

Parents' knowledge regarding first-aid management of epistaxis in children in Taif, Saudi Arabia

Badr S. Alam¹, Amjad M. Jawhari¹, Abdulaziz S. Aljuaid¹,
Mohammed A. Althomali¹, Bader S. AlMutairi¹, Hamoud A. Alobaylan¹,
Saleh M Alosaimi²

¹College of Medicine, Taif University, Al-Taif, Saudi Arabia, ²Department of Surgery, Prince Mansour Military Hospital, Taif, Saudi Arabia

ABSTRACT

Objectives: Epistaxis among children is considered a scary issue for both the child and the parents. In Saudi Arabia, one third of children suffer from epistaxis. In our study, we aimed to assess the level of knowledge among parents regarding first-aid management of epistaxis in Taif city, Saudi Arabia. **Method:** We carried out a descriptive cross-sectional study among parents who visited Alhada Armed Forces Hospital and Prince Mansour Military Hospital between May 2022 and July 2022 in Taif, Saudi Arabia. A questionnaire with 17 questions was distributed among the participants. We excluded parents with children who were older than 18 years. **Results:** A total of 502 parents were included in the study. About two thirds (67.5%) of parents had a moderate level of knowledge and around one third (30.9%) showed a good level of knowledge regarding epistaxis first aid. Furthermore, higher knowledge scores were found among parents who had epistaxis previously ($P = 0.026$), who attended a course on first aid ($P = 0.002$), and who were aged more than 35 years ($P = 0.017$). **Conclusion:** Our study demonstrated that most Saudi parents had a moderate level of knowledge regarding first-aid management of epistaxis. Additionally, several factors, such as the number of children, age, those attending first-aid courses, and experience treating others with epistaxis, were associated with the level of knowledge among parents. Further larger studies are required among Saudi parents to examine the knowledge, practice, and related factors regarding first-aid management of epistaxis.

Keywords: Children, epistaxis, first-aid management, Saudi Arabia

Introduction

Epistaxis is one of the most common emergencies that present as acute bleeding in the ear, nose, and throat. Nasal bleeding is the most prevalent epistaxis case and is mainly caused by the rupture of blood vessels in the nasal mucosa.^[1]

The nose mainly receives blood supply from two main arteries: the external carotid artery and the internal carotid artery.^[2] Nasal

bleeding is classified as anterior and posterior based on the incidence site.^[3] The anterior type is more common in young adults and children, while the posterior type is common in the elderly and arises from nasal cavity bleeding.^[4] The Kiesselbach plexus or Little's area is the most common anatomical site of epistaxis.^[5] Several factors can cause nasal bleeding, including local, systemic, and environmental factors. The local factors include nasal allergies, upper airway infections, bodies in the nasal cavity, septal perforation, and trauma, while the systemic factors include arterial high blood pressure, blood disorders, coagulopathy, and anticoagulant use.^[6]

It was reported that approximately 10%–12% of individuals are affected by epistaxis, and 10% are severe cases that require special

Address for correspondence: Dr. Saleh M Alosaimi,
Department of Surgery, Prince Mansour Military Hospital, Taif,
Saudi Arabia.

E-mail: saleh_pmmh@hotmail.com

Received: 28-09-2022

Revised: 02-11-2022

Accepted: 04-01-2023

Published: 31-05-2023

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_1925_22

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Alam BS, Jawhari AM, Aljuaid AS, Althomali MA, AlMutairi BS, Alobaylan HA, *et al.* Parents' knowledge regarding first-aid management of epistaxis in children in Taif, Saudi Arabia. J Family Med Prim Care 2023;12:940-5.

medical care.^[7] A cross-sectional study in Saudi Arabia showed that 27% of the study subjects experienced nasal bleeding.^[8] Most people affected by epistaxis were children, young adults, and the elderly, and is not common in neonates.^[9] A previous survey in Saudi Arabia showed that about 35.5% of children have suffered from epistaxis.^[10] Recurrent nasal bleeding in children is considered a troublesome and alarming issue for parents and children.^[11]

Epistaxis mainly does not cause complications. Furthermore, if they occur, they will be severe. Complications caused by epistaxis include septal hematoma, external nasal deformity, balloon migration, hemorrhagic shock, and mucosal pressure necrosis.^[12] Immediate provision of first aid to patients can make a significant difference to the outcome as it may reduce the course and complications of injuries.^[13]

