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'Evaluation of the Nurse's Practice toward Endotracheal Suctioning of Intubed Critically Ill Patients in the I.C.U. at Baghdad Teaching Hospitals'

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Abstract: ***Tracheal suctioning is an essential aspect of effective airway management. It is imperative that nurses are aware of the risks and are able to practice according to current research recommendations. Making accurate and timely judgments based on knowledge is an essential skill in intensive care nursing practice. Objectives: To evaluate the nurses practices toward endotracheal suctioning of intubed critically ill patient in the I.C.U. To find out relationship between the nurses practices and demographical characteristics of nurses which as: (age, gender ,educational level , year of experience ,training session).Methods: Descriptive design used to evaluation the nurses practice toward endotracheal suctioning for intubated patient at intensive care unit in Baghdad hospital, the study starting from 3/12/2015to 5/2/2016.Results:The findings of present study revealed that the majority of participants is female (n= 35; 70.0%), more than half of them is within (18-27) years old age group (n= 26; 52.0%), more than half of them isn't married (n= 27; 54.0%), about third of them is nursing about third of them is nursing institute graduate (n= 17; 34.0%), and the same proportion for those who are Nursing College graduate and above (n= 17; 34.0%), more than half of them reports that the number of nurses in the shift is 11-15 (n= 27; 54.0%), the mean number of training courses related to ICU is 1.74, SD= 1.794, more than third of them reports that they've (1-2) training courses (n= 18; 36.0%). severity of complications is at a moderate level for most of participants (n= 30; 60.0%), and there is no association between participants' socio-demographic characteristics and their practices. The study recommends to preparing programmed lectures for the nurses, and need for a broader study and a larger sample, as well as the need for training outside the country the competence of intensive care.***

Keywords: Evaluation, nurse's practice, endotracheal suctioning, patients

1. Introduction

Endotracheal suctioning (ETS) is one of the most common procedures performed in patients with artificial airways. It is a component of bronchial hygiene therapy and mechanical ventilation that involves the mechanical aspiration of pulmonary secretions from a patient's artificial airway to prevent its obstruction the procedure include patient preparation, the suctioning event, post procedure care. Tracheobronchial suctioning using the closed suctioning system has physiological benefits for critically ill patients. Because micro aspiration of secretions is a risk factor for VAP, assessment of practices related to oral suctioning, oral care, and management of endotracheal tube is important . Published guidelines provide little information related to use of closed system suctioning and airway management and the guidelines may reflect current practices. Knowledge of practice may assist of determining interventions current practices. Knowledge of practice may assist of determining interventions to improve patients outcomes. Comparing practices of nurses and respiratory therapists may also help as certain difference in practices and aid in establishing collaborative policies and procedures (sole, 2002).It is an imperative requisite of a professional nurse to perform endotracheal suctioning with a standard protocol to prevent complications and to promote recovery. Studies reveal that the most frequent complication of endotracheal suctioning is hypoxia. Literature recommend standard endotracheal suctioning to prevent complication. (Pederson, C.M., 2009).

2. Methodology

Descriptive design used to evaluation the nurses practice toward endotracheal suctioning for intubated patient at intensive care unit in Baghdad hospital, the study starting from 3/12/2015to 5/2/2016. The study was carried out of five hospitals. A random sample of (50) nurses who are doing endotracheal suctioning for intubated patient at intensive care unit in Baghdad Hospitals. A pilot study was conducting on (10) nursed were selected randomly surgical specialized hospital according to the criteria that have mentioned previously. The validity of the instrument was achieved through (10) of experts. Data collection started from 3 December 2015 to 5 May 2016, the data were collected by through use of format and means of demographic characteristics of patients. The demographic characteristic of patients consists of (4) items. The checklist format concerning on nursing management for endotracheal suctioning of intubated patient in intensive care unit, which include: Preparation before suctioning: consists of (8) items. During suctioning: consists of (13) items. Post suctioning: consists of (5) items. Complications: consists of (1) items. These items were rated on scale of that (always) score rated (1) and (some time) score rated (2) and (never) score rated (3).Data were analyzed through the use of statistical package of social sciences (SPSS) version 10.

