Critical Care Nurses' Knowledge about Pulmonary embolism in Respiratory Care Unit in Baghdad Teaching Hospitals

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Abstract:

Aim of the study: To asses the nurses' knowledge about pulmonary embolism

Methodology: A descriptive design study was carried out for the period of November18th 2018 up to the 20th of April 2019. Anon-probability (purposive) samples of (60) a nurse work at respiratory care unit in Baghdad Teaching Hospitals from different educational levels, both sexes (males and females), were selected. The instrument questionnaire tool consist of two parts, First part consist of (6) items included, age, gender, level of education, number of years of employment in hospital, number of experience in the respiratory care unit and training course about pulmonary embolism.& second part consist of (4) domains which included Nurses knowledge concerning definition and causes of disease, signs and symptoms, diagnostic test ,treatment of pulmonary embolism. The data have been analyzed through the application of: descriptive and the inferential analysis, and the researcher used the SPSS version 20 to analysis of data.

Conclusion: The study recommend that the **critical care nurse have** moderate level of knowledge and there were significant association between level of education and the nurse knowledge at $p > 0.05$ level.

Keywords: *Nurses'Knowledge, Pulmonaryembolism, Baghdad Teaching Hospitals.*

Introduction

Pulmonary embolism is a common complication of hospitalization and contributes to 5 to 10 percent of deaths in hospitalized patients, making it one of the leading causes of preventable hospital deaths [1,2]. Despite it being an enormous health problem, the true incidence of pulmonary embolism is uncertain. The diagnosis of czvenous thrombi and pulmonary emboli can be difficult and requires specialized imaging techniques that are not available in all hospitals or healthcare settings [2]. The diagnosis of pulmonary embolism (PE) is missed more often than it is made, because PE often causes only vague and nonspecific symptoms. pulmonary Embolism is an extremely common and highly lethal condition and that is why it is a leading cause of death in all age groups. Risk factors for venous thromboembolic disease include increasing age, prolonged immobility, surgery, trauma, malignancy, pregnancy, congestive heart failure, and diseases that alter blood viscosity4. Pulmonary embolism (PE) is a life threatening condition with the potential to masquerade as a variety of common disorders, and no single test exists for its definitive diagnosis. Clinically, PE is categorized into acute massive PE, acute medium / small PE, & chronic PE. It is the third most common acute cardiovascular disease, after myocardial infarction&strok [5].

Methodology: A descriptive design study was carried out to find out to assess of nurses' knowledge about pulmonary embolism in respiratory care unit at Baghdad Teaching Hospitals, starting from November18th 2018 up to the 20th of April 2019. Anon-probability (purposive) samples of (60) a nurse work in respiratory care unit at Baghdad Teaching Hospitals from different educational levels, both sexes (males and females), were selected. The instrument develop constricted by researcher through reading textbox and review of literature. The questionnaire format is composed of four domain with total (48) items: Part I: Socio- Demographic Information Sheet: It is consists of (6) items which included, age, gender, level of education, number of years of employment in hospital, number of experience in the respiratory care unit and training course about pulmonary embolism. Part II: Nurses' Knowledge concern pulmonary embolism: It is consists of (4) domain, which included Nurses knowledge concerning definition and causes of disease, signs and symptoms,

diagnostic test, treatment of pulmonary embolism. The instrument develop constricted by researcher through reading textbox and review of literature. The content validity of the instrument format is established through a panel of (8) experts. They are (9) faculty members from the College of Nursing /University of Baghdad. These experts have more than 10 years of experience in their specialist with a mean (18) year, and (SD=11.4). They were asked to review the questionnaire whether they multiple choice questions (items). Data were collected through using a constructed questionnaire and Self ‖reporting through an interview technique with the nurses as ‖means of data collection. The self-report of the questionnaire and interview took approximately 10- 15 minutes for each nurse. The 0.5 the level of significance was used as a standard to determine if there was a significant difference in the nurses' knowledge according to (age, gender, level of education and years of employed in hospital) Each items students knowledge was ranked according to the following scale as follow: know = 3, uncertain= 2, do not know=1. Data are analyzed through the use of the statistical package of social sciences (SPSS) version 20.0.

