

# Clinico-Epidemiological Pattern and Treatment of Epistaxis in a Tertiary Hospital in South Western Nigeria

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## Abstract

**Background/Objectives:** Epistaxis is a common presentation and may constitute a major challenge to the parents and the health care givers. This study aimed at determining the clinico-epidemiological pattern, presentation and etiology of epistaxis. **Materials and Methods:** This prospective study of all patients that presented with epistaxis via the Ear, Nose and Throat department of a tertiary institution in Nigeria. The study was carried out between June 2012 and July 2017. Data were obtained from patients who gave consent by using pre-tested interviewer assisted questionnaire. All the data obtained were analyzed using SPSS version 16.0. **Results:** The prevalence of epistaxis in this study was 12.2%. The peak age group was 1 - 10 years with epistaxis prevalence of 36.4%. The male to female ratio was 1.5:1. Anterior epistaxis was more common than posterior epistaxis accounted for 80.1% and 7.4% respectively. Single episode of epistaxis was seen in 78.4% of the patients while recurrent epistaxis occurred in 21.6%. Unilateral epistaxis was 62.5%, bilateral epistaxis was 37.5% while right nasal bleeding accounted for 35.8%. The main local causes of epistaxis were trauma 29.5%, infective rhinosinusitis 18.8% and sinonasal tumours 12.5%. Severe epistaxis requiring blood transfusion was seen in 2.8% of the patients and death was recorded in 2.3%. Majority 110 (62.5%) were managed by observation alone, 20 (11.4%) by conservative therapy and 22 (12.5%) had surgical excision. Blood transfusion was given in 5. The outcome of treatment was good recovery in 79.0% while patients' satisfaction with treatment was noted in 84.1%. **Conclusion:** Epistaxis is a common sinonasal presentation with effect on quality of life. In our center commonest site of nose bleeds was local mainly from traumatic, inflammatory and

neoplastic aetiology.

## Keywords

Epistaxis, Aetiology, Nose, South Western Nigeria

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## 1. Introduction

Epistaxis which is bleeding from the nose is a common presentation in otorhinolaryngological, head and neck practice worldwide [1]. It may present as an emergency in the casualty or in the ear, nose and throat out-patient clinic [2]. Nose bleeding may be sudden or insidious in onset. It could be induced or spontaneous. Epistaxis may present as anterior, posterior or both anterior and posterior nose bleeding. The sight of blood in the nose leads most patients to seek early medical intervention. Finally, nose bleeding may be unilateral or bilateral. Epistaxis occurs in about 60% of children worldwide during their lifetime [3] [4] [5] [6]. In the prevalence of epistaxis males are slightly more affected than females until the age of 50 years [7].

The nose is the most prominent mid facial organ occupying the middle third of the face. The nasal cavity is highly vascularized with blood supply from branches of the internal and external carotid arteries. One of the two important and commonest areas in the nose bleeding is Kiesselbach's plexus (anterior bleeds), also known as Little's area, located on the anterior inferior part nasal septum [8]. The second area is Woodruff's plexus (posterior bleeds), located over the posterior middle turbinate [9].

The causes of epistaxis have been broadly classified into local causes (relating to problems in the nose, paranasal sinuses and the nasopharynx) and systemic causes (haematological, hepatic, cardiovascular, renal and drugs) [10] [11] [12].

Severe epistaxis or chronic epistaxis may be life threatening in patients or leads to shock and eventually deaths if not properly managed. Other complication of nose bleeding includes anaemia, hypovolaemia and shock.

Patients with ongoing nose bleeding often require an immediate arrest of the bleeding and need for immediate intervention to be stabilized before detail assessment. Management of stable patients requires detailed history and examination. Management of the patients could be local or general and may also be surgical or medical depending on the aetiology and associated complications [12] [13] [14] [15]. There is paucity of literature on epistaxis in developing countries.

This study aimed at determining the clinico-epidemiological pattern of presentation of epistaxis, the etiology, management options and outcomes of management, in Ado Ekiti, Nigeria.

