

TITLE.

***An assessment of Knowledge, Attitude and
Practice in first aid management of
epistaxis by Accident and Emergency
clinical staff at Kenyatta National
Hospital.***

BY

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A dissertation submitted in partial fulfillment of requirements of the University of Nairobi, for the Award of the Degree of Master's in Medicine in ENT, Head and Neck Surgery.

DECLARATION:

This is to certify that this dissertation on '*An assessment of Knowledge, attitude and practice in first aid management of epistaxis by accident & emergency (A&E) department clinical staff at KNH*' is of my own origin in consultation with my supervisors. It has been carried out as a requirement of the University of Nairobi, in partial fulfillment for the Award of the Degree of Master's in Medicine in ENT, Head and Neck Surgery.

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DEDICATION:

I dedicate this work to my family: my dear wife Hellen and our two sons Aaron and Aquillah for their support and patience.

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I am personally indebted to my supervisors Dr. Mugwe Peter and Dr. Kamau K. Joseph for their guidance during this study.

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ACRONYMS AND ABBREVIATIONS:

- ❖ A & E – Accident and Emergency.
- ❖ BC – Before Christ.
- ❖ Bsc. – Bachelor of Science.
- ❖ BSN – Bachelor of Science in Nursing.
- ❖ ENT – Ear, Nose and Throat.
- ❖ KAP – Knowledge, Attitude and Practice.
- ❖ KECHN – Kenya Enrolled Community Health Nurse.
- ❖ KNH – Kenyatta National Hospital.
- ❖ KRCHN – Kenya Registered Community Health Nurse.
- ❖ MBChB – Bachelor of medicine and Bachelor of surgery.
- ❖ No. – Number.
- ❖ SHO – Senior house officer.
- ❖ SPSS – statistical package for the social sciences.

ABSTRACT.

Background: - Epistaxis is one of the commonest emergencies in Accident and Emergency (A&E), and Ear, Nose and Throat (ENT) departments. A vast majority of these patients settle with simple standard first aid measures. The measures that are widely accepted were formulated by *St. John's Ambulance* and they include:

- (1) Position - sitting and leaning forward,
- (2) Pressure - applied to the fleshy part of the nose (alae nasi) for 10-15 minutes,
- (3) Swallowing - breathing gently through mouth, avoiding swallowing any blood, and
- (4) Referral if nose bleeding persists.

Due to the high incidence of epistaxis, it's essential that the medical staffs who have the first encounter with the patients possess appropriate knowledge on its immediate management. Low levels of knowledge on first aid measures have been demonstrated in the medical staff and general public. This study therefore aimed at evaluating the knowledge, attitude and practice (KAP) of these measures by Accident and Emergency clinical staff at KNH.

Materials and methods: - The study design was descriptive cross-sectional. The principal researcher administered a questionnaire to the clinical staffs and data collected was analyzed by use of SPSS version 12.0 and chi square tests.

Results: Data was collected from 70 clinical staff between October and December 2010. Nurses were the most respondents (68.6%); 17.1% were medical officers and 14.3% were SHOs. Majority of the respondents had worked for over 10 years after highest qualification. The commonest first aid measures reported to be known by respondents included pinching the nose (94%), nasal packing (80.6%) and sitting leaning forward position (76.1%). Only 38.1% of respondents demonstrated the correct site for pinching the nose. The main source of information for first aid measures was the curriculum in training (64.2%) while 16.4% sourced from a first aid course they had done. On positioning of patient with epistaxis, 60% gave correct responses while 51% correctly said patient should be referred if epistaxis persists. All the 70 respondents felt that first aid was necessary in treatment of epistaxis. Majority (72.9%) of the respondents said they had ever given first aid to a patient with epistaxis.

Conclusion: The clinical staffs in the A & E department have inadequate knowledge on the standard first aid measures of epistaxis. However, most had good attitude and had provided first aid to patients presenting with epistaxis. There is need for training the staff on these measures.

CHAPTER ONE: INTRODUCTION.

Kenyatta National Hospital, KNH, is Kenya's largest national referral hospital whose catchment area includes East and Central Africa. Its Accident and Emergency department has approximately total of 14 resident medical officers and 70 nurses who are deployed there. Approximately 300 patients are seen in this department per day.

1.1 Epidemiology and etiology of epistaxis.

First Aid is the provision of initial care for an illness or injury and can be performed by a lay person or a medical personnel before definitive medical treatment can be administered ¹. Some illnesses may not require further medical care past the First Aid intervention.

Epistaxis is simply defined as **nose bleeding**. Its history dates back to 5th Century BC when Hippocrates described pressure on the alae nasi as an effective way of controlling nose bleeding ². At least 60% of people will suffer from epistaxis at some stage in their lifetime ³. Fortunately, less than 10% of them visit a doctor for the problem and about 1% of them require hospital admission. It is one of the commonest ENT emergencies presenting to general practitioners, Accident and Emergency as well as ENT departments⁴. The vast majority of nose bleeding (90%) arise from Little's area on the anterior part of the nasal septum and hence compression of this area is advocated as a primary treatment for epistaxis ⁵.

1.2 Surgical anatomy of the nose with regards to Epistaxis.

The nose has a rich blood supply. This has contribution from both internal and external carotid arteries. Functionally, epistaxis is subdivided into anterior and posterior categories based on the site of mucosal abnormality. Arbitrarily, anterior sites lie anterior to the maxillary sinus ostium whereas posterior to this denotes the posterior site. The anterior site is supplied by the anterior ethmoid, superior labial, greater palatine and sphenopalatine arteries.

1.3 Background of the problem.

Epistaxis is reported to be one of the most common emergencies in A&E and ENT departments. Lack of its immediate management often leads to unnecessary hospital admissions, increased morbidity and mortality. The incidence of an episode of epistaxis during one's lifetime has been described to be approximately 60%³. 90% of these are minor episodes of anterior nasal bleeding. A vast number of these cases require no other intervention other than the standard first aid measures. A USA health examination survey of 6672 adults revealed 7%-14% incidence of epistaxis⁸, while a 5 year retrospective study of 3706 people in a Nigerian hospital showed an incidence of 19/1000⁷.

The ability to demonstrate the correct skills of first aid management of epistaxis by A&E department staff in a major teaching hospital in UK revealed only 33% correct responses⁵. A study on the general public on the same skills showed only 50 out of 443 adults giving the correct response. Ignorance of the correct skills in first aid management of epistaxis will result in increased blood loss, unnecessary admissions and even deaths.

CHAPTER TWO: LITERATURE REVIEW.

2.1 Arterial anastomosis on nasal septum:

The nasal septum has a rich blood supply from five arteries³;

- Anterior ethmoidal artery (branch of the ophthalmic artery).
- Posterior ethmoidal artery (branch of the ophthalmic artery).
- Sphenopalatine artery (branch of the maxillary artery).
- Greater palatine artery (branch of the maxillary artery).
- Septal branch of the superior labial artery (branch of the facial artery).

These arteries meet and form a plexus at an area on the anterior inferior nasal septum called *Kesselback's plexus*^{8,9}; an area referred to as **Little's area**³.

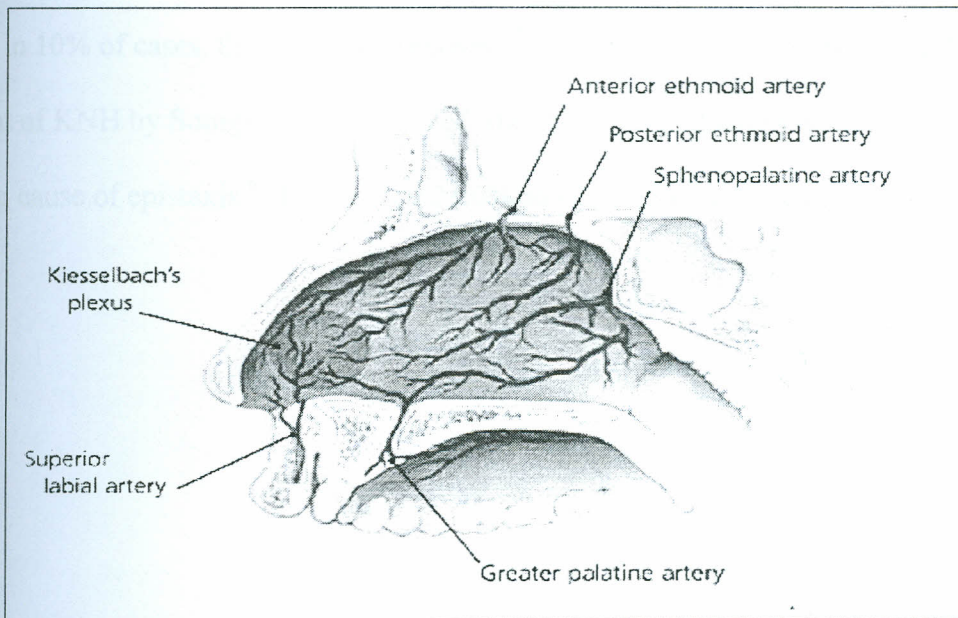


Fig.1. Diagram showing arterial supply to nasal septum³.

2.2 Etiology and site of bleeding in epistaxis:

The Little's area has been demonstrated by Sonigra (1990) to be the commonest site of bleeding in epistaxis ⁶. This is shown in the table bellow.

Site of bleeding.	No. of patients	Percentage of total (%)
Kesselback's plexus	38	34.5
Other parts of septum	29	26.4
Lateral and floor of nose	20	18.2
Source not visible	23	20.9
Total	110	100

Table 1: Locations of bleeding in epistaxis at ENT department; KNH ⁶.

Epistaxis results from a number of causes ranging from anatomical as well as systemic causes. Generally in 10% of cases, the cause is unknown ¹⁰. A clinical study of epistaxis at ENT department of KNH by Sonigra (1990) showed that idiopathic bleeding from Little's area was the leading cause of epistaxis ⁶. This was at 23.6% as shown in the table below.

