Prevalence, Patterns, Aetiology, Comorbidities and Management of Epistaxis in an Emergency Department in Central Tanzania

Zephania Saitabau Abraham* and Ndikumana Jonas Cypirian

Department of Surgery, School of Medicine and Dentistry, University of Dodoma, Dodoma, Tanzania

***Corresponding author**: Zephania Saitabau Abraham. Email: zsaitabau@yahoo.com
ORCID: https://orcid.org/0000-0002-7738-9902

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Abstract

Background: Epistaxis is a common otorhinolaryngological emergency, affecting up to 60% of the population during their lifetime, with 6% requiring medical attention. Despite being self-limited, it can be life-threatening and requires prompt intervention. There is a lack of epidemiological data on epistaxis in Central Tanzania. This study determined the prevalence, patterns, etiologies, associated comorbidities and treatment modalities of epistaxis among patients presenting to a regional emergency department in Central Tanzania.

Materials and methods: A descriptive cross-sectional study involving 306 patients was conducted at Dodoma Regional Referral Hospital from April to July 2024. Data were collected using semi-structured questionnaires and analysed using SPSS version 23.

Results: Among 306 patients (58.8% male; mean age 28±22 years), epistaxis prevalence was 15%. Epistaxis was slightly more prevalent in females (15.9%) than males (14.4%), with no significant association between sex and prevalence of epistaxis (p = 0.746). Anterior epistaxis predominated (73.9%), mostly of acute onset (71.7%). Anterior epistaxis was more common in males (88.5%) than in females (55%), whereas posterior and combined epistaxis were more frequent in females. There was a significant association between epistaxis type and sex (p=0.000). Anterior epistaxis predominated across all age groups, while posterior epistaxis was more common among patients aged 0–10 (33.3%). The association between age and type of epistaxis was statistically significant (p = 0.05). Local (71.7%) and non-traumatic causes (60.9%) were most common. Hypertension (17.4%) was the leading comorbidity. Seasonal occurrence of epistaxis was more common during the rainy season in half of the patients. Anterior nasal packing was the primary treatment modality (41.3%).

Conclusion: Epistaxis was relatively prevalent in this setting, with anterior epistaxis being most common. Trauma and hypertension were key contributors. These findings underscore the need to strengthen emergency management protocols and preventive education at regional health facilities in Tanzania.

Keywords*: Prevalence; Patterns; Etiology; Comorbid; Epistaxis*

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Introduction

Epistaxis is a potentially life-threatening yet common otorhinolaryngological emergency in clinical practice, particularly in resource-limited settings with constrained healthcare facilities [1,2]. It is a significant source of anxiety for patients, caregivers, and healthcare providers [2-6]. The condition demonstrates a bimodal age distribution, predominantly affecting children aged 2–10 years and adults aged 50–70 years, and occurs in up to 60% of individuals during their lifetime, with approximately 6% requiring medical attention [1,5,7]. There is a wide variation in the clinical severity of epistaxis, and its unpredictable course contributes to its potential for life-threatening outcomes [5,7,8].

Epistaxis has been documented to have diverse etiologies, including local, systemic, and idiopathic causes, with a reported lifetime incidence in sufferers ranging from 10% to 60% [5,9]. It occurs more frequently in males and increases with age, although gender differences

tend to diminish after 50 years of age [2,5,6,10,12]. Although epistaxis is more commonly reported in children and young adults, it is rare in neonates, and the peak incidence has been reported to be in the sixth decade of life [5,11].

Epistaxis is broadly classified as anterior or posterior. Anterior epistaxis accounts for most cases and typically arises from injury to Kiesselbach's plexus (Little's area), which is located at the anterior aspect of the nose, particularly in children younger than 10 years. In contrast, posterior epistaxis occurs more commonly in individuals older than 50 years and is usually associated with bleeding from the Woodruff's plexus [1,2,12,13].

