



First Aid Management Study on Epistaxis for Nursing Student Awareness

Khaldoon Aied Alnawafleh ^{1*}, Mohammed Musaed Al-Jabri ^{2*}

Abstract

Background: Epistaxis, or nosebleed, is a common condition affecting individuals of all ages, with various causes including trauma, dry air, hypertension, and medication use. Effective first aid management is crucial in controlling bleeding and preventing recurrent episodes. **Methods:** A descriptive cross-sectional study was conducted among nursing students at Al-Hussein bin Talal University from April to June 2023. A questionnaire assessing knowledge, attitudes, and practices (KAP) regarding epistaxis first aid management was administered electronically in Arabic. **Results:** Out of 284 nursing students surveyed, the majority were female (72.5%) and aged 20-25 years (81.7%). 64.8% reported personal experiences of epistaxis, and 92.2% had witnessed nosebleeds. 60% recognized epistaxis as a medical emergency. Direct nasal trauma was identified as the most common cause (89.1%), with hypertension and bleeding disorders also noted. While 60% knew the correct head position for first aid, only 51% demonstrated proper nose-pinching technique. 74% were aware of mouth-breathing during epistaxis management. However, 92.2% expressed a desire for further training in first aid, with 83.2% emphasizing the need for training among clinical staff. **Discussion:** The study highlights varying

levels of knowledge and practice among nursing students regarding epistaxis first aid management. While some demonstrated awareness of proper techniques, gaps existed in areas such as compression duration and seeking medical care. Training programs and standardized protocols are recommended to enhance nursing students' proficiency in managing epistaxis. **Conclusion:** Nursing students at Al-Hussein bin Talal University exhibited a baseline understanding of epistaxis first aid measures, indicating their potential to assist patients effectively.

Keywords: Epistaxis, Nursing students, First aid, Knowledge, Attitudes, Practices

1. Introduction

Epistaxis, commonly known as a nosebleed, is a relatively common condition affecting individuals of all ages. It occurs when the blood vessels in the nose rupture and bleed, often leading to a sudden and profuse flow of blood from one or both nostrils (Alyahya et al., 2019). Approximately 60% of people will eventually experience epistaxis, making it a widespread ailment. Epistaxis is most common among children and adults aged 50 to 80, with men being slightly more likely than women to experience it. Additionally, arid climates have higher rates of epistaxis (Corte et al., 2018).

The most frequent cause of epistaxis is trauma to the nasal mucosa, which can result from nose picking, blowing too hard, or inserting foreign objects. Other common causes include dry air, hypertension, anticoagulant medications, and nasal tumors. Less common causes include hereditary hemorrhagic telangiectasia, coagulopathies, and systemic diseases such as leukemia and vasculitis (Escabasse et al., 2017).

Significance | This study determined that Nursing students' knowledge of epistaxis management is vital for prompt and effective first aid, potentially reducing morbidity and healthcare burden.

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Despite being a frequent and often uncomfortable condition, it is important to identify the underlying cause of epistaxis and manage it appropriately to prevent recurrent episodes. Conservative measures are usually effective in controlling the bleeding, such as squeezing the nostrils together and applying ice to the nose. However, medical intervention may be necessary in more severe cases (Zahed et al., 2018).

The management of epistaxis depends on the severity of the bleeding and its underlying cause. While conservative methods are typically sufficient, some cases may require intervention and hospital admission. Effective first-aid procedures are essential for handling acute epistaxis, especially in settings without hospital facilities (Wakelam et al., 2017).

Thus, this study aimed to assess and evaluate first aid management knowledge, attitudes, and practices among Al-Hussein Bin Talal University nursing students.

2. Materials and Methods

2.1 Study Design:

The study employed a descriptive cross-sectional survey using a quantitative research approach. The study period was from April to June 2023. The study was conducted in the Nursing Department at Al-Hussein Bin Talal University. The sample included all Al-Hussein Bin Talal University nursing students present during the study period.

An electronic questionnaire was distributed to nursing students at Al-Hussein Bin Talal University. The questionnaire, written in Arabic, was estimated to take about 10 minutes to complete. It included questions to assess the students' awareness of first aid, covering demographic details (gender, age, marital status, region, academic year) and understanding of first aid and its sources.

The ethical committee of the relevant colleges approved the study. Participants were informed of their right to withdraw from the study at any time. Confidentiality, anonymity, and data protection were assured. The results were used for educational purposes and publication.

A pilot study was conducted with 10% of the sample to ensure the questionnaire's applicability.

The researcher obtained permission from the faculty dean at Al-Hussein Bin Talal University. Participants were invited to participate in the study and provided a self-administered questionnaire to complete thoroughly and honestly. The researcher collected the completed questionnaires from the student nurses.

2.2 Inclusion Criteria:

All students who were present during the data collection period and provided consent to participate were included in the study.

