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RESEARCH ARTICLE

CHANGING TRENDS OF EMERGENCIES AMONG ADULT PATIENTS IN A TERTIARY HEALTH INSTITUTION IN PORT HARCOURT, SOUTH-SOUTH NIGERIA: A FIVE-YEAR REVIEW

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ABSTRACT

Background: The Emergency Department (ED) is an essential part of immediate care for sick and unstable patients that require immediate resuscitation services worldwide. This study aims to identify the changing trend at the emergency units of a tertiary health institution in Port Harcourt.

Method: A five-year retrospective cross-sectional review of all emergency's cases in a tertiary health institution in Port Harcourt, Nigeria, between January 2018 and December 2022. The study population included patients aged 18 years and above. Patients records of the stated period were retrieved and relevant information were extracted and classified into departments they belong to as well as into a broad category of medical and non-medical emergencies.

Result: The results showed that 33,954 patients were presented to the emergency departments during the period under review, with an overall prevalent of 92.5% and medical emergencies being more prevalent than non-medical emergencies 57.1% and 35.4% respectively. The overall outcomes of emergencies showed a greater percentage of patient admission into the wards 64.8%. The trend of emergencies cases in relation to month showed a peak admission in July and the least in September.

Conclusion: Medical emergencies were more predominant over the years as compared to the non-medical emergencies with a prevalence of 57.1%. Additional research is needed to further understand the pattern of departmental emergencies, possible diagnoses, and their relationship with gender and age.

KEYWORDS: Emergency Department, Medical and Non-Medical Emergency, UPTH, Specialty.

INTRODUCTION

The Emergency Department (ED) is an essential part of immediate care for sick and unstable patients that require immediate resuscitation services worldwide.(1) Originally intended for urgent and emergent conditions, certain segments of the population are increasingly using EDs as a last resort for non-urgent care.(1) The pattern of admissions into medical wards varies greatly across the globe (2) and reflects the different health problems prevalent in each society.(3) This variation is influenced by the prevalent medical conditions in different regions. There is a global trend towards an increase in non-communicable diseases (NCDs), and developing countries are expected to bear a disproportionate burden of this increase.(4, 5) Previous reports have documented the shift towards NCDs as the leading cause of medical admissions in developing countries, including Nigeria.(4–7) This shift is attributed to the epidemiological transition associated with Westernization and changes in lifestyle patterns.(6)

However, communicable diseases still account for the majority of morbidity and mortality in Africa.(8)

Globally, the demand for emergency department (ED) care and resuscitation is increasing due to factors such as population growth, advancements in health technology, and longer life expectancy. The prevalence and nature of surgical emergencies can be influenced by geographical, socio-demographic, and environmental factors.(9) In Nigeria, there is a general lack of proactive health-seeking behavior, resulting in patients often seeking medical attention at advanced stages of their illnesses.(10) In some parts of Europe, accident and emergency (A&E) departments account for 70% of all hospital admissions(11). Emergency departments are experiencing increasing congestion worldwide due to the growing demand for care. In Nigeria, this congestion is aggravated by the non-functional primary and secondary healthcare levels.(12)

The decision to seek medical attention and choose a healthcare provider depends on the urgency of the complaint. In serious emergencies where immediate care is necessary, there may be little or no choice in healthcare providers.(13) A study on emergency room utilization among adults revealed that approximately 79.7% of adults visited the emergency room because they did not have access to other providers,(14) a similar study conducted in Abeokuta, southwest Nigeria found that over 66.0% of those who visited the emergency department did so because their problems were serious.(14,15) Another study also discovered that more than half of adults who visited the emergency room did so because they believed that only hospitals could provide the necessary help.(16)

There have been only a few studies conducted in certain regions of Nigeria, and there is not enough data available on the medical emergency patterns in Port Harcourt, specifically regarding different departmental care. Therefore, it is necessary to update the existing data. The objective of this study is to analyze the clinical presentation based on departmental visits hence, the study aims to provide a description of the changing trend at the emergency units of a Tertiary Health Institution in Port Harcourt, located in Southern Nigeria.

MATERIALS AND METHODS

A three-year retrospective cross-sectional review of all department unit presentation into the tertiary health institution (UPTH) in Port Harcourt, South-South Nigeria. The study covered a period of five years between January 2020 to December 2022. The study population included patients who were aged 18 years and above. Patients whose data were not complete or those aged less than 18 years were excluded. The total number of patients who presented to the units was assessed; records available in the wards (nurses report books), case notes from the medical records department were all utilized. The following data were collected; outcome during admission, year of admission and emergencies were classified into medical and non-medical emergencies.

In this study, the outcome was defined as follows: discharged, brought in dead (BID), dead on arrival (DOA), ward admission, referred, signed against medical advice (SAMA), died in A&E and abscondment.

