

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Shendi University



Faculty of Post Graduate Studies and Scientific Research

Research about:-

**Assessment of Nurses Knowledge and
Practice Regarding Tracheostomy Care in
Almak Nimer University Hospital 2016.**

*A thesis submitted as partial fulfillment requirement of M.s.c in
medical surgical nursing sciences*

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December - 2016

الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

﴿ إِنَّ اللَّهَ وَمَلَائِكَتَهُ يُصَلُّونَ عَلَى النَّبِيِّ يَا أَيُّهَا

الَّذِينَ آمَنُوا صَلُّوا عَلَيْهِ وَسَلِّمُوا تَسْلِيمًا ﴾

صدق الله العظيم

سورة الأحزاب - الآية (56)



Dedication

To those

Who give me the best of life without payment

Happily, I would like to dedicate this simple attempt to,,,,,

*The one who have taught me how to be a valuable member of the
community*

My Father

To essence of life and meaning of humanity

My Mother

*To who share with me all moments of happiness and sadness and made
me happy at time of sadness*

My family

To who gave me sense of everlasting warmth and beauty

My best friends

*I thank to my all friends and colleagues those who make me feel
friendship and share with me the all burden of carrying out this
research.*

Especial thanks:



Acknowledgment

*All thanks to Allah from the start to the end.....
And pray for Prophet Mohammed peace be upon him
I would like to acknowledge the contribution of my*

Supervisor:

Mr. Yousif Mohammed Yousif

*Who guide me throughout my way and helped me to make this
research as accurate and useful as possible.*

*And I'm grateful to my friends and all those who contributed their
time and helped me.*

My thanks also extend to my college and my teachers.



ملخص البحث

تم إجراء هذه الدراسة الوصفية لتقييم معرفة الممرضين بكيفية التعامل مع مرضى فقر الرغامي وكيفية تقديم العناية التمريضية اللازمة بمستشفى المك نمر الجامعي في الفترة من أغسطس ألي ديسمبر 2016م.

شملت الدراسة 70 ممرضاً وتم جمع البيانات عن طريق الاستبيان الذي يتكون من (18) سؤال وتم تحليل البيانات عن طريق برنامج التحليل الإحصائي للحزم الاجتماعية (SPSS) إصدار 22.

أظهرت الدراسة أن أكثر من نصف الممرضين (63%) لديهم معرفة جيدة بالتعريف والأنواع والمضاعفات المتقدمة والمتأخرة و(21%) لديهم معرفة ضعيفة عن كيفية الوقاية من المضاعفات وكيفية سحب السوائل من الأنبوب، (71%) من الممرضين لديهم معرفة جيدة بكيفية الوقاية من المضاعفات وكيفية سحب السوائل من الأنبوب.

وأوصت الدراسة بضرورة تقديم برامج وكورسات للممرضين وتوزيع الممرضين بأقسام الجراحة المختلفة لزيادة المعرفة والمحافظة علي التعقيم للوقاية من العدوى.

Abstract

This perspective study condition in Elmak Nimer Shendi university hospital to assess nurses knowledge and practice about tracheostomy care in Elmek Nimer university hospital in period from August to December 2016.

The study included (70) nurses. Data was collected by using questionnaire composed from (19) questions about the personal data and the knowledge of nurse regarding general information about tracheostomy care, and data gathered & analysed by using Statistical package for the Social Sciences (SPSS).

The study showed More than half of (63%) study group had good knowledge about definition and type and early and late complication. While only (21%) of them had poor knowledge. The majority of study group (71%) had good knowledge about prevention of complication, and majority of them need for suction.

The study recommended that nurses. Training of nursing staff in surgical unit lead to increase nursing knowledge and practice about tracheostomy care.



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Chapter One

Introduction

Rational

Objectives

1.1 Introduction

Airway Management ventilation is dependent on free movement of air through the upper and lower airways. In many disorders, the airway becomes narrowed or blocked as a result of disease, bronchoconstriction (narrowing of airway by contraction of muscle fibers), or foreign body, or secretions. Maintaining a patent (open) airway is achieved through meticulous airway management, whether in an emergency situation such as airway obstruction or in long-term management, as in caring for a patient with an end tracheal or a tracheostomy tube.⁽¹⁾ oxygen, a clear, odorless gas that constitutes approximately 21% of the air we breath, is necessary for proper functioning of all living cell. The absence of oxygen can lead to cellular, tissue, & organ death. Delivery of oxygen & removed of carbon dioxide require the integration of several systems including the hematologic, cardiovascular, & respiratory system. Impaired function of system can significantly affect our ability to breathe, transport gases & participate in ever day activities.⁽²⁾,

Tracheostomy are increasingly common in hospital ward due to rising due percutaneous, & surgical in critical care & bed pressures in these unit Hospital ward may lack appropriate infrastructure to care for this vulnerable group & significant patient harm, the studs was performed August 2008- August 2009 (988) tracheostomy related critical incidents reported to nation.⁽³⁾ , Placement of tracheostomy is a important procedure for securing function & safe airway in patient with various medical ailment, it reportedly the common surgical procedure the intensive care unit (ICU). It a procedure aimed at establishing an alternation airway by creating surgical opening in the anterior wall of trachea and maintained.⁽⁴⁾

1.2 Rational

Tracheostomy is very importance emergency of airway management ventilation treatments of life. nurse were essential l in observing patient with tracheostomy tube.

