

Evaluation of Knowledge, Attitude and Practice of Epistaxis among the General Population of Tabuk City, Saudi Arabia

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ABSTRACT

Background: epistaxis is a fairly common problem, which has been reported to be occurring in about 60% of the population. It defined as a bleeding from nose or nasal cavity and it is considered as one of the most common emergencies presenting in Ear, Nose and Throat (ENT) Department and Accident and Emergency Department worldwide. **Objectives:** this study aimed to assess the knowledge, awareness and practice of the general population of Tabuk City, KSA towards epistaxis, its causes, and management.

Materials and Methods: a cross sectional study was conducted on 540 participants of age less than 20 years to 51 and older in Saudi Arabia. Data were collected by using a pre-designed online questionnaire, which was distributed among the general population of Tabuk City, Saudi Arabia. **Results:** this study included 540 participants, 71.9% females and 28.1% males. Most of the participants (50.4%) were from 21 to 30 years. Epistaxis was found in 45.2% of them. Among participants, 34.8% knew that chronic diseases cause epistaxis, 42.2% stated that drugs cause epistaxis and 68.9% knew that excess nose manipulation caused epistaxis. Tilting the head forward was the best position to stop epistaxis which reported by 45.2% and 42.2% reported cartilage as a part of nose should be pressed on to stop epistaxis. There were no significant correlations between educational level and different knowledges of the causes and how to deal with epistaxis case ($p>0.05$). However, we found that there was a significant correlation with the action should be done if the epistaxis continues ($p=0.001$), the best position to stop epistaxis ($p= 0.02$) and nose manipulation as a cause of epistaxis ($p=0.01$).

Conclusion: our results showed that high percent of the participants were suffering from nasal bleeding (Epistaxis) in Saudi Arabia. And there was good a knowledge about causes of epistaxis and how to deal with epistaxis cases.

Keywords: epistaxis, bleeding, knowledge, awareness, Saudi Arabia

INTRODUCTION

Epistaxis is acute bleeding from the nasopharynx or the nose. It is one of the most common ENT emergencies faced in the emergency departments worldwide ^[1]. Epistaxis is a common problem and it ranges from mild to severe bleeding, also it is considers as life-threatening rhinological emergency. It acts as a significant workload in accident and emergency and Otolaryngology Departments; it usually causes anxiety for both patients and clinicians ^[2]. Of population, 66.67% experience epistaxis during their lifetime.

It is common among school children as they are easily injured during different school activity. More than 50% of children between 6 and 10 years have suffered from at least one episode of epistaxis ^[3]. Epistaxis reportedly occurs more frequently during the dry, cold winter months. It is thought to occur more frequently in males than in females and there is an increasing incidence with age ^[4]. The nasal bleeding caused by either systemic or local factor, the systemic factors involved coagulopathy, blood disorders, the use of anticoagulant and arterial high blood pressure, while the local factors included upper airway infections,

nasal allergies, the introduction of foreign bodies into the nasal cavity, trauma and septal perforation ^[5]. Other causes have been reported in children from nose picking and idiopathic causes, to trauma, medications, nasopharyngeal mass, bacterial nasal colonization and allergic rhinitis and to the less common cause such as ectopic intranasal tooth ^[6, 7]. Epistaxis can be broadly divided as occurring from anterior or posterior sites. Anterior epistaxis is more frequent at an early age. Its origin can be either arterial (Keisselbach area) or venous (Retrocolumellar vein). As the bleeding point is easily accessible, this type of epistaxis is rarely serious. Posterior epistaxis, on the other hand, is more frequent in the elderly and they may be a major therapeutic problem ^[4].

In most of the cases, epistaxis usually occurs in an out of the hospital setting. Thus, it is very important for non- health professional people to understand and know some first aid measures for epistaxis. First aid is important to reduce mortality and morbidity of the emergency case ^[8] especially in the persistent bleeding cases ^[9]. The management of epistaxis is complex and varied and it has undergone significant changes over the years from

the uncomfortable posterior nasal pack to the newly developed packing devices, indigenous hemostatic agents and endoscopic surgical approaches [10].

