Assessment Nurses Knowledge toward Oxygen Therapy Administration for Patients with COVID-19 at Intensive Care Unit and Isolation Unit in AL-Hussein Teaching Hospital in AL-Smawa City / Iraq

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الخلاصة:

خلفية البحث: العلاج بالأوكسجين هو إعطاء الأوكسجين كتدخل طبي، والذي يمكن أن يكون لمجموعة متنوعة من الحالات الطبية مثل COVID-19.

الهدف: تهدف هذه الدراسة إلى تقييم معرفة الممرضين فيما يتعلق بإدارة العلاج بالأوكسجين للمرضى المصابين بـ COVID-19 لتحديد فعالية البرنامج التعليمي على معرفة الممرضات تجاه إعطاء العلاج بالأوكسجين للمرضى المصابين بـ COVID-19. العلاقة بين المعرفة و المتغيرات الديموغرافية.

المنهجية: تم إجراء تصميم شبه تجريبي بناءً على معرفة الممرضين فيما يتعلق بإدارة العلاج بالأوكسجين لمرضى فيروس كورونا في وحدة العزل والرمل في وحدة العناية المركزة في مستشفى الحسين التعليمي في مدينة المثنى. تم إجراؤه خلال الدراسة الحالية مع تطبيق نهج الاختبار القبلي والبعدي لمجموعة الدراسة والمجموعة المسيطر عليها. بدأت هذه الدراسة من 15 / ايلول/ 2020 حتى 30 / آذار/ 2021. شملت العينة الهادفة (غير الاحتمالية) (60) ممرضاً يعملون في وحدة العزل والعناية المركزة، و (10) للدراسة التجريبية و (50) ممرضاً لتنفيذ الدراسة، و (28) ذكر و (22) أنثى من كل من الفترتين الصباحية والمسائية الذين يعملون في المستشفى خلال فترة الدراسة واستوفوا معايير الدراسة ووافقوا على المشاركة في الدراسة.

النتائج: أوضحت نتائج الدراسة أن هناك فروق ذات دلالة إحصائية عالية بين الدراسة والمسيطر عليها في التطبيق اللاحق لاختبار البرنامج التعليمي وأن هناك علاقة ذات دلالة إحصائية عالية بين البرنامج التعليمي قبل وبعد البرنامج التعليمي لمجموعة الدراسة.

الاستنتاجات: تؤكد الدراسة أن معرفة الممرضات حول العلاج بالأوكسجين لمرضى COVID-19 لم تكن مهمة في مجالين وكانت مهمة في المجالين الأخيرين قبل تطبيق البرنامج والمعرفة الضعيفة في مجموعات الدراسة والمسيطر عليها قبل تطبيق هذا البرنامج يؤكد فاعلية البرنامج التعليمي بناءً على معارف الممرض.

التوصيات: يوصي الباحث بدورات تدريبية خاصة يجب تخصيصها وتقديمها لجميع طاقم التمريض الذين يعملون في وحدة العزل ووحدة العناية المركزة حول إعطاء العلاج بالأوكسجين لمرضى فيروس كورونا. يجب نشر دليل أو كتيب تعليمات حول العلاج من فيروس كورونا وكيفية إدارة المضاعفات التي يمكن أن تحدث وتسليمها إلى الممرضات العاملات في وحدات الرعاية الحرجة.

ABSTRACT

Background: Known knowledge level for Nurses' regarding oxygen therapy administration for patient with COVID-19.

Objective: to assess knowledge of intensive care Nurses' regarding oxygen therapy administration for patient with COVID-19 at Intensive Care Unit and Isolation Unit in AL-Hussein Teaching Hospital.

Methodology: A descriptive study was carried out at Intensive Care Unit and Isolation Unit in AL-Hussein Teaching Hospital in AL-muthanna City. The study conducted from the period 15 \ September \ 2020 until 22 \ February \ 2021. A non-probability (convenience) sample of (50) nurses working in

intensive care units and isolation unit in in AL-Hussein Teaching Hospital was used. The tool used in the study was a self-administered structured questionnaire. The data was collected by self-reporting technique. Data was analyzed by using descriptive and inferential statistical data analysis.

Results: The findings of the study revealed that (30%) of the samples were in the age group (21-26) years, (52%) of study sample were male, (56%) of the sample were Secondary nursing school graduate, (88%) of them were married, (72%) of them having from (3-9) Years of service.

Conclusion: the study concluded that The Knowledge of Nurses' was Poor knowledge; also there is no relationship between Knowledge Regarding Oxygen therapy for patients with COVID-19 and age and educational level. There was poor knowledge and in total knowledge there is non-significant deferential except in two domain (nurses knowledge about problems of o2 therapy and toxicity) and (nurses knowledge about Nursing role for patient with COVID-19 about oxygen administration).

Recommendation: The researcher recommends special training courses that should be allocated and provided to all nursing staff working in the isolation unit and intensive care unit on oxygen therapy for COVID-19 patients. A guide or instruction booklet about COVID19 treatment should be published and how to manage complications that can occur and deliver them to nurses working in critical care units.