The Ethics and research committee approval from the institution was obtained. Data obtained was analyzed using the Statistical Package for social science (SPSS) version 20 software

RESULTS

During the period under review, a total of 33,954 patients were presented into the accident and emergency departments. The distribution of all admitted patients across the years shows an overall prevalence of 31,400 (92.5%), with the highest cases in 2019 (20.6%) followed by 2022 (20.0%), 2018 (19.0%), 2020 (17.5%), and 2021 shows the least prevalent (15.3%). Table 1

Medical emergencies were more predominant over the years compared to non-medical The overall outcomes of emergencies showed that 7.0% of patients died at the A&E, 2.9% signed against medical advice, 6.1% were discharged, 0.7% absconded, 64.8% were admitted in the wards, 11.0% were referred, and 7.5% were brought in dead. Table 3; figure 2

The trend of emergency cases in relation to month shows that the highest number of cases was recorded in July (9.8%) and the least in September (6.3%). These findings are presented in Figure 1

TABLE 1: Pattern of Presentation According to Departments and Year

Specialty	**2018**	**2019**	**2020**	**2021**	**2022**	**Grand Total (%)**
Internal Medicine	2751	2985	2602	2215	3180	13733(40.4)
General Surgery	608	887	638	565	712	3410(10.0)
Obstetrics and Gynaecology (O&G)	655	845	606	461	679	3246(9.6)
Orthopedic	489	574	480	370	546	2459(7.2)
Neurosurgery	328	406	475	360	398	1967(5.8)
Urology	402	288	272	233	316	1511(4.5)
Burns/Plastic	215	182	185	141	227	950(2.8)
Oral/Maxillofacial	97	105	111	199	123	635(2.0)
Otorhinolaryngology	131	160	141	125	159	716(2.1)
Cardiothoracic	234	139	157	97	156	783(2.3)
Neuropsychiatry	130	133	103	99	113	578(1.7)
Ophthalmology	116	78	50	87	83	414(1.2)
Haematology	103	78	47	59	58	345(1.0)
Family Medicine	91	37	47	78	24	277(0.8)
Dermatology	25	32	3	72	11	143(0.4)
Infectious Disease	34	13	30	33	6	116(0.3)
Physiotherapy	55	62	0	0	0	117(0.3)
Total	**6464 (19.0%)**	**7004 (20.6%)**	**5947 (17.5%)**	**5194 (15.3%)**	**6791 (20.0%)**	**31,400 (92.5%)**
DOA	0	0	0	0	19	19+2535
BID	239	704	558	505	529	2554(7.5)
Grand Total	**6703**	**7708**	**6505**	**5699**	**7339**	**33,954**

DOA=died on arrival, BID=brought in dead,

TABLE 2- Medical and Non-Medical Emergencies

Specialty	**2018 (%)**	**2019 (%)**	**2020 (%)**	**2021 (%)**	**2022 (%)**
Medical emergencies	**19385 (57.1%)**				
Internal Medicine	2751	2985	2602	2215	3180
General Surgery	608	887	638	565	712
Neuropsychiatry	130	133	103	99	113
Cardiothoracic	234	139	157	97	156
Haematology	103	78	47	59	58
Dermatology	25	32	3	72	11
Family Medicine	91	37	47	78	24
Infectious Disease	34	13	30	33	6
Total	**3976(11.7)**	**4304(12.6)**	**3627(10.7)**	**3218(9.5)**	**4260(12.5)**
Non-Medical emergencies	**12,019(35.4%)**				
Neurosurgery	328	406	475	360	398
Burns/Plastic	215	182	185	141	227

Urology	402	288	272	233	316
Otorhinolaryngology	131	160	141	125	159
Obstetrics and Gynaecology (O&G)	655	845	606	461	679
Ophthalmology	116	78	50	87	83
Orthopaedic	489	578	480	370	546
Oral/Maxillofacial	97	105	111	199	123
Physiotherapy	55	62	0	0	0
Total	**2488(7.3)**	**2704(8.0)**	**2320(6.8)**	**1976(5.8)**	**2531(7.5)**
Diseases					
Non-communicable disease	**(92.2%)**				
Communicable disease	**(0.3%)**				

