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Assessment of nurses practice toward prone position for patient with corona virus disease

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***Abstract*---**Objective: Assess nurse's practice regarding prone position for patient with corona virus disease. Find out the relationship between nurse's practice regarding prone position for patient with corona virus and demographic data (age, gender, level of education, experience). Methodology: A descriptive study design was carried out in Kut City/Wasit Province, at AL-Zahraa Teaching Hospital. A non-probability "purposive" sample had been consisted of (69) nurses were selected from at AL-Zahraa Teaching Hospital. Data collection was carried out in the isolation unit throughout the period from January 11th to 7st February 2022. Results: The results indicate that the nurses are inadequate practices at all studied items (M ≤1.66), and there is no significant different between demographic data and Nurses' practices in terms of application of prone position for patients with COVID-19. Conclusion: Nurses' practices in terms of application of prone position for patients with COVID-19, nurses were inadequate practices. Recommendations: Encouraging nurses to be enrolled in training sessions to improve their practice to keep them up to date toward COVID-19.

***Keywords*---**Assessment, Prone position, Corona Virus Disease.

Introduction

Coronavirus disease (COVID-19) is caused by coronavirus 2 (severe acute respiratory syndrome) (SARS-COV-2), a member of the human coronavirus (HCOV) family that causes severe acute respiratory syndrome by infecting the lower respiratory tract (SARS) (Berekaa, 2021). COVID-19 is currently being treated by controlling the source of infection, using infection prevention and

control methods to reduce the risk of transmission, and providing early diagnosis, isolation, and supportive treatment to those who have been infected (Wang et al. 2020).

COVID-19 Patients can develop hypoxemic respiratory failure, with ground-glass opacities progressing to a mixed appearance with consolidation largely in the bases of the bilateral lungs on chest imaging. (Shi et al., 2020). As COVID-19 has spread to become a pandemic, hospital professionals around the world have united to develop recommendations for the treatment of COVID-19 patients (Alhazzani et al., 2019). Supportive therapy with advanced hypoxemic respiratory failure management has been demonstrated to improve oxygenation in COVID-19 patients, and the prone position has been proven to improve oxygenation in COVID-19 patients (Ziehr et al., 2020).

The knowledge of mechanics associated with prone position are important in order to fully understand how and why this can be an effective treatment modality. when a patient is supine, the weight of the heart, lungs, and abdominal viscera increase the pleural pressure, reducing the pressure in dorsal lung areas. In patients with (ARDS), the ventral-dorsal pressure gradient is increased, which reduces ventilation capabilities in dependent dorsal regions (Scholten et al., 2017). For effective ventilation to occur, the alveolar pressure must be greater than the pleural pressure. ultimately, when a patient is placed in the prone position this “reduces the pleural pressure gradient from nondependent to dependent regions, in part through gravitational effects and conformational shape matching of the lung to the chest cavity (Scholten et al., 2017).

Method

Design of the study: A descriptive study design was carried out in Kut City/Wasit Province, at AL-Zahraa Teaching Hospital.

Sample of the study: A non-probability "purposive" sample had been consisted of (69) nurses were selected from at AL-Zahraa Teaching Hospital.

Data collection: implementation was carried out in the isolation unit throughout the period from January 11th to 7st February 2022.

Study instruments: The questionnaire is one of the means to help collect data that contribute to achieving the results expected by the study, so the researcher designed this questionnaire, which aims to clarify the study’s objectives and significance by obtaining answers to the study’s questions.
The researcher used three instrument parts to collect data from study participants to assess the practice as following:
First part: is the socio-demographic variables such as (age, gender, education level, years of experience and training sessions).
second part : is the Nursing practices about applying the prone position to patient with corona virus disease which consist of (10 items)
Three views were the first viewing during the first week, the second viewing during the second week, and the third viewing during the third week.

The researcher adhered to the rules of writing the questionnaire due to the importance of the type of information that the researcher is keen to be sufficient and comprehensive for all aspects of the problem and can be relied upon and trusted. To vague and complex answers. The type of questions was of the closed type, which required answering with reference to what was appropriate.

Statistical Analysis Approach

In order to statistically analyses the data collected from the study sample to arrive at the results, the researcher used the SPSS version (20) and Microsoft Excel (2010) program to analyses this data and deal with it statistically, to find the relationships between the variables, and obtain the final results of the research based on a set of statistical tests.