This study aimed to assess the knowledge, awareness and practice of the general population of Tabuk City, KSA towards epistaxis, its causes and management.

MATERIALS AND METHODS

This was a descriptive cross-sectional study conducted on a random sample of the population of Tabuk City, Saudi Arabia. A convenient sample size of 540 with different age groups had participated in this study. Approval from the Research and Ethical Committee was obtained. Incomplete questionnaire was taken as exclusion criteria.

Data Collection: data were collected by using a pre-designed online questionnaire, which was distributed among the general population of Tabuk City, Saudi Arabia. This study was conducted during the period from June to October 2017. It was self-administered by participants. The questionnaire included the relevant questions to collect data about:

- Socio-demographic characteristics included age, marital status, educational level and previous exposure to epistaxis.
- Other sections included questions designed for assessment of the level of knowledge, awareness and practice of the study sample towards epistaxis.

Data Analysis: the data were compiled, checked for completeness, and analyzed by using the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 22. Results of descriptive analysis of knowledge and awareness of epistaxis were tabulated. Cross tabulations included Chi-square test were designed to find the correlation between the previous exposure to epistaxis and educational level with other knowledge assessment factors. A 5% level was chosen as a level of significance in all statistical tests used in the study.

Ethical considerations

All ethical issues were taken into consideration, including the confidentiality and privacy of participant's data. Participants were informed that participation was completely voluntary and data collection website introduced and explained the research to participants. No names were recorded on the questionnaires and all questionnaire responses kept safe.

RESULTS

Table 1: showed the socio-demographic characteristics of the studied population and

prevalence of epistaxis among them. This study included 540 participants, females represent 71.9% of them and only 28.1% were males. Half of participants were from 21 to 30 years, 62.2% were married and the majority 73.3% had university education or more. Epistaxis was found in 45.2% of cases.

Table 2: showed the questions of knowledge of the causes of epistaxis and how to deal with epistaxis cases. About one-third (34.8%) of cases knew that chronic diseases cause epistaxis, 42.2% stated that drugs cause epistaxis and 68.9% knew that excess nose manipulation cause epistaxis. More than half of cases (55.6%) knew that pressing on the nose stops epistaxis. Regarding to best position to stop epistaxis, 45.2% stated that tilted the head forward and 36.3% reported tilted the head back. 61.5% of cases reported breath from the mouth as usual as a method for breathing during epistaxis. 81.5% prefer going to the hospital if the epistaxis continue. Although, the majority of cases 89.6% found that first aid measures are important, 85.9% of them knew that there was no enough awareness of the public about epistaxis first aid measures. ENT physicians reported as a specialist who can treat epistaxis by 67.4% of cases.

Table 3: showed the relation between knowledge of causes of epistaxis and how to deal with epistaxis cases and having epistaxis attacks. Our study found that there were no significant correlations between having epistaxis attacks and physician who can treat epistaxis, no enough awareness of the public about epistaxis first aid measures, importance of first aid measures, knowing method of breathing during epistaxis, the action should be done if the epistaxis continues, knowing which part of the nose must be pressed to stop epistaxis, the best position to stop epistaxis and knowing that pressing on the nose can stop epistaxis. Also, there was no relation between it and drugs and chronic diseases as a cause epistaxis ($p > 0.05$). However, we found that there were significant correlations between epistaxis attack and nose manipulation ($p = 0.02$).

Table 4: showed the relation between knowledge of the causes of epistaxis and how to deal with epistaxis cases and educational level. Our study showed no significant correlations between educational level and different knowledge of the causes and how to deal with epistaxis case ($p > 0.05$). However, we found that there was a significant correlation with the action should be done if the epistaxis continues ($p = 0.001$), the best position to stop epistaxis ($p = 0.02$) and nose manipulation as a cause of epistaxis ($p = 0.01$).