3. Results

Table 1: Demographic characteristics of the study sample

List	*Variable*	*Frequency*	*Percent*
1	**Gender**		
	Male	15	30.0
	Female	35	70.0
2	**Age**		
	18-27	26	52.0
	28-37	19	38.0
	38-47	5	10
3	**Marital Status**		

	Not Married Married	27 23	54.0 46.0
4	**Educational Level** Nursing School Nursing Institute Nursing College and Above	 16 17 17	 32.0 34.0 34.0
5	Number of nurses in the shift ≤ 5 6-10 11-15 ≥ 16	 3 16 27 4	 6.0 32.0 54.0 8.0
6	Number of training courses related to ICU: Mean (SD): 1.74 (1.794) 0 1-2 3-4 ≥ 5	 16 18 13 3	 32.0 36.0 26.0 6.0
7	Number of nurses per bed in critical care unit : Mean (SD): 14.96 (2.87)		

This table describes that the majority of participants is female (*n= 35;* 70.0%), more than half of them is within (18-27) yearsold age group (*n= 26;* 52.0%), more than half of them isn't married (*n= 27;* 54.0%), about third of them is nursing about third of them is nursing institute graduate (*n= 17;* 34.0%), and the same proportion for those who are Nursing College graduate and above (*n= 17;* 34.0%), more than half of them reports that the number of nurses in the shift is 11-15 (*n= 27;* 54.0%), the mean number of training courses related to ICUis 1.74, SD= 1.794, more than third of them reports that they've (1-2) training courses (*n= 18;* 36.0%).

Table 2: Mean and Standard Deviation before Suctioning Practices for study sample

List	Variables	Mean (SD)	Sig.
1	Assess the client's need for suctioning: inability to effectively clear the airway by coughing and expectoration.	2.46 (0.813)	H
2	Wash your hands	2.20 (0.969)	**M**
3	Position the client in a high Fowler's or semi-Fowler's position	2.82 (0.523)	H
4	Connect extension tubing to suction device if not already in place, and adjust suction control to between 80 and 100 mm Hg	2.68 (0.551)	H
5	Size of the suction catheter should be less than half the internal diameter of the tracheal tube	2.82 (0.388)	H
6	Put on gown and mask and goggles or face shield if indicated	2.74 (0.443)	H
7	Using sterile technique open the suction kit. Consider the inside wrapper of the kit to be sterile, and spread the wrapper out carefully to create a small sterile field	2.92 (0.340)	H
8	If sterile solution (water or saline) is not included in the kit, pour about 100 ml of solution into the sterile container provided in the kit	2.70 (0.707)	H

Cut-off-point: 1-1.66 = Low; 1.67-2.33 = Moderate; 2.34-3 = High

Table (**2**)- demonstrates that participants' preparation before suctioning practices are high for the items which include: ((**1-** Assess the client's need for suctioning, **3**-Position the client in a high Fowler's or semi-Fowler's position, **4-** Connect extension tubing to suction device if not already in place , **5-** Size of the suction catheter should be less than half the internal diameter of the tracheal tube, **6-** Put on gown and mask and goggles or face shield if indicated , 7- Using sterile technique open the suction kit., **8-** If sterile solution (water or saline) is not included in the kit, pour about 100 ml of solution into the sterile container provided in the kit) , and moderate for the item (2- Wash your hands).

Table 3: Level of Preparation before Suctioning Practices for study sample

List	Level	Frequency	Percent
1	Fair	2	4.0
2	Good	48	96.0

Table (3) reveals that participants preparation before suctioning is good for the vast majority of study sample (*n= 48;* 96.0%).