Parents are always in direct contact with their children, and the most challenging obligation is to provide a safe environment to reduce or prevent injury.^[14] Parents' knowledge about acute epistaxis management and other methods of its prevention is essential for their children; improving it will decrease pain and eliminate the deterioration of the condition without hospital admission. Additionally, in severe cases, it will reduce mortality and morbidity.^[1] Furthermore, good knowledge of parents towards acute epistaxis will help the primary care providers and family physicians to treat the disease appropriately through early management and limiting the complications that may occur in severe cases. Identifying the knowledge gaps and the factors that could affect the knowledge level will give the physicians the key to putting appropriate awareness programs that could increase parents' knowledge level in place.

Despite epistaxis being common among children, no studies conducted in Saudi Arabia has assessed the level of knowledge among parents regarding administering first aid during epistaxis. Thus, this study aimed to evaluate the knowledge regarding first-aid management of epistaxis among parents in Taif city, Saudi Arabia.

Methods

Study type

This study was a cross-sectional.

Study population

The study participants were parents with children aged younger than 18 years who visited Alhada Armed Forces Hospital and Prince Mansour Military Hospital (PMMH) during the study period.

Study period

This study was performed from May to July 2022 at Alhada Armed Forces Hospital and (PMMH) in Taif, Saudi Arabia.

Sample size

The sample size calculation considered a 50% population proportion, a 95% confidence interval, and a 5% margin of error, and the minimum representative sample was 385 participants.

Study instruments

A validated Arabic version of the questionnaire adapted from a previous Saudi study was distributed to be filled out by parents.^[15] The questionnaire consisted of two sections: The first section included demographic information, including age, gender, social status, educational level, number of children below 18 years old, and whether the participants had attended a first-aid course or ever had a nosebleed or managed a case of epistaxis before. The second section was composed of 17 questions which was a set of closed-ended questions about parents' knowledge regarding first-aid management of epistaxis for their children. For calculating participants' knowledge, each correct statement was given a score of one point. The total score for each participant was calculated by adding up the individual scores for each question. The total score of each parent was calculated out of 16 points. Afterward, the level of knowledge was categorized into three groups: ≤ 5 points accounted for having poor knowledge, 6–11 points for moderate knowledge, and 12–16 points for good knowledge.

Statistical methods

After data extraction, it was revised and coded. The statistical calculations were done using the computer program IBM SPSS Statistics (IBM Corp, Armonk, NY, USA) version 26 for Microsoft Windows. Data were statistically described in the median (IQR) for continuous data. Frequencies (number of cases) and valid percentages were used for categorical variables. Chi-squared or Fisher's exact test was performed for categorical variables between the subgroups. *P*-values less than 0.05 were considered statistically significant.

Results

A total of 502 participants were included in the study. Of them, 39% were males and 61% females, with a mean age of 40.64 ± 0.393 years. The majority of participants were married (93%), highly educated (76.1%), had 1 to 3 children (69.9%), had epistaxis (57%), had previously treated others with epistaxis (62.7%), and did not take any first-aid course (74.3%). Flyers and courses about first aid were the most common source of information about epistaxis (61.2%), followed by the care presenters and physicians (19.5%). Full details are described in Table 1.

Responses toward knowledge of epistaxis were identified in Tables 2 and 3. Exposure to hot places and hot weather exacerbates epistaxis and shows the highest rates of correct answers (82.9%), followed by changing the position of the head would stop the bleeding (77.9%). On the contrary, "sneezing is related to epistaxis" and "stop the bleeding by blocking the

Table 1: Characteristics of the study population

Parameters	Category	Count (n=502)	Percentage
Age (years)	<30	85	16.9
	31-40	178	35.5
	41-50	179	35.7
	>50	60	12
Gender	Male	196	39
	Female	306	61
Marital status	Single	14	2.8
	Married	467	93
	Divorced	13	2.6
	Widowed	8	1.6
Educational level	Illiterate	12	2.4
	Moderate education	108	21.5
	Higher education	382	76.1
Number of children	1-3	351	69.9
	4-6	139	27.7
	7-10	12	2.4
Taken any first aid course	Yes	129	25.7
	No	373	74.3
Having epistaxis	Yes	286	57
	No	216	43
Treated anyone with epistaxis	Yes	315	62.7
	No	187	37.3
Source of information	Care presenters and physicians	98	19.5
	Television and newspapers	8	1.6
	Internet and social media	75	14.9
	Friends	5	1.0
	Flyers and first aid courses	307	61.2
	Teachers	9	1.8

nose with tissue paper, cotton, or any similar object” showed the highest rate of false answers (57.8% and 47.4%, respectively).

