign patients made up 1.7% of those who were admitted, and their average stay was 3.98 days.

Keywords: Bed occupancy, Hospital Burden, Pakistani patients

This article may be cited as: Yousaf M, Khan HA, Haider I, Hospital Burden In Terms Of Bed Occupancy Due To Non-Pakistani Patients: A Major Concern In A Tertiary Care Hospital, Peshawar, Pakistan. PMSRJ 2023 May-August;1(2):65-69

INTRODUCTION

In tertiary care hospitals, many patients visit the emergency and outpatient departments, but only a small number of deserving patients have a chance of being admitted. [1] This issue is widespread across the country's hospitals. Although there is little information available on the total number of hospitalizations in Pakistan, it is substantially higher than in industrialized nations. The yearly hospitalization rate in affluent nations like China ranges from 15.3-17.5%. [2] Mismatched healthcare facilities and patient inflow, referrals from basic and secondary care hospitals, and a sizable patient inflow from neighboring countries are contributory factors. [3, 4] In a nation where there are very few healthcare resources compared to the large population (220,892,340), serving patients from other nations leads to overcrowding. [5, 6] Poor patient management, limited access to the emergency room, and subpar results are all caused by overcrowding. [7] This study's main goal is to examine overcrowding brought on by patients from outside countries. The information could be useful for hospitals and concerned health departments to make the necessary adjustments for better healthcare services, such as adding hospitals that are specifically for people who do not pay taxes or adding facilities to the current health services to deal with them through specific rules and regulations.

Correspondence
Muhammad Yousaf
Post Graduate Resident of Medicine, MTI Khyber Teaching Hospital, Peshawar - Pakistan
Cell: +92-313-9696102
Email: yousaflrh@gmail.com
Date Received: 02/12/2023
Date Revised: 21/05/2024
Date Accepted: 30/05/2024

MATERIALS AND METHODS

The electronic database of the Khyber Teaching Hospital provided information on the number of patients, their home countries, ages, and genders for this retrospective analysis. All patients who were admitted between December 2021 and November 2022 made up the total number of patients. Patients who visited the emergency room or an outpatient department but were not admitted were excluded. The information was received in a Microsoft Excel data file and exported to IBM SPSS. The hospital's ethical and scientific committee gave its approval for the study (Ref. No. 830/DME/KMC) dated 21-11-2022.

Utilizing IBM SPSS version 20, data analysis was carried out. To calculate quantitative factors like hospital stay time, mean, median, mode, and SD were used. For

categorical variables including gender, age, nationality, ward, and month of admission, frequencies and percentages were determined. The analysis also includes patient stratification by month of admission and length of hospital stay for patients from multiple countries.

RESULTS

In this study, 89186 hospitalized patients were divided into 50167 (56.2%) female patients, 38997 (43.7%) male patients, and 22 patients of transgender group (Table No 1).

The age distribution of the 89186 patients was 22107 (24.8%) under the age of 15, 57182 (64.1%) between the ages of 16 and 60, and 9897 (11.1%) above the age of 60 (Table No. 2).

According to an analysis of the ward distribution of 89186 patients, there were 20181 (22.6%) patients in the surgery and allied department, 12585 (14.1%) in the pediatric unit, 33508 (37.5%) in the medicine and allied department, 3007 (3.4%) in the ENT department, 1838 (2.1%) in the eye department, 17635 (19.8%) in the gynecology department, and 432 (.5%) in the isolation unit. (Table No 3) (Figure 1)

Analysis of the country distribution among 89186 patients revealed 87669 (98.3%) patients from Pakistan, 1419 (1.6%) patients from Afghanistan, and 98 (0.1%) from other countries. (Table No. 4)

Analysis of the month of admission for 89186 patients revealed 6766 (7.5%) admissions in January, 6759 (7.5%) in February, 7582 (8.5%) in March, 5869 (6.6%) in April, 7625 (8.5%) in May, 7717 (8.7%) in June, 7019 (7.5%) in July, 8568 (9.5%) in August, 8463 (9.5%) in September,8149 (9.1%) in October, 7529 (8.4%) in November, and 7140 (8.0%) in December. (Figure. 2)

The study analyzed how many days 89186 patients spent in hospitals. The median length of stay in the hospital was 3.98 days, ranging from 0 to 236 days with a Standard deviation of 6.37 days. (Table No. 5 and Figure. 3)