## 2. Materials and Methods

This a prospective hospital based study of all consecutive patients that presented

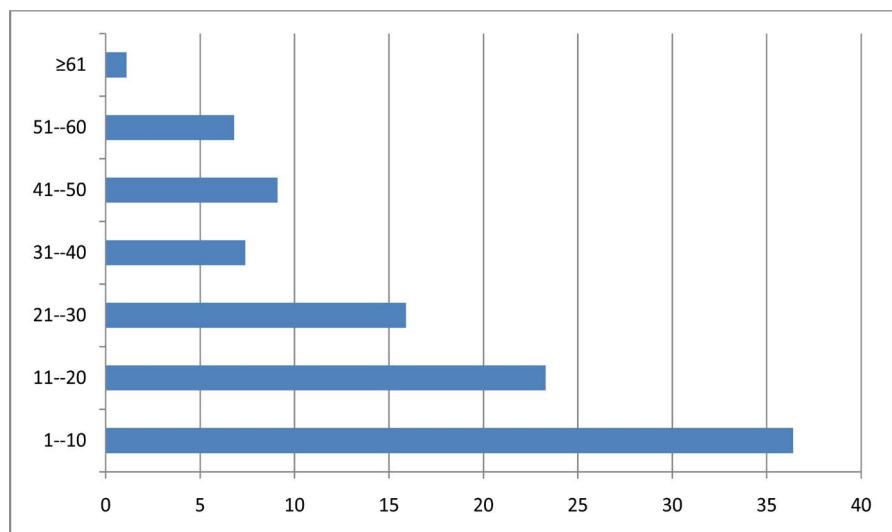
with epistaxis via the ENT clinics, the hospital wards and the accident and emergency units of a state university teaching hospital in Ado Ekiti Nigeria. The study was carried out between June 2012 and July 2017 (over 5 years). Data were obtained from the patients by using pre tested interviewer assisted questionnaire. Informed consent was obtained from patients. Firstly patients with ongoing nose bleeding were given first aid to stabilize them. Evaluation of all stable patients included detailed history taking on sociodemographic features, aetiological factors, past medical and surgical history of epistaxis. Thorough clinical examination, anterior rhinoscopy and rigid nasoendoscopy were performed where indicated. Other head and neck with general examination were performed on each patient. Further information on mode of treatment, complication, blood transfusion, duration of hospitalization and outcome of management of epistaxis were documented.

All the data obtained were collated and analyzed using SPSS version 16.0. The data were expressed by using tables, percentages, bar charts and pie charts.

Ethical approval to conduct the study was sought from the institution ethic review committee and obtained.

### 3. Results

During the study period, 1439 patients were seen out of which 176 patients had epistaxis. The prevalence of epistaxis was 12.2%. **Figure 1** illustrated the age group distribution of the patients with epistaxis. There were 106 (60.2%) males and 70 (39.8%) females with a male to female ratio of 1.5:1. Majority 97 (55.1%) of the epistaxis patients were urban dwellers. The commonest level of education were primary in 59 (33.5%) followed by preschool in 48 (27.3%). The main patients' occupations were 64 (36.4%) student/apprentice and 29 (16.5%) farming. Others were 2 (1.1%) health workers and industrial workers 17 (9.7%). This is illustrated in **Table 1**.



**Figure 1.** Age group (years) distribution of the patients with epistaxis.

**Table 1.** Sociodemographic features of patients with epistaxis (N = 176).

Sociodemographic features (variable)	Number (n)	Percentage (%)
<b>Sex</b>		
Male	106	60.2
Female	70	39.8
<b>Residential</b>		
Urban	97	55.1
Rural	79	44.9
<b>Education level</b>		
Preschool	48	27.3
Primary	59	33.5
Secondary	42	23.9
Post secondary	27	15.3
<b>Patients occupation</b>		
Student/Apprentice	64	36.4
Applicant	24	13.6
Business	26	14.8
Teaching	18	10.2
Industrial worker	17	9.7
Farming	29	16.5
Health worker	2	1.1