Etiology of epistaxis	No. of patients	Percentage of total (%)
Idiopathic- from Little's area	26	23.6
Trauma	18	16.4
Infection/inflammation	20	18.2
Tumors	24	21.3
Hypertension/cardiac failure	5	4.5
Blood diseases	8	7.3
Atrophic rhinitis	3	2.7
Granuloma	1	0.9
Septal perforation	2	1.8
Not established	3	2.7
Total	110	100

Table 2: Causes of epistaxis at ENT department; KNH⁶.

A five year retrospective study in Nigeria (1995-1999) of 3706 patients revealed an incidence of 19/1000 of epistaxis with the commonest cause of epistaxis being idiopathic (29.2%) followed by trauma (27.8%)⁷.

Causes	No. (%)
Idiopathic	21(29.2)
Trauma	20(27.7)
Hypertension	13(18.0)
Chronic rhinosinusitis	8(11.1)
Bleeding diathesis	4(5.6)
Viral hepatitis	1(1.4)
Nasal polyposis	1(1.4)
Nasal papilloma	1(1.4)
Septal granuloma	1(1.4)
Sickle cell disease	1(1.4)
Vitamin deficiency	1(1.4)
Total	72(100)

Table 3: Causes of epistaxis in 72 patients in Sokoto, Nigeria.⁷

Paranjothy (2008) also found that even in infants, idiopathic cause was the commonest cause of epistaxis¹². According to Neil (2007), nose picking and accidental injury to the nose are the commonest traumatic causes and account for higher percentage of anterior nasal bleeding¹¹.

2.3 First Aid management of epistaxis.

Whilst some patients presenting with epistaxis may require active interventions, the vast majority settle with simple first aid measures. In its First aid manual, St. John Ambulance has formulated procedures that are universally acceptable for managing epistaxis¹. They have been adopted as standard measures by many authors^{15, 16, 17, 18}.

These measures are summarized into four basic elements:

- (1) Position - sitting and leaning forward.
- (2) Pressure (pinch) - applied to the fleshy part of the nose (alae nasi) for 10-15 minutes.
- (3) Swallowing - breathing gently through mouth, avoiding swallowing any blood.
- (4) Referral if nose bleeding persists.

These are demonstrated in the photo below.



Fig.2. Photo showing the basic procedures of first aid management of epistaxis².

Other authors have also included cold compresses on the forehead or posterior part of the neck as a form of First Aid however how this acts to stop nose bleeding as been not accepted. ^{2, 13.}

Most A&E clinical staffs have been found to lack knowledge on these measures as found by McGarry (1993) where only 33% demonstrated the correct method of nasal compression in epistaxis ⁵. In this study, assessment on the ability of A&E staff to apply the haemostatic pressure in the correct position of nose was sought. It revealed that most A&E staff lack knowledge on first aid measures in epistaxis with overall correct response rate of 33% while for trained medical and nursing staff being 43%.

Designation	No.	Correct	Incorrect
Sister	10	6	4
RCN	30	9	21
SEN	10	2	8
Student nurse	10	1	9
Senior doctor	10	8	2
SHO	15	7	8
Paramedic	15	3	12
Non-clinical	15	2	13
All clinical staff	100	36	64
All A&E staff	115	38	77

Table 4: Position demonstrated for first aid control of epistaxis. ⁵

On the same breath, most A & E doctors (74%) use nasal packing as their first management of epistaxis without attempt at First Aid ^{6, 13, 14}. This can be attributed to lack of adequate knowledge on first aid as shown by McGarry ⁵.

Despite the prevalence of epistaxis, these basic first aid measures are surprisingly poorly known by both medical staff as well as the general public. In a survey of 500 members of the public, only 50 gave correct responses on first aid measures in management of epistaxis ¹⁹.

	Correct
1. Site of pinching nose	147(35%)
2. Head position	147(36%)
Overall response (both 1 and 2)	50(11%)

Table 5: Accuracy of responses given by patients on first aid of epistaxis.¹⁹

	Number	Correct (%)
Parents	228	9
Self taught	47	13
Nurse	28	25
General practitioner	27	26
First aid course	25	24
Media	20	5
Schoolteacher	16	6
St. John's Ambulance	11	9
Other activities	10	0
Total	412	12

Table 6: Sources of advice given to patients on how to stop epistaxis.¹⁹

The high ignorance on the knowledge of first aid measures in epistaxis among the general public was demonstrated by *Adhikari (2006)* when he showed that most of patients with recurrent epistaxis were unable to manage it at home as they were not taught on how to do first aid by their previous attending medical personnel²³. This high ignorance has been consistently attributed to lack of dissemination of this knowledge by medical personnel to the patients they encounter presenting with epistaxis^{20, 21, 22}. Lavy (1996) demonstrated lack of dissemination of advice on First Aid measures to patient by the different referral medical personnel as shown below.²

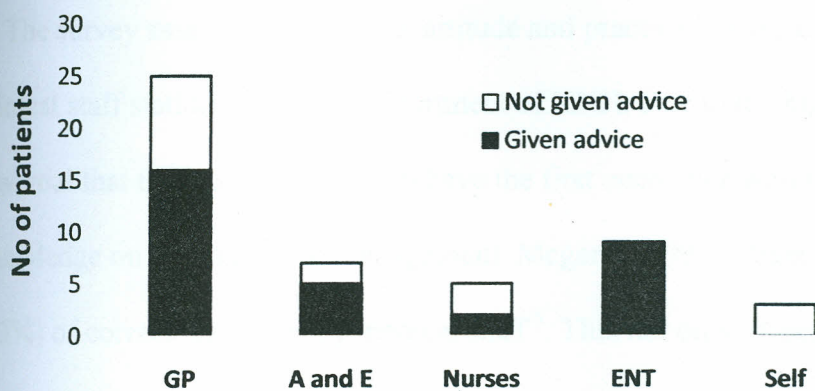


Figure 3: The number of patients and source of referral/ previous treatment ².

Epistaxis when not urgently controlled can lead to complications such as shock and anaemia. Sonigra (KNH, 1990) found that out of 110 patients, 5 developed shock while 10 had anaemia due to epistaxis⁶. Tahwinder (2007) showed that basic management of epistaxis reduced the number of admissions due to epistaxis by 73% leading to an estimated 201.39 saved bed days per annum and an annual saving of over \$ 52,632 thereby allowing resource re-allocation to other areas of need²³. First aid management of epistaxis has also been shown to reduce significantly morbidity and mortality associated with epistaxis^{25, 26, 27}.

2.4 Statement of the problem.

The survey assessed knowledge, attitude and practice in first aid management of epistaxis by clinical staff stationed at A&E department of KNH. Due to the high incidence of epistaxis, it's essential that the medical staff who have the first encounter with the patients possess appropriate knowledge on its immediate management. McGarry (1993) demonstrated a low percentage (33%) of correct responses by medical staff⁵. This not only affects management of patients with epistaxis, but also leads to lack of dissemination of proper health education to patients and the general public on first aid measure of epistaxis. This certainly further aggravates the condition since patient have no appropriate knowledge to manage epistaxis before getting to hospital. Health education to the general public population has been shown to reduce hospital admission resulting from epistaxis by as much as 73%²⁴.

Based on the problem stated, the purpose of this study was to assess whether the clinical staff at A&E department of KNH possess and apply the right standard first aid measures of epistaxis as adapted from St. John's Ambulance. A questionnaire was used to interview the staff and a demonstration of the correct method of nasal compression for patient with epistaxis was assessed.

2.5 Justification of the study.

Epistaxis is one of the commonest emergencies encountered by the clinical staff at A&E. Up to 90% of patients have minor episodes of anterior nasal bleeding which can be managed only by simple cost effective standard first aid measures⁵. Significant and surprisingly low level of knowledge on these measures has been demonstrated in the medical staff and general public. A study done in 1993 at a UK hospital showed only 33% of clinical staff at A&E possessing correct skills on these measures. No reported similar study has since been done to compare the results.

Results from this study will form a basis for setting protocols on management of epistaxis like training of A&E clinical staff on first aid management of epistaxis. Subsequently, health education on these measures can be organized to patients as well as the general public. This will lead to reduced morbidity and mortality resulting from epistaxis.

2.6 OBJECTIVES OF THE STUDY:

2.6.1 Broad objective:

To evaluate knowledge, attitude and practice in first aid management of epistaxis among the clinical staff at A&E department of KNH.

2.6.2 Specific objectives:

- a]. To establish the clinical staff's knowledge on the standard first aid measures of epistaxis.
- b]. To assess, by demonstration, site of nasal compression in a patient with epistaxis.
- c]. To assess the attitude of the clinical staff on first aid management of epistaxis.
- d]. To evaluate staff practices on first aid to patients presenting with epistaxis.

2.7 HYPOTHESIS:

2.7.1 Null hypothesis.

The knowledge, attitude and practice on first aid management of epistaxis by clinical staff at A&E department of KNH, Kenya, are similar to that from studies done elsewhere.

2.7.2 Alternative hypothesis.

The knowledge, attitude and practice on first aid management of epistaxis by clinical staff at A&E department of KNH, Kenya, are different from studies done elsewhere.

CHAPTER THREE: MATERIALS AND METHODS.

3.1 Study Design:

This study employed a Cross – sectional Descriptive study design.

3.2 Study area and population:

The study was carried at Kenyatta National Hospital's Accident & Emergency department. It involved clinical staffs working in the department who met the inclusion criteria. For the purpose of this study, clinical staffs were those who give direct medical treatment to patients in the department. These were doctors and nurses.

3.3 Inclusion Criteria:

Those who were included to participate in the study were:

1. Clinical staff working in the A&E departments during the study period.
2. Required to give informed consent to participate in the study.

3.4 Exclusion criteria:

Those not included in the study were:

1. Those who declined to consent to participate in the study.
2. All non-clinical staff working in the departments.

3.5 Sample size and sampling technique.

The total number of staff in the department was found from the departmental in-charge and the names of the staff were also taken for sampling purposes.