The aetiology of epistaxis varies according to the age of individuals and the anatomical site of nasal bleeding, with many documented causes being potentially preventable [2,12–15]. Traumatic epistaxis is more common in younger people, mainly those under 35 years of age, and is frequently associated with digital trauma, nasal foreign bodies, facial injuries, and iatrogenic causes such as nasogastric tube insertion [2,13,14]. In contrast, non-traumatic epistaxis predominantly affects older adults (>50 years of age) and is commonly attributed to systemic conditions (like renal or liver failure), environmental factors (like changes in humidity, temperature and altitude), and neoplastic or haematological malignancies (like leukaemia, aplastic anaemia) [1,2,14,16,17].

Proper documentation of the prevalence, causes, treatment and outcome of patients presenting with epistaxis is of significance towards the establishment of local preventive and treatment guidelines for epistaxis. Local data on epistaxis is inadequate in Tanzania since there are only very few published studies and none from Central Tanzania. Therefore, the objective of this study was to assess the burden and management of epistaxis through determining its prevalence, patterns, aetiology, comorbidities and treatment practices at a regional referral hospital in Tanzania.

Materials and methods

Study design, area and study duration

This hospital-based cross-sectional study was conducted at the emergency department of Dodoma Regional Referral Hospital from April to July 2024. The hospital serves an estimated population of 2.2 million and provides comprehensive medical and surgical services, managing approximately 200–300 inpatients and 500 outpatients daily. It is located in Dodoma, Tanzania (-6.1826°S, 35.744°E).

Study population

All patients presenting to the emergency department of the regional referral hospital for medical or surgical care during the study period were included. Residence was classified as urban (city or densely populated areas with readily accessible services such as shops and public transport) or rural (sparsely populated areas with limited services and transport access). Mode of transport was categorised as arrival by foot, public transport, or private transport. Marital status was defined according to Tanzanian legal definitions (married, never married, widowed, divorced, or separated) for participants aged ≥18 years.

Inclusion criteria. Patients with active epistaxis or a history of epistaxis within the past month who consented to participate were included in the study.

Exclusion criteria. Mentally unfit individuals, post-nasal surgery and those who had nasal bleeding within 48 hours post-surgery.

Sampling technique

Convenience sampling was used due to the practical constraints of the emergency setting. Although efficient, this method may introduce selection bias and limit generalizability. Future studies should consider probability-based sampling to enhance representativeness and external validity.

Sample size estimation

Sample size was obtained using the following formula:

$$N = \frac{Z^2 P(1-P)}{}$$

E^2

Where;

n = sample size

z = standard normal deviate=1.96 for 95% confidence level

p = prevalence of epistaxis 23.4% emanating from a study that recruited patients from two tertiary institutions in Dar es Salaam, Tanzania [1].

E = margin of error, which is 5%

Therefore: $N=1.96^2 \times 0.234(1-0.234)/ (0.05)^2$

Minimum estimated sample was 275 participants and adjusting for non-response rate (f% assumed to be 10%).

Then N'=N x adjusted factor (100%/100%-f %)

N'=275 X (100%/100%-10%) =306

All 306 participants were successfully enrolled.

Data collection tools

A structured questionnaire with open- and closed-ended questions, adapted from previously published studies, was used to collect data [1,2].

The first version was prepared in English, while the final draft was translated into Swahili since patients were more conversant with Kiswahili.

The questionnaire comprised the following parts:

(i) Socio-demographic characteristics of patients eg age, gender, marital status, educational level, type of occupation, type of residence, mode of transport used to bring the patient to the hospital,

(ii) Occurrence, patterns, etiology, associated comorbid conditions and management of epistaxis eg whether one has ever experienced epistaxis, how often does one experience nose bleeding within a year, age at first experience of epistaxis, laterality and duration of epistaxis, specific site for epistaxis, mode of onset for epistaxis, amount of epistaxis reported by the patient, whether the patient was taking any medications that would increase the risk of epistaxis eg warfarin or aspirin, season of the year when one normally experienced epistaxis, established cause of nose bleeding eg trauma, chronic adenoiditis, main category for causes of epistaxis as to whether local or systemic causes, further classification of the causes of epistaxis like traumatic or non-traumatic causes, any comorbid condition like hypertension, bleeding disorders, heart failure, liver or renal failure, treatment modality employed in managing patients with epistaxis such as anterior or posterior nasal packing, cauterization, nasal foreign body removal or surgical intervention such as arterial ligation, embolization, surgical nasal tumor excision, sinus surgery. The tool was validated by reviewing literature and pilot testing the instrument before the commencement of the study by involving 10% of the actual sample size from the regional referral hospital, who were eventually excluded.

