

Evaluation of Nurses' Knowledge and Practices Concerning Nursing Care Guide in the Intensive Care Unit in Misan Governorate Hospitals

تقييم معارف وممارسات الممرضين أزاء دليل العناية التمريضية في وحدة العناية المركزة في مستشفيات محافظة ميسان

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الخلاصة:

خلفية البحث: على الممرضين في العناية المركزة أن يمتلكوا معارف جيدة ومهارات مهنية عالية في كل ما يتعلق بيئة الرعاية الحرجة كالأدوات ومعدات الأجهزة التقنية المتخصصة و العناية التمريضية بمرضى الحالات الحرجة الذين تتطلب حالاتهم تهوية اصطناعية من خلال التنبيب الرغامى.

الهدف: تهدف هذه الدراسة إلى تقييم معارف وممارسات الممرضين إزاء دليل الرعاية التمريضية في وحدة العناية المركزة. **المنهجية:** دراسة وصفية أجريت في محافظة ميسان في وحدتي العناية المركزة في مستشفى الشهيد الصدر التعليمي ومستشفى الزهراوي الجراحي ، والتي بدأت من 25 \ أيلول \ 2018 إلى 30 \ تشرين الاول \ 2019. تم اختيار عينة غرضية تتألف من 60 ممرض وممرضة. تم اعتماد أداة الدراسة من دراسات سابقة وتطويرها من قبل الباحث. تتكون الاداة من (30) سؤال لتقييم معارف الممرضين و (65) فقرة لتقييم ممارسات الممرضين فيما يتعلق بدليل العناية التمريضية. تم تحديد مدى صلاحية الاداة من قبل 17 خبيراً. عند تحليل البيانات تم استخدام الإحصاء الوصفي (التكرارات، النسب المئوية، الوسط الحسابي، والانحراف المعياري) والإحصاء الاستنتاجي (اختبار مربع كاي) لمعرفة الارتباط بين المتغيرات. **النتائج:** الدراسة الحالية كشفت أن غالبية الممرضين لديهم مستوى معتدل من المعارف والممارسات عن دليل الرعاية التمريضية في وحدة العناية المركزة، وكان متوسط معارف الممرضات (0.41) ومتوسط الممارسات (1.84).

الاستنتاج: أظهرت الدراسة الحالية ان جميع ممرضات العناية المركزة بمستشفى الصدر التعليمي ومستشفى الزهراوي لم يتدربن بشكل كاف على دليل العناية التمريضية في وحدة العناية المركزة المعتمدة من قبل وزارة الصحة العراقية. وأظهرت عدم وجود فروق ذات دلالة إحصائية بين البيانات الديموغرافية ومعارفهم. بينما أظهرت أن هناك اختلافات كبيرة مع الممارسات المتعلقة بالعناية التمريضية.

التوصيات: ضرورة تحديث معارف ومهارات الممرضين في وحدات الرعاية الحرجة في المستشفيات لتوفير العناية التمريضية من خلال ممارسات ملائمة وعالية وذلك من خلال التدريب المستمر ، أما بالنسبة للممرضين الذين لديهم أقل من خمس دورات ، فيجب تكثيف ومضاعفة عدد الدورات التدريبية لهم.

الكلمات المفتاحية: تقييم، ممرضين، معارف، ممارسات، دليل الرعاية التمريضية، وحدة العناية المركزة.

ABSTRACT:

Background: Intensive care nurses must possess good knowledge and high professional skills in everything related to the critical care environment such as tools and equipment for specialized technical devices and nursing care for critically ill patients whose cases require mechanical ventilation through endotracheal intubation.

Aim of the study: The study aim was to evaluate knowledge and practices of the nurses regarding nursing care guide at the intensive care units in Al-Sadder teaching hospital and Al Zahrawi surgical hospital.

Methodology: Conducted is a descriptive design study in the intensive care units at Al-Shaheed Al-Sadder teaching hospital and Al Zahrawi surgical hospital, started from the 25 \ September \ 2018 to the 30 \ October \ 2019. Select purposive sample comprised of 60 nurses. Instrument of the study is adopted and developed via the researcher. Questionnaire was consisted (30) questions to evaluate the nurses' knowledge and (65) checklist items to evaluate the nurses' practices concerning the nursing care guide. The validity of the instrument obtained by 17 expert's panel, Analysis of data is performed via the application of description statistic (frequencies, percentages, arithmetic mean, and standard deviations), and the inferential statistical (chi-square test) to present association between variables.