In this study anterior epistaxis was seen in 141 (80.1%), posterior epistaxis in 13(7.4%) and both (anterior and posterior) were found in 22 (12.5%). There were single episode of epistaxis in 138 (78.4%) over recurrent epistaxis in 38 (21.6%). Unilateral epistaxis was seen in 110 (62.5%) and bilateral epistaxis in 66 (37.5%) while right nasal bleeding accounted for 63 (35.8%). It was noted that 114 (64.8%) patients lost less than 200 ml of blood compared to 62 (35.2%) patients who lost over 200 ml of blood. Characteristics of epistaxis among the patients were illustrated in **Table 2**.

Local causes of epistaxis accounted for 150 (85.2%) while general causes accounted for 26 (14.8%). Main causes of epistaxis was trauma in 52 (29.5%) followed by infective rhinosinusitis in 33 (18.8%) and sinonasal tumour in 22 (12.5%). Less common causes were septiceamia, chronic renal failure and nasopharyngeal carcinoma in 2 (1.1%), 3 (1.7%) and 3 (1.7%) respectively. This is illustrated in **Table 3**.

Major sources of referral were emergency department of the hospital and general practitioners which were 63 (35.8%) and 41 (23.3%) respectively. Minor referral were from paediatricians in 28 (15.9%) and self reporting 27 (15.3%). **Figure 2** demonstrated sources of referral of the patients with epistaxis. Epistaxis leads to absenteeism in 86 (48.9%) and irritable in 79 (44.9%). Others were 59 (33.5%) depression and 67 (38.1%) social dysfunction. Quality of life among patients with epistaxis is demonstrated in **Figure 3**. In this study, 98 (55.7%) patients presented through the accident and emergency department and 63

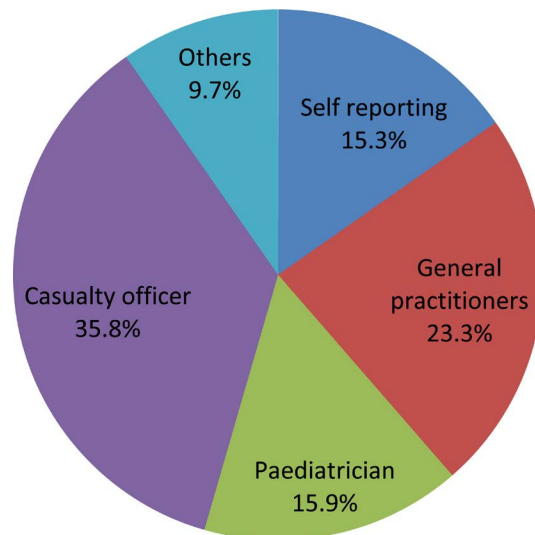
(35.8%) presented in the ear nose and throat clinic. There were associated recurrent epistaxis in 37 (21.0%) and vomiting in 34 (19.3%). Death was recorded in 4 (2.3%). Majority 110 (62.5%) were managed by observation alone, 20 (11.4%) by conservative therapy, while 22 (12.5%) had surgical excision. Minority had blood transfusion in 5 (2.8%) and posterior nasal packing in 3 (1.7%). The outcome of treatment was good recovery in 139 (79.0%) while patients' satisfaction with treatment was noted in 148 (84.1%). This is fully illustrated in **Table 4**.