Sample size calculation was done by use of Fisher et al (1998) formula:

$$n = \frac{Z^2 PQ D}{d^2}$$

Where: - Z= standard normal deviation, set at 1.96 when confidence interval is 95%.

- n= sample size desired when population is over 10,000.
- P= proportion in target population (50% when prevalence is unknown.).
- Q= 1- P.
- D= 1.
- d= 100% - confidence interval (95%).

I.e. $n = \frac{1.96 \times 1.96 \times 0.5 \times 0.5 \times 1}{0.05 \times 0.05} = 384.16$. (Estimated population 10,000).

$$0.05 \times 0.05$$

When population is less than 10,000 the desired sample size (nf) will be:

$nf = n / [1 + (n/N)]$, where N is estimated population.

For this study with estimated clinical staff population (N) of 86:

- 26 doctors
 - 12 senior house officers (SHOs) - doctors undertaking master of medicine degree who work at the A&E department on locum basis.
 - 14 medical officers.
- 60 nurses.

$$nf = 384.16 / [1 + (384.16/86)] = 70.2$$

Therefore the **minimum sample size** was **70**.

Cluster sampling technique was used whereby the staff were grouped into three professional clusters:

A]. SHOs.

B]. Medical officers.

C]. Nurses.

The minimum sample size in each cluster was determined by getting the proportion of each cluster in the total population;

i.e. - Number of SHO = $12/86$ of total sample (70) = 10.

- Number of medical officers = $14/86$ of 70 = 12.

- Number of nurses = $60/84$ of 70 = 48.

Random sampling technique was employed using the staffs' names in each cluster. The names were written on pieces of paper of same type and size, put in a container and mixed. Then the container was held so as not to visualize the papers, random hand picking one by one was done until the sample size was achieved in each cluster. The staffs identified during sampling were the ones who participate in the study. Where one declined to participate, random sampling was repeated to achieve the sample size.

3.6 Data collection methods:

Data was collected by use of a principal - researcher administered preformed Questionnaire.

Procedure:

Upon recruitment of a participant, the principal researcher administered the questionnaire and recorded the responses. The participants were also required to demonstrate the site of nasal compression used in giving first aid to a patient with epistaxis. The responses were recorded by the principal researcher.

3.7 Data Analysis and presentation:

Data analysis was done by use of:

- Spearman's statistical method for correlation analysis
- Student's t-test for paired data.
- SPSS version 12.0.

Data was then presented in tables, charts and graphs.

A 95% confidence interval will be used in the study.

3.8 Ethical approval:

The study was carried upon approval by the KNH Ethical Review Committee. A signed informed consent was also sought from the participants before inclusion into the study.

3.9 Study limitations:

Tracing of the sampled subjects within the study period was difficult by their absence because of annual leave, maternity leave, or off duty due to various reasons. However, those absent at any one time were traced before the end of the study period.

CHAPTER FOUR: STUDY RESULTS

4.1 Introduction.

This chapter presents the results and analysis of the study. Data was collected from 70 clinical staff in the department using questionnaires which were filled by the principal researcher, analyzed and presented as follows.

4.2 Biodata of the Respondents

4.2.1 Designation of the Respondents

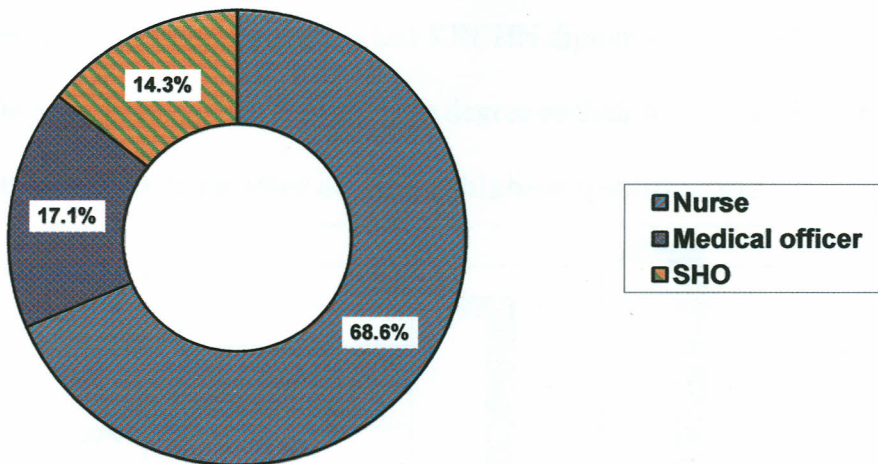


Figure 4: Designation of the Respondents

Figure 4 above shows that more than two thirds, 68.6% (48), of the respondents were nurses, 17.1% (12) were medical officers, while the remaining 14.3% (10) were senior house officers (SHO) on locum.

4.2.2 Respondents' Highest Level of Formal Education.

Table 7: Respondents' highest level of formal education.

Level of Formal Education (qualification).	No. of Respondents	Percentage
MBCChB	22	31.4
KECHN	21	30.0
KRCHN	18	25.7
Higher diploma in nursing	6	8.6
BSc Nursing	3	4.3
Total	70	100

The table 7 above shows that 31.4% (22) of the respondents had MBCChB degree, 30% (21) had KECHN certificate, 25.7% (18) of them had KRCHN diploma, 8.6% (6) had higher diploma in nursing while only 4.3% (3) had BSc Nursing degree as their highest qualification.

4.2.3 Duration of Working after attaining highest qualification.

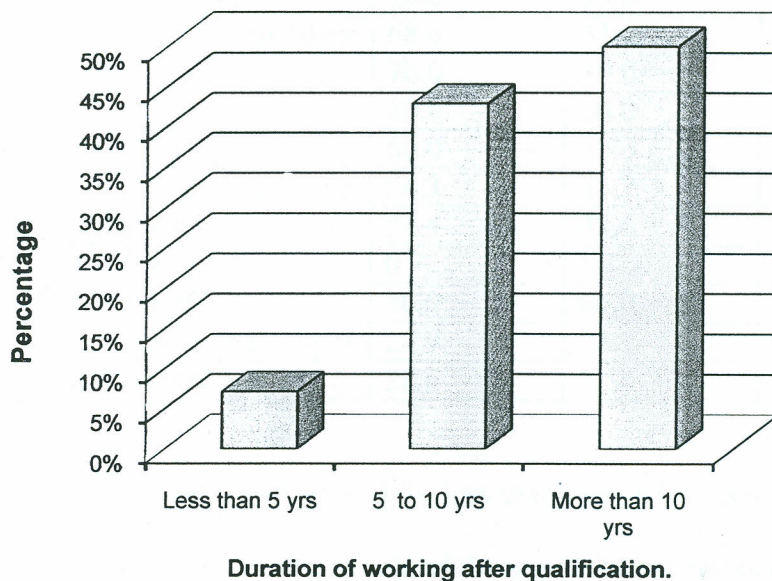


Figure 5: Duration of working after attaining highest qualification.

Figure 5 shows that half, 50% (35), of the respondents had been working for more than ten years after attaining their highest qualification of formal education, 42.9% (30) had been working between 5 – 10 years while 7.1 (5) had been working for less than 5 year after attaining highest qualification.

The relationship between the duration that the respondent had worked after highest qualification and the knowledge on epistaxis was further established. The Level of knowledge was established with respect to the correct response the respondent gave in regards to the four measures of managing epistaxis as outlined by St. John's ambulance. Cross tabulation and chi-square was run at 95% confidence level. The results are presented in Table 8 below.

Table 8: Post-qualification Duration and Knowledge on the Epistaxis First Aid

Knowledge	Duration-Years	Incorrect response %	Correct response %	Total %	P-Value
Position	less 5 yrs	60.0	40.0	100.0	0.079
	5-10 yrs	50.0	50.0	100.0	
	more than 10yrs	25.7	74.3	100.0	
	Total	38.6	61.4	100.0	
Length of Pinching Nose	less 5 yrs	80.0	20.0	100.0	0.872
	5-10 yrs	70.0	30.0	100.0	
	more than 10yrs	68.6	31.4	100.0	
	Total	70.0	30.0	100.0	
Swallowing blood, Breathing	less 5 yrs	40.0	60.0	100.0	0.819
	5-10 yrs	50.0	50.0	100.0	
	more than 10yrs	54.3	45.7	100.0	
	Total	51.4	48.6	100.0	
Referral	less 5 yrs	0	100.0	100.0	0.106
	5-10 yrs	40.0	60.0	100.0	
	more than 10yrs	22.9	77.1	100.0	
	Total	28.6	71.4	100.0	

Table 8 shows that those who had worked for less than 5 years had more knowledge on what should be done should blood flow from behind the nose into the mouth (60%) and what should be done should the blood flow persists (100%). For those who had worked for 5-10 years, 50% had knowledge on correct position as well as correct response on what should be done should blood flow from behind the nose into the mouth. However, these respondents gave less correct responses on length of time which the nose should be pinched (30%) and what should be done should the blood flow persists (40%). The ones who had worked for more than 10 years were

knowledgeable on the position (74.3%) and what should be done should the blood flow persists (77.1%). Generally, this shows that the more the duration one had worked lead to more correct responses. However chi-square tests show no significant relationship between duration that the respondents spent working after qualification and their level of knowledge on first aid of epistaxis given that the p-values were above 0.05.

4.2.4 Respondents' Duration of Working in A&E Department

For the duration of working in accident and emergency department, 42.9% of the respondents had worked in for more than 24 months, 24.3% had worked for 7 – 12 months, 22.8% for 13 - 24 months while only 10% had worked in the department for less than 6 months.

The study further sought to find out whether there was an association between the duration that the clinical staff had worked at the department and knowledge they had on first aid measures on epistaxis. Cross tabulation and chi-square test were done and results presented in table 9 below:

Table 9: Duration at A&E Department and Knowledge on the first aid in epistaxis.