Table 4: Mean and Standard Deviation During Suctioning Practices for study sample

List	Variables	Mean (SD)	Sig.
1	Pick up the extension tubing with your clean hand. Connect the suction catheter to the extension tubing, taking care not to contaminate the catheter	2.96 (0.198)	H
2	Using your clean hand, remove the oxygen delivery device from the tracheotomy tube and place it on a clean surface	2.78 (0.582)	H
3	Position your clean hand with the thumb over the catheter's suction port	2.90 (0.303)	H
4	Dip the catheter tip into the sterile solution, and activate the suction. Observe as the solution is drawn into the catheter	2.84 (0.468)	H
5	Without occluding the suction control port, insert the catheter tip into the tracheostomy tube and advance it until the patient coughs	2.76 (0.517)	H
6	Re oxygenate and inflate the patient's lungs for several breaths with manual resuscitation bag, or allow ventilator to re oxygenate patient for several breaths using suction mode	2.86 (0.405)	H
7	Apply suction for no longer than 15 seconds at a time	2.78 (0.507)	H
List	**Variables**	**Mean (SD)**	**Sig.**
8	Repeat this step until all secretions have been cleared, allowing brief rest periods between suctioning episodes	2.82 (0.482)	H
9	Ask the client to open his or her mouth. Insert the catheter and advance it along the oropharynx until resistance is felt. Apply suction and slowly with draw the catheter	1.78 (0.887)	H
10	Insert the catheter and advance it along the oropharynx until resistance is felt. Apply suction and slowly with draw the catheter. Dip the catheter tip into the sterile solution and apply suction	2.76 (0.517)	H
11	Do not apply excessive negative pressure (suction) to the catheter; suction levels should not exceed 80-100 cm H2O	2.40 (0.606)	H
12	Disconnect the catheter from the extension tubing. Holding the coiled catheter in your gloved hand, remove the glove by pulling it over the catheter. Discard catheter and gloves in an appropriate container	2.84 (0.370)	H

13	Attention to the heart rhythm and the heartbeat, attention to saturation of oxygen (pulse oximetry), connection of the patient to ventilator, hyper oxygenation of the patient	2.40 (0.857)	H
	post suctioning	**Mean (SD)**	**Sig.**
1	Reapply oxygen delivery device	2.68 (0.713)	H
2	Discard remaining supplies in the appropriate container	2.63 (0.727)	H
3	Wash your hands	2.08 (0.986)	**M**
4	Provide the client with oral hygiene if indicated/ desired	1.96 (0.947)	**M**
5	Document the procedure, noting the amount, color, and odor of secretions and the clients	2.12 (0.982)	**M**

Cut-off-point: 1-1.66 = Low; 1.67-2.33 = Moderate; 2.34-3 = High

Table (4) During suction practices reveals that is high sign in all majority of the items of study sample, and Moderate in the items (Wash your hands, Provide the client with oral hygiene if indicated/ desired, Document the procedure, noting the amount, color, and odor of secretions and the clients**),** and in post suctioning practices reveals that is Moderate sign in allmajority of the items of study sample**.**

Table 5: Level of Preparation during Suctioning Practices for study sample

List	Level	Frequency	Percent
	Fair	2	4.0
	Good	48	96.0

Table (**5**) reveals that the vast majority of study sample has good practices during suctioning (*n= 48;* 96%).

Table 6: Mean and Standard Deviation for Patients' Complications during the suctioning practices

List	*Variables*	*Mean (SD)*	*Sig.*
1	Airway obstruction	1.74 (0.443)	M
2	Trauma	1.58 (0.499)	L
3	Hypoxia	1.56 (0.501)	L
4	Infection	1.60 (0.495)	L
5	Tracheal or bronchial trauma can result from traumatic or prolonged suctioning	1.68 (0.471)	M

Cut-off-point: 1-1.66 = Low; 1.67-2.33 = Moderate; 2.34-3 = High

Table (**6**) demonstrates that participants' practices are at a moderate level in the items 5 and 1 (1.68 ± 0.471), (1.74 ± 0.443) respectively.