Administrative Arrangements

Approval from the University of Baghdad/ College of Nursing Council for the study, Official permissions from Ministry of Planning (CSO) 'Central Statistical Organization' ,Official permissions were also obtained from the Wasit Health Directorate (Training and Development Division) in order to formally access the Hospital , and Official permission have been obtained from AL-Zahraa Teaching Hospital.

Ethical consideration

Before the starting of gathering the data from the sample who are participating in the study, the researcher given a brief explanation about the scientific background of the research and the purpose of conducting it and what is the role of the nurses who participate in this study, to give them a complete and clear picture about the study to be carried out.

Result

Table (1): Distribution of Study Sample by their Age Groups

Age	Classification	Freq.	%
	20-29 years old	22	51.2
	30-39 years old	14	32.6
	40-49 years old	6	14.0
	50 and older	1	2.3
	Total	43	100.0
	Mean± SD	*30.37 ± 8,571*	

Findings show participants age, the mean age is 30, the age 20-29 years old were recorded the highest percentage (*n=22*; 51.2%), followed by those who are aged 30-39 years old (*n=14*; 32.6%) and those who are 40-49 years and ≥50 years (*n=6*; 14%) and (*n=1*; 2.3%).

Table (2): Distribution of Study Sample by their Gender

Gender	Classification	Freq.	%
	Male	27	62.8
	Female	16	37.2
	Total	43	100.0

In regard with gender, the male nurses were predominated (*n=27*; 62.8%) as compared with those who are female nurses (n=16; 37.2%).

Table (3): Distribution of Study Sample by their Education Level

Education Level	Classification	Freq.	%
	Nursing School	11	25.6
	Diploma Nursing	18	41.9
	Bachelors Nursing	14	32.6
	Total	43	100.0

In terms of education, the study participants expressed diploma nursing graduated (*n=18*; 41.9%), followed by those who are bachelors (*n=14*; 32.6) and those who are nursing school (*n=11*; 25.6).

Table (4): Distribution of Study Sample by their Years of Experience

Years of experience	Classification	Freq.	%
	<5 years	17	39.5
	5-10 years	21	48.8
	>10 years	5	11.6
	Total	43	100.0

Years of experience related findings, the nurses exhibited 5-10 years of experience (*n=21*; 48.8%) followed by those who are < 5 years of experience (*n=17*; 39.5) and those who are >10 years of experience (*n=5*; 11.6%).

Table (5): Distribution of Study Sample by their Training Courses

Training sessions	Classification	Freq.	%
	No	37	86.0
	Yes	6	14.0
	Total	43	100.0

In terms of training courses, it is obvious that the majority of nurses were no trained (*n=37*; 86%) as compared with those who are trained (*n=6*; 14%).

Table (6): Nurses Responses tests Regarding to Practices Concerning Application of Prone Position for Patient with Corona Virus Disease

Practices items			
		M ± SD	*Ass.*
1	Monitoring are asunder pressure during prone position	1.60±0.820	P
2	Placing the patient in a prone position immediately after eating	1.58±0.663	P
3	Measuring the patient's vital signs before and after the prone position	1.65±0.719	P
4	Create a schedule for placing the patient in a prone position, starting with him for two hours	1.55±0.825	P
5	Oxygen measurement when using the prone position	1.55±0.765	P
6	Disconnect the feeding tube while placing the patient in a prone position	1.46±0.735	P
7	Withdrawal of secretions from lung infections	1.27±0.590	P
8	Use absorbent sheets for fluids in the prone position	1.60±0.820	P
9	Place pillows under the legs, pelvic area and head	1.41±0.663	P
10	Taking the patient's medical history (Previous operations in the abdomen, face, chest, jaw and spine)Before applying the prone position	1.30±0.637	P

Level of Assessment ((P) Poor= 1-1.66, (M)Moderate= 1.67-2.33, (G) Good ≥2.34)

Findings demonstrated assessment of the study sample responses regard practices concerning application of prone position for patient with corona virus disease. The results indicate that the nurses are inadequate practices at all studied items (M ≤1.66).

Table (7). Overall Nurses Practices Concerning Application of Prone Position for Patient with Corona Virus

Practices			
	Freq.	%	*M ± SD*
Inadequate	32	74.4	*15.02 ± 3.602*
Moderate	10	23.3	
Adequate	1	2.3	
Total	43	100.0	

"M: Mean of total Scores, SD: Standard Deviation for total scores (Inadequate=10-16; Moderate= 17-23, Adequate=24-30"

Findings illustrated that the (74.4%) of nurses expressed inadequate practices of measurement (*M ± SD=15.02 ± 3.602*) with regards application of prone position for patient with corona virus disease.