Results: Outcomes of study is revealed that the majority of nurses have a moderate level of knowledge, and practices about nursing care guide at the intensive care unit, total mean are with regard to knowledge (0.41) and, and in practice (1.84).

Conclusion: Study Illustrated that not all intensive care unit nurses were trained adequately on the nursing care guide in the ICU, approved by Iraqi Ministry of Health. That there are non-significant differences between demographical data with their knowledge, while showed that there was high significant differences with practices related to nursing care.

Recommendation: Assert to update nurses' knowledge and current skill set in critical care units in hospitals to provide nursing care through adequate and high practices by training continuously, it is preferable to increase the proportion of males to females into the intensive care unit, and as for nurses who have less than five courses must intensify and double the number of training courses for their.

Keyword: Evaluation, Nurse, Knowledge, Practice, Nursing Care Guide, Critical Care Unit.

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INTRODUCTION

A critical care can be considered a complex specialty developed to serve the diverse health care needs of patients with actual potentially life-threatening conditions. Professional practice in a high risk critical care environment requires good specialized knowledge, efficient advanced skills, adequate clinical experience and problem-solving capabilities to assess, monitor and effectively assess, monitor and respond to the needs of seriously ill patients ⁽¹⁾. To meet the needs, comfort, and goals set for the patient undergoing ventilator or respiratory failure must be provide evidenced based standards to the nursing care for safe and efficient management with the mechanical ventilation patients ⁽²⁾.

In intensive care units the critically ill patients with high symptomatic burdens and physiological functional impairments, So the care receive in critical care units are highly dependent on the level of knowledge and skills critical care nurse and comfort level of caring ⁽³⁾. Commonly critical care nurses are also called ICU nurses. Because they treat patients with severe and unstable physiological diseases, they require more frequent nursing assessments of the patient's situation and knowledge of the use of life-saving medical technology and drugs. They apply their specialized knowledge base to care and maintain life support for critically ill patients, especially those who are verge of death ⁽⁴⁾. Intensive care nurses are required training on variety technology and the uses its, such as equipment hemodynamic parameter, mechanical ventilation uses, and cardiac monitoring devices, intra-aortic balloon pumps, and ventricular assist systems, continuous renal replacement tools, extracorporeal membrane oxygenation turning and many other advanced life support systems ⁽⁵⁾. The area of critical care nursing is the provision of specialized care for critically ill patients with life-threatening illnesses or critical injuries. These patients may be unstable, have complex needs and require intensive and careful nursing care. Thus, the nursing requirements in intensive care are high, including on the professional skills and expertized knowledge ⁽⁶⁾. Intensive care is a system of care provided by a professional team of experts including physicians from various disciplines, professional nurses, pharmacists, respiratory therapists, microbiologists, physiotherapists and rehabilitation, as well as social workers, specialists, spiritual care and many other fields ⁽⁷⁾.

There are many cases every day are admitting to hospitals, especially in critical care units such as cardiovascular and respiratory failures patients and who requirement to specialized high quality of critical care nursing, those require to adequate learning and training toward monitoring principles, application of systems, use devices technique and implement of nursing interventions ⁽⁸⁾. When provide comprehensive, competent, and appropriate nursing care is required deep scientific knowledge to support their actions and great clinical expertise, to nursing professionals in critical care area ⁽⁹⁾. The study aim to evaluate knowledge and practices of the nurses toward nursing care guide in the ICU, and found out the association between the nurses' knowledge, and practices with their demographic characteristics (age, achievement of educational, years of experience in nursing scope, experiences' years in the intensive care unit and training sessions).

AIM OF THE STUDY

The study aim was to evaluate knowledge and practices of the nurses regarding nursing care guide at the intensive care units in Al-Sadder teaching hospital and Al Zahrawi surgical hospital.