INTRODUCTION

COVID-19 is the latest infectious disease, identified for the first time on 31 December 2019 in China. On March 11, 2020, the illness was proclaimed a pandemic by WHO after a swift outbreak that has affected many countries worldwide. By 25 May 2020, COVID-19 had crossed 5,131,810 and 331,108 in the total number of people who contracted their deaths and were 129,341 and 7249 in Iran simultaneously. Some 20 percent of infected patients will develop extreme symptoms that need oxygen treatment or other inpatients and about 5 percent of these will require intensive care hospitalization [1].

Touch, fomites, and particles distribute COVID-19.To be infected, a person normally be exposed to contagious through infection by talking, sneezing, or cough, the person must be within six feet to be safe. You may acquire COVID-19 by contacting a virus infected surface or substance and then touching your own face nostrils or eyes. Aerosol diffusion could be possible in comparison to drip let distribution with long exposure to high levels of aerosol in enclosed areas [2]. The treatment of extreme COVID-19 patents is mostly based on oxygen therapy. Airway and oxygen control and resuscitation therapies can be used by adults with emergency symptoms, serious air pressure, core cyanides, trauma, paralysis or seizures, Spo_2 > 94 percent. Start oxygen therapy at 5 liter/min and head flow rate to achieve goal Spo_2 93percent one during recovery. Usage only one interfaces (nasal prongs, cannula, clear face mask, non-rebreathe mask) to have oxygen deliverability. The most serious indication is acute hypoxemic respiratory failure with increase CO_2 level that result from ARDS (60-70 percent of patients admitted to the ICU) [3]. Since respiratory assistance is the main managing of COVID-19 patients, the nursing of oxygen therapy in specified hospitals must be standardized. Reasonable methods for the delivery of oxygen and oxygen are chosen according to patient degree of hypoxemia, and the patient must carefully track the patient's breathing rate, oxygen saturation and blood gas analyzes [4].

AIMS OF THE STUDY

To assess nurses' knowledge concerning oxygen therapy administration for patient with

COVID-19.To determines the effectiveness of educational program on nurses' knowledge toward oxygen therapy administration for patient with COVID-19, to find out the relationship between nurses knowledge and demographic variables.

METHODOLOGY

A quantitative design (descriptive study) of the current study was carried out to assess knowledge of intensive care Nurses' regarding Ventilator-Association Pneumonia from the period September 1st, 2017 until of September 15st, 2020. At AL-Hussein Teaching Hospital in Al-Smawa City, A non-probability sample of (50) nurses working at AL-Hussein Teaching Hospital in isolation unit and intensive care unit. The tool used in the study was a self-report structured questionnaire. The correct answer of knowledge was given a score (2) and the incorrect answer was scored (1). The test related to nurses' knowledge was carried out during the morning and evening shifts. About (20-30) Minutes were given to each nurse for test completion. It consisted of two parts. Demographic data (5), items. Knowledge of Critical Care Nurses' regarding oxygen therapy for patient with COVID-19 (31) items, which consist of general knowledge about oxygen therapy and administration for patient with COVID-19,Antomy and physiology, complication of over dose from oxygen and nursing management. The results were analyzed through the application of statistical Package of Social Sciences analysis (SPSS) version (24).

RESULTS

Table (1): Distributions of the Study Sample According to the Socio Demographic Characteristics and the Differentials between the Study and Control Groups

Demographic data	Groups	Study	
		F	**%**
Age/Years	≤ 26	**15**	30
	27-31	11	22
	32-36	9	18
	37-41	11	22
	42	4	8
	Total	**50**	**100**
Gender	Male	28	56
	Female	22	44
	Total	**50**	**100**
Marital Status	Single	9	18
	Married	41	82
	Total	**50**	**100**
Level of Education	College	3	6
	Institute degree	14	28
	Secondary nursing school graduate	33	66
	Total	**50**	**100**
Total Years of Service	3-9	28	56
	10-16	12	24
	17-23	10	20
	Total	**50**	**100**

The demographic characteristics of (50) nurses indicated that (56 %) most of the sample were males. In majority of age group was 21-26 years, the percentage (30 %) of nurses, Concerning marital status, the percentages (82 %) of the study sample were married. Relation to educational level most of the study samples (66 %) had Secondary nursing school graduate level, (56%) of sample work (3-9 years.) in isolation unit and most of the subjects (0%) had training session.

