



Trend of Patients attended at Emergency Department of Referral Neurosciences Hospital in Bangladesh



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Abstract

Background: Emergency Department is very important place for the patient. **Objective:** The purpose of the present study was to assess the trend of patients attended at emergency department of referral neurosciences hospital in Bangladesh. **Methodology:** This was a retrospective study carried out from January 2018 to 2021. This study was carried out in the Department of Microbiology at National Institute of Neurosciences & Hospital, Dhaka, Bangladesh. National Institute of Neurosciences & Hospital, Dhaka has been started its journey from September, 2012. It is situated in the health hub of Sher-E-Bangla Nagar, Dhaka, Bangladesh. This is the only Govt. run tertiary care neuroscience center in Bangladesh. We are having specialized out patient service and 24×7 emergency service. Our 100 bedded comprehensive stroke unit is running. Detailed medical record for each of the study sample was obtained from the record office. **Results:** A total number of 180145 cases were found with the duration of three years. This data showed that the number of neurology patients were attended at emergency department of Neurology at National Institute of Neurosciences and Hospital. The trend of patients who were attended at emergency department was steadily increase from January to December of 2020. It was found that a total number of 4786 cases were attended at emergency Department of study place. Later, this trend was increased. **Conclusion:** In conclusion the trend is increase from 2019 to 2021. [*Journal of National Institute of Neurosciences Bangladesh, July 2023;9(2):122-126*]

Keywords: Trend; emergency department; referral neurosciences hospital

Introduction

Hospital Emergency Department (ED) serves a vital role in the health care system and as the interface between hospital services and the community¹. As Hospitals Emergency Department mostly provide 24-hour services, it becomes easily accessible to the public². However, some patients attending Emergency Department have problems which can be treated in the primary care services in the community³. These patients and their conditions have been described as inappropriate for Emergency Department services⁴. The implication of inappropriate utilization of Emergency Department services is enormous. Resources intended for the care of the critically ill and injured patients may be diverted to those not actually needing emergency care⁵. It may also lead to inefficiency in delivering Emergency Department

services.

The demands on emergency departments (EDs) have dramatically changed both quantitatively and qualitatively⁵. In the early years of emergency care, EDs received a limited number of patients, most of whom had experienced some form of injury. With demographic changes in society, increasing life expectancy and greater personal and clinical expectations, EDs now deal with a greater proportion of patients with medical illnesses rather than traumatic injury, and attendance rates have soared⁶.

Overcrowding in emergency departments is well recognized to contribute to poor outcomes, increased mortality, and poor staff morale⁷. Access block is commonly encountered in the ED, and is a function of hospital-wide issues with poor discharge planning and

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lack of beds being common causes. Increased expectations from patients, emergency physicians, and other clinicians has led to increasing demands on ED services, and higher expectations of definitive diagnosis has led to more testing and radiological investigations being performed in the ED setting⁸. The emergency department (ED) is busy in nature and has a heavy workload with multiple specialties, disease conditions and medications. These conditions make the ED setting more medication error-prone. The purpose of the present study was to assess the trend of patients attended at emergency department of referral neurosciences hospital in Bangladesh.

Methodology

Study Settings and Procedure: This was a retrospective study carried out from January 2018 to 2021. This study was carried out in the Department of Microbiology at National Institute of Neurosciences & Hospital, Dhaka, Bangladesh. National Institute of Neurosciences & Hospital, Dhaka has been started its journey from September, 2012. It is situated in the health hub of Sher-E-Bangla Nagar, Dhaka, Bangladesh. This is the only Govt. run tertiary care neuroscience center in Bangladesh. Four fifty (450) bedded 10 storied hospital having Department of Neurology, Neurosurgery, Pediatric Neurology, Pediatric Neurosurgery, Neurophysiology, Neurointervention, Neurorehabilitation, Neuroradiology, Neuropathology, Transfusion Medicine, Critical Care Medicine and so others. Our Operation Theatre, Cath Lab, Laboratory Services, Neuroradiology, Neurophysiology, ICU and HDU are equipped with all modern and sophisticated technologies. We are having specialized out patient service and 24×7 emergency service. We also provide in patient service. Patients get all these services almost free of cost or with minimum charges as per govt. schedule. Everyday more than thousand patients get our specialized OPD service. Our 100 bedded comprehensive stroke unit is running. Detailed medical record for each of the study sample was obtained from the record office.