A total of 86.1% of the participants reported that if they are having epistaxis, they would try to stop it or control it with pressure. Approximately 70.1% of the participants were unaware of the right side to apply the pressure. About half of the participants correctly answered the required duration of pressing on the area and changing the position of the head forward. Forty percent knew when to go to the emergency room (after 20 minutes). Only 13.1% knew that more than one cup was a large amount of bleeding. Full details are described in Tables 2 and 3.

Table 4 shows a moderate level of knowledge regarding epistaxis among parents (67.5%), followed by good knowledge by 30.9%.

By comparing the associated factors with the three levels of knowledge [Table 5], no statistically significant differences were found except for the number of children and parents who treated others with epistaxis. However, good knowledge was significantly higher among parents who had more than four children ($P = 0.03$) and who had treated others with epistaxis ($P = 0.004$).

By comparing the associated factors with the total score of knowledge (median [IQR] = 9.0 [3]), factors such as sex,

education, number of children, marital status, and source of information had no significant differences with the level of parents’ knowledge. Meanwhile, parents who were older than 35 years ($P = 0.017$), who had taken previous courses of first aid ($P = 0.002$), had epistaxis ($P = 0.026$), and who had treated others with epistaxis ($P = 0.001$) had a higher score of knowledge about first-aid management of epistaxis [Table 6].

Discussion

Epistaxis, also called nosebleed, is one of the most significant medical emergency cases associated with the ear, nose, and throat that are reported in emergency departments.^[16] The prevalence of epistaxis ranged from 10% to 60% of normal individuals. In addition to this, 6% of individuals with epistaxis were admitted to medical care centers to stop nasal hemorrhage.^[17]

Several trials were previously conducted either about general first-aid management among parents^[18,19] or about epistaxis first-aid management in other populations.^[11,20–24] Consequently, this study was conducted to assess the knowledge of first-aid management regarding epistaxis among parents in Taif city, Saudi Arabia. Besides that this study was conducted to examine the factors that could affect the participants’ knowledge.

Our study showed that the median (IQR) score of knowledge regarding management of epistaxis was 9 (3). By assessing the knowledge levels regarding the management of epistaxis, our results demonstrated that almost two thirds of parents showed a moderate level of knowledge regarding first-aid in epistaxis (67.5%) and around one third (30.9%) had good knowledge.

In the prior trials carried out among Saudi parents attending primary health care about their knowledge of general first aid, only 27.9% of parents correctly answered one question regarding the management of epistaxis which is by pressuring the nasal soft tissue with the head tilted down.^[3] In our study, however, half of the parents provided the correct answer regarding the position of the head.

On the contrary, American parents had a highly correct response toward managing children’s epistaxis (80.1%).^[4] Similarly, in the present study, almost the same response (86.1%) was seen about applying pressure to stop the bleeding.

Furthermore, in the general Saudi population, the results of a study conducted in 2020 on administration of first aid during epistaxis showed that 78% of the participants had a good level of knowledge about first-aid management of epistaxis.^[5] This finding could be justified as the latter study population had taken previous training on first-aid management (63%) and had witnessed or had epistaxis before (73.5%). However, in our study, only 25.7% had taken first-aid courses, and 57% had only experienced epistaxis previously.