Most nurses have good knowledge to ward Tracheostomy care

1.3 Objectives

1.3.1.General objective:

To assessment of nurses knowledge regarding tracheostomy care in Almak Nimer hospital .2016

1.3.2. Specific objective:

- To assess knowledge of Nurses about definition, type, size and site of tracheostomy.
- To assess nursing knowledge to patient with tracheostomy.
- To determine nurses knowledge regarding to complication .
- To determine nursing knowledge about prevention of tracheostomy.

2. Literature review

2.1. Anatomy and physiology of trachea:

The trachea, or windpipe, is composed of smooth muscle with C-shaped rings of cartilage at regular intervals. The cartilaginous rings are incomplete on the posterior surface and give firmness to the wall of the trachea, preventing it from collapsing. The trachea serves as the passage between the larynx and the bronchi. ⁽¹⁾

Is it approximately 10-11 Cm long and lies mainly in the median plane in front of the esophagus.

Structure:

Composed of three layers of tissue, open by between 16-20 incomplete (C shaped) ring of hyaline cartilage lying one above the other.

The rings are incomplete posteriorly, the cartilage are embedded in a sleeve of smooth muscle and connective tissue, soft tissue posterior will be in contact with esophagus.

Blood and nerve lymph drainage:

The arterial blood supply inferior thyroid and bronchial arteries, it returns by the inferior thyroid vein into bronchocycphic vein.

Parasympathetic nerve supply is by laryngeal nerve and other branches of the vein. Sympathetic nerve supply is by sympathetic ganglia.

Lymph from the respiratory passage drains through lymph nodes situated round trachea. ⁽⁶⁾

Function:

- **Support and patency:**

Absence of cartilage posteriorly allows trachea to dilate and constrict in response to nerve stimulation and indentation as the esophagus during swallowing, and helps to regulate the diameter trachea.

- **Warming, humidifying and filtering:**
- **Cough reflex :**

Nerve ending in the larynx, trachea, bronchi are sensitive to irritation which generates nerve impulse conducted by the vagus nerves to the respiratory centre in the brain stem, the reflex motor response deep inspiration followed by closure of the glottis.

Respiratory muscle then contract and suddenly the air is released under pressure expelling mucus and /or foreign material from mouth⁽⁶⁾.

Tracheostomy is done using one of two techniques traditionally open surgical method or percutaneous insertion the percutaneous method can be done at the bedside in critical care unit.

Tracheostomy tubes are available in different sizes and may be plastic, silicone, metal and cuffed fenestrated.

Fenestrated Tracheostomy has an opening in the tube that allows air to pass through to the vocal cord, thus allowing the client to communicate.⁽²⁾

2.2. Definition of Tracheostomy:

It is an opening into the trachea through the neck, patient who need airway support to a temporary, permanent. The indwelling tube insertion into the trachea called a tracheostomy tube.⁽²⁾

It is also defined as surgical procedure to create an opening in the neck for direct access to the trachea.

Tracheostomy performed because of airway obstruction, problem with secretion & efficient Oxygen delivery.⁽⁵⁾

A tracheostomy is a surgical procedure done to provide long-term airway support or as an emergency procedure when an endotracheal tube cannot be passed successfully. An opening (stoma) is made in the trachea below the cricoid cartilage, and a semi rigid plastic tube (tracheostomy tube) is passed through the opening and into the trachea, cuff similar to that endotracheal tube, it is inflated near the distal airway.⁽²⁾

2.2.3.Tracheostomy tube type:

- Tube types vary according to presence of inner cannula and type cuff, Tubes with volume, low pressure cuffs with sealing inflation valves with or without cannula. ⁽⁷⁾
- Low pressure cuffs are common used to distribute a low, even pressure against the trachea, thus decreasing the risk of trachea tissue necrosis, they do not need to be deflated periodically to reduce pressure on tracheal wall.⁽²⁾
- Fenestrated tube allowing the clients to communicate by allowing air passes through vocal cord.
- Foam-filled cuff (from cuff). ⁽⁷⁾
- Do not require injected air instead, when the part is opened, ambient air enters the balloon, which then conforms to the client trachea, air is removed from the cuff prior to insertion or removed of the tube. ⁽²⁾
- Vary according to length and inner diameter in millimeters, usual size for an adult are 5, 6, 7, and 8 .
- Tracheotomy is usually planned, either as an adjunct to therapy for respiratory dysfunction or for longer- term air way management intubation has been for more than 14 day.
- May be done at the bed side in an emergency when other mean of creating an airway have failed. ⁽⁶⁾

2.4.Indication or reason for tracheostomy tube insertion:

- Complications of endotracheal tube intubation.
- Absence of protective reflexes.
- Desire for improved patient comfort or communication.
- Long term management of airway and secretions⁽¹¹⁾
- Many disease process emergency conditions make a tracheostomy necessary, Used to bypass an upper airway obstruction to allow removal of tracheobronchial secretion. ⁽¹⁾