**Table 2.** Characteristics of epistaxis among the patients (N = 176).

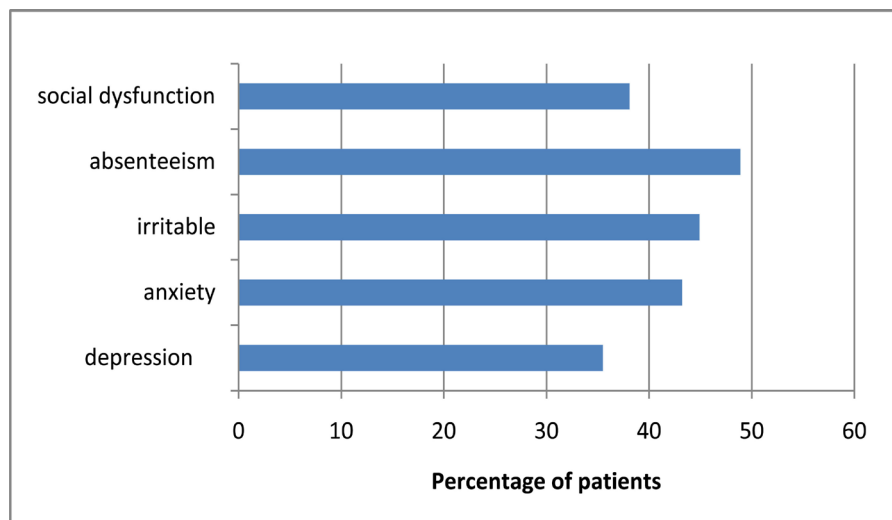
Characteristics	Number (n)	Percentage (%)
<b>Area of bleeding</b>		
Anterior	141	80.1
Posterior	13	7.4
Both	22	12.5
<b>Recurrence</b>		
Single episode	138	78.4
Recurrent	38	21.6
<b>Duration</b>		
Acute (<3/12)	149	84.7
Chronic (>3/12)	27	15.3
<b>Laterality</b>		
Right	63	35.8
Left	47	26.8
Bilateral	66	37.5
<b>Estimated blood loss</b>		
<200 ml	114	64.8
>200 ml	62	35.2

**Table 3.** Aetiology of epistaxis among the patients (N = 176).

Aetiology	Number	Percentage (%)
Trauma	52	29.5
Foreign body	14	8.0
Allergic rhinitis	7	4.0
Infective rhinitis	33	18.8
Sinonasal tumour	22	12.5
Nasopharyngeal carcinoma	3	1.7
Hypertension	11	6.3
Septiceamia	2	1.1
Chronic renal failure	3	1.7
Sickle cell diseases	4	2.3
Idiopathic	19	10.8
Others	6	3.4



**Figure 2.** Sources of referral of the patients with epistaxis.



**Figure 3.** Quality of life among patients with epistaxis.

#### 4. Discussion

Epistaxis is one of the common nasal symptoms encountered in most otorhinolaryngological, head and neck practice. In this study, epistaxis accounted for 12.2% of all patients seen in ear, nose and throat department. Previous record from other studies revealed higher prevalence in their findings [3] [16] [17]. The lower prevalence in this study is due to larger number of patients seen while other study reviewed only emergency patients.

In this study of nose bleeding, young age group (preschool age group) are more commonly affected than the adults. Preschool ages are prone to different nasal injuries, higher incidence of poorly treated rhinitis and nasal foreign body impaction. The foreign body impaction may either be improperly removed or unnoticed with secondary infected. This finding is contrary to record from other study with adult or elderly with higher prevalence [18] [19] [20]. The findings in

**Table 4.** Treatment pattern among the patients with epistaxis (N = 176)

Treatment patterns	Number (n)	Percentage (%)
<b>Location of treatment</b>		
Ear Nose and Throat clinic	98	55.7
Hospital ward	15	8.5
Accident and emergency department	63	35.8
<b>Associated complications</b>		
Anaemia	32	18.2
Recurrent epistaxis	37	21.0
Vomiting	34	19.3
Death	4	2.3
<b>Management</b>		
Observation alone	110	62.5
Anterior nasal packing	16	9.1
Posterior nasal packing	3	1.7
Other Conservative therapy	20	11.4
Surgical Excision	22	12.5
Blood transfusion	5	2.8
<b>Outcome of treatment</b>		
Good recovery	139	79.0
Hospital stay (days)	37	21.0
<b>Patients satisfaction</b>		
Satisfactory	148	84.1
Unsatisfactory	28	15.9

this study is in agreement with reports of other workers who found epistaxis more in younger age patents [21] [22].