Table 2: Responses of true/false questions about epistaxis knowledge

Question	Response	Count (n=502)	Percentage
Stop the bleeding by blocking the nose with tissue paper, cotton, or any similar object	True*	246	52.6
	False	238	47.4
Stop the bleeding by changing the position of the head	True*	391	77.9
	False	111	22.1
Stop the bleeding by applying ice on the nose, head, or between the eyes	True*	310	61.8
	False	192	38.2
Hot beverages exacerbate epistaxis	True*	267	53.2
	False	235	46.8
Hot baths exacerbate epistaxis	True*	316	62.9
	False	186	37.1
Exposure to hot places and hot weather exacerbate epistaxis	True*	416	82.9
	False	86	17.1
Doing strenuous exercises exacerbates epistaxis	True*	356	70.9
	False	146	29.1
Sneezing is related to epistaxis	True*	212	42.2
	False	290	57.8
Moisturizing the nose reduces epistaxis	True*	360	71.7
	False	142	28.3
Smoking causes epistaxis to recur	True*	302	60.2
	False	200	39.8

Question with (*) mark is the correct answer

Table 3: Responses to the multiple-choice epistaxis first-aid management questions

Question	Response	Count (n=502)	Percentage
If having epistaxis	Stopping or controlling it by pressure*	432	86.1
	Leave it	70	13.9
Applied the pressure on the	Bottom of the nose*	150	29.9
	The upper part of the nose	223	44.4
	Do not know	129	25.7
The duration of pressing on the area	<5 min	227	45.2
	5-10 min *	254	50.6
	11-20 min	17	3.4
	>20 min	4	0.8
Changing the position of the head is by	Tilting head backward	249	49.6
	Tilting head forward*	253	50.4
The right time to go to the emergency room	After 20 min*	205	40.8
	After 40 min	103	20.5
	After 60 min	92	18.3
	At any time	102	20.3
Amount of bleeding that should be considered a large amount	>1 cup*	66	13.1
	One full cup	71	14.1
	One half of a cup	121	24.1
	One quarter of a cup	151	30.1
	One third of a cup	93	18.5

Question with a (*) mark is the correct answer

Regarding the factors associated with an increased level of knowledge about first-aid management of nosebleeds, parents who were older than 35 years, had more than four children, attended previous training on first-aid management, had epistaxis, and who had previously treated others with epistaxis expressed a higher score of knowledge about first-aid management of epistaxis.

Our results were in accordance with the study conducted in Madinah. Also, parents with four to six children who had taken courses in first aid and had experience with nosebleeds had a

higher knowledge of general first-aid management.^[3] Regarding first-aid management of epistaxis, our findings about age were similar to a Riyadh study conducted among the general population: Knowledge was higher among older participants.^[5]

Moreover, our results also encourage the Ministry of Health, primary care providers, and family physicians to educate and inform the public about epistaxis and how to manage it in a proper and safe manner. This will help strengthen the weak points that could lead to poor knowledge.

Table 4: Participants' scores on the knowledge of epistaxis

	Count (n=502)	Percentage
Level of knowledge		
Poor knowledge	8	1.6
Moderate knowledge	339	67.5
Good knowledge	155	30.9

Table 5: Factors affecting the level of knowledge

Factors	Level of Knowledge			P
	Poor	Moderate	Good	
Sex				
Male	2 (1.0)	135 (68.9)	59 (30.1)	0.69
Female	6 (2.0)	204 (66.7)	96 (31.4)	
Education				
Uneducated	0 (0)	5 (41.7)	7 (58.3)	0.118
Educated	8 (1.6)	334 (68.2)	148 (30.2)	
Age (years)				
<35	4 (2.6)	108 (70.1)	42 (27.3)	0.256
≥35	4 (1.1)	231 (66.4)	113 (32.4)	
Number of children				
≤4	5 (1.1)	308 (68.6)	136 (30.3)	0.030*
>4	3 (5.7)	31 (58.5)	19 (35.8)	
Marital status				
Unmarried	2 (5.7)	23 (65.7)	10 (28.6)	0.159
Married	6 (1.3)	316 (67.7)	145 (31.0)	
Source of information				
Medical	6 (1.5)	271 (66.9)	128 (31.6)	0.657
Non-medical	2 (2.1)	68 (70.1)	27 (27.8)	
Taken any first aid courses				
Yes	4 (1.4)	182 (63.6)	100 (35.0)	0.66
No	4 (1.9)	157 (72.7)	55 (25.5)	
Having epistaxis				
Yes	4 (1.4)	182 (63.6)	100 (35.0)	0.066
No	4 (1.9)	157 (72.7)	55 (25.5)	
Treated anyone with epistaxis				
Yes	3 (1.0)	200 (63.5)	112 (35.6)	0.004*
No	5 (2.7)	139 (74.3)	43 (23.0)	