- Will prevent oxygen for the mouth to reach the lung, to clean and remove secretion form airway.
- Prolonged mechanical ventilation (breathing machine), to more easily, usually more safely ⁽⁵⁾
- Upper airway obstruction (inflammation, tumor, foreign body, laryngeal spasm)⁽⁷⁾
- Prevent aspiration of oral or gastric secretion in the UN conscious or paralyzed patient (by closes off the trachea from the esophagus) replace endotracheal tube,^(1,7)
- acute respiratory failure central nervous system (CNS) depression neuromuscular, pulmonary disease chest wall injury, need for airway protection (vomiting, bleeding or altered mental status).
- Anticipated upper airway obstruction from edema or soft tissue swelling due to head and neck trauma some post operative need and neck procedures involving the air way facial or airway burns decrease of level of conscious, Deliver oxygen to lungs, if fracture of cervical vertebrate with cord injury required ventilator y assistance. ⁽⁷⁾
- May be done the patient who have had a laryngectomy for cancer. ⁽⁸⁾

In the acute setting indication for tracheostomy include such:

Sever facial trauma head, need cancer larges congenital tumors of the head neck bronchial(left cyst).

The of failed are tracheal or nasotracheal or crisis thyrotomy may be performed in the chronic setting indication may be performed in the chronic setting include the need for long item mechanical ventilation tracheal toilet (comatose patient) or extensive surgery involving the need and neck in extreme cases procedure may be indicated treatment for sever obstructive sleep Apnea seen patient positive intolerant of continuous positive airway pressure (CPAP) therapy and uvulopalat a pharyngoplasty maxillomandibular advancement genioglossus advancement. ⁽⁹⁾

2.5. Procedure:

Equipment for Tracheostomy:

- Tracheostomy kit, either percutaneous or surgical.
- Surgical drapes, towels, gowns, gloves and sutures, prep equipment, and antiseptic application or solution.
- Suction setup
- Correct size tracheostomy tube (usually 8.0 in adults)
- 10-mL syringe for cuff inflation
- Twill tape, or Velcro tracheostomy holder
- Pulse oximeter
- Oxygen source
- Manual resuscitation bag with mask
- End-tidal carbon dioxide monitor or disposable detector.
- Sedation analgesic and paralytic medication
- Bronchoscopy cart (visualize correct placement for percutaneous approach).⁽¹¹⁾

The surgical procedure is usually performed in the operating room or in an intensive care unit, where the patient's ventilation can be well controlled and optimal aseptic technique can be maintained. A surgical opening is made between the second and third tracheal rings. After the trachea is exposed, a cuffed tracheostomy tube of an appropriate size is inserted. The cuff is an inflatable attachment to the tracheostomy tube that is designed to occlude the space between the tracheal walls and the tube, to permit effective mechanical ventilation and to minimize the risk of aspiration.

The tracheostomy tube is held in place by tapes fastened around the patient's neck. Usually a square of sterile gauze is placed between the tube and the skin to absorb drainage and reduce the risk for infection.⁽¹⁾

2.6. Nursing Management:

The patient requires continuous monitoring and assessment. The newly made opening must be kept patent by proper suctioning of secretions. After the

vital signs are stable, the patient is placed in a semi-Fowler's position to facilitate ventilation, promote drainage, minimize edema, and prevent strain on the suture lines. Analgesia and sedative agents must be administered with caution because of the risk of suppressing the cough reflex.

Major objectives of nursing care are to alleviate the patient's apprehension and to provide an effective means of communication. The nurse keeps paper and pencil or a Magic Slate and the call light within the patient's reach at all times to ensure a means of communication. ⁽¹⁾

Essential Care Principles:

The essential are principles when caring for patient with tracheostomy a are based and maintain patient safely facilitating communication and preventing complication and associated with procedure.

Air way obstruction:

Air way occlusion the most serious complication arising from a tracheostomy emergency and can result cardiac arrest patient with should be nursed suction as basis vital signs monitory and or close observation the an area with function oxygen and section particularly respiratory rate should be complemented by move advanced monitory such as pulse oxmietry.

The most common cause of obstruction is build up of respiratory secretion in the tube suction via the tube can immediately remedy this the provision of humidification to prevent during of the preventing lube occlusion. ⁽¹⁰⁾

General Guidelines for Tracheal Suctioning:

1. Explain the procedure to the patient , including the expected benefits.
2. Because suctioning removes air (and oxygen) from the client's airways as well as secretions, care must be taken to avoid excessive suctioning and prevent severe oxygen desaturation:
 - a. Do not apply excessive negative pressure (suction) to the catheter; suction levels should not exceed 80–100 cm H₂O. In addition to causing oxygen desaturation. In, excessive suction can damage the tracheal mucosa.