Table 7: Participants' Level of Preparation Post-Suctioning Practices

List	*Level*	*Frequency*	*Percent*
1	Poor	1	2.0
2	Fair	34	68.0
3	Good	15	30.0

Table **(7)** describes that most of participants has fair practices post suctioning about (*n= 34;* 68%).

Table 8: Level of Preparation General Suctioning Practices for study sample

List	*Level*	*Frequency*	*Percent*
1	Fair	6	12.0
2	Good	44	88.0
	Total	50	100.0

Table (**9**) reveals that the majority of participants has good general practices (*n= 44;* 88.0%).

Table 9: Patients' Severity of Complications

List	*Level*	*Frequency*	*Percent*
1	Mild	20	40.0
2	Moderate	30	60.0
	Total	50	100.0

Table (**9**) demonstrates that severity of complications is at a moderate level for most of participants (*n= 30;* 60.0%).

Table 10: Association between study sample Socio-demographic Characteristics and Their Practices

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age	-.449-	1.942	-.061-	-.231-	.818
Educational Level	.279	.697	.070	.400	.691
Years of experience in hospital as general	-.054-	.378	-.058-	-.143-	.887
Years of experience in ICU	.147	.555	.096	.266	.792
Number of training courses related to ICU	-.587-	.553	-.211-	-1.060-	.295
Number of the nurses in the shift	.012	.262	.009	.047	.963
Number of nurses per bed in critical care unit	-.186-	.323	-.108-	-.577-	.567

Table (10): describes that there is no association between participants' socio-demographic characteristics and their practices.

Table 11: Association between Participants' Socio-demographic Characteristics and Complications

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age	1.252	.704	.388	1.777	.083
Educational Level	-.601-	.253	-.346-	-2.377-	.022
Years of experience in hospital as general	-.053-	.137	-.132-	-.389-	.699
Years of experience in ICU	-.307-	.201	-.458-	-1.526-	.135
Number of training courses related to ICU	.436	.201	.361	2.173	.035
Number of the nurses in the shift	-.150-	.095	-.241-	-1.578-	.122

Number of nurses per bed in critical care unit	.273	.117	.362	2.330	.025

Table (11) reveals that there are highly significant associations between participants' level of education, number of nurses per bed in critical care unit, and number of training courses related to ICU and the occurrence of complications (P-value = 0.022; 0.025; 0.035) respectively.

4. Discussion

Part one:

Socio-demographic characteristics presented that the majority of participants is female (70.0%), more than half of them is within (18-27) years-old age group (52.0%), more than half of them isn't married (54.0%), about third of them is nursing about third of them is nursing institute graduate (34.0%), and the same proportion for those who are Nursing College graduate and above (34.0%), more than half of them reports that the number of nurses in the shift is 11-15 (54.0%), the mean number of training courses related to ICU is 1.74, SD = 1.794, more than third of them the training courses (36.0%) **(Table- 2).**

Kelleher, (2008) reported that among 44 nurses participating in the study two were men (4.5%) and 42 were women (95.5%) At the average age of 29±2.8. The average of All of them and their working experience was 5±2.5 years.

Bull & Hart,(2008) mention that 92 (88%) were female and 11 (11%) were male (missing data n=1). The age of participants ranged from 20-25 years (n=1, 10%) to >50 years (n=12, 11.5%). Twenty two percent (n=23) of participants were aged between 36-40 years and 25% (n=26) of participants aged between 41 and 45 years of age. Most participants were identified as either Registered Nurses (n=40, 38.5%) or Clinical Nurse Specialists (n=37, 35.6%). The Clinical Nurse Specialist is defined differently between states and territories within Australia. The role can be the equivalent of a Clinical Nurse Consultant, Charge Nurse, Clinical Nurse Manager or a Nurse Unit Manager.