METHODOLOGY

To achieve aims of this study, it was utilized a descriptive design study, with the application to evaluate the nurses' knowledge and practices concerning nursing care guide in the ICU. This study applied in critical care units at Shaheed Al-sadder teaching hospital and

Al-zahrawi surgical hospital in Misan governorate. Started from the 25th of September 2018 to the 30th of October 2019. Purposive sample selecting is consisted of (60) nurses. The data collection process has been performed through the utilization of questionnaire in Arabic version. Instrument of study is adopted, and developed via researcher to evaluate nurses' knowledge and practices concerning nursing care, it contains three parts:

Part I: Self-administered sheet include demographical characteristics of the nurses involved (6) variables, which included age, gender, achievement education, experiences' years in nursing field, and years of experience in the critical care units and training sessions.

Part II: questionnaire sheet which use to assessment of knowledge, it is consisted (30) questions. Each question comprised of (4) alternatives for multiple choice. The score of questions is recorded as correct (1) point, and incorrect (0) point. The test covered the main points related to the content of subjects of nursing care guide. Scores of nurses' response are classified into: Poor knowledge = (>0.33): 1; Fair knowledge = ($0.33-0.66$):2; Good knowledge = ($0.67-1.00$):3.

Part III: questionnaire sheet is the practices checklist for nurses was composed of (65) items related to nurses' practices and divided into ten domains (Standard precautions when provide nursing care (6) items, nursing care of the respiratory tract (16) points, nursing care cardiovascular system (4) items, care of nursing with the nervous system (5) items, nursing care digestive tract (5) points, nursing care in the urinary system (5) points, nursing care for the integumentary (7) items, nursing care of the musculoskeletal system (4) items, psychosocial nursing care (6) items, and nursing documentation (7) points. According the Likers' scale, were rated these items into: always (3), sometimes (2), and never (1). Scale levels of were observed in a total of three episodes of events for each respondent evaluation of practices are rated according to three levels: ($1.00 - 1.66$) inadequate practice, ($1.67 - 2.33$) fair practice and ($2.34 - 3.00$) adequate practice.

The content validity of the instrument for knowledge test and practices checklist was determined by the panel of 17 experts. Instrument reliability is determined via use of Alpha Cronbach's reliability is a high acceptance level (0.92). New line and write statistical analysis, SPSS version 20 was used through the descriptive statistical method which includes (frequencies, percentages, mean score, standard deviation), and a deductive statistical approach (Chi-Square test). The results were determined to be high significant if ($P < 0.01$), was significant when ($P < 0.05$) and not significant if the value ($P > 0.05$).

RESULTS:

Table (1): Distribution of demographic characteristics for nurses working in intensive care units in Misan hospitals (n=60 nurses)

Variables	Characteristics	Distribution	
		Freq.	%
Age (years)	21-25	13	21.7
	26-30	14	23.3
	31-35	9	15
	36-40	15	25
	≥ 41	9	15
	$\bar{x} \pm S.D.$	32.93 $\pm$ 6.400	
Gender	Male	35	58.3
	Female	25	41.7
Achievement Education	College of Nursing	18	30
	Nursing Institute	26	43.3
	Secondary School Nursing	16	26.7

Years of Experience in the Nursing field	1-5 years	18	30.0
	6-10 years	10	16.7
	11-15 years	15	25
	16-20 years	12	20
	≥ 21 years	5	8.3
Years of Experience in the I.C.U	1-5 years	23	38.3
	6-10 years	19	31.7
	11-15 years	13	21.7
	16-20 years	3	5
	≥ 21 years	2	3.3
Number of the Training Courses	1-3 times	20	33.3
	4-6 so on	8	13.3
	7-9 so on	13	21.7
	10-12 so on	10	16.7
	13-15 so on	5	8.3
	≥ 16 so on	4	6.7

Freq. = Frequencies, % = Percentages, $\bar{x} \pm S.D$ = Arithmetic Mean (and Std. Dev. (S.D.). I.C.U= Intensive Care Unit, $\geq$ = more Than or Equal.

The above table is revealed that majority of participants in the sample were from Al-Shaheed AL-sadder teaching hospital where included 44 (73.3%). The most of age group were 15 (25%) of nurses in the study within (36-40 years) while the majority of gender accounted 35 (58.3%) of nurses were male.

Concerning to the achievement educational showed majority of the nurses 26 (43.3%) were graduated of nursing institute. In relation subject, the years of experience in nursing area 18 (30%) of nurses have service (1-5 years) in the nursing field. In regarding years of expert in the ICU, the majority for sample as they showed 23 (38.3%) have years of expert were (1-5 years). Concerning training courses concerning the work in the intensive care unit, 20 (33.3%) of nurses in research sample, have (1-3 sessions).