- b. Do not suction for more than 10 to 15 seconds .Apply intermittent suction only while the catheter is being withdrawn. Do not suction until the catheter is and the cough reflex is stimulated.
 - c. Provide supplemental oxygen before and after suctioning by increasing the oxygen flow or concentration (unless contraindicated) and encouraging the client to take several deep breaths. Clients with endotracheal or tracheostomy tubes may be hyper oxygenated using a manual resuscitation bag with high-flow oxygen attached.
3. Use sterile technique in handling the suction catheter, and observe standard precautions to prevent cross-contamination.
 4. After suctioning, provide mouth care and suction the oropharynx if indicated. Assist the client to a comfortable position and allow for a rest period. ⁽²⁾

Communication:

The majority of patient with tracheostomy will be unable to speak as the tube (stoma) is position below the level of the vocal cord. however this is not always the case, a patient may breath around the tracheostomy, particularly if the tube does not have a cuff, or the cuff is deflated, in some cases exhaled air passes through specially designed holes in the tube (fenestration) and through specially designed cords specific (speaking valves). Have also been developed to allow patient to talk

Effective communication can be achall with be with tracheotomies and written and other non verbal communication strategies are necessary.

The nurse must allow consider how the lees of speech with affect patient and anxieties this may evoke's.

If permanent tracheostomy is planned as in the cases of laryngectomy specific counseling sometimes before the procedures'. The importance of involving physiotherapists in the management after patient con not be over stated. ⁽¹⁰⁾

Stoma cares:

Is commenced in the immediate post operative and is ongoing daily cleaning the stoma is recommends using 0,9%sterile saline solution after cleaning ensure the skin cleans dry to avoid breakdown.

Procedure for stoma care:

Care of stoma include outlier observation of the site and commendation of the fending include redness swelling evidence of granulation tissues, exudates increased discomfort during care and stoma odor.

If visible of sign of infection are present obtain of specimen for cultures sensitively.

Feeding and nutrition:

Trachea may have an impact an the patient ability wall swallow it maybe also influence how the patent feed about eating and drinking prior to commencing nasogtratic a oral intake of food and drinks it recommended that speech pathologist assists the patent to swallow.

Oral Care:

Patent to tracheostomy after upper airway function and may have oral care especially in comatose patient. ⁽¹¹⁾

Post Operative Nursing:

The patent requires continues and assessment the newly mode opening must be keep patent by prober solution of secretors after position to semi fowler position to facilitate ventilation promote drainage minimize edema and prevent strain on the suture lines analgesia and sedative agent must be administered with causation or the risk of suppressing the cough reflex, The major objective of nursing and effective means of communication, The nursing keep paper and pencil and the call light with the patient reach to ensure a means communication⁽¹⁾

2.7. Complications of Tracheostomy:

- Acute hemorrhage at the site.
- Air embolism.
- Aspiration.
- Tracheal stenosis.
- Erosion into the innominate artery with exsanguinations.
- Laryngeal nerve damage.
- Pneumothorax.
- Subcutaneous and mediastinal emphysema.
- Swallowing dysfunction.
- Tracheoesophageal fistula.
- Infection.
- Accidental decannulation with loss of airway.
- Weak voice and hoarseness⁽¹¹⁾

2.8. Preventing Complications Associated With Tracheostomy Tubes:

- Administer adequate warmed humidity.
- Maintain cuff pressure at appropriate level.
- Suction as needed per assessment findings.
- Maintain skin integrity. Change tape and dressing as needed or per protocol.
- Auscultation lung sounds.
- Monitor for signs and symptoms of infection, including temperature and white blood cell count.
- Administer prescribed oxygen and monitor oxygen saturation.
- Monitor for cyanosis.
- Maintain adequate hydration of the patient.
- Use sterile technique when suctioning and performing tracheostomy care. ⁽⁷⁾

Managing the Cuff:

As a general rule, the cuff on an endotracheal or tracheostomy tube should be inflated. The pressure within the cuff should be the lowest possible pressure that allows delivery of adequate tidal volumes and prevents pulmonary aspiration. Usually the pressure is maintained at less than 25mm Hg to prevent injury and at more than 15mm Hg to prevent aspiration. Cuff pressure must be monitored at least every 8 hours by attaching a handheld pressure gauge to the pilot balloon of the tube or by using the minimal leak volume or minimal occlusion volume technique. With long-term intubation, higher pressures may be needed to maintain an adequate seal. ⁽¹⁾

3. Material and Methodology

3.1 Study design:

This was descriptive study cross sectional, hospital based research, done in period extended from August to November 2016 to assess nurses knowledge about tracheostomy care.

3.2 Study area:

The study was done in Sudan Shendi town which is located 172 Km North to Khartoum city, it is the southern part of the River Nile state, lies in the east of the River Nile and covering area of 30Km square.

Most of the people in Shendi working in agriculture, simple in industrial works, employers, and trading.

The town considered as center of Galieen tribe and some other tribes. There are different centers for general services, also there Shendi university with its different faculties. Shendi has two big hospitals, the teaching hospital, and Elmek Nimer university hospital.

3.3 Study setting:

Elmek Nimer university hospital was established in July 2002. and consist of the following parts: theater, male/female surgery wards, male/female medicine wards, obs /gynecologic wards, pediatrics wards, laboratory, x-ray, u/s, renal part, radiation and chemotherapy, dialysis, endoscope, ICU and CCU. There are 130 nurses in the hospital.