* Level of significance is 0.05

Conclusion

Our results showed a moderate level of knowledge among Saudi parents regarding first-aid management of epistaxis. Being elder, having a high number of children, having attended previous first-aid courses, and having experience of or experience treating others with epistaxis were correlated with a higher level of knowledge about first-aid management of epistaxis. First-aid training programs should be performed at primary health care centers in Taif city for parents of children to reduce the early mortality and morbidity of emergencies. Furthermore, as a result of the widespread use of social media recently, the Ministry of Health and physicians should create first aid awareness course programs throughout social media.

Future studies on the first-aid management of epistaxis, including large sample sizes from various regions in Saudi Arabia, are recommended to assess the level of knowledge, practice, and

the associated factors among all populations and not only those attending primary health care centers.

Strengths

Our study is the first study to assess the level of knowledge among parents in Taif city, Saudi Arabia. Furthermore, it included a large sample size. The study not only investigated the parents' knowledge level but also discussed the factors that affected their knowledge and how they might influence the level of knowledge.

Limitation

The study depended only on the parents who attended the primary health care centers throughout the study period to assess the knowledge level. In addition to this, the study focused only on the knowledge level and did not give attention to the practice level of parents, which is more critical in managing epistaxis.

Key points

1. The study indicated that parents who attended the primary health care centers throughout the study period showed a moderate knowledge level of epistaxis management.
2. Many factors significantly affected the knowledge level including old age, high numbers of children, attending previous first-aid courses, and experiencing or treating others with epistaxis.

Acknowledgment

The authors would like to thank all of the medical students from Taif University's College of Medicine who contributed to the study: Abrar Mohammad Alguaed, Albatool majdi Tumbukani, Areej Abdullah Almutairi, Atheer Khalid Albar, Juri Sulaiman Alotaibi, Leen Mohammed Albuqami, Leen Saleh Al-Waqdani.

Ethical approval

Consent and ethical approval have been obtained from Alhada Armed Forces Hospital. No extra charges were made by the participants in this research as a result of treatments or investigations as just the questionnaire was used to get the data. Before completing the questionnaire, informed consent was acquired. Since no names or other means of identification were used in the study, the personal information of the participants was handled privately and was not shared.

Authors contribution

BSA: Conceptualization, Methodology, Software **AMJ:** Visualization, Data curation, Writing- Original draft preparation. **ASA:** Data curation, Investigation. **MAA:** Supervision, Project administration, Reviewing, and Editing. **BSAM:** Software, Editing initial draft. **HAA:** Writing- Reviewing and Editing. **SMA:** Data curation, Investigation.

Financial support and sponsorship

Nil.

Table 6: Factors affecting the total score of knowledge

Factors	The total score of knowledge		P
	Median	Interquartile range	
Sex			
Male	9.00	3	0.942
Female	9.00	4	
Education			
Uneducated	11.00	5	0.350
Educated	9.00	3	
Age (years)			
<35	9.00	4	0.017*
≥35	9.00	3	
Number of children			
≤4	9.00	4	0.281
>4	9.00	3	
Marital status			
Married	9.00	4	0.851
Unmarried	9.00	3	
Source of information			
Medical	9.00	3	0.927
Non- medical	9.00	3	
Taken any first aid course			
Yes	10.00	3	0.002*
No	9.00	4	
Having epistaxis			
Yes	9.00	3	0.026*
No	9.00	4	
Treated anyone with epistaxis			
Yes	9.00	3	0.001*
No	9.00	3	

* Level of significance is 0.05

Conflicts of interest

There are no conflicts of interest.