Statistical Analysis: Statistical analysis was performed by Windows based software named as Statistical Package for Social Science (SPSS), versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were expressed as mean, standard deviation, minimum and maximum. Categorical data were summarized in terms of

frequency counts and percentages. Chi-square test was used for comparison of categorical variables and Student t test was applied for continuous variables. Every effort was made to obtain missing data. A two-sided P value of less than 0.05 was considered to indicate statistical significance. Differences between case and control were tested.

Ethical Clearance: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration) and also with the ethical guidelines of the Institutional research ethics. Formal ethics approval was granted by the local ethics committee. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results

A total number of 180145 cases were found with the duration of three years. This data showed that the number of neurology patients were attended at emergency department of Neurology at National Institute of Neurosciences and Hospital (Table 1).

Table 1: Trend of neurological patients attended at Emergency Depart of Study Place

| Year | Frequency | Percent |
|--------------|---------------|--------------|
| 2019 | 53215 | 29.5 |
| 2020 | 60755 | 33.7 |
| 2021 | 66175 | 36.7 |
| Total | 180145 | 100.0 |

The patients were attended at emergency department from January 2019 to December 2019 for a period of one year. In January 2019 the lowest number of patients were attended which was 3043. However, the highest number of patients were found in December which was 6025 cases. It was found that there was a high trend of increase of patients from January 2019 to December 2019 (Figure I).

The trend of patients who were attended at emergency department was steadily increase from January to December of 2020. It was found that a total number of 4786 cases were attended at emergency Department of study place. Later, this trend was increased (Figure II).

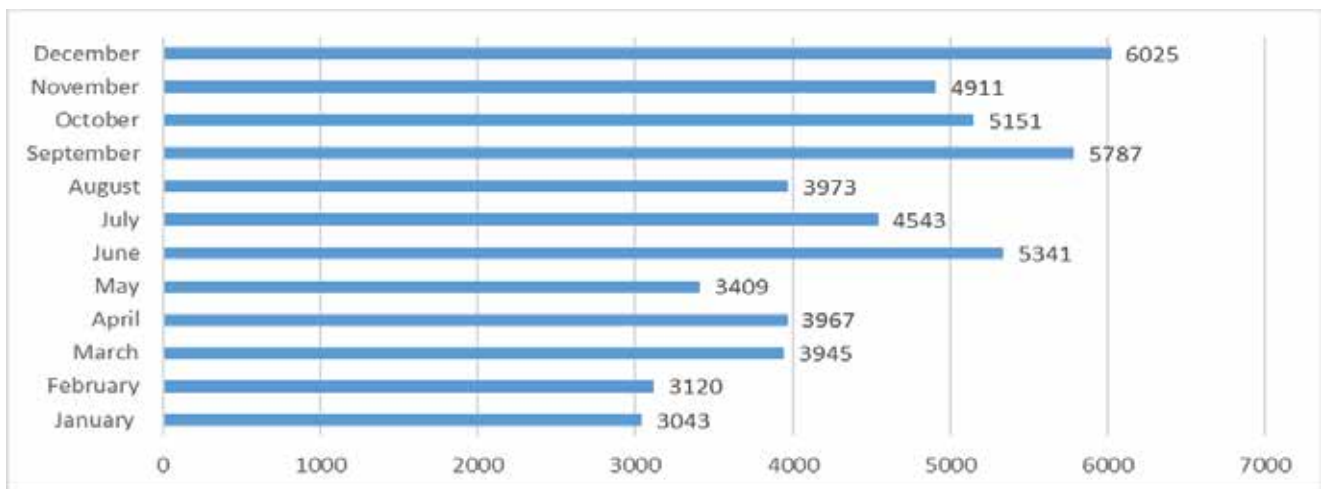


Figure I: Showing the 2019 Trends of Neurological Patients attended at Emergency Department