Results and Discusion

The analysis of socio-demographic characteristics in **table (1)** The findings show the majority of the study were male who accounted for (63.3%) of the total participants. The results supported by6, they noticed that the (54%)of nurses in sample study were male. Most of the study participants (55%) were ages between 20 and 26years old. These findings agreed with study done by7, stated That the majority of the sample in their study was college and post educational graduated. A high percentage of them were most of them (34.3%) were for (1-5) years were employment in nursing, majority of them (58.3%) were for (1-5) years, have experiences in RCU and finally majority of nurses (58.3%) have no training session in Respiratory care unit. These results similar with study done by, who reported that (27%) of participants hasn't taking any training session (71%) of the study sample have experiences in (1-5) years in EM. It is supported by8, study done by9,who reported Majority of the respondents (41.2%) were of age group 25-29 years. Nearly half of them (45.9%) had completed certificate nursing and were working as staff nurse (87.1%). Majority (22.4%) were working in ICU. About 39% of them had been working for less than 5years in the institution**.** Table 2**.**A,B,C,D depicted that nurses had a low level in Nurses knowledge concerning definition and causes of disease in (8) and,(13) items, nurses had a low level in Nurses knowledge concerning signs and symptoms of pulmonary embolism in item (3 and 8) items and, diagnostic test in item(6) and, concerning treatment of pulmonary embolism in item (1 5 and, 8) item(drink plenty of fluids in the traveling for a long time, to prevent formation of pulmonary clots. This results agree with supported by study done in Rwanda by10, who found that nurses working in ICU had poor knowledge and bad attitudes towards pain assessment and management. Table 3 demonstrates the association between sociodemographic and nurses knowledge score was explored. There are association between level of education and studied sample knowledge at p value 0.05 and also illustrate that no relationship found with rest of studied variables which are (age groups, gender and years of employment in RCU at p value 0.05. These finding is supported by 11, who that founds the majority of the respondents were black, married, from the Free state province only 38 (11.0%) knew the three main clinical manifestations associated with chronic disease. Level of school education, race and language were statistically significantly associated with knowledge level where as age and marital status were not. The findings of present study shows that there were not significant differences between gender and nurses knowledge about PE at P ≤0.05 value.

Table (1) assessment of nurses knowledge toward definition and causes of disease.

NO.	Items	Know	Do not know	Uncertain	MS	Levels ls
Domain I: Nurses knowledge concerning definition and causes of disease:		**F**	**F**	**F**		
1	Pulmonary embolism is a blockage of a central blood vessel in the arteries of the lungs.	45	6	9	2.65	M

Cont... **Table (1) assessment of nurses knowledge toward definition and causes of disease.**

2	Pulmonary embolism occurs due to circulate blood clots to the lungs from the legs. .	38	7	15	2.51	M
3	Pulmonary embolism is a dangerous condition that can cause permanent damage to the lungs.	39	4	17	2.58	M
4	The causes of pulmonary embolism are accurately not known.	14	19	27	1.91	M
5	Cancer tumors is not a cause of pulmonary embolism.	3	36	21	1.45	M
6	Air bubbles are one of the factors contributing to pulmonary embolism	38	13	9	2.41	M
7	Fatty deposits that enter the blood vessels when a fracture occurs in the bones are one of the factors contributing to pulmonary embolism. .	30	9	21	2.35	M
8	Amniotic fluid embolism is one of the causes of pulmonary embolism.	0	42	18	1.30	L
9	Smoking cannot cause pulmonary embolism	25	14	21	2.18	M
10	The genetic factor is one of the factors contributing to pulmonary embolism.	31	11	18	2.33	M
11	Surgery is not one of the main causes of pulmonary embolism.	4	36	20	1.46	M
12	Cardiovascular diseases increase the risk of disease.	28	13	19	2.25	M
13	Sleeping in bed for a long time increases the risk of infection.	0	39	21	1.30	L
14	Pregnancy increases the risk of disease.	24	11	25	2.21	M
15	Contraceptive can increase the risk of disease.	27	19	14	2.13	M
16	Obesity may be increase the risk of disease.	34	12	14	2.36	M
17	Frequent travel may be increases the risk of pulmonary embolism . .	31	11	18	2.33	M
18	Pulmonary embolism can be life-threatening.	46	6	8	2.66	H

Table (2) assessment of nurses knowledge toward signs and symptoms of disease:

Items		Know	Do not know	Uncertain	MS	Levels
NO.	Domain II: Nurses knowledge concerning signs and symptoms of pulmonary embolism	F	F	F		
1	Sudden shortness of breath is a symptom of pulmonary embolism and not relieved by the rest	39	9	12	2.50	M
2	The presence of acute pain in the chest increases with coughing, is a symptom of the disease	46	3	11	2.71	H
3	Fever is not a symptom of the disease	0	40	20	1.33	L
4	Presence of pain, swollen or both in the leg is a symptom of pulmonary embolism	23	6	31	2.28	M
5	Pallor is a symptom of pulmonary embolism.	26	7	27	2.31	M
6	Dizzy is not a symptom of pulmonary embolism	2	33	25	1.48	M
7	Cough with sputum is a symptom of pulmonary embolism.	26	10	24	2.26	M
8	Excessive sweating is a symptom of pulmonary embolism.	2	44	14	1.30	L
9	Irregular or rapid heartbeat is not a symptom of pulmonary embolism	6	27	27	1.65	M
10	Pulmonary hypertension is a symptom of pulmonary embolism	31	11	18	2.33	M

M.s=mean of score, Levels: Low(L) (1-1.33), moderate(M) (1.34-2.65), high(H) (2.66-3)

This table demonstrates nurses knowledge toward pulmonary embolism in respiratory care units. Which clearly depicted that nurses had a low level in Nurses knowledge concerning signs and symptoms of pulmonary embolism in item (3) (Fever is not a symptom of the disease) and item (8) excessive sweating is a symptom of pulmonary embolism.