Table 1: socio-demographic characteristics of the studied population and prevalence of epistaxis among them (N=540)

Sex	Frequency	Percent
• Female	388	71.9
• Male	152	28.1
Age		
• Less than 20 years	48	8.9
• From 21 to 30 years	272	50.4
• From 31 to 40 years	124	23.0
• From 41 to 50 years	44	8.1
• From 51 years and older	52	9.6
Marital status		
• Single	180	33.3
• Married	336	62.2
• Divorced/widow	24	4.4
Educational level		
• Less than secondary	32	5.9
• secondary	112	20.7
• University or more	396	73.3
Having Epistaxis		
• No	296	54.8
• Yes	244	45.2

Table 2: questions of knowledge of the causes of epistaxis and how to deal with epistaxis cases

Chronic diseases are a risk factor		
• No	104	19.3
• Don't know	248	45.9
• Yes	188	34.8
Some medication can cause epistaxis		
• No	88	16.3
• Don't know	224	41.5
• Yes	228	42.2
Excess Nose Manipulation can cause Epistaxis		
• No	212	17.0
• Don't know	76	14.1
• Yes	372	68.9
Pressing on the nose can stops epistaxis		
• No	136	25.2
• Don't know	104	19.3
• Yes	300	55.6
What is the best position to stop epistaxis		
• Lie down with your feet up	28	5.2
• Tilt the head forward	244	45.2
• Tilt the head back	196	36.3
• I do not know	72	13.3
What part of the nose compressed during epistaxis		
• The lower part (cartilage)	228	42.2
• Upper part (bone)	180	33.3
• I do not know	132	24.4
Method of breathing during epistaxis		
• Breath from the nose as usual	32	5.9

Chronic diseases are a risk factor		
• Breath from the mouth as usual	332	61.5
• Don't know	176	32.6
What should be done if bleeding doesn't stop		
• Continue the first aid measures	68	12.6
• Just wait	32	5.9
• Go to the hospital	440	81.5
Are first aid measures important		
• No	12	2.2
• Don't know	44	8.1
• Yes	484	89.6
There is no enough awareness of the public about epistaxis first aid measures		
• No	24	4.4
• Don't know	52	9.6
• Yes	464	85.9
What is the specialty that can treat epistaxis		
• Any physician	120	22.2
• ENT physicians	364	67.4
• Don't know	56	10.4

Table 3: relation between knowledge of the causes of epistaxis and how to deal with epistaxis cases and having epistaxis attacks

Questions	Responses	Have epistaxis attacks		Total (N=540)	P value
		Yes (n=244)	No (n=296)		
Who can treat epistaxis	Any doctor	36	84	120	0.089
		14.8%	28.4%	22.2%	
	Ear, Nose and Throat Doctor	188	176	364	
		77.0%	59.5%	67.4%	
	I do not know	20	36	56	
		8.2%	12.2%	10.4%	
There is no enough awareness of public about epistaxis first aid measures	No	4	20	24	0.305
		1.6%	6.8%	4.4%	
	I do not know	28	24	52	
		11.5%	8.1%	9.6%	
	Yes	212	252	464	
		86.9%	85.1%	85.9%	
Are first aid measures important	No	8	4	12	0.750
		3.3%	1.4%	2.2%	
	I do not know	20	24	44	
		8.2%	8.1%	8.1%	
	Yes	216	268	484	
		88.5%	90.5%	89.6%	
What should be done if the epistaxis continue	Continue to do first aid	36	32	68	0.743
		14.8%	10.8%	12.6%	
	Wait until the bleeding stops	16	16	32	
		6.6%	5.4%	5.9%	
	Transfer to hospital	192	248	440	
		78.7%	83.8%	81.5%	
Method of breathing during epistaxis	Breathe through the nose til the bleeding stops	8	24	32	0.327
		3.3%	8.1%	5.9%	
		164	168	332	