Knowledge	Duration	Incorrect Response	Correct Response	Total	P-Value
Position	More than 24 months	31.0	69.0	100.0	.491
	13-24 months	52.9	47.1	100.0	
	7-12 months	44.4	55.6	100.0	
	Less 6 months	33.3	66.7	100.0	
	Total	40.0	60.0	100.0	
Pinching Nose	More than 24 months	69.0	31.0	100.0	.146
	13-24 months	70.6	29.4	100.0	
	7-12 months	83.3	16.7	100.0	
	less 6 months	33.3	66.7	100.0	
	Total	70.0	30.0	100.0	
Swallowing blood, Breathing.	more than 24 months	44.8	55.2	100.0	.283
	13-24 months	70.6	29.4	100.0	
	7-12 months	50.0	50.0	100.0	
	less 6 months	33.3	66.7	100.0	
	Total	51.4	48.6	100.0	
Referral	more than 24 months	20.7	79.3	100.0	.676
	13-24 months	35.3	64.7	100.0	
	7-12 months	33.3	66.7	100.0	
	less 6 months	33.3	66.7	100.0	
	Total	28.6	71.4	100.0	

The table 9 above shows that on position at which the epistaxis patient should be placed, those who had worked for more than 24 months were more knowledgeable (69%), followed by those who had worked for less than 6 months (66.7%) and those who had worked for between 7-12 months (55.6%). On the site of nose pinching, the clinical staffs who had worked for less than 6 months gave the highest correct response (66.7%). For the question on what should be done should blood flow from the back of the nose into the mouth, the highest correct responses were from those who had worked for less than 6 months. This generally gives no correlation between the duration of working at the department and correct responses. Also, the chi-square results shows no association with p-values of more than 0.05.

4.3 Knowledge on First Aid in Epistaxis

4.3.1 Respondents' Familiarity with Standard First aid Measures of Epistaxis

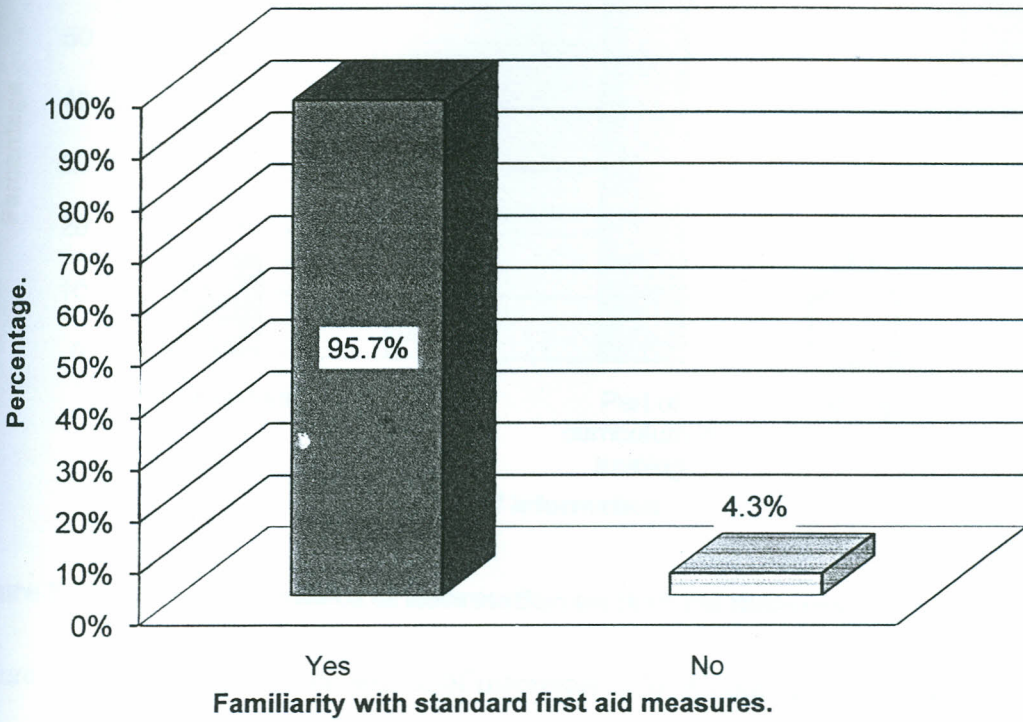


Figure 6: Whether respondents were familiar with the first aid measures.

Majority, 95.7% (67), of the respondents said they were familiar with standard first aid measures for epistaxis while 4.3% (3) said they were not familiar with standard first aid measures of epistaxis as shown in figure 6 above.

4.3.2 Respondents' Source of Information on First Aid Measures

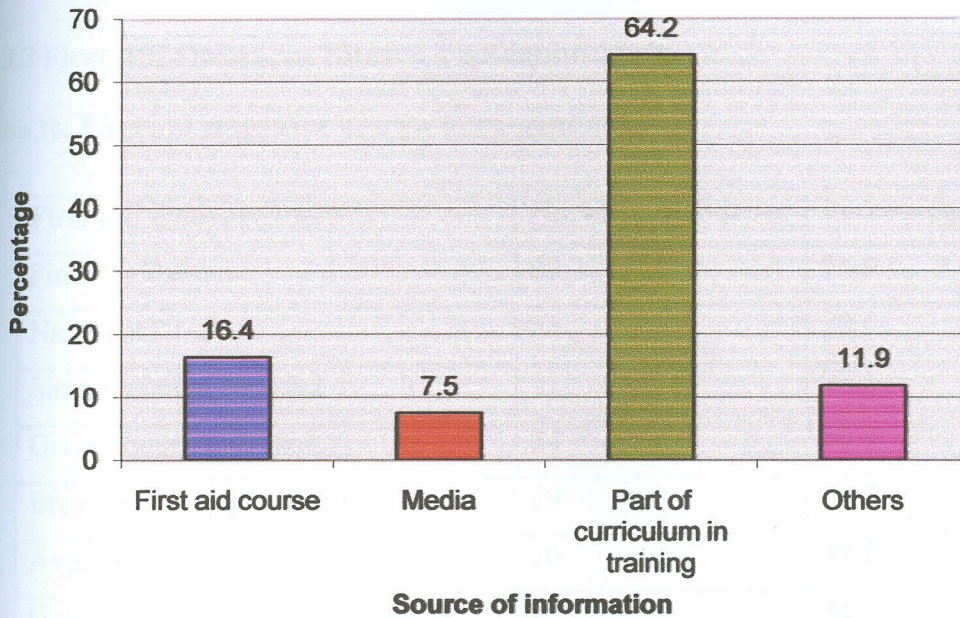


Figure 7: Respondents' source of information on first aid measures.

Figure 7 above shows that the source of information for 43 out of the 67 respondents who were familiar with first aid measures in epistaxis was from the curriculum while in training for their highest qualifications. A less percentage, 16.4% (11) reported to have got the information from a first aid course, while 7.5% (5) got the information from media. Others gave various sources including observation at work place, continuous medical education (CME) and from colleagues at the work place.

The study sought to establish if the source of knowledge in first aid of epistaxis was related to the designation of the respondents using Chi-square. The Chi-Square test presented an insignificant result of 0.361 ($p > 0.05$). This depicts that the sources of knowledge do not significantly predict ones designation.

4.3.3 First Aid Measures Known To Respondents

Table 10: First aid measures known to respondents.

First aid measure known.	No. of respondents	Percentage
Pinching the nose	63	94.0
Nasal packing	54	80.6
Sitting leaning forward	51	76.1
Giving hemsamic acid	34	50.7
Breathing through the mouth	29	43.3
Avoid blowing the nose	26	38.8
Giving IV fluids	23	34.3
Cauterization	18	26.9
Referral to ENT specialist	18	26.9

Table 10 above shows that the first aid measure known by most of the respondents was pinching the nose cited by 94% (63), followed by nasal packing cited by 80.6% (54) of the respondents and sitting leaning forward mentioned by 76.1% (51) of them. Other measures mentioned by minority included reassuring the patient, monitoring blood pressure, blowing the nose to see the bleeding, applying cold compressions on the forehead and patient sitting in an upright position.

4.3.4 Respondents who had First Aid course training on Epistaxis.

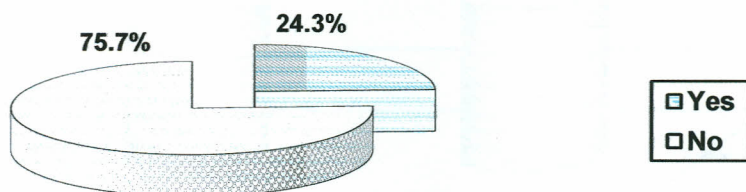


Figure 8: Whether respondents had first aid course training on epistaxis.

More than three quarters 75.7% (53) of the respondents said they had no formal training course on first aid management of epistaxis while the rest, 24.3% (17), reported to have had formal training on first aid management of epistaxis.

Formal training course in first aid of epistaxis seemed to influence respondents' knowledge on the pinching of the nose. This is because 10 of the 17, (58.8%), respondents who had been trained demonstrated the correct site of pinching of the nose while only 14 out of 53 respondents who were not trained (26.4%) demonstrated the correct site. This is shown in figure 9 below.

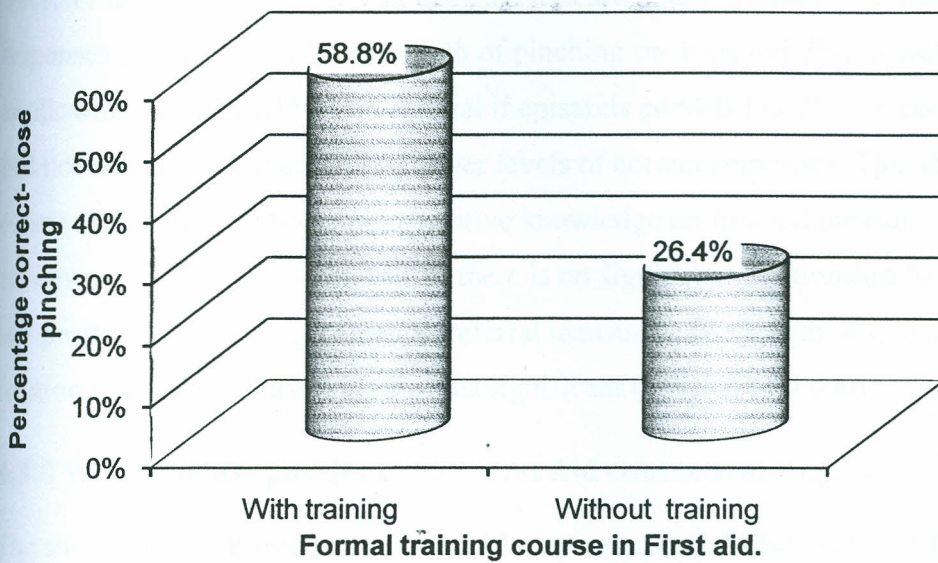


Figure 9: Knowledge on Pinching of the Nose in Relation to First Aid Training.