The percentage of hospital stays for 87669 and 1419 patients from Pakistan and Afghanistan, respectively, showed that there were 27.5% and 31.4% (zero days of stay), 13.9% and 12.0% (one day of stay), 12.1% and 10.1% (two days of stay), 9.3% and 10.1% (three days of stay), 7.3% and 6.1% (four days of stay), 11.4% and 13.2% (five or six days of stay), 9.9% and 13.2% (seven to ten days of stay), and 8.7% and 8.6% (above 10 days of stay) respectively. (Table and figure 4)

The analysis of the percentage of patients from 87669 and 1419 patients from Pakistan and Afghanistan into different wards showed 22.4% and 34.5% in surgery and allied, 22.4% and 6.6% in the pediatric unit, 37.5% and 42.7% in medicine and allied, 3.4% and 4.7% in ENT, 2.0% and 3.1% in EYE, 20.0% and 8.4% in gynecology, and 0.5% and 0.0% in isolation units, respectively (Figure 5).

The data included 87669 hospital admissions from several countries in various months. According to the findings, there were 21107 (23.7%) patients admitted in January, February, and March, of whom 20693 were from Pakistan, 398 were from Afghanistan, and 16 were from other countries. There were 21211 (23.8%) patients admitted in April, May, and June, of whom 20840 were from Pakistan, 347 were from Afghanistan, and 24 were from other countries. 25180 (28.2%) patients were admitted in August, September, and October, with 24797 from Pakistan, 344 from Afghanistan, and 39 from other countries. 21688 (24.3%) patients were admitted in July, November, and December, with 21339 from Pakistan, 330 from Afghanistan, and 19 from other countries. (Tables 7 and 8)

DISCUSSION

Everybody falls sick at some point in their lives. Admission to the hospital is required in cases of serious illness for an accurate diagnosis and better management. However, a significant issue is the strain on hospitals brought on by the enormous number of patients, both lo-

Table 1: Gender distribution (n=89186)

Gender	Frequency	Percent
Female	50167	56.2
Male	38997	43.7
Neuter	22	.0

Table 2: Age distribution (n=89186)

Age group	Frequency	Percent
1 day to 15 years	22107	24.8
age above 15 to 60 years	57182	64.1
age above 60 to 100 years	9897	11.1

Table 3: Wards distribution

Ward Group	Frequency	Percent
Surgery and allied	20181	22.6
Pediatrics	12585	14.1
Medicine and allied	33508	37.6
ENT	3007	3.4
EYE	1838	2.1
GYNAE	17635	19.8
Isolation	432	.5

Table 4: Country distribution

	Frequency	Percent
Pakistan	87669	98.3
Afghanistan	1419	1.6
other countries	98	0.1

Table 5: Stay duration in the hospital

	N	Minimum	Maximum	Mean	Std. Deviation
number of days in the hospital	89186	0	236	3.98	6.372

Table 6: Number of admissions monthwise

	Frequency	Percent
January	6766	7.6
February	6759	7.6
March	7582	8.5
April	5869	6.6
May	7625	8.5
June	7717	8.7
July	7019	7.9
August	8568	9.6
September	8463	9.5
October	8149	9.1
November	7529	8.4
December	7140	8.0

Table 8: Number of admissions monthwise

Admissions from different countries in different months			
	Pakistan	Afghanistan	Other countries
Jan Feb March	20693	398	16
April May June	20840	347	24
Aug Sep Oct	24797	344	39
July Nov Dec	21339	330	19

Table 7: Number of admissions monthwise

Admissions from different countries in different months			
	Pakistan	Afghanistan	Other countries
Jan Feb March	20693	398	16
April May June	20840	347	24
Aug Sep Oct	24797	344	39
July Nov Dec	21339	330	19

