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ORIGINAL ARTICLE

Teachers' awareness regarding first-aid management and control of epistaxis inside schools in Riyadh region, Saudi Arabia

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ABSTRACT

Background: Epistaxis is one of the most common otorhinolaryngology emergencies occurring in pediatric population due to school injuries and traumas, predisposing them to require basic yet important first-aid management. This study was done to assess the knowledge and awareness of teachers regarding the first-aid management and control of epistaxis inside schools.

Methodology: Totally, 1,073 teachers were evaluated at different grades in schools of the Eastern region of Saudi Arabia. The age of teachers ranged from 20 to 55 years. The international guidelines for first-aid management of epistaxis were used to assess the teachers' awareness.

Results: This study revealed that nearly one-third of the teachers had good awareness regarding epistaxis and its measures. However, the site and duration of nasal position awareness were poor among all teachers. Around 68.1% of the teachers had experienced at least one case of epistaxis in their schools. Nose pressure as a method to control of epistaxis was recorded by 76.5% teachers and 23% mentioned the lower part as the area for pressure, while 12.8% told about pressing for 6–10 minutes.

Conclusion: One-third of teachers had good knowledge regarding epistaxis management, especially those who had previous information regarding epistaxis first aid. However, more attention should be paid to improve teachers' awareness regarding this area through health education sessions besides better training to apply epistaxis management.

Keywords: Epistaxis, children, teachers, awareness, management.

Introduction

Epistaxis is defined as bleeding from the nasal and/or nasopharyngeal cavity. It could be classified either as anterior or posterior bleeding [1]. It is one of the common otorhinolaryngology emergencies occurring in up to 60% of the general population [2]. And although rarely a life-threatening condition, it could cause significant concern [3]. Epistaxis occurring in the pediatric population is the most commonly secondary to trauma. School injuries and traumas predisposing the pediatric population to epistaxis require basic yet important first-aid management [4,5]. Since teachers are usually the first responders encountering nosebleeds, it is essential that proper knowledge and awareness of appropriate first-aid measures with the appropriate management of epistaxis are required [6,7].

One such previous study showed that most teachers lack awareness and have poor-to-moderate knowledge regarding essential first-aid management of epistaxis and that 66% of teachers were willing to administer first aid if provided with the required training [8]. Recently, in 2018, Al-Shehri et al. [9] performed a cross-sectional study to assess the level of knowledge and attitude regarding first-aid management of epistaxis among school teachers in

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Al-Ahsa, Saudi Arabia. Approximately, 54% of teachers had received information about first aid to stop nose bleeding or hemorrhage. Almost, 67% said that their students had experienced epistaxis before. Interestingly, 15% said they would not try to stop the bleeding, and only 25% said they would press on the cartilaginous part of the nose. However, a higher percentage (57%) of teachers knew that they should tilt the head forward.

Additionally, Saleem et al. [10] conducted a survey to assess the knowledge of the first-aid management of epistaxis and misconceptions among the general Saudi population. They found that 63.2% of the Saudi population had poor knowledge of first-aid management of epistaxis.

Thereby, this study was done to assess the knowledge and awareness of teachers in the Riyadh, Saudi Arabia, regarding the first-aid management and control of epistaxis. In addition, to assess the misunderstandings among teachers about epistaxis and correct the conceptions' mistakes around as well as to evaluate the relationship of epistaxis awareness and behaviors among teachers in schools.

Subjects and Methods

The present study was a descriptive cross-sectional study done in schools in Riyadh, Saudi Arabia in 2019. The study was done from 1 July to 20 July. The study population was school teachers in Riyadh province of both sexes and all nationalities. The international guidelines for first-aid management of epistaxis were used to assess teachers' awareness. Totally, 1,073 school teachers were included.

After data was extracted, it was revised, coded, and fed to statistical software IBM SPSS version 22. All statistical analysis was conducted using two-tailed tests and an alpha error of 0.05. A *p*-value less than or equal to 0.05 was considered as statistically significant. Regarding the scoring of awareness items, each correct answer was given a one point score. Then, all discrete scores for the different awareness items were summed and categorized into poor for those who had knowledge score <60% of the maximum and good for those who had score 60%. Descriptive analysis, including frequency and percent distribution, was done for all the variables, including teachers' demographic and individual awareness data. Univariant relations between the teachers' personal data and awareness level were tested using with Pearson chi-square test.