2.3 Exclusion Criteria:

Students who were unwilling to participate or unable to provide the required information during the data collection period were excluded.

2.4 Statistical Analysis:

The data were manually reviewed for completeness, imported into EPI-Data Management version 4.2.1, and analyzed using SPSS version 23. For normally distributed data, descriptive statistics include proportions, percentages, ratios, frequency distributions, means, and standard deviations. Skewed data were described using the median and interquartile range. The results were presented using frequency tables and graphical representations.

3. Results

3.1 Socio-demographic Characteristics

The study included 284 nursing students from Al-Hussein Bin Talal University (Table 1). The majority of participants were female (72.5%), aged 20-25 years (81.7%), and single (88.0%). Additionally, many students were in their first (35.2%) and second (32.04%) academic levels.

3.2 Knowledge, Attitude, and Practice (KAP) of Participants about Epistaxis

Approximately 64.8% of participants reported experiencing epistaxis, and 92.2% had witnessed a nosebleed at least once (Figure 1).

Regarding knowledge, 60% of respondents perceived epistaxis as a medical emergency (Figure 2). The majority (89.1%) identified direct nasal trauma as the most common cause of epistaxis, followed by hypertension (77.7%), hemophilia (70.5%), tumors (70.1%), congenital disorders of nasal vasculature (69.4%), deviated nasal septum (58.1%), aspirin (52.5%), warfarin (49.6%), cold weather (40.1%), and steroids (35.6%) (Table 2).

Regarding attitudes towards first aid management of epistaxis, 60% of respondents correctly identified the proper head position as forward (Figure 3). However, only 51% knew the correct nose pinching location (the lower part), 30.1% pinched incorrectly, and 18.9% did not know (Figure 4).

For compression timing, only 7.1% of respondents gave the correct duration (6-10 minutes), 71.5% provided incorrect times, and 22.4% did not know (Figure 5). Most respondents (74%) knew the correct way to breathe (by mouth), while 6% chose the incorrect method (by nose), and 20% did not know (Figure 6).

Additionally, 92.2% of participants expressed a desire for more training in first aid management of epistaxis, and 83.2% believed that clinical staff in emergency departments also need training in this area (Table 3).

4. Discussion

Epistaxis, or nosebleed, common and often caused by trauma or environmental factors, requires proper management to prevent

Table 1. Demographical data of study subject

Percentage	Frequency	Variable
11.6%	33	Age group: <20 years
81.7%	232	20 – 25 years
6.7%	19	>25 years
27.5 %	78	Sex : Male
72.5 %	206	Female
35.2%	100	Educational level : First level
32.04%	91	Second level
16.9%	48	Third level
15.5%	44	Fourth level
88 %	250	Marital status: Single
10.6 %	30	Married
0.7 %	2	Widow
0.7 %	2	Divorced

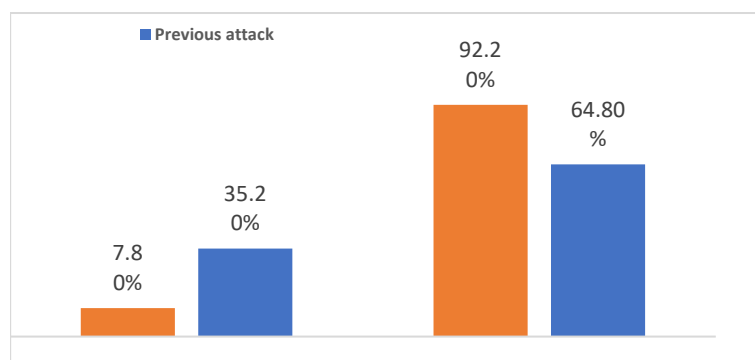


Figure 1. Do you have ever had nose bleeding or see someone with bleeding nose.

Table 2. Etiology of epistaxis

Variable	Yes		No		I do not know	
	N	%	N	%	N	%
Nasal trauma	256	89.1	15	5.3	13	4.6
Cold weather	114	40.1	115	40.5	55	19.4
Nasal deviation	165	58.1	48	16.9	71	25.0
Hypertension	215	77.7	23	8.1	46	16.2
Warfarin	141	49.6	27	9.5	116	40.8
Aspirin	149	52.5	42	14.8	93	32.7
Steroids drugs	101	35.6	45	15.8	138	48.6
Haemophilia	206	70.5	18	6.3	60	21.1
Congenital vascular anomaly of nose	197	69.4	21	7.4	66	23.2
Tumour	199	70.1	14	4.9	71	25.0