Questions	Responses	Have epistaxis attacks		Total (N=540)	P value
		Yes (n=244)	No (n=296)		
	Breathing through the mouth until the bleeding stands	67.2%	56.8%	61.5%	
	I do not know	72	104	176	
		29.5%	35.1%	32.6%	
Which part of the nose must be pressed to stop epistaxis	The lower part (cartilage)	100	128	228	0.822
		41.0%	43.2%	42.2%	
	Upper part (bone)	88	92	180	
		36.1%	31.1%	33.3%	
	I do not know	56	76	132	
		23.0%	25.7%	24.4%	
What is the best position to stop epistaxis	Lie down with your feet up	12	16	28	0.332
		4.9%	5.4%	5.2%	
	Tilt the head forward	104	140	244	
		42.6%	47.3%	45.2%	
	Tilt the head back	92	104	196	
		37.7%	35.1%	36.3%	
	I do not know	36	36	72	
		14.8%	12.2%	13.3%	
Pressing on the nose stops epistaxis	No	68	68	136	0.603
		27.9%	23.0%	25.2%	
	I do not know	52	52	104	
		21.3%	17.6%	19.3%	
Yes	124	176	300		
	50.8%	59.5%	55.6%		
Excess Nose Manipulation causes Epistaxis	No	32	60	92	0.023
		13.1%	20.3%	17.0%	
	I do not know	16	60	76	
		6.6%	20.3%	14.1%	
	Yeah	196	176	372	
		80.3%	59.5%	68.9%	
Drugs cause epistaxis	No	60	28	88	0.060
		24.6%	9.5%	16.3%	
	I do not know	92	132	224	
		37.7%	44.6%	41.5%	
	Yeah	92	136	228	
		37.7%	45.9%	42.2%	
Chronic diseases cause epistaxis	No	48	56	104	0.763
		19.7%	18.9%	19.3%	
	I do not know	104	144	248	
		42.6%	48.6%	45.9%	
	Yeah	92	96	188	
		37.7%	32.4%	34.8%	

Table 4: relation between knowledge of the causes of epistaxis and how to deal with epistaxis cases and Educational level

Questions	Responses	Educational level			Total (N=540)	P value
		Less than secondary (n=32)	Secondary (n=112)	University or more (n=396)		
Who can treat epistaxis	Any doctor	4	16	100	120	0.370
		12.5%	14.3%	25.3%	22.2%	
	Ear, Nose and Throat Doctor	28	88	248	364	
		87.5%	78.6%	62.6%	67.4%	
I do not know	0	8	48	56		
	.0%	7.1%	12.1%	10.4%		
There is no enough awareness of the public about epistaxis first aid measures	No	0	8	16	24	0.890
		.0%	7.1%	4.0%	4.4%	
	I do not know	4	8	40	52	
		12.5%	7.1%	10.1%	9.6%	
Yeas	28	96	340	464		
	87.5%	85.7%	85.9%	85.9%		
Are first aid measures important	No	0	4	8	12	0.314
		.0%	3.6%	2.0%	2.2%	
	I do not know	0	0	44	44	
		.0%	.0%	11.1%	8.1%	
Yeas	32	108	344	484		
	100.0%	96.4%	86.9%	89.6%		
What should be done if the epistaxis continue	Continue to do first aid	4	40	24	68	0.001
		12.5%	35.7%	6.1%	12.6%	
	Wait until the bleeding stops	0	8	24	32	
		.0%	7.1%	6.1%	5.9%	
Transfer to hospital	28	64	348	440		
	87.5%	57.1%	87.9%	81.5%		
Method of breathing during epistaxis	Breathe through the nose until the bleeding stops	0	12	20	32	0.762
		.0%	10.7%	5.1%	5.9%	
	Breathing through the mouth until the bleeding stands	20	64	248	332	
		62.5%	57.1%	62.6%	61.5%	
I do not know	12	36	128	176		
	37.5%	32.1%	32.3%	32.6%		
Which part of the nose must be pressed to stop epistaxis	The lower part (cartilage)	12	48	168	228	0.870
		37.5%	42.9%	42.4%	42.2%	
	Upper part (bone)	16	36	128	180	
		50.0%	32.1%	32.3%	33.3%	
I do not know	4	28	100	132		
	12.5%	25.0%	25.3%	24.4%		
What is the best position to stop epistaxis	Lie down with your feet up	8	8	12	28	0.029
		25.0%	7.1%	3.0%	5.2%	
	Tilt the head forward	8	32	204	244	
		25.0%	28.6%	51.5%	45.2%	
	Tilt the head back	8	48	140	196	
		25.0%	42.9%	35.4%	36.3%	
I do not know	8	24	40	72		
	25.0%	21.4%	10.1%	13.3%		
	No	8	44	84	136	0.388