Measurement of variables

Dependent variables. The dependent variables for this study were prevalence, patterns, aetiology, and treatment options for epistaxis.

Independent variables. The independent variables for this study were patients' socio-demographic characteristics (patients' age, sex, occupational status, level of education, marital status) and associated comorbid conditions among the recruited patients with epistaxis.

Data processing and analysis

The collected data were cleaned and analysed using Statistical Package for Social Sciences version 23. Descriptive statistics were performed to present frequency distribution for socio-demographic characteristics, patterns, aetiology, and treatment options for epistaxis. Chi-square test was performed to establish the association between independent and dependent variables. Any independent variable with a p-value <0.05 was regarded as statistically significant.

Ethical considerations

The Ethics and Research Committee of the University of Dodoma granted ethical approval with reference number MA.84/261/72/14 and permission to conduct the

study was provided by the research and training committee of the regional referral hospital. All the recruited patients provided a written informed consent and were fully informed of their right to decline participation and/or withdraw from the study. Permission from caregivers or parents was obtained for participants aged <18years. Confidentiality was guaranteed since no names of patients were recorded. Data was anonymised or de-identified, apart from not just recording names. The study adhered to international standards as set by the Declaration of Helsinki.

Results

Socio-demographic characteristics of the recruited patients

A total of 306 patients were enrolled in this study, most of whom were urban residents, 285(93.1%). Males predominated, 180(58.8%), giving a male-to-female ratio of 1.4:1.

Table 1

Socio-Demographic Characteristics of the Recruited Patients

Variables	Characteristics	Frequency, N (%)
Sex	Males	180(58.8)
	Females	126(41.2)
	Total	306(100)
Age Group (Years)	0-10	110(35.9)
	11-20	26(8.5)
	21-30	34(11.1)
	31-40	42(13.7)
	41-50	33(10.8)
	51-60	31(10.2)
	>60	30(9.8)
	Total	306(100)
Marital Status	Single	168(54.9)
	Married	116(37.9)
	Divorced	13(4.2)
	Widowed	2(20.7)
	Cohabiting	7(72.3)
	Total	306(100)
Educational Level	No Formal Education	25(8.2)
	Primary Education	134(43.8)
	Secondary Education	95(31.0)
	University/College Education	52(17.0)
	Total	306(100)
Occupational Status	Unemployed	173(56.5)
	Self Employed	110(35.9)
	Employed	23(7.5)
	Total	306(100)
Place of Residence	Urban	285(93.1)
	Rural	21(6.9)
	Total	306(100)
Mode of Transport	On Foot	67(21.9)
	Private Transport	47(15.4)
	Public Transport	192(62.7)
	Total	306(100)

The majority were aged 0–10 years, 110(35.9%), while the 11–20-year age group was least represented, 26(8.5%). Most patients were single, 168(54.9%) and had primary educational level, 134(43.8%). More than half were unemployed, 173(56.5%). Public transport was the most common mode of reaching the hospital, 192(62.7%). (Table 1)

Overall prevalence of epistaxis

In this study, where 306 patients were recruited, 46(15.0%) patients had epistaxis and thus the prevalence of epistaxis was 15%.

Prevalence of epistaxis by age and sex

Prevalence of epistaxis among males was 14.4% (26/180), whereas among females it was 15.9% (20/126). Remarkable prevalence of epistaxis was established in the 41–50-year age group, 10(30.3%), as compared to other age groups. There was no significant association between sex and epistaxis prevalence (p = 0.746). (Table 2).