Results

The present study included 1,073 teachers whose age ranged from 20 to 55 years, with a mean age of 34.2 ± 10.6 years old. Female teachers constituted 85.5% of the sample. The majority of teachers were Saudi national (94.6%), while 5.4% only were non-Saudi nationals. Almost 33.3% of the teachers worked in secondary schools, and 32.7% worked in primary schools (Table 1). Approximately, 68% of teachers had attended a course to have information regarding epistaxis management and first aid (Figure 1). Furthermore, when assessing the teachers' awareness regarding epistaxis management (Table 2), 68.1% of the survey teachers experienced at least one case of epistaxis in their schools. Nose pressure as a method to control epistaxis was recorded by 76.5% of the teachers and 23% mentioned the lower part as the area for pressure, while 12.8% told about pressing for 6–10 minutes. When asked about whether the nose should be obstructed, 55.9% reported that it should not. Also, 78.3% of the teachers reported the importance of changing head position, while 60.2% selected forward titled head as the correct position. Putting ice over nose in case of epistaxis was recorded by 57.4% of the teachers, while 48.4% said that the student should go to emergency if bleeding lasts for more than 10 minutes. In total, 37.4% of the teachers had good awareness level regarding epistaxis management and first aid (Figure 2).

Table 1. *Personal characteristics of survey teachers in Eastern region, Saudi Arabia.*

Personal data	No (1,073)	%
Age in years		
○ <25 years	61	5.7%
○ 25–	278	25.9%
○ 35–	485	45.2%
○ 45+	249	23.2%
Gender		
○ Male	156	14.5%
○ Female	917	85.5%
Nationality		
○ Saudi	1,015	94.6%
○ Non-Saudi	58	5.4%
Teaching grade		
○ KG	101	9.4%
○ Primary	351	32.7%
○ Intermediate	264	24.6%
○ Secondary	357	33.3%

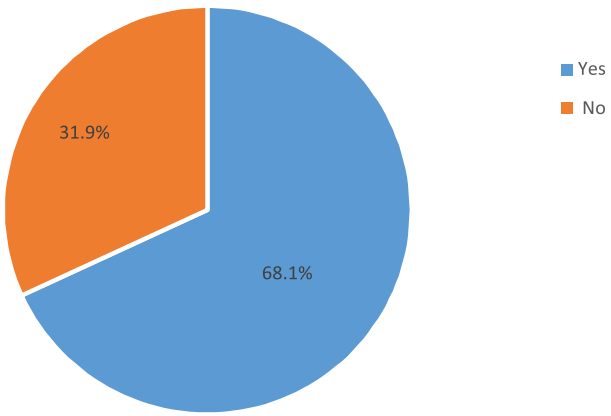

Figure 1. *Attendance of course to have information regarding epistaxis first aid among survey teachers.*

Table 2. *Responses to epistaxis management data among survey teachers*

Epistaxis data		No	%
Attended epistaxis case in the school	Yes No	731 342	68.1% 31.9%
Will you deal with epistaxis by nose pressure	Yes # No	821 252	76.5% 23.5%
Place of nose pressure in epistaxis	Lower part # Upper part	247 826	23.0% 77.0%
Epistaxis duration of nose pressure	< 2 minutes 2-5 min 6-10 min # 11-20 min > 20 min	395 511 137 19 11	36.8% 47.6% 12.8% 1.8% 1.0%
Obstruct nose with tissue paper or cotton	No # Yes	600 473	55.9% 44.1%
Change head position	No Yes #	233 840	21.7% 78.3%
Correct head position	Titled forward # Titled backward	646 427	60.2% 39.8%
Put snow on nose or head	No Yes #	457 616	42.6% 57.4%
Use other methods	No Yes	936 137	87.2% 12.8%
When to go to ER/	If bleeding lasts for more than 10 min # If bleeding lasts for more than 30 min If bleeding lasts for more than 60 min	519 290 90	48.4% 27.0% 8.4%

#: correct answer

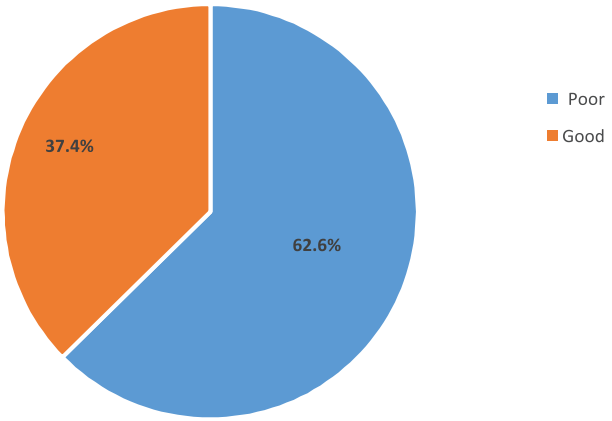

Figure 2. *Overall awareness level regarding Epistaxis first aid among survey teachers.*