Table (2): Distribution of participants' level through the knowledge, and practices concerning nursing care guide

Nurses' Parameters	Levels of Evaluation	Study Sample	
		Frequency	Percent
Knowledge	Poor (0 - 0.33) : 1	15	25.0
	Fair (0.34 – 0.67) : 2	45	75.0
	Good (0.68 – 1.00) : 3	0	0.0
	Total	60	100.0
Practices	Inadequate (1 - 1.66) : 1	0	0.0
	Fair (1.67 – 2.33) : 2	60	100.0
	Adequate (2.34 – 3.00) : 3	0	0.0
	Total	60	100.0

Table (2) displays that majority of the participants nurses' knowledge related to nursing care guide have fair level of knowledge evaluation 45(75%), and while the level of evaluation related to practices is showed that all nurses participants were have fair level 60(100%).

Table (3): Nurses' responses for knowledge concerning nursing care guide at the intensive care unit

List	Questions Related To Nurses' Knowledge	Nurses' Responses						
		Correct		Incorrect		Mean	S.D.	Eva.
		F	%	F	%			
1.	Which of the following criteria is used to discharge patients from the intensive care unit?	36	60.0	24	40.0	0.60	0.494	F
2.	The most common means of spreading infection in the intensive care unit are:	16	26.7	44	73.3	0.27	0.446	P
3.	When should you wash your hands?	36	60.0	24	40.0	0.60	0.494	F
4.	Which of the following cases require Controlled Mechanical Ventilation?	14	23.3	46	76.7	0.23	0.427	P
5.	Indications of placing the patient on mechanical ventilation?	29	48.3	31	51.7	0.48	0.504	F
6.	Determine the mode of process of ventilator system based on the patient's clinical situation through?	21	35.0	39	65.0	0.35	0.481	F
7.	Is a breathing method to supply the patient with a number of times of breathing - a specific size of air, but the ventilator gives an opportunity for the patient to take himself	30	50.0	30	50.0	0.50	0.504	F
8.	The primary nursing procedure before placing the patient on mechanical ventilation is?	25	41.7	35	58.3	0.42	0.497	F
9.	The initial procedure for nursing during and after placing the patient on mechanical ventilation lies in:-	35	58.3	25	41.7	0.58	0.497	F
10.	After placing the patient on mechanical ventilation, the following device standards should be observed except:	30	50.0	30	50.0	0.50	0.504	F
11.	Which of the problems can occur during placing the patient on an artificial respirator that causes a lack of air intake in one breath?	26	43.3	34	56.7	0.43	0.500	F
12.	The following are the problems of high pressure air in the device that can occur during placing the patient on the ventilator except:-	25	41.7	35	58.3	0.42	0.497	F
13.	Not from signs of patient evaluation prior to weaning from the ventilator are:	24	40.0	36	60.0	0.40	0.494	F
14.	Sequence the steps of nursing interventions when weaning the patient from the ventilator:	18	30.0	42	70.0	0.30	0.462	P
15.	When the patient is weaning from the ventilator, the patient may not be able to breathe. What should the nurse do before separation?	26	43.3	34	56.7	0.43	0.500	F
16.	Is assessment which aimed at recognizing patients response to the ICU from their expression and feelings for situation such (fear ; anxiety and depression) assessment to :	15	25.0	45	75.0	0.25	0.437	P
17.	Reducing the sounds of alarms and removing any unnecessary equipment from the bed unit are nursing interventions for:	18	30.0	42	70.0	0.30	0.462	P
18.	Nursing care of the artificial respiration tube to prevent complication of pulmonary aspiration is:	41	68.3	19	31.7	0.68	0.469	G
19.	If the indicators of nursing assessment (edema in sclera and face, oliguria, dyspnea, pallor, decrease blood pressure) are evidence of the occurrence	19	31.7	41	68.3	0.32	0.469	P
20.	The external factors that help the occurrence of bed ulcers are:	22	36.7	38	63.3	0.37	0.486	F