Type of epistaxis by sex

Anterior epistaxis predominated (34, 73.9%), followed by posterior (9, 19.6%) and combined anterior–posterior cases (3, 6.5%).

Table 2

Prevalence of Epistaxis by Age and Sex of Recruited Patients

		Prevalence of epistaxis		
		Yes, n (%)	No, n (%)	Total, n (%)
Sex	Male	26(14.4)	154(85.6)	180(58.8)
	Female	20(15.9)	106(84.1)	126(41.2)
Total		46(15.0)	260(85.0)	306(100)
Age group (years)	0-10	15(13.6)	95(86.4)	110(35.9)
	11-20	1(3.8)	25(96.2)	26(8.5)
	21-30	9(26.5)	25(73.5)	34(11.1)
	31-40	7(16.7)	35(83.3)	42(13.7)
	41-50	10(30.3)	23(69.7)	33(10.8)
	51-60	3(9.7)	28(90.3)	31(10.2)
	>60	1(3.3)	29(96.7)	30(9.8)
Total		46(15.0)	260(85.0)	306(100)

Table 3

Type of Epistaxis by Sex of Patients

	Type of epistaxis			
Sex	Anterior, N (%)	Posterior, N (%)	Both, N (%)	Total, N (%)
Male	23(88.5)	3(11.5)	0(0.0)	26(100)
Female	11(55.0)	6(30.0)	3(15.0)	20(100)
Total	34(73.9)	9(19.6)	3(6.5)	46(100)

Key: Chi square=17.044, df=2, p=0.000

Table 4

Type of Epistaxis by Age of Patients

	Type of epistaxis			
Age group (years)	Anterior, N (%)	Posterior, N (%)	Both, N (%)	Total, N (%)
0-10	7(46.7)	5(33.3)	3(20.0)	15(32.6)
11-20	1(100)	0(0.0)	0(0.0)	1(2.2)
21-30	7(77.8)	2(22.2)	0(0.0)	9(19.6)
31-40	6(85.7)	1(14.3)	0(0.0)	7(15.2)
41-50	9(90.0)	1(10.0)	0(0.0)	10(21.7)
51-60	3(100)	0(0.0)	0(0.0)	3(6.5)
>60	1(100)	0(0.0)	0(0.0)	1(2.2)
Total	34(73.9)	9(19.6)	3(6.5)	46(100)

Key: Chi square=12.877, df=12, p=0.05

Anterior epistaxis was more common in males (88.5%) than in females (55%), while posterior and combined types were more frequent in females. There was a significant association between epistaxis type and sex (p=0.000). (Table 3).

Type of epistaxis by age of participant

Anterior epistaxis predominated across all age groups, whereas posterior epistaxis predominated in those aged 0-10 (33.3%), 21-30 (22.2%) and 31-40 (14.3%) years.

Table 5

Occurrence and Patterns of Epistaxis among Recruited Patients

Variables	Characteristics	Frequency, N (%)
Annual frequency of epistaxis	Less than once	27(58.7)
	1 to 3 times	19(41.3)
	4 to 12 times	0(0.0)
	More than 12 times	0(0.0)
	Total	46(100)
Side of the nose	Right	20(43.46)
	Left	13(28.26)
	Both side	3(6.52)
	Total	46(100)
Duration of epistaxis	One day	28(60.9)
	Two days	18(39.1)
	More than two days	0(0.0)
	Total	46(100)
Mode of onset	Acute	33(71.7)
	Chronic	13(28.3)
	Total	46(100)
Amount of epistaxis	Scanty	25 (54.3)
	Moderate	21(45.7)
	Profuse	0(0.0)
	Total	46(100)
Season of epistaxis	Rainy season	35(76.1)
	Dry season	11(23.9)
	Total	46(100)
Category for the causes of epistaxis	Local causes	33(71.7)
	Systemic causes	13(28.3)
	Total	46(100)
Classification for specific causes	Traumatic	18(39.1)
	Non-traumatic	28(60.9)
	Total	46(100)