The relationship between whether or not the respondent had formal training on epistaxis and the knowledge on epistaxis in regards to the four measures of managing epistaxis as outlined by St. John's ambulance was further established. A chi-square test was run at 95% confidence level. The results are as presented in Table 11 below.

Table 11: First Aid course and Knowledge on First Aid of Epistaxis

Knowledge	First Aid course on epistaxis	Incorrect Response %	Correct Response %	Total %	P-value
Position	No	45.1	54.9	100.0	.167
	Yes	22.2	77.8	100.0	
	Total	38.6	61.4	100.0	
Length of Pinching Nose	No	82.4	17.6	100.0	.000
	Yes	33.3	66.7	100.0	
	Total	70.0	30.0	100.0	
Swallowing blood, Breathing	No	54.9	45.1	100.0	.313
	Yes	38.9	61.1	100.0	
	Total	51.4	48.6	100.0	
Referral	No	29.4	70.6	100.0	.809
	Yes	27.8	72.2	100.0	
	Total	28.6	71.4	100.0	

Table 11 above shows that those who had first aid course training in epistaxis had high correct responses on position (77.8%), length of pinching the nose (66.7%) as well as avoiding swallowing blood (61.1%) and referral if epistaxis persists (72.2%). In comparison, those who had not received the training had lower levels of correct responses. This shows that training course on first aid contributed to positive knowledge on first aid measures on epistaxis. However, chi-square test shows that there is no significant relationship between first aid course and position, swallowing as well as referral measures. The length of time in pinching the nose in relation to first aid course training was significant (P-value of 0.000).

4.3.5 When the Respondents had First Aid course training.

The study found out that 11 out of the 17 respondents, (64.7%), who had first aid course training in epistaxis said they had been trained 5 – 10 years prior to the study. This is followed with 23.5% having been trained more than ten years prior to the study while 11.8% got the training less than 5 year preceding the study.

On further establishment if the duration taken after first aid training course on epistaxis was related to knowledge on first aid measures using Chi-square, the test presented an insignificant result of 0.161 ($p > 0.05$). This shows that duration after first aid training and knowledge on first aid in epistaxis do not significantly relate.

4.3.6 Position Used by a Patient with Nose Bleeding

Table 12: Position to be used by a patient with nose bleeding

Designation	Number	Correct	Incorrect
Nurse	48	32 (66.7%)	16 (33.3%)
Medical officer	12	4 (33.3%)	8 (66.7%)
Senior House Officer	10	6 (60.0%)	4 (40.0%)
Total	70	42 (60.0%)	28 (40.0%)

When asked to describe the position in which a patient with nose bleeding should be placed, 66.7% (32) of the nurses stated the correct position; patient sited and leaning forward. Also, 60% (6) of the senior house officers stated the correct position while only 33.3% (4) of the medical officers knew the correct position. A total of 42 clinical staff (60%) stated the correct position for a nose bleeding patient. The incorrect responses included sitting and leaning backwards (24.3%), lying down facing up (10%), lying down facing down (4.3%) and standing up position (1.4%).

Table 13: Level of Education and Knowledge on Position

Level	Correct (sited, Leaning forward)	Incorrect responses.	Total
MBchB	68.2	31.8	100.0
Higher Diploma	66.7	33.3	100.0
KECHN	63.6	36.4	100.0
KRCHN	47.1	52.9	100.0
Bsc. Nursing	33.3	66.7	100.0
Total	60.0	40.0	100.0

The relationship between level of highest education attained by the respondents and the respondents' knowledge on the position patient with epistaxis should be placed was established. Table 13 shows that 33.3% of those who had BSc in Nursing gave correct response on position as compared to 66.7% of those with higher diploma, 63.6% of those with KECHN and 68.2% of those with MBchB. Chi-square test on level of education and correct response on position showed statistical significance between the two variables with a p-value of 0.004 as shown in table 14 below.

Table 14: Chi-Square - Level of Education and Knowledge of Position

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.771 ^a	16	.004
Likelihood Ratio	18.366	16	.303
N of Valid Cases	70		

Twenty (20) cells (80.0%) have expected count less than 5. Therefore the minimum expected count is 0.04 (a). The Pearson chi-square gives p-value of 0.004.

4.3.7 Whether pinching the nose is first aid measure of Epistaxis

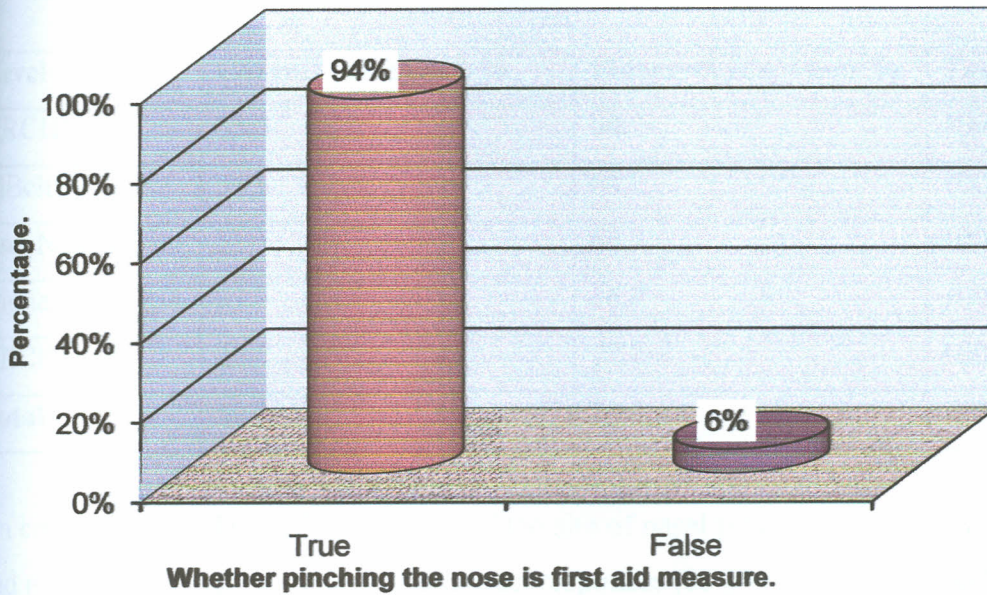


Figure 10: Whether pinching the nose is first aid measure in managing epistaxis.

Majority, 94% (63), of the respondents said that it was true that pinching the nose was first aid measure in managing epistaxis while 6% (7) said that it was false.

4.3.8 Demonstration of the site used when pinching the nose.

Table 15: Site Used when Pinching the Nose

Designation	Number	Correct	Incorrect
Nurse	45	16 (35.5%)	29 (64.5%)
Medical officer	9	3 (33.3%)	6(66.7%)
Senior House Officer	9	5 (55.5%)	4 (44.5%)
Total	63	24 (38.1%)	39 (61.9%)

Table 15 above shows that 38.1% of all the clinical staff demonstrated the correct site for pinching the nose which is the fleshy part of the nose (alae nasi). More than half, (55.5%), of the SHOs demonstrated the correct position as compared to 35.5% of the nurses and 33.3% of the medical officers. Incorrect responses included 34.9% who demonstrated the anterior nasal opening and 27% who showed the nasal bridge as areas of pinching the nose.

Table 16: Level of Education and site of Nose Pinching

Level	Correct (alae nasi) %	Incorrect responses %	Total%
KRCHN	35.3	64.7	100.0
MBchB	31.8	68.2	100.0
Bsc. Nursing	33.3	66.7	100.0
Higher Diploma	33.3	66.7	100.0
KECHN	22.7	77.3	100.0
Total	30.0	70.0	100.0

On correlating the level of education and the site of nasal pinching, it was found that those who had attained KRCHN gave the most correct responses (35.3%) while those with KECHN gave the least correct responses (22.7%) as show in table 16. Chi-square test showed no significant relationship between the level of education and site of nose pinching with p-value of 0.938 as shown in table 17 below.

Table 17: Chi-Square - Level of Education and Nose Pinching

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.329 ^a	16	.938
Likelihood Ratio	10.212	16	.855
N of Valid Cases	70		

19 cells (76.0%) have expected count less than 5. Thus the minimum expected count is 0.30(a) giving a significance value of 0.938.

4.3.9 Duration of pinching the nose.

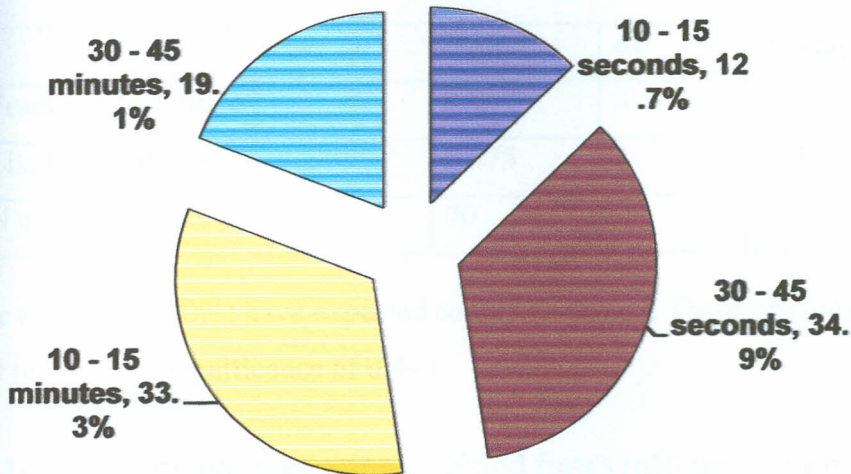


Figure 11– Duration of pinching the nose.