Questions	Responses	Educational level			Total (N=540)	P value
		Less than secondary (n=32)	Secondary (n=112)	University or more (n=396)		
Pressing on the nose stops epistaxis	I do not know	25.0%	39.3%	21.2%	25.2%	
		4	16	84	104	
	12.5%	14.3%	21.2%	19.3%		
	20	52	228	300		
Excess Nose Manipulation causes Epistaxis	No	0	4	88	92	0.016
		.0%	3.6%	22.2%	17.0%	
	I do not know	8	4	64	76	
	25.0%	3.6%	16.2%	14.1%		
Some medication can cause epistaxis	Yeah	24	104	244	372	0.089
		75.0%	92.9%	61.6%	68.9%	
	No	0	32	56	88	
	.0%	28.6%	14.1%	16.3%		
Chronic diseases are risk factors	I do not know	20	52	152	224	0.264
		62.5%	46.4%	38.4%	41.5%	
	Yeah	12	28	188	228	
	37.5%	25.0%	47.5%	42.2%		
	No	4	24	76	104	0.264
		12.5%	21.4%	19.2%	19.3%	
	I do not know	24	36	188	248	
	75.0%	32.1%	47.5%	45.9%		
	Yeah	4	52	132	188	
		12.5%	46.4%	33.3%	34.8%	

DISCUSSION

Epistaxis is a common symptom in otorhinolaryngology practice, with most people suffering one or more episodes in their lifetime. Epistaxis means bleeding from the nostril, nasal cavity or nasopharynx. It occurs due to the bursting of a blood vessel in the nose. Although epistaxis in most cases is relatively minor and usually manageable at home, sometimes, it can be dramatic and can be a life-threatening problem. The incidence of epistaxis was reported to be ranged from 10% to 60 % of individuals [4] 6% of the individuals were admitted to medical treatment to control the nasal hemorrhage [11].

Some authors portray epistaxis as a disease of the young [12, 13] whereas others have noted epistaxis to be more common in the elderly [14]. Epistaxis may occur due to various underlying causes with a significant morbidity and even mortality in rare cases. This across sectional study was conducted among 540 participants, KSA. Among 540 participants we found 45.2% of them had epistaxis. Our result was less than another study conducted among sample of 1,114 participants which found that 49% of the participants were epistaxis patients [15]. However, in Tanzania a cross-sectional, hospital based study was done to 427 patients reported that

prevalence of epistaxis was 23.4% [16]. Study done by **Kishve *et al.*** showed the prevalence of epistaxis among pediatric patients with ear nose and throat disease to be 16% [17]. In Scotland, an epidemiology, hospital based study conducted between 1995 and 2004 reported that epistaxis accounted for 33% of all ENT emergency admissions during the study period [18]. Another study conducted among 392 participants found that 27% of the participants were suffering from nasal bleeding (Epistaxis) [19]. Another study was conducted among 300 medical students from all over the kingdom of Saudi Arabia by using questionnaires reported high epistaxis prevalence, 85.67% of the participants had epistaxis at least once in their life [20].

Regarding to knowledge of the causes of epistaxis and how to deal with epistaxis cases. Among participants, 34.8% knew that chronic diseases cause epistaxis, 42.2% stated that drugs cause epistaxis and 68.9% knew that excess nose manipulation cause epistaxis. More than half of participants (55.6%) knew that pressing on the nose stops epistaxis. 61.5% of cases reported breath from the mouth as usual as a method for breathing during epistaxis. The majority (81.5%) prefer going to the hospital if the epistaxis continue.

ENT physicians reported as a specialist who can treat epistaxis by 67.4% of cases. Another study found that 67.4% of participants knew about epistaxis management, while 32.6% did not know. There were 5 questions to investigate the knowledge of individuals; the first asked if the chronic disease was a risk factor, most of the participants 46.3% did not know. In contrast to our results this study found that the majority of participants (41.4%) did not know if some medicinal were risk factors.