Table 6

Aetiology of Epistaxis by Age of Recruited Patients

	Age group (years), n (%)							
Causes	0-10	11-20	21-30	31-40	41-50	51-60	>60	Total
Trauma	3(18.8)	2 (66.7)	5(71.4)	3(50.0)	1(12.5)	0(0.0)	0(0.0)	14(30.4)
Hypertension	0 (0.0)	0(0.0)	0(0.0)	1(16.7)	3(37.5)	3(60.0)	1(100.0)	8(17.4)
Inflammatory	2(12.5)	0(0.0)	2(28.6)	2(33.3)	1(12.5)	0(0.0)	0(0.0)	7(15.2)
Other causes	11(68.7)	1(33.3)	0(0.0)	0(0.0)	3(37.5)	2(40.0)	0(0.0)	17(37.0)
Total	16 (34.8)	3(6.5)	7(15.2)	6(13.0)	8(17.4)	5(10.9)	1(2.2)	46(100.0)

Key: Chi square=59.045, df=42, p=0.042

Note: - Other causes include nasal foreign body, benign nasal/sinonasal tumours, liver failure, chronic adenoiditis, and renal failure

- Column percentage has been computed in the above table, except for the last row (total), where row percentage has been computed

The relationship between the type of epistaxis and the age of the patients studied was statistically significant (p=0.05). (Table 4)

Occurrence and patterns of epistaxis

The majority of the patients had episodes of epistaxis less than once a year, 27(58.7%), and right-sided epistaxis predominated, 20(43.46%).

Bilaterality of epistaxis was found in 3(6.25%) patients.

The majority of the patients who presented with epistaxis had a duration of one day, 28(60.9%). The mode of onset for epistaxis was predominantly acute in 33(71.7%) patients. The amount of nose bleeding was predominantly scanty in 25(54.3%) patients.

Regarding seasonal presentation of epistaxis, the winter period predominated, 23(50%). Pertaining to the cause of epistaxis, local causes predominated in 33(71.7%) patients, and for specific classification of the causes for epistaxis, the majority of the patients had sustained non-traumatic causes, 28(60.9%). (Table 5).

Aetiology of epistaxis by age

Trauma was the leading cause of epistaxis (14, 30.4%), followed by hypertension (8, 17.4%) and inflammatory causes (7, 15.2%). Traumatic epistaxis predominated in patients aged 21–30 years (71.4%), with a significant association between aetiology and age ($p = 0.042$) (Table 6).

Comorbid conditions associated with epistaxis by the age

Regarding comorbid conditions associated with epistaxis, hypertension was the only comorbid condition in patients aged >60 years. Among those aged 51-60 years, the comorbid conditions reported were hypertension (60%), renal failure (20%) and liver failure (20%). The relationship between comorbid conditions and epistaxis was statistically significant ($p=0.00$).

Comorbid conditions associated with epistaxis by sex

Regarding the comorbid conditions associated with epistaxis, hypertension predominated in both sexes, where in males, hypertension accounted for 5(19.2%) patients, while in females it accounted for 3(15%), but generally hypertension was reported in 8(17.4%) patients. The second commonest comorbid condition was liver failure, reported in 4(8.7%) patients, among whom 3(11.5%) were males, and 1(5%) female, had liver failure. The least comorbid condition was renal failure, found in 1(2.2%) patient, and this was reported exclusively in males. No comorbid condition was reported in 33(71.7%) patients. The relationship between comorbid conditions associated with epistaxis and sex was statistically significant ($p=0.022$).

Treatment provided to recruited patients with epistaxis

Most patients with epistaxis underwent management by means of anterior nasal packing, 19(41.3%), and a few patients were managed by both anterior and posterior nasal packing, 3(6.5%). Other modes of treatment include observation alone, 7(15.2%); posterior nasal packing, 9(19.6%); other surgical intervention (nasal masses excision), 4(8.7%), nasal foreign body removal, 4(8.7%).