From figure 11 above, 33.3% gave the correct response by saying that the nose should be pinched for 10 – 15 minutes. The incorrect responses included 34.9% who said 30 – 45 seconds, 19.1% who gave 30 – 45 minutes as the response and 12.7% who said pinching should be done for 10 – 15 seconds.

Table 11: Post-qualification Duration and Knowledge on the duration of Pinching of Nose

Duration	Correct (10-15min) %	Incorrect responses. %	Total %
less 5 yrs	20.0	80.0	100.0
5-10 yrs	30.0	70.0	100.0
more than 10yrs	31.4	69.6	100.0
Total	30.0	70.0	100.0

Table 18 above demonstrates the relationship between duration worked after highest qualification and responses given on duration of pinching the nose. It shows that while 20.0% of the respondents who had worked for less than 5 years said they will pinch the nose for 10 – 15 minutes (correct response), 30.0% of those who worked for 5 - 10 years and 31.4% of those who had worked for more than 10 years gave correct response. Chi-square test done does not illustrate significant relationship between the length of nose pinching and work experience as shown in table 19 below.

Table 12: Chi-Square Test - Post-Qualification Duration and Pinching of Nose.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.907 ^a	8	.443
Likelihood Ratio	6.975	8	.539
N of Valid Cases	70		

Nine (9) cells (60.0%) have expected count less than 5. Therefore minimum expected count is 0.50 (a) giving a significance of 0.443.

4.3.10 Advice given to a patient if blood flows into the mouth.

When asked on what advice to give a patient with epistaxis if blood flows into the mouth, a total of 34 (48.6%) respondents gave the correct response which is to avoid swallowing blood and spit it. The remainder 51.4% gave incorrect responses; swallow the blood (24.3%) and blow the nose and breathe though it (27.1%).

SHOs (80%), gave the highest percentage of correct response while 58.3% of medical officers and 39.6% of the nurses gave correct responses.

Table 20: Level of Education and Advice when blood flows into the mouth.

Level	Correct Response %	Incorrect Response %	Total %
Bsc. Nursing	100.0	0	100.0
Higher Diploma	83.3	16.7	100.0
MBchB	59.1	40.9	100.0
KRCHN	41.2	58.8	100.0
KECHN	27.3	72.7	100.0
Total	48.6	51.4	100.0

Table 20 shows relationship between highest level of education attained and advice given to patients if blood flows into the mouth. All those with Bsc. Nursing responded correctly compared to those with KECHN who gave the least (27.3) correct response. Chi-square test however showed an insignificant relationship with a p-value of 0.116.

Table 3: Post-Qualification Duration and avoiding swallowing blood.

Duration	Correct (avoid swallowing blood) %	Incorrect response %	Total %
less 5 yrs	60.0	40.0	100.0
5-10 yrs	50.0	50.0	100.0
more than 10yrs	45.7	54.3	100.0
Total	48.6	51.4	100.0

On the other hand, table 21 relates duration after highest qualification and advice given to patients if blood flows into the mouth. It shows that 60% of those that had worked for less than 5 years would advice correctly that the patient avoid swallowing the blood and spit it while 50% and 45.7% of those that had worked for 5 to 10 years and more than 10 years respectively would give the same advice. Chi-square test done however presents lack of relationship between the two given a significance of 0.694 as shown in table 22.

Table 4: Chi-Square Test - Post-Qualification Duration and blood flows.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.228 ^a	4	.694
Likelihood Ratio	2.226	4	.694
N of Valid Cases	70		

3 cells (33.3%) have expected count less than 5. Thus the minimum expected count is 1.21(a) giving a significance of 0.694.

4.3.11 How patient with epistaxis should breathe.

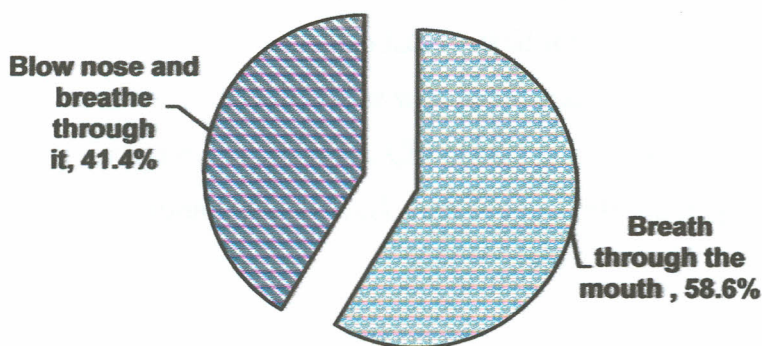


Figure 12: How patient with Epistaxis should breathe.

Slightly more than half, 58.6%, of the respondents gave a correct response by saying that a patient with nose bleeding should be advised to open the mouth and breathe through it while the remainder gave incorrect response as shown in figure 12.

4.3.12 Action to be taken if nose bleeding persists in spite of first aid measures.

Majority, 72.8%, of the respondents responded correctly on what to do if nose bleeding persisted in spite of first aid which is to refer the patient to specialized personnel or hospital. 10% said that they would wait for the bleeding to stop on its own while 4.3% said that they would continue first aid indefinitely. The remaining 12.9% mentioned other actions they would take which included giving intravenous fluids, packing the nose with adrenalin, carrying out laboratory investigations and giving hemsamic acid.

Majority, (83.3%), of nurses stated the correct action while 66.7% of the medical officers and 30.0% of senior house officers gave the correct response.

Table 23: Post-Qualification Duration and Referral.

Level	Correct (Urgently Refer) %	Incorrect responses %	Total %
less 5 yrs	100.0	0	100.0
5-10 yrs	60.0	40.0	100.0
more than 10yrs	77.1	22.9	100.0
Total	72.8	27.2	100.0

Further evaluation of relationship between duration of working and referral of patient with epistaxis showed that all those who had worked for less than 5 years would refer should bleeding persist as compared to 60% of those who had worked for 5 – 10 years and 77.1% of those who had worked for more than 10 years. Chi-square analysis presented in table 24 shows lack of any significant association between work duration and referral if epistaxis persists with a significance value of 0.528.

Table 24: Chi-Square Test, Post-Qualification Duration and referral.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.127 ^a	6	.528
Likelihood Ratio	6.383	6	.382
N of Valid Cases	70		

10 cells (83.3%) have expected count less than 5. Thus the minimum expected count is .29(a) giving a significance of 0.528.

4.3.13 Summary of Findings on Knowledge.

Table 25: Comparison of knowledge among various clinical staff.

knowledge	Designation			
	Nurses	Medical officers	SHOs	Total
Correct responses on:				
Site of pinching the nose	16 (33.3%)	3 (25.0%)	5 (50.0%)	24 (38.1%)
Position	32 (66.7%)	4 (33.3%)	6 (60.0%)	42 (60.0%)
Avoid Swallowing blood	19 (39.6%)	7 (58.3%)	8 (80.0%)	34 (48.6%)
Referral	40 (83.3%)	8 (66.7%)	3 (30.0%)	51 (72.9%)
Average	55.7%	45.8%	55.0%	54.0%

Table 25 shows that on average, nurses had the highest knowledge (55.7%) on the first aid measures followed by senior house officers while medical officers had the least knowledge. However, there is no consistency in giving highest correct responses for nurses since for knowledge on avoiding swallowing blood they gave the least response (39.6%). Overall, knowledge on referral was best correctly answered (72.9%) while site of pinching the nose was least correctly answered (38.1).

Table 26: Comparison of knowledge and designation of respondents.

knowledge	Designation	Incorrect Response %	Correct Response %	Total %	P-Value
Site of pinching nose	medical officer	75.0	25.0	100.0	.728
	nurse	70.8	29.2	100.0	
	SHO	60.0	40.0	100.0	
Position	medical officer	41.7	58.3	100.0	.428
	nurse	41.7	58.3	100.0	
	SHO	20.0	80.0	100.0	
Avoid Swallowing blood	medical officer	50.0	50.0	100.0	.317
	nurse	56.3	43.8	100.0	
	SHO	30.0	70.0	100.0	
Referral	medical officer	33.3	66.7	100.0	.585
	nurse	25.0	75.0	100.0	
	SHO	40.0	60.0	100.0	

Table 26 above relates the various measures of first aid of epistaxis and respondents designation.

It shows that SHOs consistently gave most of the correct responses except for referral where nurses gave the highest correct response (75.0%). It also reveals that there is no significant relationship between knowledge and designation of the respondents as all p-values are greater than 0.05.

Table 27: Relationship between Level of education and knowledge.

Knowledge	Level	Incorrect response %	Correct response %	Total %	P-Value
Position	BSN	33.3	66.7	100.0	.726
	H. Diploma	33.3	66.7	100.0	
	KECHN	36.4	63.6	100.0	
	KRCHN	52.9	47.1	100.0	
	MBCHB	31.8	68.2	100.0	
Length of Pinching Nose	BSN	66.7	33.3	100.0	.930
	H. Diploma	66.7	33.3	100.0	
	KECHN	77.3	22.7	100.0	
	KRCHN	64.7	35.3	100.0	
	MBCHB	68.2	31.8	100.0	
Avoid Swallowing blood	BSN	.0	100.0	100.0	.022
	H. Diploma	16.7	83.3	100.0	
	KECHN	72.7	27.3	100.0	
	KRCHN	58.8	41.2	100.0	
	MBCHB	40.9	59.1	100.0	
Referral	BSN	33.3	66.7	100.0	.750
	H. Diploma	33.3	66.7	100.0	
	KECHN	18.2	81.8	100.0	
	KRCHN	29.4	70.6	100.0	
	MBCHB	36.4	63.6	100.0	

The table 27 above shows relationship between the various measures of first aid of epistaxis and respondents highest attained level of education. There is no single level with a consistent high or low correct response in all the measures. There is a significant relationship between avoiding swallowing blood with the level of highest attained education (p-value of 0.022). The rest of the measures had no relation to the level of education attained.