Table (8): Significant Differences in Practices with Nurses Age (*n=43*)

Age	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Practices	Between Groups	.412	3	.137	1.063	.376
	Within Groups	5.038	39	.129		
	Total	5.450	42			

d.f: Degree of freedom, F: F-statistic, Sig: Significance

Findings illustrated there were no significant differences in nurses practices towards application of prone position for patient with corona virus disease with their age groups (*p> 0.05*).

Table (9): Significant Differences in Practices with Nurses Gender (*n=43*)

Nurses Practices	Gender	Mean	SD	t-value	d.f	*p≤ 0.05*
	Male	1.52	.327	.641	41	*.525*
	Female	1.45	.416			

SD: Standard deviation, t: t-test, d.f: Degree of freedom, Sig: Significance, p: Probability value

Findings illustrated there were no significant differences in nurses practices towards application of prone position for patient with corona virus disease with their gender (*p> 0.05*).

Table (10): Significant Differences in Practices with Nurses Education Level (*n=43*)

Education Level	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Practices	Between Groups	.233	2	.116	.892	.418
	Within Groups	5.217	40	.130		
	Total	5.450	42			

d.f: Degree of freedom, F: F-statistic, Sig: Significance

Findings illustrated there were no significant differences in nurses practices towards application of prone position for patient with corona virus disease with their education level (*p> 0.05*).

Table (11): Significant Differences in Practices with Nurses Years of Experience (*n=43*)

Experience	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Practices	Between Groups	.605	2	.302	2.496	.095
	Within Groups	4.845	40	.121		
	Total	5.450	42			

d.f: Degree of freedom, F: F-statistic, Sig: Significance

Findings illustrated there were no significant differences in practices towards application of prone position for patient with corona virus disease with their years of experience (*p> 0.05*).

Discussion

In regard with gender, the male nurses were predominated as compared with those who are female nurses. This study agreement with previous study which found the highest percentage of the participants in study group are male (60%) while only (40%) are female. In terms of education, the study participants expressed diploma nursing graduated, followed by those who are bachelors and those who are nursing school. This study is agreeing with previous study Anwar Abd ElAziz et al., (2021), who found that majority had a technical institute diploma nursing.

Years of experience related findings, the nurses exhibited 5-10 years of experience followed by those who are < 5 years of experience and those who are >10 years of experience .This study disagreement with Mahmoud and Mohammed (2015) the study shows the majority years of experience in nursing less than five years. In terms of training courses, it is obvious that the majority of nurses were not trained as compared with those who are trained. This study is agreement with Mahmoud and Mohammed (2015) who reported the most of the sample did not take any training session.

The results also indicate that the nurses are inadequate practices of prone position for patient with coronavirus disease. The study is agreed with Solbes and Yoneda (2018) reported the high fidelity simulation is an educational modality that is commonly use in medical and nursing education for increasing comfort of staff who perform therapeutic pronation. Overall Nurses Practices Concerning Application of Prone Position for Patient with Corona Virus Disease. Nurses expressed inadequate practices measurement with regards application of prone position for patient with corona virus disease. The study agreed with montanaro (2021) stated that using in situ simulation to develop a prone positioning protocol for patients with ARDS, details the implementation of prone positioning protocol.

Findings illustrated there were no significant differences in nurse's practices (p=0.376) towards application of prone position for patient with corona virus disease with their age groups.
Gender is a there were no significant differences in nurses' practices towards application of prone position for patient with corona virus disease with their gender (p=0.525)
Findings illustrated there were no significant differences in nurse's practices (p=0.418) towards application of prone position for patient with corona virus disease
Findings illustrated there were no significant differences in nurse's practices (p=0.095) towards application of prone position for patient with corona virus disease with their years of experience.
Also no differences between those who are training (M=1.66) and those who are untrained (M=1.47) and no significant differences in nurses' practices (p=0.233) (table 4-4-5).

Therefore, we reject the null hypothesis (There were no significant differences in nurse's practice) and accept the alternative hypothesis

Conclusion

Nurses' practices in terms of application of prone position for patients with COVID-19, nurses were inadequate practices. There is no significant different between demographic data and Nurses' practices in terms of application of prone position for patients with COVID-19.

Recommendations

Encouraging nurses to be enrolled in training sessions to improve their practice to keep them up to date toward COVID-19. A manual booklet of prone position associated COVID-19 and how to perform it should be write in simple words and use attractive pictures given to the patients and family. Multisite studies especially qualitative type (to make the study more representative and to decrease bias) on nurses' attitude should be conducted.

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