ENT, ICU surgery was specific setting for the study, the ENT composed of (7) beds, the total number of staff (5) nurses.

ICU surgery unit composed of (4) beds, and total number of staff (4) nurses .

Surgery ward composed of (30) bed ,total number of staff nurse(18) .

3.4 Study population:

All nurses' work in ENT, ICU surgery, surgery ward in Elmek Nimer university hospital during period of study.

3.5 Sampling technique:

All nurses whom worked in ENT, ICU surgery. surgery word were indication in the study.

3.6 Sample size:

(70) nurses were participated.

3.7 Data collection tool:

The data was collected by questionnaire designed by the researcher to fulfill the purpose of knowledge assessment of the study based on literature review. Composed(18) closed ended question ,question from (1-5) about demographic data ,question from (6-18)about tracheostomy care.

3.8 Data collection technique:

The data was collected within one week during morning and afternoon and night shift. Every questionnaire takes 5-10 minet.

3.9 Data analysis:

The data was analyzed by statistical package for social sciences (SPSS version 21) and presented in forms of tables and figures.

3.10 Ethical consideration:

The study was approved by ethical committee of research in faculty of post graduate and scientific research, before conduction the study. Verbal Permission have been taken from original director of the hospital and then head nursing.

The researcher was explained the purpose of the study to the nurse's participant and has assured them that data collected from questionnaire will remain confidential and it is not allowed for any person to identify it.

4. Results

Table [1]distribution of study group according to the Age.

	Frequency	Percent
Less than 25 years	23	33%
25-30 years	35	50%
31-35 years	9	13%
More than 35 years	3	4%
Total	70	100%

The above table showed that (33%) of nurse age less than 25 years, (50%) of nurse between age 25-30 years, (13%) of nurse between age 31-35years and (4%) of nurse age more than (35%) years.

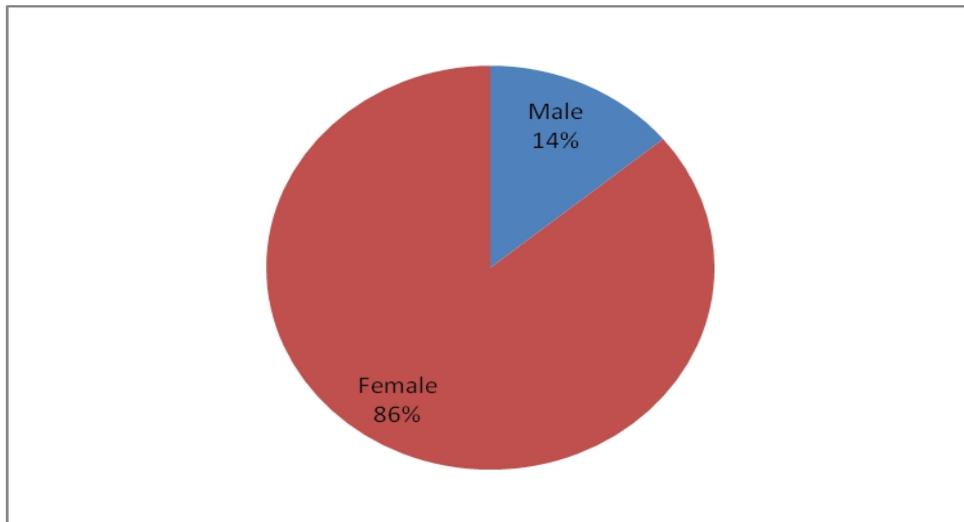


Figure (1): the distribution of study population according to gender.

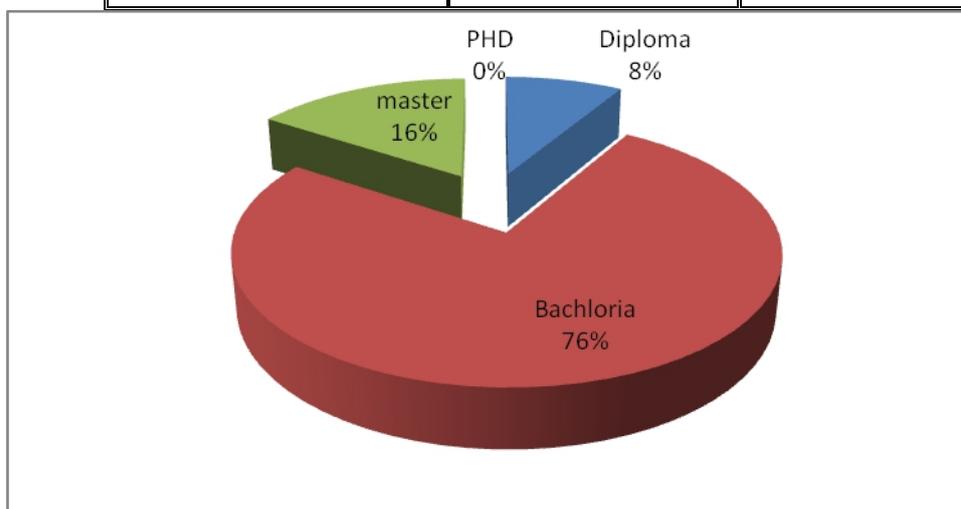
Above figure showed that (86%) of nurse female, (14%) male

Figure {2} Distribution of study group according to the Degree of certification:

The above table showed that the degree of certification of nurse (76%) bachloria, (16%) master, (8%) diploma.