Discussion

Epistaxis is the commonest otorhinolaryngology emergency encountered in most centres, and on most occasions, individuals with signs and symptoms of epistaxis do not seek medical attention, and of those seeking medical attention, only very few tend to opt for emergency care. Of all the 306 recruited patients, the overall prevalence of epistaxis was 15.0% in this study. Such a finding appears to be lower than that from the study that was done in Tanzania at a national hospital by involving patients from two of its institutions, where the prevalence of epistaxis was 23.4% [1]. The observed difference may be because one of the involved institutions in the study by Abraham *et al* is a well-known trauma centre in Tanzania; thus, patients presenting with epistaxis may be more commonly attended at that facility. Unveiling the prevalence of epistaxis at the regional hospital that serves the largest number of patients being referred from several regions within and outside the Dodoma region is of importance since these findings support the need for the establishment of improved emergency protocols and preventive education at regional health facilities.

In the present study, epistaxis was somewhat more prevalent among females than males. This finding contrasts with reports from other settings, including a study from Dar es Salaam by Abraham *et al*. and a study from India by Varshney and Saxena, both of which reported male predominance in epistaxis [1,11]. The observed variation across studies is unlikely to be attributable to genetic predisposition, as no established sex-linked risk factors for epistaxis have been documented from the available studies on epistaxis. The slight female predominance in this study may reflect contextual factors, mainly health-seeking behaviour, as females are generally more likely to present for emergency care for both traumatic and non-traumatic conditions, which may be accompanied by epistaxis.

Regarding the age distribution of epistaxis, epistaxis was most frequently observed among individuals in their fifth decade of life, while older age groups were least affected. This age distribution pattern of epistaxis is consistent with findings from studies done in India by Varshney and Saxena as well as Rao *et al*., both of which reported a peak in the occurrence of epistaxis in middle-aged adults and a decline in older individuals [11,18]. The concordance across the studies suggests that middle age represents a period of increased vulnerability to epistaxis, and this is probably due to cumulative environmental exposure and emerging comorbidities. These findings underscore the importance of heightened otorhinolaryngological surveillance beginning in the fourth decade of life to establish epistaxis on a prompt basis and therefore institute proper treatment on a similar early basis.

Anterior epistaxis was the predominant type of nose bleeding in this study, a finding that is consistent with reports from both India and Tanzania, where anterior epistaxis has similarly been shown to predominate [1,18]. Posterior epistaxis occurred less frequently, in line with reports from studies done in India, which consistently documented a lower occurrence of posterior epistaxis [18,19]. Concomitant anterior and posterior epistaxis was found to be uncommon in this study and has similarly been reported as the least frequent pattern of epistaxis in other Tanzanian settings, particularly a study from Mwanza by Gilyoma *et al*. [2].

Right-sided epistaxis was the most common laterality observed in this study, with left-sided and bilateral involvement of the nose bleeding occurring less frequently. This pattern is comparable to the findings from Mwanza, Tanzania, where right nasal cavity involvement predominated while bilateral epistaxis was reported to be relatively uncommon in the same study [2]. Regarding the duration of epistaxis, most episodes were short-lived, typically resolving within one to two days. Similar trend in the duration of epistaxis has been reported in the study from India, where it was found to be short-lived and resolve within one to two days, and the least participants had prolonged nose bleeding [19].

Most patients in this study presented with an acute onset of epistaxis, while a chronic onset was less frequent. This pattern of epistaxis is consistent with findings reported by Kumar in India, where acute presentation of nose bleeding similarly predominated [19]. Regarding the bleeding volume in epistaxis, scanty epistaxis was the most common presentation, followed by moderate bleeding. Comparable distribution of bleeding severity has been described in the study that was conducted in India, where mild to moderate epistaxis constituted the majority of the emergency presentation in epistaxis [19].