The relation between teachers' awareness and their characteristics was also assessed (Table 3). Teachers who were less than 25 years (32.8%) had a good awareness level regarding epistaxis management as compared to 37.3% of old aged teachers (above 45 years), with no statistical significance (p = 0.615). While assessing between the gender, it was found that about 37% of both male and female teachers recorded a good awareness level; however, no statistical significance was found (p = 0.957). Furthermore, almost 51.7% of non-Saudi teachers had good awareness as compared to 36.6% of Saudi teachers with a statistically significant difference (p = 0.020). Moreover, approximately 43.9% teachers who had received information regarding epistaxis had a good awareness level as compared to those who did not (29.2%) (p = 0.001).

Discussion

Epistaxis is defined as the common occurrence of bleeding from the nose. It is usually noticed when the blood drains out through the nostrils [11]. About 60% of people have a nosebleed at some point in their life [12]. About 10% of nosebleeds are serious [13]. Nosebleeds appear to have a bimodal distribution, most commonly affecting younger than 10 and older than 50 [2]. First aid methods with adequate awareness are essential to deal with acute epistaxis without hospital facilities, which are poorly known, even though the prevalence of epistaxis is high [14–16].

Teachers at basic and secondary grade schools deal with critical age groups who are hyperactive and exploring, so they are at high risk for traumas of different types, among which one is epistaxis. Epistaxis is not a very dangerous trauma and can be managed out of hospitals with no risk. Teachers' awareness of dealing with epistaxis case is vital and crucial. Therefore, the current study aimed to assess teachers at different educational stages regarding epistaxis management and first aid.

The current study revealed that nearly one-third of the teachers had good awareness regarding epistaxis and its

Table 3. *Distribution of survey teachers' awareness regarding Epistaxis first aid according to their data*

Factors		Awareness level				*P*-value
		Poor		Good		
		No	%	No	%	
Age in years	< 25 years	41	67.2%	20	32.8%	0.615
	25-	166	59.7%	112	40.3%	
	35-	309	63.7%	176	36.3%	
	45+	156	62.7%	93	37.3%	
Gender	Male	98	62.8%	58	37.2%	0.957
	Female	574	62.6%	343	37.4%	
Nationality	Saudi	644	63.4%	371	36.6%	0.020*
	Non-Saudi	28	48.3%	30	51.7%	
Teaching grade	KG	61	60.4%	40	39.6%	0.927
	Primary	220	62.7%	131	37.3%	
	Intermediate	169	64.0%	95	36.0%	
	Secondary	222	62.2%	135	37.8%	
Received information regarding epistaxis	Yes	333	56.1%	261	43.9%	0.001*
	No	339	70.8%	140	29.2%	
Attended epistaxis case in the school	Yes	455	62.2%	276	37.8%	0.703
	No	217	63.5%	125	36.5%	

P: Pearson X^2 test
$P < 0.05$ (significant)

measures for management. The highest area of awareness was the importance of nasal pressure, head position, and putting ice on the nose. The site and duration of nasal position awareness were poor among all teachers. This low awareness was recorded irrespective of that majority of the teachers claimed that they had information regarding epistaxis first aid. Awareness level was higher among non-Saudi teachers which might be attributed to their few numbers. Also, the awareness was relatively better among those who claimed that they had received information regarding epistaxis management and first aid.

These results were consistent with study by Joseph et al. [17], India. The researchers reported that only 47% of teachers had received first-aid training previously. Poor and moderate knowledge of first aid was recorded among 13% of the teachers.

Furthermore, in Saudi Arabia, a study was conducted by Alshehri et al. [9], to assess teachers' awareness regarding emergency management of epistaxis inside school. The study revealed that 54% of participants had information about first aid to stop nose bleeding or hemorrhage. 67% told that their students had experienced epistaxis before, but 15% said they would not try to stop the bleeding. Only 25% of teachers said they would press on the lower part of the nose. However, a higher percentage of them (57%) knew that they should tilt the head forward [9].

Additionally, Saleem et al. [10] conducted a survey to assess the knowledge of the first aid management of epistaxis and misconceptions among the general Saudi population. They found 63.2% of the Saudi population had poor knowledge of first aid management of epistaxis.

Teachers in the schools are the main caregivers and the first line of protection for children. During school hours, teachers are actually the first respondent in cases of disasters or emergencies. They should be able to deal properly with health emergencies both in normal children and those children with special health care needs [18].