There was male preponderance among patients seen in this study compares well with other reports on nose bleeding from other studies [21] [22]. Men are highly adventurous group, more prone to injuries and exposed to road traffic accidents as drivers (of vehicles and motorcycles) and as frequent travelers in motor vehicles for work and leisure activities [3].

Present study shows the most common cause of epistaxis was local to nose and secondary to trauma first followed by various form of rhinosinusitis and sinonasal tumour. The other causes were idiopathic and hypertension. This findings is consistent with other studies [3] [19]. Most of the patients with nose bleeding arise from traumas that were from road traffic injury, digital, iatrogenic and foreign body impaction. Findings in other studies cite idiopathic causes as the commonest [22] [23].

About three quarter of the patients in our study presented with anterior nasal bleeding. The bleeding is mostly from little's area. This corresponds with findings from other study which demonstrated that almost all of the epistaxis in patients originates from Little's area [24]. Patients with short history of epistaxis were commoner in this study than long standing nose bleeding. This may be be-

cause of frightened effect of sight of blood from the nose. Furthermore, most of the studied patients present with single episode of epistaxis rather than recurrent epistaxis. This may be a resultant effect of treatable causes of epistaxis such as trauma and infection in this study. Unilateral epistaxis accounted for more than half nose bleeds in this study. The findings may be due to unilateral sinonasal tumour in the studied patients.

On the sources of referral of epistaxis patients for otorhinolaryngological expert review and management in this study were mainly from casualty officer and paediatrician followed by general practitioners. This may be because these are first contact of the patients. This is contrary to record of bleeding diathesis in most attending emergency department in previous study [25] [26].

Nose bleeding was recorded in literature as a source of concern to the patients, relations and managing physician [27]. In this study there are many effects on quality of life the studied patients. These are noted in anxiety, absenteeism, irritable and depression. The causes may be site of blood and discomfort from the cause of nose bleeding. Majority of the patients were either reviewed or managed in the accident and emergency department or ear, nose and throat clinic. The associated complications during first review were mild anaemia, vomiting which contained altered blood and recurrent epistaxis.

In previous studies, treatment of epistaxis requires a systematic and methodical approach. This treatment options vary according to the cause, location, and severity of the hemorrhage [5] [8]. Like in other study observational, conservative and surgical treatment modalities have been used in the management of epistaxis in the patients [9]. Observation treatment when bleeding has stopped with further treatment like nasal decongestants were instituted. The conservative treatment for anterior or posterior epistaxis includes firm pressure over bleeding area (little's area) with thumb and index finger. If failed anterior with or without posterior nasal packing is performed with much success in our practices. Most of our patients in this study have their epistaxis controlled by conservative measures which include mere observation, use of decongestant and Etamsylate. Some however had anterior and posterior nasal packing done with glove finger and Foley's catheter respectively. Those that had Sino nasal tumour had surgical excision. It is important to note that sophisticated equipment for arterial embolisation, cryosurgery and endoscopic cautery are not available in our center. Surgical control of epistaxis is performed such as nasal tumour excision. Only 2.8% patient had blood transfusion and we recorded death in 2.3% patients. Almost all the patients had good outcome and majority were satisfy with the treatment given.

## 5. Limitation

Limitations in this study are lack of sophisticated methods of managing nose bleeding in developing countries. These include use of cryotherapy, posterior endoscopic cautery and arterial embolization that are used in the developed



countries.

## 6. Conclusion

In this study traumatic and inflammatory causes remain the most common etiological factor for epistaxis. Of all the multiple methods of treatment, our experience shows that safe and cost-effective conservative approach is sufficient in the management of most of our patients and surgical intervention should be the last resort. Effective and safe practices against trauma and infection will reduce the incidence of epistaxis.

## Competing Interests

All the authors declare that there was no competing interest.

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