Part two

The finding of present study revealed that Table (**2**) demonstrates that participants' preparation before suctioning practices are high for all items except moderate for the item (2- Wash your hands) reveals that participants preparation before suctioning is good for the vast majority of participants (n= 48; 96.0%) **(Table2).**

Guglielminotti,et al ,(2000) reported that a clinical study including 66 patients has shown that the risk of overlooking residual secretions decreased when the assessment was done using a stethoscope. This clinical study demonstrate in adequate and nurse may not have necessary skills to carry out the assessment.

Chirag and kollef, (2004) mention that a number of studies show that the internal lumen of endotracheal tubes decreases significantly after a few days of intubation, sometimes only after 8hr ,due to formation about biofilm and the adherence of secretions on the surface. Minimum frequency of endotracheal suctioning (ETs) should be considered due to the risk of not detecting retained secretions and partial tube occluding, as long as the patient is unable to adequately clear the secretion. Wood, (1998) reported that Suctioning only when necessary requires the nurse to be able to determine the patient's need for suctioning, indications for suctioning are cough, visible or audible secretions, coarse or absent respiratory sounds , increasing airway pressure, desaturation or increased respiratory work

During suction practices reveals that is high sign for majority of participate and Moderate in (Wash your hands, Provide the client with oral hygiene if indicated/ desired, Document the procedure, noting the amount, color, and odor of secretions and the **(during suctioning).** And moderate in items (1-Reapply oxygen delivery device,(2) Discard remaining supplies in the appropriate container) in (post suctioning). (**Table 4)**

Tatu.a.s (2012).Hand washing practice of nurses during their routine activities was expressed in percentages and number values hand washing before and after suctioning and oral care was excluded in this part as each had been taking place on its own specified observations. In this study, it was found that of the 30 nurses observed, none washed hands before entering the intensive care unit, only 5 (16.7%) had washed their hands before and 10(33.3%) after contacting a patient; and 20 (66.7%) of these nurses, washed their hands after contacting with a source of microorganism like body fluid, 9 (30%) used antiseptic solution (chlorhexidine) or alcohol-based hand hygiene products after washing their hands.

The current study report no nurse observed to wash hands before entering ICU. While it is recommended for health care workers including nurses to wash hands before entering intensive care unit.
The observer associate absence of a tap and reagent for hand rub in the inlet door as a factor which hinder hand washing before entering ICU researcher perceives that dryness, irritation and fissures caused by soap or alcohol-based products may contribute to poor compliance to hand washing. It therefore suggested that the use of waterless alcohol gels may improve the hand hygiene of health care workers because these gels are less damaging to the skin and they efficiently and effectively remove transient flora from the hands.36 Hands should be washed in contact with patients, the materials around them and the secretions from the patient, and before and after invasive procedures whether or not gloves are used or changed.

Findings observed in the current study shows hand washing before patient contact was %33,3and after patient contact was 66.7%.With the application of multimodal intervention practices on nosocomial infection to the health workers, hand hygiene compliance was reported to increase from 40% to 53% before patient contact and from39% to 59% after patient contact. In another study it was reported that hand washing rates were only 23% before patient contact and 48% after patient contact.

Hand washing hygiene is a cheap and primary infection control procedure therefore the researcher is suggesting the

measure for improvement by continuous education during hand over of the shifts, seminar and posters, ensuring the availability of adequate hand washing utilities like soap, water taps, drying tissues and reducing work load by improving nurse to patient ratio.

Tatu.a.s (2012).mention that the oral care practice observed was hand washing before 10 (33.3%) and hand washing after 13 (43.3%) oral care to a patient, 3 (10%) nurses fail to wear clean gloves during oral care, 9 (30%) nurses position a patient in a semi recumbent position during oral care. 24 (80%) use tooth brush or gauze moistened with either tooth paste or mouthwash antiseptics solution, 18 (60%) rinse patient mouth with clean swab,15(50%) do suctioning of secretions as they accumulate during the oral care, 8 (26.7%) apply water soluble jelly and 22 (73.3%) clean equipment and return it in a proper place. In oral care protocol for intubated patients in GICU and CICU at MNH using a toothbrush with toothpaste, brushing with a swab, using mouth wash or oral rinse solution, suctioning the oral secretions after oral care and assessing the oral cavity were not clearly stated. The AACN guidelines recommend brushing the teeth twice a day, swabbing the mouth every 2 to 4 hours, and suctioning the oral cavity frequently as per need in order to minimize colonization of endotracheal microbes.