One cross-sectional descriptive study was conducted in Saudi Arabia, among primary school teachers working at government primary schools for boys in Abha City. Only 43.3% of the teachers knew correctly how to manage a case of epistaxis [19].

Recently in 2019, a cross-sectional descriptive study was conducted in the city of Riyadh, KSA, to assess the level of knowledge of teachers and school instructors related to basic first-aid practices. When asked about the steps to be taken while dealing with the child having epistaxis, 62.2% answered incorrectly. Although it was about the position of the child when having a nose bleed, which is one of the common incidences in primary school children but still the old misconception of the right position has not changed, proving the lack of knowledge [20].

Conclusion

It was concluded that one-third of teachers had knowledge regarding epistaxis management, especially those who had previous information regarding epistaxis first aid.

The highest awareness was regarding nose pressure and head position. More attention should be paid to improve teachers' awareness regarding this area through health education sessions besides better training to apply epistaxis management.

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Conflict of interest
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Consent of publication
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Ethical approval
The research was approved by the ethics committee of Almaarefa University board numbered (6/191) at 22/July.

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References

1. Traboulsi H, Alam E, Hadi U. Changing trends in the management of epistaxis. Int J Otolaryngol. 2015;2015:263987.
2. Douglas R, Wormald P-J. Update on epistaxis. Curr Opin Otolaryngol Head Neck Surg. 2007;15(3):180–3.
3. Moreau S, De Rugy MG, Babin E, Courtheoux P, Valdazo A. Supraselective embolization in intractable epistaxis: review of 45 cases. Laryngoscope. 1998;108(6):887–8.
4. Pollice PA, Yoder MG. Epistaxis: a retrospective review of hospitalized patients. Otolaryngol Head Neck Surg. 1997;117(1):49–53.
5. Cummings C, Fredrickson J, Harker L. Otolaryngology: head and neck surgery. 4th ed. St. Louis, MO: Mosby; 2005.
6. Kitamura T, Takenaka Y, Takeda K, Oya R, Ashida N, Shimizu K, et al. Sphenopalatine artery surgery for refractory idiopathic epistaxis: systematic review and meta-analysis. Laryngoscope; 2019;129(8):1731–6.
7. Masih S, Sharma RK, Kumar A. Knowledge and practice of primary school teachers about first aid management of selected minor injuries among children. Int J Med Public Health. 2014;4(4).
8. Sönmez Y, Uskun E, Pehlivan A. Knowledge levels of pre-school teachers related with basic first-aid practices, Isparta sample. Turk Arch Pediatr. 2014;49(3):238.
9. 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(02):44.
10. Saleem AH, Alahwal AM, Al-Sayed AA, Bin-Manie MI, Marzouki HZ. Epistaxis: what do people know and what do they do? J Nat Sci Med. 2018;1(1):22.
11. Kucik CJ, Clenney T. Management of epistaxis. Am Fam Physician. 2005;71(2):305–11.
12. Folz B, Kanne M, Werner J. Current aspects in epistaxis. HNO. 2008;56(11):1157–65.
13. Rockey J, Anand R. A critical audit of the surgical management of intractable epistaxis using sphenopalatine artery ligation/diathermy. Rhinology. 2002;40(3):147–9.
14. McGarry G, Moulton C. The first aid management of epistaxis by accident and emergency department staff. Emerg Med J. 1993;10(4):298–300.
15. Khan A, Shaikh S, Shuaib F, Sattar A, Samani SA, Shabbir Q, et al. Knowledge attitude and practices of undergraduate students regarding first aid measures. J Pak Med Assoc. 2010;60(1):68.
16. Tekian, A. Have newly graduated physicians mastered essential clinical skills? Med Educ. 2002;36(5):406–7.
17. Joseph N, Narayanan T, bin Zakaria S, Nair AV, Belayutham L, Subramanian AM, et al. Awareness, attitudes and practices of first aid among school teachers in Mangalore, south India. J Primary Health Care. 2015;7(4):274–81.
18. Barrett JC. Teaching teachers about school health emergencies. J Sch Nurs. 2001;17(6):316–22.
19. Al-Samghan AS, Al-Shahrani F, Al-Shahrani F. Primary school teachers' knowledge about first-aid. Med J Cairo Univ. 2015;83(1):541–7.
20. AlYahya IA, Almohsen HA, AlSaleem IA, Al-Hamid MM, Arafah AM, Al Turki YA, et al. Assessment of knowledge, attitude, and practice about first aid among male school teachers and administrators in Riyadh, Saudi Arabia. J Family Med Primary Care. 2019;8(2):684.