N:Frequency %:percentage

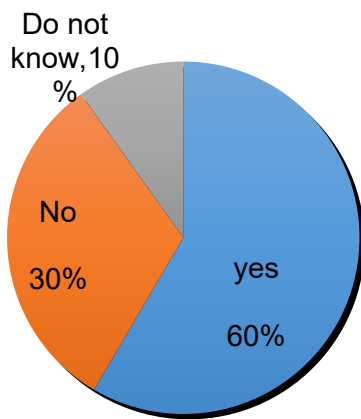


Figure 2. Epistaxis considered as one of the emergency situation

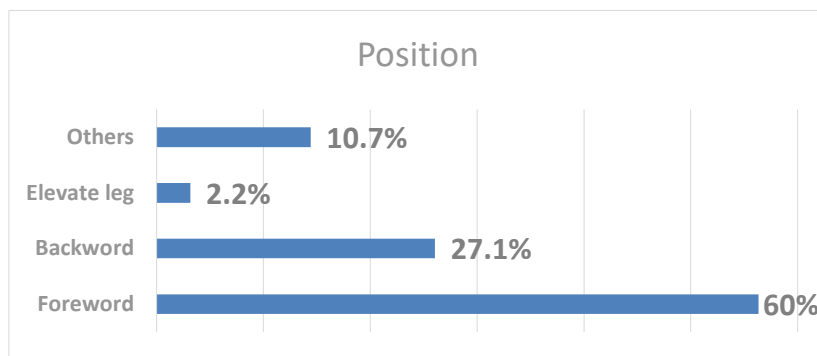


Figure 3. What should an epistaxis sufferer perform in the right position?

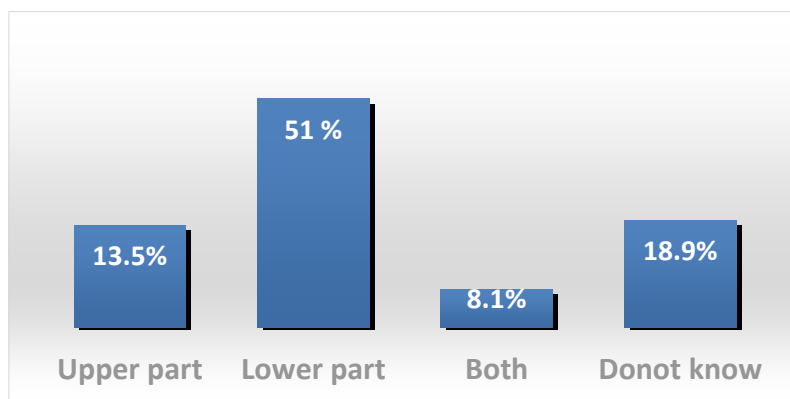


Figure 4. Should the first line of defense against epistaxis be to pinch the nose?

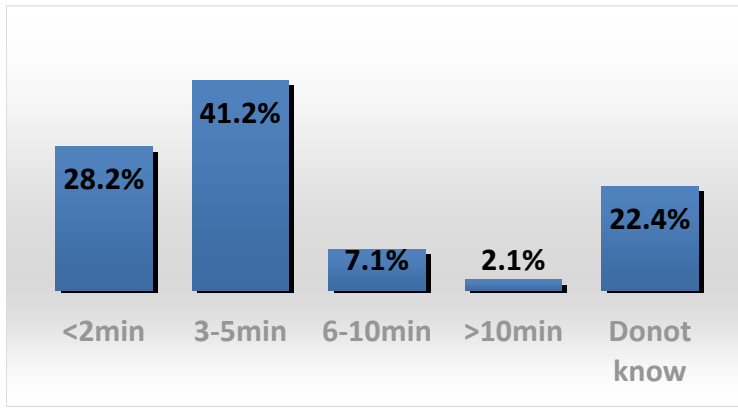


Figure 5. Duration of pinching

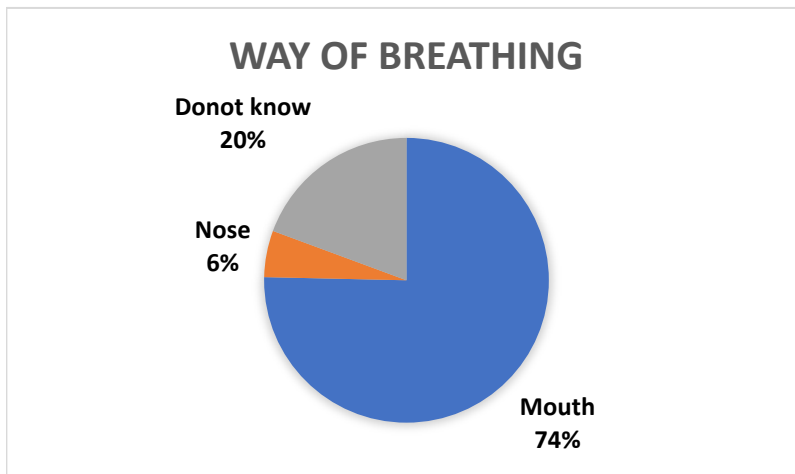


Figure 6. Way of breathing

Table 3. Students attitude regarding training

Variable	Agree		Neutral		Disagree	
	N	%	N	%	N	%
Training	65	22.9	22	7.7	197	69.4
More training	260	92.2	8	2.8	15	5.3
Advice training	242	83.2	13	4.6	29	10.2
	971	57.0	185	10.9	548	32.2