4.4 Attitude towards First Aid in Epistaxis

4.4.1 Who to give first aid to patients with nose bleeding

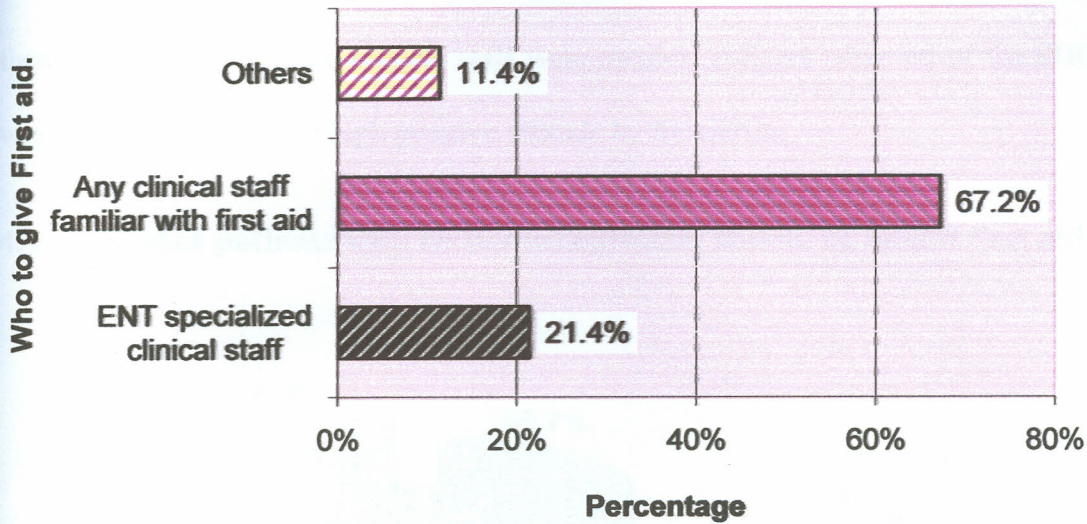


Figure 13: Who should give first aid to patients with nose bleeding

More than two thirds, 67.2%, of the respondents reported that a patient with nose bleeding should be given first aid by any clinical staff familiar with first aid measures, being the correct response. A significant percentage, 21.4%, said that first aid should be given only by ENT specialized clinical staff. The remaining 11.4% gave other responses including anybody near the patient, any clinical staff near and by the patient himself.

4.4.2 Respondents' opinion on whether first aid was necessary.

All the 70 respondents (100%) felt that first aid was necessary in treatment of epistaxis.

4.4.3 Need for training clinical staff on first aid measures in epistaxis.

Majority, 91.4%, of the respondents felt that there was need to train clinical staff on first aid measures in epistaxis while 8.6% of them said there was no need. Three (50%) of those who said there was no need to train clinical staff were medical officers while all of the SHOs said that it was necessary showing a high positive attitude by the SHOs.

4.4.4 Whether patients with recurrent epistaxis should be taught first aid measures.

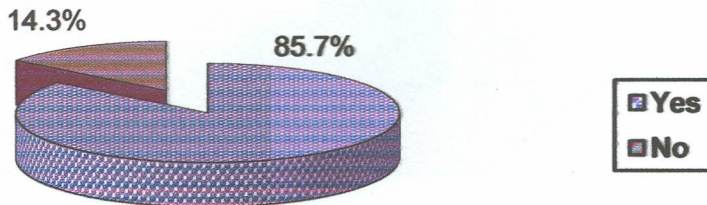


Figure 14: Whether patients with recurrent Epistaxis should be taught first aid measures.

Figure 14 above shows that 85.7% (60) of the respondents positively said that patients with recurrent epistaxis should be taught first aid measures as part of their management before discharge. The remaining 14.3% (10) gave negative response. This shows that a high percentage of the staffs have a positive attitude on dissemination on knowledge to the epistaxis patients.

4.5 Practice of First Aid Measures in Epistaxis.

4.5.1 Respondents who had given first aid to patients with Epistaxis.

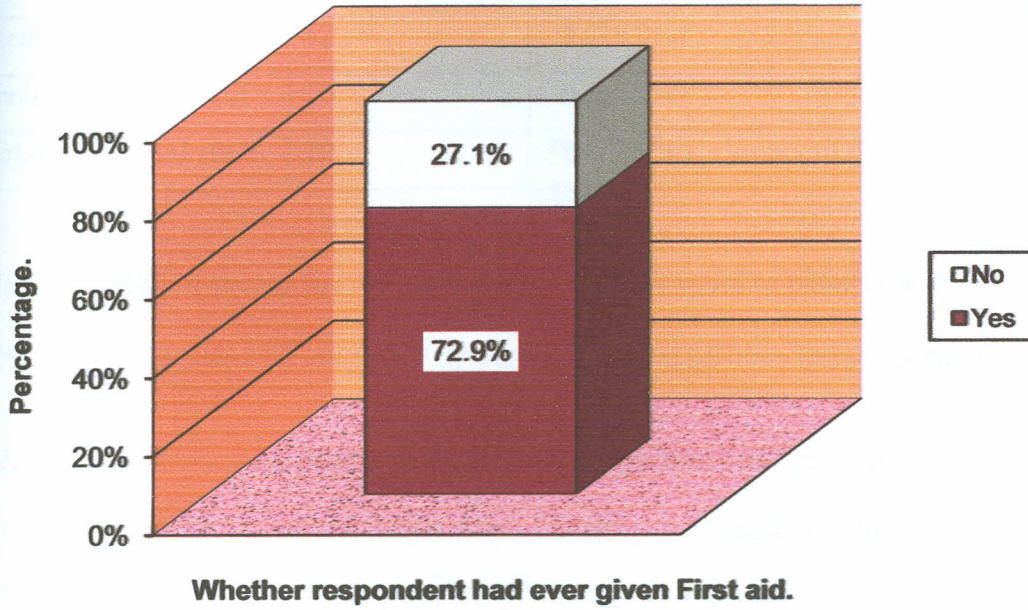


Figure 15: Respondents who had given first aid to a patient with epistaxis.

Majority, 72.9%, of respondents reported that they had given first aid to a patient with epistaxis before. The remainder, 27.1%, said they had never given first aid to a patient with epistaxis.

Table 28: Practice of first aid among various clinical staff.

Designation	Number	Gave first aid
Nurse	48	42 (87.5%)
Medical officer	12	3 (25.0%)
Senior House Officer	10	6 (60.0%)
Total of clinical staff	70	51 (72.9%)

Most, (87.5%), of the nurses reported to have given first aid to patients with epistaxis, whereas 60% of senior house officers and 30.0% of the medical officers has given the first aid.

4.5.2 Whether respondents had educated a patient on first aid measures in epistaxis.

More than half, 54.3%, of the respondents said they had taught a patient on first aid measures of epistaxis before. The remainder 45.7% had not.

CHAPTER FIVE: DISCUSSION.

This is a descriptive cross sectional study on knowledge, attitude and practice in first aid management of epistaxis by Accident and Emergency clinical staff of Kenyatta National Hospital. The respondents were nurses, medical officers, and senior house officers on locum. The respondents had various qualifications with nurses' qualifications ranging from Certificate in nursing, KRCHN diploma to bachelors in nursing degree, while all the doctors had at least MBChB degree. These levels of education were expected to positively influence the knowledge attitude and practice on the first aid management of epistaxis.

Duration of working after completion of the last formal training was long with half (50%) of the respondents having worked for more than ten years after completion of training. This coupled with their qualifications placed the respondents in a good position to have adequate knowledge on first aid management of epistaxis and subsequently their practice of the same. However, there was no significant relationship between post training duration and knowledge on first aid measures in epistaxis (P-value more than 0.05). Also, 27.1% of the respondents said they had never given first aid to a patient with epistaxis. In contrast, a study by Ho EC (2008)¹³ showed that 91% of Accident and emergency staff gave first aid to patients presenting with epistaxis. This disparity can be attributed to respondents having inadequate knowledge on first aid measures on epistaxis.

Majority (95.7%) of the respondents said they were familiar with standard first aid measures of epistaxis. However, more than three quarters (75.7%) of the respondents had no formal training on first aid management of epistaxis. Ho EC (2008)¹³ reported a similarly high number (83.3%) of A & E staff not had formal training on first aid management of epistaxis. This lack of formal training can directly lead to inadequate knowledge on the first aid measures as it's expected that the training has a great impact on the knowledge possessed on the measures.

The first aid measure known by most of the respondents was pinching the nose (94.0%), followed by nasal packing (80.6%) and sitting leaning forward. Adhikari (2006)²³ found nasal packing to be the most common first line measure used by accident and emergency clinical staff. This finding was similar to other studies that showed that use of nasal packing was first line

management of epistaxis without attempt at First Aid as shown by Sonigra⁶, Ho EC¹³, and Klossek¹⁴. The other measures mentioned included cold compresses on the forehead which has also been reported as one of the measures of first aid in epistaxis by Lavy². This can be further attributed to lack of adequate knowledge on the first aid measures and the high percentage of respondents having not had formal training of first aid.

Sixty percent of the respondents described the correct position which a patient with nose bleeding should be placed in as sitting and leaning forward position. Further evaluation showed that the level of education possessed by the respondents was significant to the knowledge on positioning of a patient with epistaxis (P-value of 0.000). In a study by Strachan (1998)¹⁹ on the members of the public, only 36% gave a correct position. This shows that the respondents' academic qualifications gave them a better understanding of first aid measures.