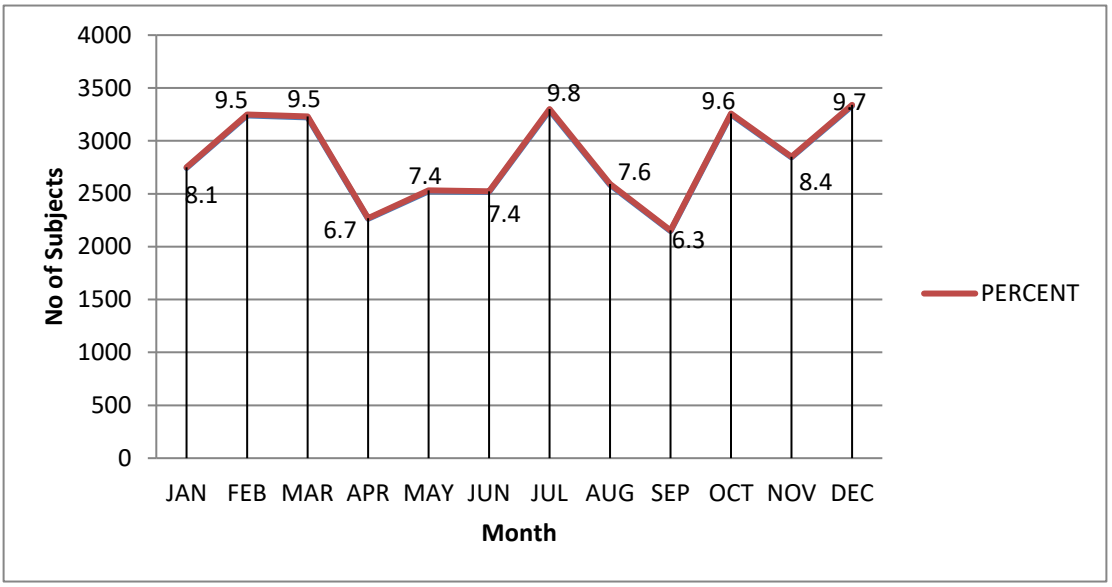

FIGURE 1- Trend of Emergencies Across the Months

TABLE 3- Outcome of emergencies between January 2018 and December 2022

OUTCOMES	**2018 n=6703**	**2019 n=7708**	**2020 n=6505**	**2021 n=5699**	**2022 n=7339**	**Grand Total N=33,954**
Died In A&E	443(6.6)	485(6.3)	642(9.8)	430(7.5)	379(5.2)	2379(7.0)
SAMA	190(2.8)	220(2.9)	244(3.8)	208(3.6)	113(1.5)	975(2.9)
Discharges	357(5.3)	462(5.9)	404(6.2)	439(7.7)	423(5.8)	2085(6.1)
Abscondment	79(1.2)	58(0.8)	36(0.6)	22(0.4)	27(0.4)	222(0.7)
Ward Admission	4543(67.8)	4824(62.6)	3982(61.2)	3598(63.1)	5048(68.7)	21,995(64.8)
Cases Referred to Clinic	852(12.7)	955(12.4)	639(9.8)	497(8.7)	801(10.9)	3744(11.0)
BID and DOA	239(3.6)	704(9.1)	558(8.6)	505(9.0)	548(7.5)	2554(7.5)