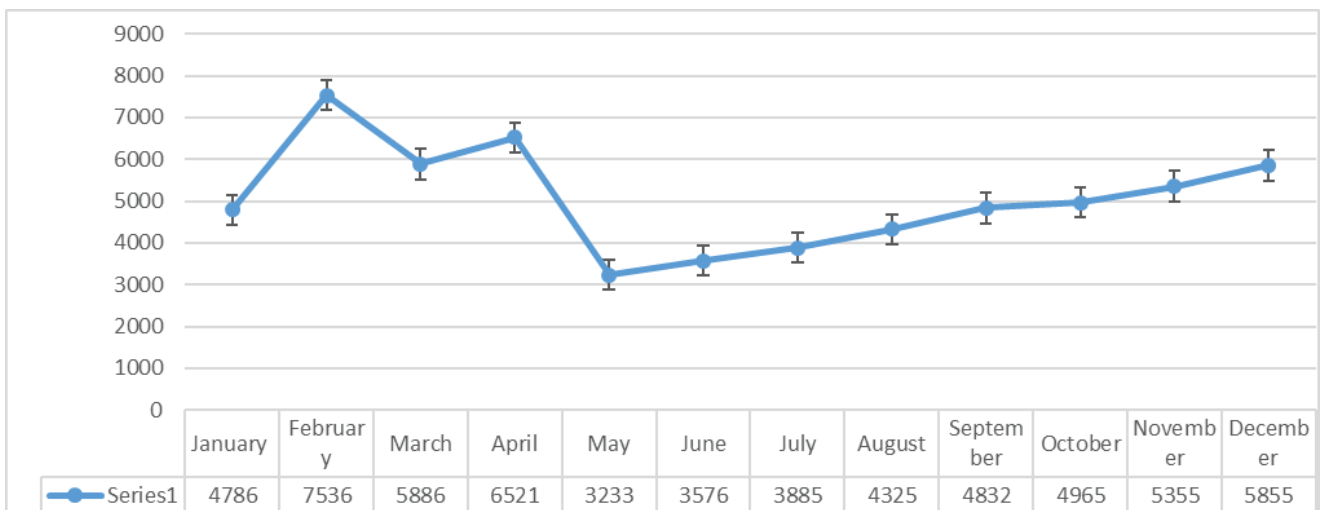


Figure II: Showing the Trends of 2020 Patients attended at Emergency Neurlogy Department with Standard Error