Although the American Dental Association has no standards for the orally intubated patient, tooth brushing with toothpaste is recommended twice a day and swabbing the mouth every 2 to 4 hours, and this practice is now included in the AACN's oral care protocol. However in the current study observer find using a toothbrush can be inadequate due to time-consuming and difficultness in manipulation of the endotracheal tube which limits access to the oral cavity and causes fear of potential dislodgement of the tube.

Oral suctioning and rinsing is indicated to prevent aspiration of oral care solutions during oral care.2 In the current study 15(50%) of the nurses did suctioning of the oral cavity after tooth brush and 18 (60%) rinse patient mouth with clean swab while a patient positioned in a semi recumbent position to prevent back flow of oral secretion.

Oral suctioning and semi recumbent positioning of the patient prevent aspiration which can cause VAP therefore nurses are expected to apply these measures to patients if no contraindication like in patients with head injury.

In the current study observations, the researcher or author is in thought that the use of gloves replaced hand washing process this resulted in high expenditure of glove it also create a sense of internal stigma to patients as some nurses observed to wear gloves during feeding a patient this couldn't be a case if nurses adhere to proper hand washing practice.

Present study reveals that the vast majority of participants has good practices during suctioning (*n= 48;* 96%) **Table (5)**

Van deleur et al ,(2003)reported that a prospective randomized study of 383 patients demonstrate that prn suctioning was associated with fewer adverse effects .There was no significant variation in ICU mortality , increase of pulmonary infections duration of intubation , ICU stay in patients that were suctioned routinely or only when necessary .

This study demonstrates that participants' practices are at a moderate level in the items 5 and 1 (1.68 ± 0.471), (1.74 ± 0.443) respectively. **Table (6)**

Wood, 1998 a study including in patients, showed no significant variation in complications (decrease desaturation, increased airway pressure ,changes in heart rate , heart rhythm and mean arterial pressure) ET tube occlusion and infection rate between routine and prn suctioning .

Describes that most of participants has fair practices post suctioning (*n= 34;* 68%). **Table (7)**

Grap MJ, Belcha T & Munro, (2002) mention that this article has discussed appropriate methods for suction in patients who have a tracheostomy and reveals the importance of use an aseptic technique before and during suctioning and show the application of these findings post suctioning is limited or poor application all steps after suctioning and presented high level of nursing documentation after procedure.

Darvas and Hawkins,(2003) reported that closed suction systems require rinsing to remove secretions and to minimize colonization of the catheter. To date this has not been studied, therefore it is recommended that the catheters should be cleaned as per manufacturers.

Table (8) - reveals that the majority of participants has good general practices (*n= 44;* 88.0%). I did not find the study supports the current research study.

The present study demonstrates that severity of complications is at a moderate level for most of participants (*n= 30;* 60.0%) **Table (9)**

Thompson , (2000), reported that studies evaluated the effects of complications after procedure and respiratory improvement and adverse effects however the methodology and small convenience sample preclude the application of these results on a routine basis it is recognized that there may be occasions of trauma during suctioning not only after procedure and hyperinflation during suctioning is occur .

Alp and Voss, (2006) mention that this study show that the open suction techniques are significantly more complex than closed suction techniques, especially with respect to maintenance of a sterile catheter, and pose a significant infection risk both to the individual patient, other patients and clinicians as respiratory secretions are aerosolised. In addition, a closed suction system is recommended as part of infection control strategies to prevent VAP For these reasons, and as there is no evidence to suggest that closed suction systems result in adverse patient outcomes, closed suction systems should be available for suctioning intubated patients.