SAMA= Signed Against Medical Advice

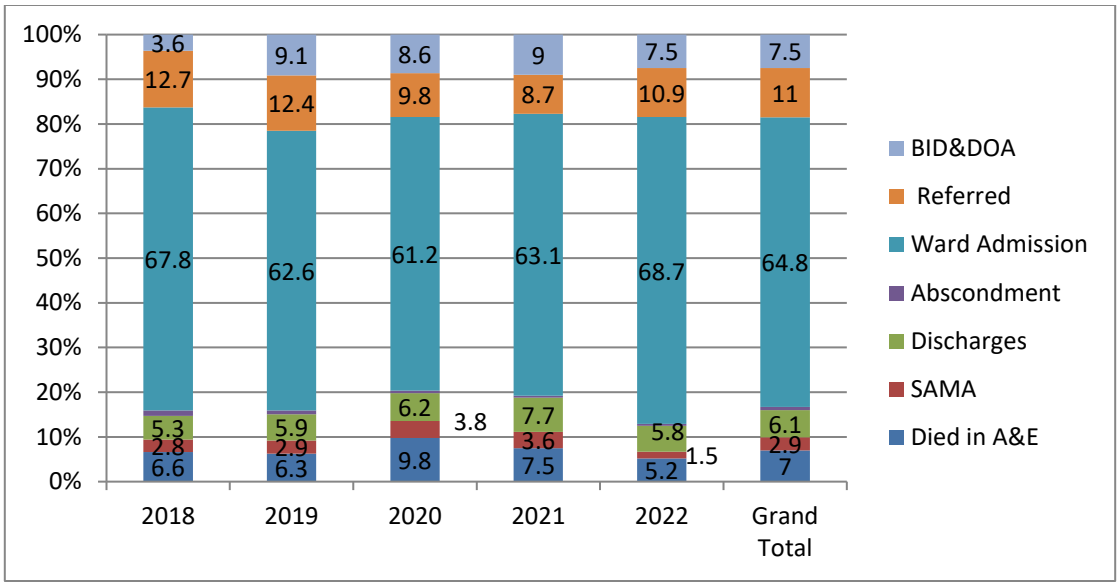

FIGURE 2- Bar Chart Showing Treatment Outcomes of The Study Participant

DISCUSSIONS

The study carried out in a tertiary health institution in Port Harcourt, South-South Nigeria described the changing trends of emergencies among adult patients. There has been a consistent increase in the number of emergency department admissions for a specific population(3). The majority of these admissions were due to medical emergencies. However, it is important to note that the study's findings may not accurately reflect the actual emergency conditions in the area. This is because the hospital-based study may not capture the full extent of emergencies in the region, as it is difficult for people to access emergency health facilities in a timely manner due to the remote location. Additionally, many individuals in the area rely on complimentary and traditional healing systems before seeking hospital services. Furthermore, there was a gap in the data for May 2018 due to a strike by the Health workers' union, under the umbrella of the Joint Health Sector Unions (JOHESU) which may have led to an undervaluation of morbidity and mortality in the study.

The emergency patterns in the immediate environment reflect the burden of diseases and help health facilities plan effectively. In this study, the number of emergencies varied each month, with the highest case in July and the lowest in September. This aligns with a study in Abakaliki, Southeast Nigeria, where April had the highest admissions and September had the lowest (2). However, other studies in Abeokuta, Southwest Nigeria, reported the highest admissions in January and the lowest in March (15) while in Western Ethiopia, February had the highest admissions and November had the lowest (3). The predominantly dry season months from October to March had higher cases (54.8%) compared to the rainy season from April to September (45.2%) with fewer cases. This is similar to a two-year review in Abeokuta (15) but differs from a study in Enugu (5) where higher admissions were observed during the rainy season.

The prevalence of emergency cases in the current study showed that internal medicine had the highest percentage at 40.4%, followed by general surgery at 10%, and O&G at 9.6%. Orthopaedic, neurosurgery, and urology had lower percentages ranging from 7.2% to 4.5%. The least prevalent emergency cases were infectious disease and physiotherapy at 0.3%. These findings differ from other studies that reported higher percentages for some specialties.(15, 17, 18)

In this study, the majority of emergencies were caused by non-communicable diseases (NCDs), accounting for 92.2% of cases, while infectious diseases only accounted for 0.3%. This can be attributed to the effectiveness of control measures such as health education, improved sanitation, and immunization in preventing communicable diseases. Our findings are consistent with previous reports in Kaduna, Ekiti, Aba, and another Ekiti, which also showed a high prevalence of NCDs ranging from 64.6% to 71.5% (7, 19–21). This suggests that the burden of NCDs is increasing in sub-Saharan Africa due to the adoption of a Westernized lifestyle and habits by rural

communities(22). Additionally, improvements in personal hygiene, environmental sanitation, health awareness, and vaccine programs may have contributed to the reduced burden of communicable diseases. These factors, individually or in combination, help explain the shift in disease burden(23).

The distribution of emergency cases seen at the hospital revealed 57.1% being medical cases and 35.4% being non-medical cases. This proportion of medical cases is lower than the 76.6% reported in Aba, southeast Nigeria (21) but higher than the 17.3% reported in the same institution in Port Harcourt (18). This suggests that medical emergencies make up a larger percentage of all emergency cases. The distribution of emergency cases varies across different regions, influenced by factors such as prevalent medical diseases.

The study found that the outcome of patients admitted to the emergency department (ED) varied over the years. Approximately 14.5% of patients who visited the selected hospitals in the study died, with 7.5% arriving or brought in dead and 7.0% dying in the ED. Of all patients treated, 6.1% survived and were discharged, while the majorities (64.8%) were transferred to wards for further treatment, indicating high-quality services. A small percentage (0.7%) absconded. About 13.9% of patients had unknown outcomes due to referral or signing against medical advice (SAMA), often influenced by poverty, cultural beliefs, or spiritual reasons. The overall ED mortality of 14.5% align with the 12.3% reported in Ekiti (20) but higher than a previous rate of 10.1% in the same institution (18) done over a decade ago, possibly due to changes in care standards and sample size.

CONCLUSION AND RECOMMENDATION

The study found that in Nigeria, adults are more likely to seek medical care for non-communicable diseases (NCDs) such as medical emergencies. Medical emergencies were more common than non-medical emergencies, with a prevalence of 57.1% and 35.4%, respectively. The majority of emergency cases resulted in ward admission, while absconding was the least common outcome. The trend of emergency cases peaked in July and was lowest in September.

The study highlights the need for action to improve healthcare systems to address this disease pattern, and further research is needed to better understand departmental emergencies

LIMITATION OF THE STUDY

The study fails to retrieve information on the gender and age group of the study populations, the specific diagnosis found in the various departments and the duration of hospital stay in the facilities.

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