Table { 2}: Distribution of study group according to their place of work :

	Frequency	Percent
ENT word	10	14%
Surgery	32	45%
Medicine	15	22%
ICU	13	19%
Total	70	100%



The above table showed that (45%) of nurse worked in surgery, (22%) in medicine, (19%) ICU, (14%) ENT.

Table { 3}: Distribution of study group according to years of experience:

	Frequency	Percent
Less than 2 years	24	34%
2-5 years	27	39%
More than 5 years	19	27%
Total	70	100%

The above table showed that (34%) in study group of experience less than 2 years, (39%) between 2- 5 years, and (27%) more than 5 years.

Table {4}: Distribution of study group according to the knowledge about definition of Tracheostomy.

	Frequency	Percent
Good	37	53%
Fair	9	13%
Poor	24	34%
Total	70	100%

The above table showed that (53%) of nurses had good knowledge about tracheostomy tube definition while (13%) had fair knowledge and (34%) had poor knowledge about the definition of tracheostomy.

Table {5}: Distribution of study group according to the knowledge about type of Tracheostomy:

	Frequency	Percent
Good	44	63%
Fair	10	14%
Poor	16	23%
Total	70	100%

Above table showed that (63%) of nurse knowledge about tracheostomy tube type were good, (14%) were fair knowledge and (23%) poor knowledge.

Table{ 6}: Distribution of study group according to knowledge about indication of tracheostomy can be:

	Frequency	Percent
Good	49	70%
Fair	3	4%
Poor	18	26%
Total	70	100%

The above table showed that (70%) of nurse knowledge about indication of trachestomy were good, (4%) were fair knowiedge, and (26%) poor knowledge.

Table[7]: Distribution of study group according to knowledge about size of tracheostomy tube.

	Frequency	Percent
Good	54	77%
Fair	6	9%
Poor	10	14%
Total	70	100%

Above table showed that (77%) of nurse knowledge about size of tracheostomy were good, (9%) were fair knowledge, and (14%) poor knowledge .

Table [8]: Distribution of the study group according to knowledge about indication of tracheostomy tube are:

	Frequency	Percent
Good	43	49%
Fair	17	24%
Poor	19	27%
Total	70	100%

The above table showed that (49%) of nurse knowledge about indication of tracheostomy tube were good, (24%) were fair knowledge, and (27%) poor knowledge.

Table [9]: Distribution of study group about knowledge to vital sign of patient in first 24 hours done.

	Frequency	Percent
Good	2	3%
Fair	66	94%
Poor	2	3%
Total	70	100%

The above table showed that (3%) of nurse knowledge vital sign to the patient in first 24 hours were good, (94%) were fair, and (3%) poor .

Table [10]: Distribution of study group according to knowledge about proper nurse care for patient with tracheostomy are.

	Frequency	Percent
Good	47	67%
Fair	7	10%
Poor	16	23%
Total	70	100%

The above table showed that (67%) of nurse care for patient with tracheostomy were good, (10%) were fair, and (23%) poor.

Table [11]:Distribution of study group according to knowledge about first 24 hours complication of tracheostomy can be.

	Frequency	Percent
Good	43	62%
Fair	12	17%
Poor	15	21%
Total	70	100%

Above table showed that (62%) of nurse in first 24 hours complication of tracheostomy were good, (17%) were fair and (21%) poor presented.

Table [12]: Distribution of study group about according to knowledge about late complication of tracheostomy are.

	Frequency	Percent
Good	45	64%
Fair	7	10%
Poor	18	26%
Total	70	100%

Above table showed that (64%) of nurse late complication of tracheostomy were good, (10%) were fair, and (26%) poor.

Table [13]: Distribution of study group according to knowledge about intervention if the patient has bleeding is:

	Frequency	Percent
Good	45	64%
Fair	7	10%
Poor	18	26%
Total	70	100%

The above table showed that (64%) of nurse intervention if patient has bleeding were good, (10%) were fair presented and (26%) poor presented .

Table[14]:Distribution of study group according to knowledge about intervention if the patient obstruction of tracheostomy tube.

	Frequency	Percent
Good	15	21%
Fair	15	21%
Poor	40	58%
Total	70	100%

Above table showed that(21%) of nurse intervention if the patient obstruction of tracheostomy tube were good knowledge ,(21%) were fair knowledge ,and (58%) poor knowledge.

Table [15]: Distribution of study group according to knowledge about Need of suction for patient with tracheostomy tube was

	Frequency	Percent
Good	59	84%
Fair	7	10%
Poor	4	6%
Total	70	100%

Above table showed that (84%) of nurse to need of suction for patient were good , (10%) were fair presented, and (6%) poor presented .