Table (3) assessment of nurses knowledge toward diagnostic test of disease.

Items		Know	Do not know	Uncertain	MS	Levels ls
NO.	Domain III: Nurses knowledge concerning diagnostic test of pulmonary embolism	F	F	F		
1	Clinical examination is the first diagnostic test for pulmonary embolism	23	14	23	2.15	M
2	Complete blood count necessary to diagnose of the pulmonary embolism.	30	7	23	2.38	M
3	Chest X-ray is a test to diagnose pulmonary embolism	37	5	18	2.53	M
4	Magnetic resonance imaging is not test for pulmonary embolism	8	31	21	1.61	M
5	Ultrasound waves are tests for pulmonary embolism	28	6	26	2.36	M
6	Computed tomography (CT) is not a test for pulmonary embolism	0	44	16	1.26	L
7	Electrocardiographs is a test required for pulmonary embolism	37	5	18	2.53	M
8	Pulmonary nuclear radiation is diagnostic of the disease	25	17	18	2.13	M
9	Doppler of veins are require test for pulmonary embolism	26	11	23	2.25	M
10	Angisgiphy helps to diagnose pulmonary embolism	29	14	17	2.25	M

This table demonstrates nurses knowledge toward pulmonary embolism in respiratory care units. Which clearly depicted that nurses had a low level in Nurses knowledge concerning diagnostic test in item(6).(Computed tomography (CT) is not a test for pulmonary embolism).

Table (4) assessment of nurses knowledge toward diagnostic test of disease.

Items		**Know**	**Do not know**	**Uncertain**	**MS**	**Levels**
NO	Domain IV: Nurses knowledge concerning treatment of pulmonary embolism	F	F	F		
1	Regularity of taking anticoagulants drugs is not important to reduce the formation of new blood clots	2	44	14	1.30	L
2	Minimizing the continuous sitting for a long time is not necessary to prevent blood clot.	22	14	24	2,13	M
3	Wear support socks to enhance blood circulation.	31	7	22	2.40	M
4	Trembling in the seat and flexing the ankles every 15 or 30 minutes helps reduce the risk of blood clots	37	8	15	2.48	M
5	Limit the intake of caffeine or alcoholic as they contribute to the loss of fluids.	0	44	16	1.26	L

Cont... **Table (4) assessment of nurses knowledge toward diagnostic test of disease.**

6	Stand on the feet after surgery as possible to reduce the risk of blood clots.	34	10	15	2.91	H
7	Inserting a temporarily or permanently filter into a vena cava to prevent formation of blood clots.	31	10	19	2.35	M
8	Drink plenty of fluids in the traveling for a long time, to prevent formation of pulmonary clots	0	40	20	1.33	L
9	Air compression in the upper thigh or upper abdomen, which is enhance the blood flow	28	6	26	2.36	M
10	Non-adherent clothes in the waist area and legs does not prevent the formation of blood clots.	27	11	22	2.26	M

* M.s=mean of score, Levels: Low(L) (1-1.33), moderate(M) (1.34-2.65), high(H) (2.66-3)

Table (5): Analysis of variance for the differences between demographic characters of the study sample and nurses knowledge.

	Sum of Squares		**df**	**Mean Square**	**F**	**Sig**
Age	Between Groups	.710	4	.812	.431	.915 NS
	Within Groups	14.05	20	.652		
	Total	14.76	24			
Level of education	Between Groups	7.69	4	.015	.006	.015 S
	Within Groups	9.35	20	.668		
	Total	17.04	24			
Gender	Between Groups	.150	1	.741	.352	.643 NS
	Within Groups	16.61	23	.194		
	Total	16.76	24			
Years of experiences	Between Groups	.140	2	.641	.452	.125 NS
	Within Groups	15.61	23	.215		
	Total	15.75	25			

df. =degree of freedom, F=frequency, Sig. =significance

This table indicate that there is a significant differences between level of education and nurses knowledge, and no significant association between age , gender, years of experience and nurses knowledge.

Conclusion

Results revealed that the majority of the study were male who accounted for (63.3%) of the total participants while female constituted (36.7%). Most of the study participants (55 %) were ages between (20-26) years old. A high percentage of them were having Nursing college and above (46.7%). Majority of them (58.3%) were employee (1-5) years in respiratory care unit. Majority of nurses' (58.3%) have not training session about PE in RCU. Nurses' knowledge concerning PE in RCU had moderate knowledge level, with respect to the total mean of score (MS) which was (50). There is a significant association between level of education and studied sample knowledge at p value 0.05.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Department of Adult Nursing, College of Nursing, University of Baghdad, Iraq and all experiments were carried out in accordance with approved guidelines.

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