21.	To maintain joint integrity and flexibility and prevent joint stiffness, all joints of the limbs must be moved and exercised in the range of motion to several times daily	22	36.7	38	63.3	0.37	0.486	F
22.	Problems that cannot occur for the oral or nasal tracheal tube:	18	30.0	42	70.0	0.30	0.462	P
23.	Any of the following nursing procedures is of great importance when Actilyse is given:	17	28.3	43	71.7	0.28	0.454	P
24.	Digoxin is used in all kinds of heartbeat disorders and its side effects:	19	31.7	41	68.3	0.32	0.469	P
25.	Adrenaline drug is working as: -	37	61.7	23	38.3	0.62	0.490	F
26.	Atropine is used in cases of bradycardia and has side effects such as (dry mouth - pupil dilation - lack of concentration), but must be given carefully under the supervision of the doctor, especially in cases of:	22	36.7	38	63.3	0.37	0.486	F
27.	A drug used in decrease blood circulation and heart enlargement, and nursing procedure when given: Do not add to the alkaline solution (sodium bicarbonate) The patient should be placed on the monitor is:	27	45.0	33	55.0	0.45	0.502	F
28.	A drug used to ventricular arrhythmias. The dose is given: intravenous 100 ml initial dose and 1-2 g / 500 ml 5% glucose at 1-4 ml / min and according to doctor's orders:	17	28.3	43	71.7	0.28	0.454	P
29.	Nitroglycerin is used in cases of angina and in cases of high blood pressure before or during surgery and given intravenously using the solution pump best nursing intervention:	27	45.0	33	55.0	0.45	0.502	F
30.	A solution used in the Severe decline in blood circulation and cases of diabetic coma with insulin	25	41.7	35	58.3	0.42	0.497	F
Average of Overall Items for Nurses' Knowledge						0.41	0.492	F

F: Frequencies, %: Percentages, S.D: Standard Deviation; Eva.: Evaluation; Level of Evaluation = Poor (0 - 0.33) : 1; Fair (0.34 – 0.67) : 2; Good (0.68 – 1.00) : 3.

Results of table (3) demonstrates the participants' knowledge for overall items and more than two-thirds of items are fair level except the items 2 (0.7 ± 0.446), 4 (0.23 ± 0.427), 14 (0.30 ± 0.462), 16 (0.25 ± 0.437), 17 (0.30 ± 0.462), 19 (0.32 ± 0.486), 22 (0.30 ± 0.462), 23 (0.28 ± 0.454), 24 (0.32 ± 0.469), 28 (0.28 ± 0.454)) respectively, showed that in poor level of evaluation.

Table (4): Nurses' practices concerning nursing care guide in the intensive care unit

List	Main Domains Related To Nurses' Practices	Nurses' Performance								
		Always		Sometime		Never		Mean	S.D.	Eva.
		F	%	F	%	F	%			
1.	Standard precautions when provide nursing care	24	6.7	265	73.6	71	19.7	1.87	0.498	F
2.	Nursing care of the respiratory system	97	10.1	697	72.6	166	17.3	1.93	0.519	F
3.	Nursing care cardiovascular system	18	7.5	186	77.5	36	15.0	1.93	0.469	F
4.	Nursing care in the nervous system	15	5.0	142	47.3	143	47.7	1.57	0.588	P
5.	Nursing care digestive system	45	15.0	183	61.0	72	24.0	1.91	0.619	F
6.	Nursing care in the urinary system	32	10.7	198	66.0	70	23.3	1.87	0.570	F
7.	Nursing care in integumentary system	41	9.8	252	60.0	127	30.2	1.80	0.599	F
8.	Nursing care in Musculoskeletal system	19	7.9	153	63.8	68	28.3	1.80	0.568	F

9.	Psychosocial nursing care	46	12.8	245	68.1	69	19.2	1.94	0.562	F
10.	Nursing Documentation	19	4.5	262	62.4	139	33.1	1.71	0.543	F
Average of Overall Items for Nurses' Practices								1.84	0.560	F

F: Frequencies, %: Percentages, S.D: Standard Deviation; Eva.: Evaluation; Level of Evaluation = Inadequate (1 - 1.66) : 1; Fair (1.67 – 2.33) : 2; Adequate (2.34 – 3.00) : 3.

Table (4) reveals that participants' practices are fair level in the all domains, except domain (4). Nursing care cardiovascular system) (1.57 ± 0.588) is showed that poor level.