Table (16):Distribution of study group according to knowledge about prevent of complication of tracheostomy by:

	Frequency	Percent
Good	50	71%
Fair	8	12%
Poor	12	17%
Total	70	100%

Above table showed that (71%) of nurse prevent of complication were good, (12%) were fair ,and (17%) poor knowledge

Table (17) cross tabulation between study group Years of experiences and Tracheotomy tube definition :

Years of experiences		Tracheotomy tube defines			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Less than 2 years	Count	9	7	8	24	.037
	% of Total	12.9%	10.0%	11.4%	34.3%	
2-5 years	Count	15	1	11	27	.042
	% of Total	21.4%	1.4%	15.7%	38.6%	
More than 5 years	Count	13	1	5	19	.188
	% of Total	18.6%	1.4%	7.1%	27.1%	
Total	Count	37	9	24	70	
	% of Total	52.9%	12.9%	34.3%	100.0%	

P value = .037

Table (18) cross tabulation between study group Years of experiences and Tracheotomy tubes type are

Years of experiences		Tracheostomy tubes type are			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Less than 2 years	Count	2	6	16	24	.491
	% of Total	2.9%	8.6%	22.9%	34.3%	
2-5 years	Count	3	7	17	27	.526
	% of Total	4.3%	10.0%	24.3%	38.6%	
More than 5 years	Count	5	3	11	19	.247
	% of Total	7.1%	4.3%	15.7%	27.1%	
Total	Count	10	16	44	70	
	% of Total	14.3%	22.9%	62.9%	100.0%	

P value = .491

Table{19) Cross tabulation between study group Years of experiences and the indication of tracheostomy:

Years of experiences		According to indication of			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Less than 2 years	Count	15	1	8	24	.880
	% of Total	21.4%	1.4%	11.4%	34.3%	
2-5 years	Count	20	1	6	27	.884
	% of Total	28.6%	1.4%	8.6%	38.6%	
More than 5 years	Count	14	1	4	19	.363
	% of Total	20.0%	1.4%	5.7%	27.1%	
Total	Count	49	3	18	70	
	% of Total	70.0%	4.3%	25.7%	100.0%	

P value = .880

Table (20)cross tabulation between study group Years of experiences and the Tracheotomy size as:

Years of experiences		The Taracheostomy size as			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Less than 2 years	Count	5	2	17	24	.774
	% of Total	7.1%	2.9%	24.3%	34.3%	
2-5 years	Count	3	3	21	27	.780
	% of Total	4.3%	4.3%	30.0%	38.6%	
More than 5 years	Count	2	1	16	19	.278
	% of Total	2.9%	1.4%	22.9%	27.1%	
Total	Count	10	6	54	70	
	% of Total	14.3%	8.6%	77.1%	100.0%	

P value =.774

Table (21) Cross tabulation between the study group Years of experiences and the indication of taracheostomy tube are:

Years of experiences		The insertion of taracheostomy tube are			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Less than 2 years	Count	12	5	7	24	.993
	% of Total	17.1%	7.1%	10.0%	34.3%	
2-5 years	Count	13	7	7	27	.992
	% of Total	18.6%	10.0%	10.0%	38.6%	
More than 5 years	Count	9	5	5	19	.990
	% of Total	12.9%	7.1%	7.1%	27.1%	
Total	Count	34	17	19	70	
	% of Total	48.6%	24.3%	27.1%	100.0%	

P value =.993

Table (22) Cross tabulation between study group Degree of certification and you intervention if the patient has bleeding:

Degree of certification		Your intervention if the patient has bleeding			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Diploma	Count	4	0	2	6	.782
	% of Total	5.7%	0.0%	2.9%	8.6%	
BCS	Count	34	5	14	53	.696
	% of Total	48.6%	7.1%	20.0%	75.7%	
MS	Count	7	2	2	11	.764
	% of Total	10.0%	2.9%	2.9%	15.7%	
Total	Count	45	7	18	70	
	% of Total	64.3%	10.0%	25.7%	100.0%	

P value =.782

Table (23) Cross tabulation between study group Degree of certification and the intervention if the patient obstruction taracheostomy tube.

Degree of certification		Your intervention if the patient obstruction tracheotomy tube			Total	Asymp. Sig. (2-sided)
		Good	Fair	Poor		
Diploma	Count	2	0	4	6	.138
	% of Total	2.9%	0.0%	5.7%	8.6%	
BCS	Count	8	13	32	53	.104
	% of Total	11.4%	18.6%	45.7%	75.7%	
MS	Count	5	2	4	11	.151
	% of Total	7.1%	2.9%	5.7%	15.7%	
Total	Count	15	15	40	70	
	% of Total	21.4%	21.4%	57.1%	100.0%	

P value=.138

5.1. Discussion

Tracheostomy is surgical procedure done to create an opening in the neck for direct access to trachea for breathing.

This was descriptive ,cross section hospital based study, carry in Elmankimer university hospital to assess nurses knowledge regarding tracheostomy care.

Based on data analysis and result regarding to age of nursing the major percentage of study group (50%) of nursing age in range from 25-30 years.

Majority of study group (86%) female, Regarding degree of certification, the years of experience and department the presented study showed that more than half of study group (76%) was bachloria, and less than half study group (39%) their years of experience was less than 2-5 years, and unit of work about less than half study group (45%) surgery department.