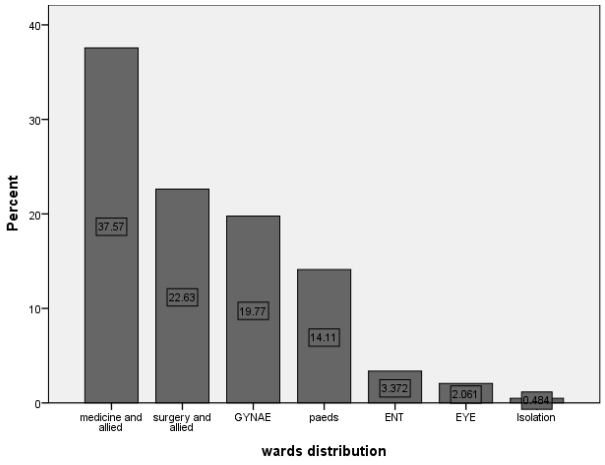

Fig 1: Distribution of patients into different clinical wards

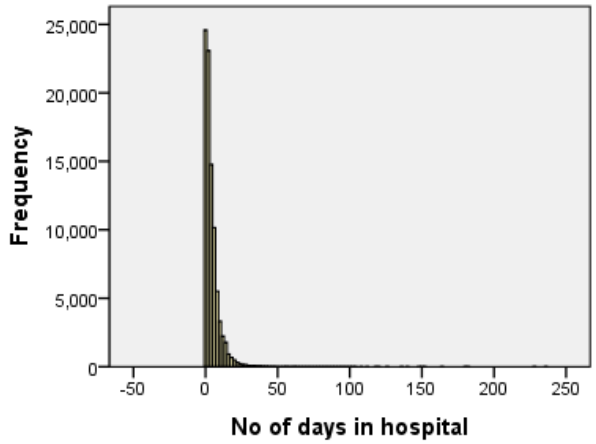

Fig 3: Stay duration in the hospital

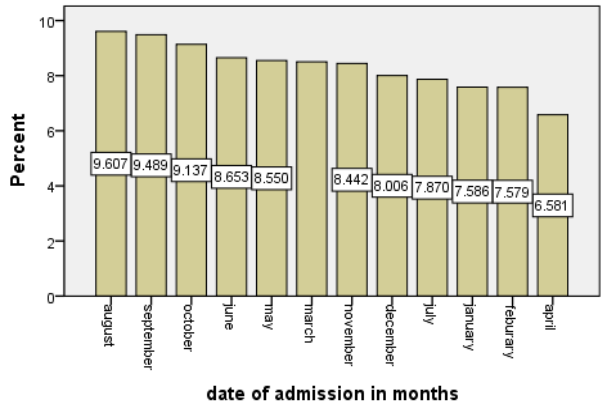

Fig 2: Date of admission of patients in months

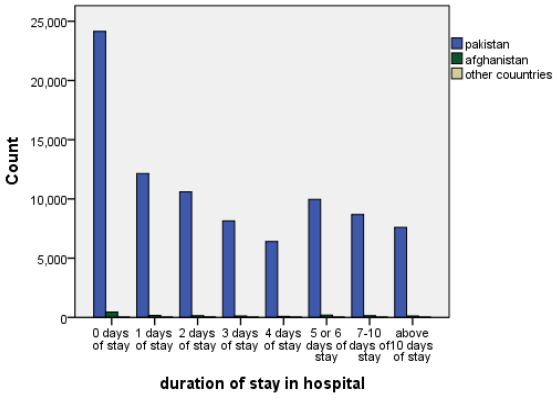

Fig Figure 4: Duration of stay in the hospital

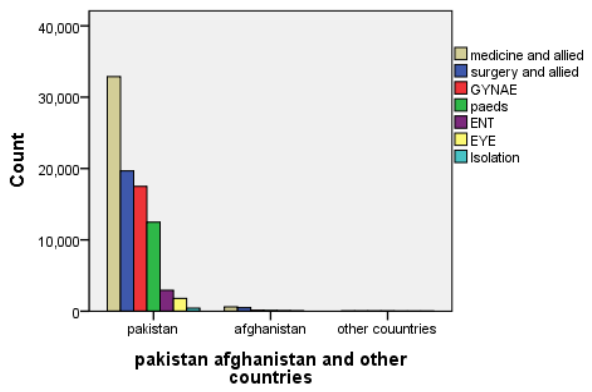

Fig 5: Distribution of patients from different countries into wards

cals and foreigners. Bed availability becomes a significant problem, especially in countries with low resources like Pakistan where there are few hospitals.

According to this study, 89186 admissions occurred overall in a single year. 50167 cases were male, with 43.7% being female (38997). 0.1 % (98 patients) came from Albania, El Salvador, Heard Island, McDonald Island, Panama, Reunion, St. Lucia, Yemen, and Zambia. Pakistan accounted for 98.3% (87669) of the patients and Afghanistan accounted for 1.6% (1419) of the total. With SD + 6.37, the average length of stay was 3.98 days.