References

- Almulhim KS, Abdulhakim I, Mubarak AS, Hussain MA, Alhaddad MS, Alotaibi NK, *et al.* Assessment of knowledge attitude and practice of epistaxis in Saudi population. *Egypt J Hosp Med* 2017;69:2675-9.
- Krulowitz NA, Fix ML. Epistaxis. *Emerg Med Clin* 2019;37:29-39.
- Kucik CJ, Clenney TL. Management of epistaxis. *Am Fam Physician* 2005;71:305-11.
- Faistauer M, Faistauer A, Rafaeli SG, Roithmann R. Clinical outcome of patients with epistaxis treated with nasal packing after hospital discharge. *Braz J Otorhinolaryngol* 2009;75:857-65.
- Chowdhury S. Chakraborty P pratim. Universal health coverage-There is more to it than meets the eye. *J Fam Med Prim Care* 2017;6:169-70.
- Marty FM, Ljungman P, Papanicolaou GA. Saudi Ministry of Health, Riyadh, Saudi Arabia zmemish@yahoo.com. *Medicine* 2010;10:818-9.
- Rockey JG, Anand R. A critical audit of the surgical management of intractable epistaxis using sphenopalatine artery ligation/diathermy. *Rhinology* 2002;40:147-9.
- Aljuaid FF, Almezani AM, Alghris NM, Alotaibi AF. Knowledge about the prevalence and attitude of patients experiencing epistaxis in Saudi Arabia. *Egypt J Hosp Med* 2018;73:6905-9.
- Varshney S, Saxena RK. Epistaxis: A retrospective clinical study. *Indian J Otolaryngol Head Neck Surg* 2005;57:125-9.
- Alqarni ZM, Alajmi TA, Alhumaidi HH, AlharethAlhussain YM, Alzahrani HS. Prevalence, causes, treatment, and outcome of epistaxis. *Age* 2019;60:30.
- Davies K, Batra K, Mehanna R, Keogh I. Pediatric epistaxis: Epidemiology, management & impact on quality of life. *Int J Pediatr Otorhinolaryngol* 2014;78:1294-7.
- Veiga VC, Silva LM, Sady ER, Maia IS, Cavalcanti AB. Epistaxis as a complication of high-flow nasal cannula therapy in adults. *Rev Bras Terap Intensiva* 2022;33:640-3.
- Nageh HM, El-Raouf A, Samar EL, El-Mouty A, Samia M. Mothers' knowledge and subjective practice toward most common domestic injuries among under-five children. *Mansoura Nurs J* 2020;7:19-35.
- Anwar MM, Mostafa ZM, Elareed HR. Maternal knowledge and attitude about home related injuries in children under five years. *Egypt Fam Med J* 2021;5:91-105.
- Alshehri F, Alluwaim F, Alyahya K. Teachers' awareness regarding emergency management of epistaxis inside the school; alahssa, Saudi Arabia. *Open J Prev Med* 2018;8:44-55.
- Tabassom A, Cho JJ. Epistaxis (nose bleed). *StatPearls*; 2020.
- McGarry GW, Moulton C. The first aid management of epistaxis by accident and emergency department staff. *Emerg Med J* 1993;10:298-300.
- Ala'a AS, Sabor S, Aldubai SA. Knowledge and practice of first aid among parents attending primary health care centers in Madinah City, Saudi Arabia, A cross sectional study. *J Family Med Prim Care* 2018;7:380-8.
- Singer AJ, Gulla J, Thode HC Jr, Cronin KA. Pediatric first aid knowledge among parents. *Pediatr Emerg Care* 2004;20:808-11.
- Almass A, Alshahrani B, Almweisheer A, Alshlewi A. Awareness and practice of pediatric first aid among parents in Saudi Arabia: Cross-sectional study. *J Health Spec* 2015;3:84-5.
- Mugwe P, Kamau KJ, Nyambaka OK. Knowledge, attitude and practice in first aid management of epistaxis by accident and emergency clinical staff at Kenyatta National Hospital. *East Cent Afr J Surg* 2014;19:1721.
- Alshehri KA, Alqulayti WM, Saggaf OM, Enani MZ, Bahatheq AK, Abdalwassie LK, *et al.* Awareness of first-aid management of epistaxis among school students in Jeddah, Saudi Arabia. *Saudi Surg J* 2019;7:108-12.
- Alhejaily MA, Alatawi AA, Alatawi MS, Mrighani HO. Evaluation of knowledge, attitude and practice of epistaxis among the general population of Tabuk City, Saudi Arabia. *Egypt J Hosp Med* 2019;75:1923-31.
- Suliman OA, Fallatah EA, Al-Mosa WH, Karsou LS, Al-Junaidy ZZ. Assessment of knowledge, attitude and practice of epistaxis among the population in different regions in Saudi Arabia. *Med Sci* 2020;24:4798-807.