Table (2): Assessment Knowledge of the Sample

Variables	Classification	Sample		Significances
		F	**%**	
nurses knowledge about oxygen therapy and administration for patient with COVID-19	Poor	37	74	T test = 1.879 df =48 p. value=0.066 NS
	Moderate	11	22	
	High	2	4	
	Total	**50**	**100**	
nurses knowledge about Anatomy and physiology of respiratory system	Poor	47	94	T test =1.750 df =48 p. value= 0.086 N
	Moderate	2	4	
	High	1	2	
	Total	**50**	**100**	
nurses knowledge about complications of o2 therapy	Poor	35	70	T test =-2.669 df =48 p. value= 0.010 S
	Moderate	15	30	
	Total	**50**	**100**	
nurses knowledge about Nursing management for patient with COVID-19 about oxygen therapy	poor	44	88	T test =3.301 df =48 p. value =.002 S
	Moderate	6	12	
	Total	**50**	**100**	
Total knowledge	Poor	46	92	T test =1.579 df =48 p. value =0.121 NS
	Moderate	4	8	
	Total	**50**	**100**	

SD=stander deviation, P. Value=probability value, Sig: significance, N.S: Non-significant

Table 2 showed that Knowledge of Sample in while assessing the nurses' knowledge, there was a gap and a poor of information. Present of them poor in total knowledge there is non-significant deferential except in two domain (nurses knowledge about complications of o2 therapy) and (nurses knowledge about Nursing management for patient with COVID-19 about oxygen therapy).

DISCUSSION

Part 1: Discussion Socio-Demographic Data

Findings presented the distribution of the nurses their socio-demographic features in term of frequencies and percentage. The features of present sample that included in the present study at age group (21 to 42) years old confirms that common of nurses' age were less than 26 years forming (30%).

Study results of ages are agreed with those results [6] who revealed that the majority of nurses' age was 20 to less than 30 years forming (50%). Age's findings are also agreed with those of Odhah et al., (2020) who revealed that more than half of studied nurses (53.3%) were in age group less than 25 years.

The present study ensures that the majority of nurses in the isolation unit and intensive care unit were males with a percentage (56%) in the study sample. Gender results are agreed with those [8] who reveals that Majority of sample participants (63.3%) were male in study group and (73.3%) in control group. Gender findings are also agreed with [7] who show that the most of participants were males (60%).

The study revealed that most of subjects are married (82%) in the study sample. These findings are agreed with [7] who presents that the majority of the studied nurses (62.5%) were married. These findings are also agreed with [1] results who revealed that (90%) were married. The researcher thinks that most nurses are married because most of the sample is young and employees for this reason are married.

As for the level of education, the present study reveals that the majority of nurses in the study sample (66%) were nursing secondary school graduates and (28%) were institute graduates and college (6%). These findings agreed with [9] results who revealed that (82.4%) were nursing secondary school and (11.8%) were institute nurse and (5.9%) were bachelor (BSC nurse). These findings agreed with [1] results who revealed that (73.3%) were Diploma of Nursing (13.3%) technical Institute of Nursing and (13.3%) bachelor of Nursing.

The present study demonstrates that the majority of nurses who work in the isolation unit and intensive care unit have less than 9 years of employment with percentage (56%) in the study samples. Results of the study samples are agreed with [6] whose findings demonstrated that the most of nurses less than 10 years employment with percentage (66%). Results of the study samples are agreed with [10] whose findings demonstrated that the most of nurses from 2 to less than 9 years employment with percentage (64.5%).

Part2: Discussion the Knowledge for Nurses concerning oxygen therapy for patient with C0VID-19

The results of the present study explored the statistics of nurses' knowledge concerning oxygen therapy administration for patient with COVID-19 at isolation unit and intensive care unit Nurses' knowledge statistics are classified into four main domains as: assessment of nurses knowledge about oxygen therapy and administration for patient with COVID 19, assessment nurses knowledge about anatomy and physiology of respiratory system, assessment nurses knowledge about complications of o2 therapy, assessment nurses knowledge about nursing management for patient with COVID 19 about oxygen therapy. Knowledge of Sample in while assessing the nurses' knowledge, there was a poor of information. Present of them poor in total knowledge there is non-significant deferential except in two domain (nurses knowledge about complications of O2 therapy) and (nurses knowledge about Nursing management for patient with COVID-19 about oxygen administration).

The total knowledge non-significant and majority of sample subjects is in poor level. These findings are agreed with those of Yousif et al., (2020) There is an unsatisfactory in the knowledge the percentage was (100%) in pretest.

These findings are agreed with [10] study demonstrates that there is a gap in emergency health-care workers EHCWs' knowledge, attitude and practice (KAP) of nurses, particularly regarding when to provide oxygen therapy to a patient.

These findings are agreed with [11] the participants had poor level of knowledge of oxygen administration.

These findings are agreed with [12] Current study fine knowledge of nurse about indications of oxygen therapy is (7.1%) had good knowledge, (8.6%) had fair and (84.3%) had poor knowledge.

These findings are agreed [13] knowledge variable in pretest percentage was (96.6) inadequate.

CONCLUSION

The study concluded that The Knowledge of Nurses' was Poor knowledge; also there is no relationship between Knowledge regarding Oxygen therapy for patients with COVID-19 and age and educational level. There was poor knowledge and in total knowledge there is non-significant deferential except in two domain (nurses knowledge about problems of o2 therapy and toxicity) and (nurses knowledge about Nursing role for patient with COVID-19 about oxygen administration).

RECOMMENDATIONS

The researcher recommends special training courses that should be allocated and provided to all nursing staff working in the isolation unit and intensive care unit on oxygen therapy for COVID-19 patients. A guide or instruction booklet about COVID19 treatment should be published and how to manage complications that can occur and deliver them to nurses working in critical care units.

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