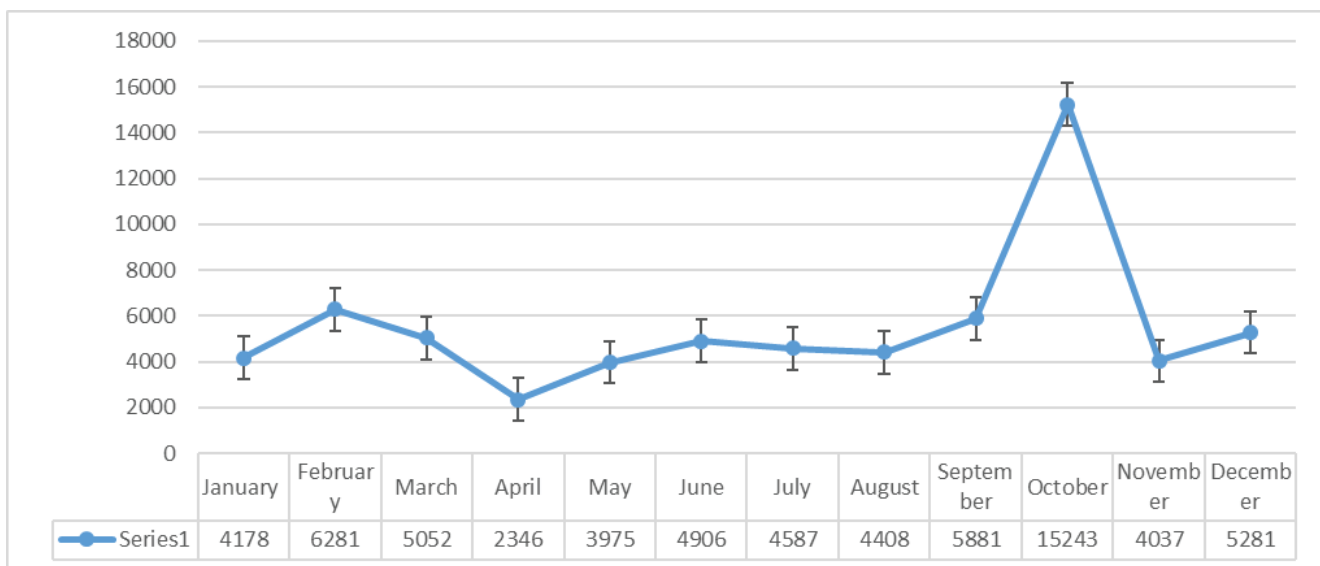


Figure III: Showing the Trends of 2021 Patients attended at Emergency Neurlogy Department with Standard Error

A large number of patients were attended in the emergency department of NINS for seeking treatment. In January it was reported that 4178 cases were attended in the hospital emergency. However, highest number of patients were attended during October 2021 which was 15243 cases. The lowest number of patients were reported during April 2021 which was 2346 cases (Figure III).

Discussion

A total number of 180145 cases were found with the duration of three years. This data showed that the number of neurology patients were attended at emergency department of Neurology at National Institute of Neurosciences and Hospital.

A sudden but transient decrease in total attendance followed the introduction of ED charges and the SARS outbreak. The failure of ED patient attendances to return to pre-SARS levels may be a result of changing public perceptions of the safety of hospitals, a realisation for some that the ED is intended for genuine emergencies rather than primary health-care needs, or a result of increasing ED charges.

The patients were attended at emergency department from January 2019 to December 2019 for a period of one year. In January 2019 the lowest number of patients were attended which was 3043. However, the highest number of patients were found in December which was 6025 cases. It was found that there was a high trend of increase of patients from January 2019 to December 2019.

The trend of patients who were attended at emergency department was steadily increase from January to December of 2020. It was found that a total number of 4786 cases were attended at emergency Department of study place. Later, this trend was increased. Because EDs are generally not an optimal setting to provide care for patients with medically neurological diseases⁹, this increase in ED visits among patients with neurological diseases reinforces the need for care programs to devise innovative ways to manage complications associated with treatment in the outpatient and ambulatory settings¹⁰.

A large number of patients were attended in the emergency department of NINS for seeking treatment. In January it was reported that 4178 cases were attended in the hospital emergency. However, highest number of patients were attended during October 2021 which was 15243 cases. The lowest number of patients were reported during April 2021 which was 2346 cases.

We conducted this study to explore trends and characteristics of ED visits including the main reasons for ED presentation among patients with neurological diseases and examine factors associated with potentially preventable ED visits and unplanned hospitalizations.

Conclusion

In conclusion, there have been major changes in the patterns of emergency department attendances and emergency department waiting times over the study period. Reducing medical and nursing staff appears to reduce the capacity of emergency department to provide timely assessments and care and to function as gatekeepers of the hospital. Further large scale study should be carried out to get real scenario.

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Conflict of interest

We declare that we have no conflict of interest.

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Contribution to authors

Rahman AKMM, Sharmin F, Islam M, Shoman MM were involved in protocol preparation, data & sample collection and literature search and manuscript writing. Khan K were involved in sample preparation and testing. All the authors have involved from protocol preparation up to manuscript writing & revision

Data Availability

Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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