There were 71.2% thought that dealing with nose was a risk factor and 77.9% thought that environmental factors may be a cause of epistaxis and high percent 64.5% thought that compressing nose was beneficial to stop bleeding. Among participants, 84.8% stated that the mechanism of breathing during epistaxis should be by mouth to stop epistaxis, 89% of individuals found that referring to the hospital was the solution to stop bleeding if the bleeding did not stop^[21]. In contrast to our results, the same study reported that 70.6% of participants suggested that any medical person know epistaxis management can perform first aid followed by 29.4% for ENT physician^[21].

Another study was conducted among 600 participants reported that majority of them did not know either chronic diseases or medication are risk factors for epistaxis (82%) and (74%) respectively. Two-thirds of participants (77.7%) stated compression on the nose will stop bleeding^[22].

In addition, more than 90% of participants will go to hospital if bleeding did not stop and 73.3% do not know who is managing the epistaxis, while 26.7% chose by ENT doctors^[22]. As regards best position to stop epistaxis, 45.2% stated tilt the head forward, 36.3% reported tilt the head back and only 5.2% lying down with your feet up as a best position to stop epistaxis. Similar to our results, another study reported that the majority 56.9% of the participants thought that leaning the head forward is the best body position to stop nose bleeding followed by leaning the head backward in 36.5% participants, lying on the back in 5.1% participants and lying on the abdomen in only 1.5% participants^[19]. **Nisreen et al.**^[23] found that 80.6% of the respondents in his study knew the correct position which a patient with epistaxis should be placed.

This was higher than reported by **Mugwe et al.**^[24] who found that 60% of respondents knew the correct position. However, **Strachan and Strachan D, England**^[25] reported that only 36% knew the correct position. In contrast to our results another study reported that 53% of the participants believed that lying on backward is the optimal position to stop bleeding^[22].

First aid measures with adequate knowledge required to manage acute epistaxis without hospital facilities are essential but poorly known, even though the prevalence of epistaxis is high^[26, 27]. Although, the majority of cases 89.6% stated that first aid measures are important, 85.9% of them knew that there was no enough awareness of the public about epistaxis first aid measures. Similar to our results, another study reported that 92.2% of cases stated that first aid management against epistaxis was important and 76.9% thought that there was low awareness about first aid management against epistaxis^[21]. Regarding to part of nose should be pressed on to stop epistaxis. Our study reported the lower part (Cartilage) by 42.2%, upper part (bone) 33.3% and 24.4% did not know the correct part. Another study reported; 53.3% of cases stated that cartilage was the part comprised to stop epistaxis and 46.7% stated bony part^[22].

Also, the study conducted by **Mugwe et al.**^[24] showed only 38.1% correctly demonstrated pinching the nose at the cartilaginous part. According to the relation between knowledge of the causes of epistaxis and how to deal with epistaxis cases and having epistaxis attacks we found that there were no significant correlations between having epistaxis attacks and physician who can treat epistaxis, no enough awareness of the public about epistaxis first aid measures, importance of first aid measures, knowing method of breathing during epistaxis, the action should be done if the epistaxis continues, knowing which part of the nose must be pressed to stop epistaxis, the best position to stop epistaxis and knowing that pressing on the nose can stop epistaxis.

Also, there was no relation between it and drugs and chronic diseases as a cause epistaxis ($p > 0.05$). However, we found that there were significant correlations between epistaxis attack and nose manipulation ($p = 0.02$). In our study, there was no relation between knowledge of the causes of epistaxis and how to deal with epistaxis cases and educational level. Our study reported no significant correlations between educational level and different knowledge of the causes and how to deal with epistaxis case ($p > 0.05$).

However, we found that there was a significant correlation with the action should be done if the epistaxis continues ($p = 0.001$), the best position to stop epistaxis ($p = 0.02$) and nose manipulation as a cause of epistaxis ($p = 0.01$).

CONCLUSION

Our study concluded that there were 45.2% of cases had epistaxis previously. The majority 45.9% did not know that chronic diseases cause epistaxis,

but 42.4% of them knew that drugs cause epistaxis. The majority (89.6%) knew that first aid measures were important.

However, high percentage knew that there was not enough awareness of the public about epistaxis first aid measures. ENT physicians was reported by 67.4% as specialist who can treat epistaxis.

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