Darvas , (2003) mention that any disconnection or break in the ventilation circuit increases the risk of introducing infective agents which may lead to ventilator associated pneumonia (VAP), particularly in the critically ill patient and discussed the patient in-line suction catheters remain in-situ in order to minimize airway contamination through disconnection of the ventilator circuit, but manufacturers recommend 24 hour change to prevent VAP.

Describes that there is no association between participants' socio-demographic characteristics and their practices **(Table10)**.
Tatu.a.s , (2012) reported that, current study found that ICU nurses knowledge on prevention of VAP is statistically not associated with ICU training, level of education and years of experience. This is similar with the findings of the global European study and similarly to the study done in South Africa which indicate that there is no association between the level of knowledge, ICU training, years of experience and knowledge on prevention of complications.

Data from an Italian study carried out at Cisanello Hospital indicated that nurses tend to apply measures automatically by simply following protocols and instructions given by physicians or colleagues without being fully aware of what and why they actually do this differ from the current study where large number 89.83% of ICU nurses have preventive strategies were found not widely applied by nurses in a recommended manner, this can be due to shortage of ICU nurses and lack of enough equipment therefore application of recommended practice during nursing intervention requires not only adequate knowledge but other associated factors have to be well addressed. In Muhimbili national hospital (MNH) continuous education and sensitization of ICU staff members toward infection control including ventilator associated pneumonia (VAP) control is done through different education program, journal clubs, seminars, case presentation and other means which target on quality care improvement. However limited availability of equipment necessary for controlling cross infection between environment, health provider and patients, delay in restoring destroyed equipments like water tap hinders the adherence to adequate practice.

Reveals that there are highly significant associations between participants' level of education, number of nurses per bed in critical care unit, and number of training courses related to ICU and the occurrence of complications (P-value = 0.022; 0.025; 0.035) respectively**(Table 11).**

Pedersen, et al, (2009), conducted a study ,the suction procedure is associated with complications to review the available literature regarding endotracheal suctioning of adult intubated intensive care patients and to provide evidence-based recommendations . The major recommendations are suctioning only when necessary, using a suction catheter occluding less than half the lumen of the endotracheal tube, using the lowest possible suction pressure, inserting thecatheter no further than carina, suctioning no longer than 15 second, performing continuous rather than intermittent suctioning, avoiding saline lavage, providing hyper oxygenation before and after the suction procedure, providing hyperinflation combined with hyperoxygenation on a non-routine basis, alwaysusing aseptic technique, and using either closed or open suction systems.

5. Conclusions

A random sample of (50) nurses who are doing endotracheal suctioning for intubated patient at intensive care unit in Baghdad Hospital

Tracheal suctioning is an essential aspect of effective airway management. It is imperative that nurses are aware of the risks and are able to practice according to current research recommendations.

The majority of study sample is female (*n= 35;* 70.0%), more than half of them is within (18-27) years old age group (*n= 26;* 52.0%), more than half of them isn't married (*n= 27;* 54.0%), about third of them is nursing about third of them is nursing institute graduate (*n= 17;* 34.0%), and the same proportion for those who are nursing College graduate and above (*n= 17;* 34.0%), more than half of them reports that the number of nurses in the shift is 11-15 (*n= 27;* 54.0%), the mean number of training courses related to ICU is 1.74, SD= 1.794, more than third of them reports that they've (1-2) training courses (*n= 18;* 36.0%).

There is no association between participants' socio-demographic characteristics and their practices**.**

The study recommends to:
1) Preparing programmed lectures for the nurses ,andneed for a broader study and a larger sample, as well as the need for training outside the country the competence of intensive care, including information about local epidemiology, patient- and treatment-related risk factors as well as clinical outcomes .
2) Sterile technique is also encouraged during the open-suctioning procedure
3) Observed poor compliance of health-care practioners to appropriate hand hygiene.

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