Table (5): Association between knowledge and practices of the nurses with their demographic characteristics

Demographical Characteristics	Nurses' Knowledge				Nurses' Practices			
	Chi-Squ	D.F	p-value	Sig.	Chi-Squa	D.F	p-value	Sig.
Age	3.699	4	0.448	NS	9.650	8	0.290	NS
Gender	1.215	1	0.270	NS	11.444	2	0.003	HS
Achievement Education	1.896	2	0.387	NS	12.605	4	0.013	S
Experiences Years in Nursing Field	2.470	4	0.650	NS	18.894	8	0.015	S
Experiences Years in ICU	2.514	3	0.473	NS	19.725	6	0.003	HS
Participation in Training Courses	2.668	5	0.571	NS	37.865	10	0.000	HS

D.F = degree of freedom, P = probability value, Sig. = Significant, S= Significant at ($P < 0.05$), HS= High Significant at ($P < 0.01$), NS= Non Significant at ($P > 0.05$).

Findings of the table -5- showed that there is no significant association between the nurses' knowledge with their demographic characteristics at (p value > 0.05), while pointed out that there is significant and highly significant relationship between nurses' practices and demographic characteristics at (p value > 0.01), except (age) is showed that non-significant differences with their practices.

DISCUSSION:

- Part I: Discussion of the demographical characteristics for intensive care unit nurses.

When the results finding revealed that majority of participants in the sample were from Al-Shaheed AL-sadder teaching hospital where included 44 (73.3%). The most of age group were 15 (25%) of nurses in the study within (36-40 years) while the majority of gender accounted 35 (58.3%) of nurses were male. Concerning to the achievement educational, majority of the nurses 26 (43.3%) were graduate of nursing institute. Intervention to improve intensive care nurses' knowledge of sedation assessment and management, Results showed that most of the nurses (82%, $n=54$) owns nursing certificates were diploma⁽¹⁰⁾. Regarding the years of experience in the nursing area 18 (30%) of nurses in the study have service (1-5 years). More than one third of them in these hospitals their years of experience range between 5-10 years with the mean 5.7 and 9.9 respectively⁽¹¹⁾. In regarding experiences' years at unit of the intensive care, the majority for sample as they showed 23(38.3%) have years of expert were (1-5 years). Concerning training courses concerning the work in the intensive care unit, 20(33.3%) of the study sample have (1-3 sessions).The majority of study (59.5%) of the respondents had less than two years of service experience and most of respondents had been less than 2 years' experience as nurse in (ICU)⁽¹²⁾. The vast majority of participants concerning specific years of experience in the study group had 1 - 5 years ($n = 32$; 80 %). The participants in the control group also had 1 - 5 years but in a smaller proportion ($n = 27$; 67.5%). Additionally, in both of study and control groups more than two third of participants

reported that they had 1-3 times ($n = 31$; 77.5%) ($n = 30$; 75%) regarding specific training courses in ICUs ⁽¹³⁾. Agree with study by (Hiba & suad, 2016), which collects basic socio-demographic characteristics obtained from the nurses via questionnaire sheet which contains [age of nurse, gender, level of educational, experience s' years, and years of experience in the ICU, and participation in training courses] ⁽¹⁴⁾.

- **Part II: Overall evaluation of knowledge and practices for the nurses toward nursing care guide in the intensive care unit.**

The study displays that majority of the participants nurses knowledge about nursing care guide have fair level of knowledge evaluation 45 (75%), while the level of evaluation related to practices is showed that all nurses participants were have fair level 60 (100%). From the findings of the study, nurses had a deficient of knowledge and some unsound practices regarding enteral feeding in the critical care department ⁽¹⁵⁾. Many studies had similar results related to the level of knowledge. In general, nurses' knowledge about enteral feeding in the critical care area was low and inadequate. Where the level of knowledge ranges from moderate to low, and none of the nurses had completely well knowledge ^(16, 17). Results of study is demonstrated that participants' knowledge for overall items and more than two-thirds of items are fair level except the items 2 (0.7 ± 0.446), 4 (0.23 ± 0.427), 14 (0.30 ± 0.462), 16 (0.25 ± 0.437), 17 (0.30 ± 0.462), 19 (0.32 ± 0.486), 22 (0.30 ± 0.462), 23 (0.28 ± 0.454), 24 (0.32 ± 0.469), 28 (0.28 ± 0.454)) respectively, showed that in poor level of evaluation. In the analysis came out of this study was noticed that intensive care nurses had a lack of knowledge ⁽¹⁸⁾. To determine quality of care for ICU patients is depending on the critical care nurses' knowledge, and the assessment of pain and as well as management skills applicable. Where, it has been showed that ICU nurses lack knowledge in pain assessment and interventions ⁽¹⁹⁾. The results of this study reported that more than three quarter of critical care nurses in medical and oncology ICUs, (77.1%) and (48.6%) respectively, to have the unsatisfactory degree of knowledge. While practices showed an increase of half (51.4%) and 25.7% of nurses had poor practice ⁽²⁰⁾.