N: Frequency; %: Percentage

recurrence. Nursing students show varied awareness, with 60% recognizing its urgency. Direct nasal trauma is a primary cause, yet proper techniques like head positioning are inconsistently known. More training is needed among students and healthcare providers. Epistaxis is the medical term for acute hemorrhage from a nostril, nasal passage, or nasopharynx. The respondents to the survey were nursing students from Al-Hussein bin Talal University. Their education level was anticipated to positively impact their knowledge and attitude about the first aid management of epistaxis. Regarding knowledge, 60% of respondents viewed epistaxis as urgent. Similar findings were observed in a study in Saudi Arabia by Khalid Alyahya et al., where 64% of the respondents thought epistaxis is an emergent case (Alyahya & Alsaad, 2018). Another study by Albouq et al. found that 74.6% of respondents viewed epistaxis as an emergent case (Albouq, 2018). These findings contradict a study demonstrating poor knowledge of first-aid epistaxis measures among healthcare providers (Mugwe, Kamau, & Nyambaka, 2014).

Direct nasal trauma was cited as the most frequent cause of epistaxis by 89.1% of our participants. In contrast, the research by Albouq et al. indicated that 87.1% of respondents believed the most common cause of epistaxis was a bleeding disorder (Albouq, 2018). According to a study by Khalid Alyahya and Sara Alsaad, 39.7% of respondents identified fingernail trauma as the most common cause of epistaxis (Alyahya & Alsaad, 2018). Another study showed 87.1% of respondents cited a bleeding disorder as the most common cause of epistaxis (Torabi, Esfahani, & Baneshi, 2018).

The study found that 60% of respondents were aware of the proper posture, which involves holding the head forward rather than backward. This finding aligns with a study by Tunkel, David E., et al., which revealed that 60% of respondents were aware of the optimal head position for treating epistaxis, emphasizing holding the head forward rather than backward (Tunkel et al., 2020). However, 40% of the respondents were unaware of the proper head position and believed holding the head backward was correct.

The highest area of awareness in the study was the importance of nasal pressure, head position, and applying ice on the nose.

An interesting finding was that while 71.5% of respondents provided an inaccurate time frame, only 7.1% gave the correct time frame, between 6 and 10 minutes. Nursing students must know when to seek treatment for epistaxis as it can prevent unnecessary trips to the hospital. Similar findings were reported in a study by Saleem H., et al., where 7.5% of respondents believed that patients should always be taken to the ER, irrespective of the duration of the nosebleed (Saleem et al., 2018).

In contrast, a study referenced as (Torabi, Esfahani, & Baneshi, 2018) showed differing findings regarding knowledge of seeking medical care during an episode of epistaxis. 75.3% of participants in this study indicated that a nosebleed that cannot be stopped after

10–20 minutes of direct nasal compression is one of the most common reasons to seek emergency care.

According to the study, the majority of respondents (74%) are aware of the mouth-breathing technique. This technique, known to most responders, could be a beneficial tool for managing epistaxis symptoms, as suggested by a Randomized Controlled Trial study (Zahed et al., 2018).

The survey revealed that 92.2% of participants desired greater training in treating epistaxis using first aid, with 83.2% considering such training necessary. Surprisingly, only 35.8% of participants had received prior training in first aid care for epistaxis, a finding consistent with a study by Jamshaid, S., et al. (Jamshaid et al., 2020). Among those without prior training, 92.2% desired more instruction.

Moreover, 83.2% of participants believed that clinical staff in emergency rooms needed training in the first aid management of epistaxis.

5. Conclusion

In conclusion, nursing students at Al-Hussein bin Talal University demonstrate a solid understanding of first aid treatment for epistaxis, indicating their readiness to assist patients in need. However, standard protocols and training at the house-officer level are essential to ensure consistent and effective application of these measures. Future efforts should focus on raising awareness among the general population about epistaxis first aid and conducting broader research encompassing various related health issues. Moreover, teaching programs addressing lifestyle factors such as excessive screen time may further contribute to mitigating epistaxis occurrences.

Author contributions

K. A. A conceptualized the study, developed methodology, prepared draft, reviewed, edited the manuscript. M. M. A. J data curated, performed analysis, created visualizations, reviewed, edited the manuscript.

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Competing financial interests

The authors have no conflict of interest.

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