The study showed that about more than half of study group (53%) had good knowledge about definition of tracheostomy tube.(is opening in to trachea through the neck PT who need air way support) (2).

Regarding the knowledge of nursing about type of tracheostomy tow third (63%) of sample had good knowledge .(length and inner diameter in millimeters usually size for adult (5-6-7) (2).

The study showed that about one third (26%) of study group had fair knowledge about indication of tracheostomy ,while most (70%) of them had good knowledge about indication.

Regarding the knowledge of nursing about size of tracheostomy the majority of study group (77%) had good knowledge. And tow third (60%) of study group had good knowledge about site of insertion of tracheostomy tube.

Regarding the need of suction the present study showed that majority of study group(84%) had good knowledge about need for suction.

Regarding knowledge about proper nurse care this study showed that tow third of study group (67%) had good knowledge.

Regarding knowledge about the early and late complication, the study showed that about two third (62%) of study group had good knowledge about early complication, and more than half (64%) of them had good knowledge about late complication.

Regarding intervention during complication the present study showed that about more than two third of study group (64%) applied blood grouping and Cross matching during occurrence of bleeding, and more than half (58%) of study group given oxygen during occurrence of obstruction, regarding the knowledge about the prevent of complication the majority (71%) of study group had good knowledge about prevent of complication (1)

The Correlation analysis was detailed break down illustrating the correlation between three of independent variables years of experience and question (6,7,8,9,10, 11). Degree of certification and 1, question (16,17).

There was significant between years of experience and the definition of tracheostomy p value =(.037), and no significant between years of experience and type of tracheostomy p value=(.491), years of experience had no significant p value(.880) and indication of tracheostomy, years of experience and size no significant p value(.774), there was no significant between degree of certification and intervention during PT has bleeding p value(.782),and no significant between degree of certification and intervention during obstruction p value (.138).

5.2. Conclusion

By the end of this study about assessment of nursing knowledge regarding tracheostomy care ,we found more than half of study group had good knowledge about definition, and most of study group had good knowledge about indication of tracheostomy, the study showed that more than half of study group had good knowledge about early complication and more than half of study group had good knowledge about late complication ,the more than tow third of study group had good knowledge about prevent of complication. and most had good knowledge about need of suction.

5.3. Recommendations

Based on finding and conclusion it was recommendation that to hospital direct and head nurses :

- Appropriate educational program should be planned is needed to assess knowledge and practice about tracheostomy care.
- Increase the number of nursing staff in surgical unit and ENT unit.
- Training of nursing staff in surgical unit lead to increase nursing knowledge and practice about tracheostomy care.

Further should be conduct studies to fulfill gap of knowledge and practice about tracheostomy care

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Shendi university

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Questionnaire About Assessment of Nurse Knowledge and practice about tracheostomy care in Almek Nimer University Hospital

NO ()

1) Age:

- a) Less than 25 years() b) 25-30years () c) 30-35years () d)more than 35()

2) Gender: a) Male () b) female ()

3) Degree of certification:

- a) Diploma () b) bachloria () c)master () d) PHD()

4) Department:

- a) ENT word () b) surgery () c) Medicine () d) ICU ()

5) Years of experience:

- a) Less than 2yeart () b) 2-5 years () c) More than 5 ()

6) Tracheostomy tube defines as:

- a) A surgical procedure in which an opening is made into the larnge ()
b) The indwelling tube inserted into trachea ()
c) Is called a tracheostomy tube () d) All above ()

7) Tracheostomy tubes type are:

- a) plastic () b)metallic () c)other ()

8) according to indication of tracheostomy can be:

- a) Temporary () b) permanent () c) both (a) and(b)()

9) The Tracheostomy size as:

- a) 5mm () b) 6mm () c) 7mm () d) 8mm ()

10) The indication of Tracheostomy tube are:

- a) URT infection () b)Acute respiratory failure ()

- c) Fracture of cervical vertebra “spinal cord injury” ()
d) removal of trachea bronchial secretion () e) all of the above ()

11) follow up vital sign of patient in first 24 hours done:

- a) hourly () b) 2hr () c) 4hr () d) 8hr ()

12) The proper nurse care for patient with Tracheostomy are:

- a) Adequate ventilation and oxygenation ()
b) Change of position semi-fowler sitting ()
c) Proper suction prevents aspiration () d) all the above ()

13) The first 24 hours complication of Tracheostomy can be:

- a) Bleeding () b) aspiration () c) cardiac arrest () d) all the above ()

14) The late complication of Tracheostomy are:

- a) Infection () b) dysphagia () c) Tracheoophageal fistula ()
d) all of the above ()

15) Your intervention if the patient has bleeding is:

- a) call the doctor () b) Replacement fluid () c) blood grouping ()
d) all above ()

16) Your intervention if the patient obstruction tracheostomy tube:

- a) Give oxygen () b) suction () c) notify physician () d) do not know ()

17) Need of suction for patient with Tracheostomy tube was:

- a) Usually () b) regular () c) as need () (d) never ()

(18) prevent of complication of Tracheostomy by:

- a) Monitor signs \symptom of Infection () b) Use sterile technique ()
c) Hand wash () d) all of the above ()