Despite 90% of the respondents having known that pinching the nose was first aid measure in managing epistaxis, only 38.1% of them correctly demonstrated that the nose should be pinched at the alae nasi. This is in agreement with McGarry (1993)⁵ who found out that 43% of the clinical staff in A&E demonstrated the correct method of nasal compression in epistaxis. McGarry⁵ also found that 46% of SHOs gave the correct response compared to nurses' 30%. This was almost similar to in this study where 50% of SHO and 33.3% of nurses gave correct responses. This shows that level of education and professional qualification of the respondents determined the correct response on knowledge site of pinching the nose. However, evaluation on whether there was a relationship between level of education and site of nose pinching revealed insignificant relation with a P-value of 0.938.

Although all the respondents positively said that first aid was necessary in treatment of epistaxis, 21.4% said that first aid in epistaxis should be given only by ENT specialized clinical staff. However, majority of the respondents (91.4%) reported that there was need to train clinical staff on first aid measures in epistaxis while 85.7% said that patients with epistaxis should be taught first aid measures as part of their management before discharge. In contrast, this high percentage of respondents who said that patients should be taught the measures was not reflected in Strachan (1998)¹⁹ study. The study showed that 28 of 412 patients and 27 of 412 patients interviewed reported their sources of advice on how to stop epistaxis to have been from nurses and doctors

respectively. Of the ones who got advice from nurses, 28% gave correct responses on site of nasal pinching as compared to 26% in those who got the advice from doctors. This can be attributed to poor knowledge of these measures by the clinical staffs. In general, the attitude of the clinical staff in the department towards first aid in epistaxis is good.

The study found out that 54.3% of the respondents had ever educated a patient on first aid measures in epistaxis. Nurses who had given the education were 87.5 % while medical officers were 25.0% and 60.0% for SHOs. This was almost similar to Lavy's (1996)² study that found out that 60% of patient with epistaxis seen by accident and emergency clinical staff had been educated on first aid measures in epistaxis with nurses and doctors who gave the education being 50.0% and 66.0% respectively. This relatively good number of clinical staff giving advice to patient is consistent with the good attitude shown by the respondents in this study. Low levels of dissemination of knowledge by the clinical staff have been reported by Tran (2003)²⁵.

According to Tahwinder (2007)²⁴, basic management of epistaxis reduced the number of admissions due to epistaxis by 73% and reduced significantly morbidity and mortality associated with epistaxis. Therefore the respondents' practice of educating patients on first aid measures in epistaxis was important since the patients would manage episodes of epistaxis at home and hence reduce morbidity and mortality associated with epistaxis.

The study's null hypothesis that knowledge, attitude and practice on first aid management of epistaxis by clinical staff at A&E department of KNH, Kenya, do not differ significantly from studies done elsewhere was therefore proved to be generally true.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

In conclusion, the study findings showed that the clinical staffs in the accident and emergency department of Kenyatta National Hospital have inadequate knowledge on the standard first aid measures of epistaxis. A high percentage of the clinical staff did not know the correct site of nasal compression in a patient with epistaxis. It was also found that most of the staff had positive attitude on first aid management of epistaxis. On the practice of first aid to patients, it was revealed that most clinical staff had provided first aid to patients presenting with epistaxis.

6.2 Recommendations

Based on the findings of this study, the researcher recommends the following:

- The hospital management should develop training course on first aid management of epistaxis to clinical staffs in the A & E department, offered whenever staff is deployed in the department.
- Continuous medical education (CME) on first aid management of epistaxis should be organised to the accident and emergency clinical staff.
- Emphasis should be put in the basic training curriculum of the clinical staff on first aid treatment of epistaxis.
- Further research is required to determine the knowledge attitude and practice in first aid measures of epistaxis by patients presenting with epistaxis and the general public so that appropriate measures can be taken to curb morbidity and mortality associated with epistaxis.

ANNEXES

Annex 1: Study Time frame.

Following approval by supervisors and other ENT department members, the study will be handed over to the KNH Ethics Committee. The committee's approval will give way to initiation of the study. The estimated time frame for the study is as follows.

	Jan-July 2010	August 2010	Sept. 2010	Oct-Dec 2010	Jan-Mar 2011	April. 2011	May 2011
Proposal writing.							
Proposal presentation.							
Ethical committee approval.							
Data collection							
Data analysis.							
Dissertation presentation.							
Submission of final report.							

Annex 3: Consent form.

CONSENT FOR PARTICIPATION IN THE STUDY

My name is **Dr Kevin O. Nyambaka**, a Master of Medicine in ENT Surgery student at University of Nairobi. Am undertaking a research on '*An assessment of Knowledge, attitude and practice in first aid management of epistaxis by accident & emergency (A&E) department clinical staff at KNH*'. The clinical staff in this study will be nurses and doctors.

Epistaxis (nose bleeding) is one of the commonest emergencies encountered by the clinical staff at A&E department and so its prompt management is necessary to combat associated complications. Information given to this study is expected to help in setting management protocols for epistaxis and consequently improve patient care.

Your participation is voluntary and you may choose to stop the interview at any time. All your responses will be kept confidential.

I _____ consent to participate in this study. I have been assured that my identity and any personal information I give will be kept confidential. I have also been assured that the responses and results of this study as regards my contribution will have no bearing on my future appraisal. My participation in this study is of my own free will and choice.

Participant's Signature:

Date:

.....

.....

Researcher's signature:

.....

.....

Dr. Kevin O. Nyambaka.

Annex 4 : Questionnaire.

Serial number _____

BIODATA :

Q1. What is your designation in this department?

- A]. Nurse. B]. Medical officer C]. SHO (on locum)

Q2. What is your highest completed level of formal education?

- A]. KECHN B]. KRCHN C]. Higher diploma in nursing
D]. Bsc. Nursing E]. MBchB D]. Other. Specify _____

(i). How long have you been working as medical personnel since completion of above?

- A]. Less than 5 year. B]. 5 – 10 years. C]. More than 10 years.

Q3. How long have you been working in this department?

- A]. Less than 6months. B]. 7 – 12 months.
C]. 13 – 24months. D]. More than 24months.

KNOWLEDGE:

Q4. Are you familiar with the standard first aid measures used in a patient with epistaxis?

- A]. Yes. B]. No.

(i). if yes, what is your source of these measures?

- A]. First aid course B]. Media C]. part of curriculum in school
D]. Other, specify _____

(ii). List the measures you know:

- | | |
|---------|---------|
| 1 _____ | 2 _____ |
| 3 _____ | 4 _____ |
| 5 _____ | 6 _____ |
| 7 _____ | 8 _____ |

Q5. Have you received formal training on First Aid management of Epistaxis?

- A]. Yes. B]. No.

(i) If yes, how long ago did you get the training?

- A]. Less than 5year. B]. 5 – 10 years. C]. More than 10years.

Q6. Describe the position in which a patient with nose bleeding should be placed.

- A]. Sited and leaning forward. B]. Lying down facing up.
C]. Sited leaning backwards D]. Lying down facing down
E]. Other, specify _____

Q7. Pinching the nose is one of the ways of First Aid in managing nose bleeding; true or false?

- A]. True B]. False

If true:

(i) By demonstration, show the site where pinching should be done on the nose.

- A]. Fleshy part of the nose (alae nasi) B]. Anterior nasal opening
C]. Nasal bridge D]. Other, specify _____

(ii) For how long should the nose be pinched before releasing?

- A]. 10 – 15 seconds. B]. 30 – 45 seconds.
C]. 10 – 15 minutes. D]. 30 – 45 minutes.

Q8. What advice should the patient with nose bleeding be given if blood flows into the mouth from behind the nose?

- A]. Swallow the blood B]. Avoid swallowing and spit it.
C]. Blow the nose. D]. Other, specify _____

Q9. How should the patient with nose bleeding be advised to breathe?

- A]. Keep the mouth open and breath though it.
B]. Blow the nose and breathe through it.
C] Other, specify _____

Q10. If nose bleeding persists in spite of First Aid measures what should be done?

- A]. Urgently refer patient to specialized personnel/hospital
B]. Wait for nose bleeding to stop on its own.
C]. Continue First Aid indefinitely.
D]. Other, specify _____

ATTITUDE:

Q11. Who do you think should give First Aid to a patient presenting at Accident and Emergency department with nose bleeding?

- A]. Only ENT specialized clinical staff.
B]. Any clinical staff familiar with First Aid measures.
C]. Other, specify _____

Q12. In your opinion, do you think First Aid is necessary in treatment of epistaxis?

- A]. Yes. B]. No.

Q13. Do you think there is need to train the clinical staff working at Accident and Emergency department First Aid measures in epistaxis?

- A]. Yes. B]. No.

Q14. Do you think patients who present with epistaxis should be taught First Aid measures as part of their management before discharge?

- A]. Yes. B]. No.

PRACTICE:

Q15. Have you personally given First Aid to a patient with nose bleeding while working in this department?

- A]. Yes. B]. No.

Q16. While working in this department, have you provided education to patients on First Aid measures in epistaxis?

- A]. Yes. B]. No.

THANK YOU FOR YOUR PARTICIPATION.



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1st October 2010

Ref: KNH-ERC/ A/600

Dr. Nyambaka O. Kevin
Dept. of Surgery
School of Medicine
University of Nairobi

Dear Dr. Nyambaka

Research proposal: "An assessment of knowledge, Attitude and Practice in first aid management of epistaxis by Accident and Emergency clinical staff at Kenyatta National Hospital" (P257/08/2010)

This is to inform you that the KNH/UON-Ethics & Research Committee has reviewed and **approved** your above revised research proposal for the period 1st October 2010 to 30th September 2011.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimens must also be obtained from KNH/UON-Ethics & Research Committee for each batch.

On behalf of the Committee, I wish you a fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely

PROF A N GUANTAI
SECRETARY, KNH/UON-ERC

c.c. The Deputy Director CS, KNH
The Dean, School of Medicine, UON
The Chairman, Dept. of Surgery, UON
The HOD, Records, KNH
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