In a study by Muhammad Arif Ali, the average length of stay was 1-2 days for acute illnesses and medicine and allied services, and 7-14 days for chronic illnesses and surgery and allied services, while the length of stay seen here is 3.98 days. [8]

Most information on patients being admitted to hospitals from neighboring countries is absent. The patient burden is substantially greater in Pakistan, and more notably in KPK. The overall number of healthcare facilities in KPK is 1708, the total number of beds is 18433, and the population is 35.5 million, or around 1 bed per 19000 people, compared to WHO's recommended minimum of 3 per 1000 population. [9, 10, 11]

Serving patients from nearby countries interferes with healthcare services when there aren't enough beds for all of the country's residents, causing many patients to be referred from one hospital to another in search of a bed. According to this report, there are more admissions in months like August, September, and October, which accounted for 28.2% (25150) of all admissions. 1.54% of which is made of foreign patients. An average stay of 3.98 days makes a significant difference in the number of available beds.

According to the aforementioned figures, numerous patients from surrounding countries are being admitted to hospitals and staying for lengthy periods. There are more admissions in months like August, September, and October. The health department and concerned authorities must either build new hospitals to cope with the increased workload or give additional health services to the hospitals handling these patients.

CONCLUSION

More patients from nearby nations are being admitted to hospitals. The local population suffers from increased effort and resource scarcity as a result. The government needs to increase the number of hospitals and the available resources to meet the increased demand.

REFERENCES

1. Hing E, Hall MJ, Xu J. National Hospital Ambulatory Medical Care Survey: 2006 outpatient department summary. Natl Health Stat Report. 2008 Aug 6;(4):1-31. PMID: 18958995.
2. Moses M.W, Pedroza P, Baral R et al. Funding and services needed to achieve universal health coverage: Applications of global, regional, and national estimates of utilization of outpatient visits and inpatient admissions from 1990 to 2016, and unit costs from 1995 to 2016. Lancet Public Health. 2019;4:e49–e73. doi: 10.1016/S2468-2667(18)30213-5.
3. Institute of Medicine. 2007. Hospital-Based Emergency Care: At the Breaking Point. Washington, DC: The National Academies Press. https://doi.org/10.17226/11621.
4. Hostetler MA, Mace S, Brown K, et al. Subcommittee on Emergency Department Overcrowding and Children, Section of Pediatric Emergency Medicine, American College of Emergency Physicians. Emergency department overcrowding and children. Pediatr Emerg Care. 2007 Jul;23(7):507-15. doi: 10.1097/01.pec.0000280518.36408.74. PMID: 17666940.
5. Pakistan Healthcare Spending (2000-2023) Macro-Trends. Available at: https://www.macrotrends.net/countries/PAK/pakistan/healthcare-spending (Accessed: January 25, 2023).
6. Pakistan population (2020) Worldometer. Available at: https://www.worldometers.info/world-population/pakistan-population/ (Accessed: January 25, 2023).
7. Bernstein SL, Aronsky D, Duseja R, Epstein S, Handel D, Hwang U, McCarthy M, John McConnell K, Pines JM, Rathlev N, Schafermeyer R, Zwemer F, Schull M, Asplin BR; Society for Academic Emergency Medicine, Emergency Department Crowding Task Force. The effect of emergency department crowding on clinically oriented outcomes. Acad Emerg Med. 2009 Jan;16(1):1-10. doi: 10.1111/j.1553-2712.2008.00295.x. Epub 2008 Nov 8. PMID: 19007346.
8. Ali, M., Arif, A., Fatima, T., & Arif, M. (2017). Study of Mortality Patterns among Hospitalized Patients in Public Sector Tertiary Care Hospitals Faisalabad, Pakistan. Annals of Punjab Medical College (APMC), 11(3), 238-242. https://doi.org/10.29054/apmc/2017.203
9. Asian Development Bank (2020) Khyber Pakhtunkhwa Health Sector Review: Hospital Care, Asian Development Bank. Asian Development Bank. Available at:https://www.

adb.org/publications/khyber-pakhtunkhwa-health-review-hospital-care (Accessed: January 25, 2023).

10. Annual growth rate. Table - 1 area, population by sex, sex ratio, population density, urban proportion [Internet]. Gov.pk. [cited 2023 Jan 25]. Available from: https://www.pbs.gov.pk/sites/default/files/population/2017/tables/kpk/Table01p.pdf

11. How many hospital beds per population is ideal? [Internet]. Excel-medical.com. [cited 2023 Jan 25]. Available from: https://www.excel-medical.com/how-many-hospital-beds-per-population-is-ideal/

CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE: NIL

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Yousaf M: Concept, planning, study design, study conduction, critical review, analysis, manuscript writing.

Khan HA: Critical review, discussion, interpretation, manuscript writing, study conduction.

Haider I: Analysis, critical review, study conduction.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.