Epistaxis in this study demonstrated a clear seasonal pattern of clinical presentation, with most cases occurring during the rainy season and fewer cases presenting with epistaxis during the summer period. This pattern of seasonal variation appears to be consistent with findings from studies done in India, which reported a higher incidence of epistaxis during the winter period followed by the summer period [18,19]. Differences in the predominant season across settings may reflect variations in climate,

humidity, and environmental exposures, rather than fundamental differences in the patterns of epistaxis.

In this study, trauma has emerged as the leading aetiology of epistaxis, a finding that is in line with reports from other Tanzanian settings as well as from Nigeria, where trauma was similarly identified as the commonest cause of epistaxis [1,2,20]. Hypertension was the second most frequently implicated aetiology, resembling findings from other studies done in Tanzania and Nigeria, which highlighted hypertension as a significant implicated aetiology of epistaxis [1,2,20]. The concordance of these findings across diverse settings suggests trauma and hypertension as the predominant etiological factors for epistaxis in sub-Saharan Africa.

Regarding the category for the aetiology of epistaxis, local causes predominated in this study, with systemic causes accounting for a lesser proportion. This pattern appears to be consistent with findings from Dar es Salaam, Tanzania, where local causes were also reported as the leading contributors to the category for the aetiology of epistaxis [1]. In terms of specific classification of the categories for the aetiology of epistaxis, non-traumatic causes were more common than traumatic causes, a finding that aligns with reports from the United States emergency department, where non-traumatic aetiology predominated [14]. With respect to the management of epistaxis, anterior nasal packing was the most frequently utilised treatment modality. The remarkable use of this intervention resembles findings from studies done in Dar es Salaam and Mwanza, Tanzania, where anterior nasal packing was similarly reported as the primary modality for management of epistaxis [1,2].

Regarding posterior nasal packing as the treatment modality for epistaxis, this modality was used in a minority of patients, reflecting its role as a secondary intervention in the management of epistaxis. This finding is consistent with reports from Dar es Salaam and Mwanza, Tanzania, where posterior nasal packing was similarly less frequently utilised in management of epistaxis [1,2]. In contrast, the predominance of anterior nasal packing in this study underscores adherence to the established first-line management protocols for anterior epistaxis.

Generally, these findings highlight the need to strengthen emergency management protocols and preventive education at regional health facilities in Tanzania.

This study was conducted at a single regional referral hospital, which limits the generalizability of the findings countrywide. Future multicenter studies are therefore recommended to enhance external validity or broader applicability. In addition, the use of convenience sampling may have introduced selection bias, further limiting representativeness; thus, future studies should consider systematic or random sampling techniques. The absence of clearly described standardisation procedures also raises the possibility of recall and observer bias. Future studies should incorporate and report structured measures, such as the use of standardised data collection tools and random sampling to enhance validity and reduce errors, thus improving methodological rigour.

Conclusion

Epistaxis was prevalent at Dodoma Regional Referral Hospital, with anterior epistaxis occurring more frequently than posterior epistaxis. Females were more commonly affected than males, and trauma emerged as the leading aetiology of epistaxis. Hypertension was the most prevalent comorbidity, while anterior nasal packing was the primary treatment modality for epistaxis.

Definition of terms

Acute epistaxis: Refers to a sudden, single episode of nosebleed, while "chronic epistaxis" describes a condition where nosebleeds occur frequently or repeatedly over a prolonged period of ≥4 weeks, often indicating an underlying medical issue causing the recurrent bleeding.

Moderate epistaxis: A moderate nosebleed, or epistaxis, is when there is some bleeding, but direct pressure stops it within 15 minutes, or if the nose bleeds small amounts of blood more than three times in 24 hours.

Scanty epistaxis: Implies a minor trickle of blood flow from the nostrils

Profuse epistaxis: Occurs if the bleeding hasn't stopped after 20 minutes of applying direct pressure to your nose.

Author contributions

Both authors contributed to the conception, design of the work; the acquisition, analysis, or data interpretation; and drafting the work: ZSA contributed 55% while NJC contributed 45%. Both authors approved the version to be published.

Data availability. All data generated or analysed during this study are included in this article. Further enquiries can be directed to the corresponding author.

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