Analysis data of study reveals that participants' practices are fair level in the all domains, except domain 4. Nursing care cardiovascular system (1.57 ± 0.588) is showed that poor level. Frequencies and percentages distribution of the nurses' practices level toward body fluid balance assessment was unsatisfactory at preprogram implementation ($n=60$; 55 (91.7%) ⁽²¹⁾.

- **Part III: Discussion association between the nurses' knowledge and practices with their demographic data (age, gender, achievement education; experiences' years of in the nursing scope; experiences years in ICU and participation in training sessions)**

The results showed that there is none statistical significant correlation between nurses' knowledge with their demographic characteristics at (p value > 0.05). This result is identical with the study achieved by (Sulekha & Sarala, 2017) reported that there is no association with the knowledge level of the respondents and their age groups ($p=0.107$), and nurses' level of education ($p=0.160$) ⁽²²⁾. This was supported by (Morsy et al, 2014) who stated that there is no significant statistical relationship between years of experience and knowledge scores. This finding was supported by (Morsy et al, 2014) which stated revealed that there are no important statistical rapport between the years of experience and overall knowledge scores ⁽²³⁾.

Current study is agree with study by (Hiba & Suad, 2016), which showed there are no statistical significance correlation between nurses knowledge with their sex ($p = 0.647$), and year of the service in ICU ($P = 0.632$) {14}. Low training courses and don't in participation can be impact on nurses knowledge, therefore we need more participation in courses to promote nurses' knowledge ⁽²⁴⁾. Also, finding showed that there is significant and highly statistical importance rapport with nurses' practices and demographic characteristics at (p

value > 0.01), except (age) is showed that non-significant differences with their practices. With regard to age, the result showed no correlation between age, practice and degrees of knowledge. This may be because of palliative care, a novice in Egypt protocol, especially in University of Tanta ⁽²⁰⁾. Researcher reveals according the study sample that there is a statistically significance correlation between nurses gender and their practices, because most of women have more compassionate and emotional feelings than males towards the patients undergoing ventilator in ICU. This study was supported by Ayed et al., (2015) reportedly, (2018) nurses with a higher degree education such as an academic certification, they had higher mean scores of the knowledge and practices compared with graduates of nursing institutes ⁽²⁵⁾.

The current study is agree with study by AQEEL & Suad, (2019) disclosed there was no statistically significant relevance with experiences' years and total knowledge scores; however, there was an association between years of experience and total scores of practices. May be due to the fact that nurses with more than 5 years of experience do not update their information and/or may have not enough time to research and increase their knowledge, therefore some nurses provide some aspects of care without knowing ⁽²⁶⁾. Results of study are reported that years of experiment in the ICU significantly correlated to increased knowledge, attitudes and practices among the various categories of staff ⁽¹⁵⁾. Training courses especially in the critical care units can improve the scientific and practical framework of the nurses whose working there, so the enhancement and the will is toward increasing the number of provided training courses inside and outside the country specifically regarding ICUs, will lead to a dream of comprehensive care that can be given ⁽¹³⁾.

CONCLUSIONS:

1. Illustrated from this study not all intensive care unit nurses were trained adequately on the nursing care guide at the intensive care unit approved via the Health Ministry of Iraqi which was prepared by Hammam Mithaq (2017).
2. The results of the current study are showed that knowledge and practices of nurses were moderate level.

RECOMMENDATIONS:

1. Assert to update nurses' knowledge and current skill set in critical care units in hospitals to provide nursing care through adequate and high practices by training continuously.
2. As for nurses who have less than five courses must intensify and double the number of training courses for their.

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