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ORIGINAL ARTICLE

Effectiveness of an Educational Program on Nurses' Knowledge towards Physical Therapy for Patients with COVID-19

QASIM DALI MOHAMMED[1], HUSSEIN HADI ATIYAH[2]
[1]*Academic Nurse, BSN, MSc, Al-Muthanah Health Directorate, Al-Muthanah, Iraq*
[2]*Assistant Professor, PhD, Department of Adult Health Nursing, College of Nursing, University of Baghdad, Baghdad, Iraq*
Corresponding author: Qasim Dali Mohammed, Email: qasem.dali1202b@conursing.uobaghdad.edu.iq

ABSTRACT

Background: Traditional Chest Physical Therapy is a method of respiratory therapy in which the lungs are drained using an airway clearance technique; it consists of placement, drainage, and percussion. Techniques have been developed, as a result, new techniques emerged that facilitated secretion removal and even included strategies for increasing lung capacity and volume.

Objectives: This study aims to evaluate the effectiveness of an interventional program on nursing staffs' knowledge toward physical therapy for patients with COVID-19.

Methodology: A pre-experimental (one-pretest-posttest) design was used to conduct this study. A non-probability (purposive) sampling was used to select (60 nurses) working in ICU. To measure the effectiveness of the interventional program, the researcher used a knowledge form that included (22) questions patient-oriented with COVID-19. The validity of the questionnaire and the interventional program was verified by presenting it to (12) experts. The reliability was determined using the test-retest approach for the knowledge questionnaire. Data analysis was done using the Statistical Package of Social Sciences (SPSS) version 25.

Results: The study findings showed that there are highly statistically significant differences between the scores of nursing staffs' knowledge in two levels of measurements (pre-test and post-test) at p-value (0.000), where the statistical mean of the overall knowledge of nursing staff in the pre-test was (1.657), while it becomes (12.297) in post-test, after the interventional program has been applied.

Conclusion: The study concluded that the interventional program positively affects the nursing staffs' knowledge concerning physical therapy for patients with COVID-19.

Keywords: Physical therapy, COVID-19, Nursing, Educational program

INTRODUCTION

The novel coronavirus is a highly contagious disease that produced an acute respiratory syndrome epidemic (COVID-19). Between January and April 2020, the epidemic morphed into a global pandemic, spreading from its beginning in Wuhan, China to almost every country on the planet. COVID-19 has killed over 126,000 individuals worldwide as of April 14th, 2020.[1]

As the primary line of care for hospitalized patients, nurses play a critical role in the treatment and prevention of the disease's rising trend. Pandemics like these create difficult and unforeseen situations. Nurses' perceptions of their readiness to respond to uncertainty and security in the event of a pandemic, as well as their ability to deliver the appropriate services for the situation during this time, the health of the community has an impact.[2] Other than treating the symptoms, there are no particular vaccinations or therapies for COVID19. At this time. Many active clinical trials, on the other hand, are looking into potential treatments.[3]

Before the admission of COVID-19 patients during the initial phase of the crisis in March 2020, preparations were done to prepare the Shoham Geriatric Medical Center physical therapy team for delivering care acute therapy is required. The first step was to learn how to breathe properly all employees would receive treatment training. The next step is to be organizing a working group with a respiratory expert a physical therapist who specializes in rehabilitation, and the physical therapy services director.[4]

Concerning the responsibilities that physical therapists do include home safety assessments, the acquisition of necessary durable medical equipment, and caregiver training always being postponed without jeopardizing functional deterioration the risk of hospitalization as a result of the condition. Patients who have a deterioration in physical function, as a result of their hospitalization, is a 250 percent increase in the risk of infection following a hospital discharge. Re-admission to the hospital or death.[5]

Techniques have been developed. As a result, new techniques emerged that facilitated secretion removal and even included strategies for increasing lung capacity and volume. Various methods for reducing the amount of work. Traditional Chest Physical Therapy (CPT or Chest PT) is a method of respiratory therapy in which the lungs are drained using an airway clearance technique (ACT), it consists of placement, drainage, and percussion.[6]

METHODOLOGY

To achieve the aims of the study, a quasi-experimental design was conducted on nurses' knowledge concerning physical therapy for patients with coronavirus at ALshahid Youssef Hospital for Communicable Diseases in Al-Muthanna City. A pre and post-test was conducted on both the study group and control one.

Before data collection, official permission was obtained from the relevant authorities. The sample selection was concerned with ethical conduct for scientific analysis; as no information about the nurses' names was gathered. All of the nurses in this study were well informed about their mission. Both nurses were told that the results of the questionnaire would be utilized solely for research purposes. Informing all nurses that they have the right to refuse to participate.

Sample of the study, (10) nurses for the pilot study were excluded from the study due to the use of a purposeful (non-probability) sample. The remainder (50) were for the study's implementation, including (30) males and (20) females from both the morning and evening shifts who worked in the hospital during the study period, met the study criteria, and agreed to participate. The study group was exposed to an educational program, while the control group was assigned to a control group. The following criteria used for selecting the research sample: a) Nurses who agree to take part in the research. b) The study focused on nurses who had been working since the beginning of the epidemic until the study began. c) Nurses, both male and female. d) Nurses with different level of education (Nursing College, Nursing Institute, Secondary Nursing School). e) Nurses with a preliminary exam score of less than 60%. The reliability test of the questionnaire was used to determine the accuracy of the questionnaire, was calculated by using Cranach's Alpha, the result was (0.813).

From January 12th to January 23nd, 2022, all nurses in the study and control groups took a knowledge exam to measure their knowledge before commencing the educational program. From the 24th of January until the 11th of February 2022, the program was implemented in the medical department of AL-Shahid Youssef

Hospital for Communicable Disease. Only the research group of (25) nurses was told about the program, and they were summoned to the same classroom sessions at 1:30 p.m. to take part in the instructional program. The curriculum was divided into four lectures, each of them which was created and scheduled to last roughly 45 minutes per day.

The data for the research group was obtained from nurses two weeks after the training ended. Data was gathered from both the study and control groups from the 25th to the 4th of March.

The data was acquired using a constructive knowledge questionnaire, which was completed by self-reporting closed-ended structured questions. The right knowledge answer received a score of (2), while the erroneous answer received a score of (1). The knowledge exam for nurses was conducted throughout the morning and evening shifts. Each nurse was given around (25-35) minutes to complete the test. The current study's data were analyzed with the Statistical Package for Social Sciences (SPSS) version 24.

RESULTS AND DISCUSSION

Table 1: Knowledge of sample (study and control groups) in pretest and comparing between the knowledge of the study group and control group before applying the educational program.

Variables	Classification	Significance				Significancy
		Study		Control		
		F	%	F	%	
Nurses' knowledge about the Coronavirus and its prevention	Poor	20	80.0	20	80.0	T test = .823 df =48 p. value=.415 NS
	Moderate	4	16.0	5	20.0	
	High	1	4.0	0	0	
	Total	25	100.0	25	100	
Nurses' knowledge about physical therapy for patients infected with the Corona pandemic virus						
	Poor	16	64.0	22	88.0	T-test =1.657 df =48 p. value= .104 NS
	Moderate	9	36.0	3	12.0	
	High	0	0	0	0	
	Total	25	100	25	100	
Total knowledge	Poor	21	84.0	23	92.0	T-test =.280 df =48 p. value=.781 NS
	Moderate	4	16.0	2	8.0	
	Total	25	100.0	25	100.0	

Table 2: The knowledge of the sample (study and control groups) in posttest and comparing between the knowledge of the study and control groups after applying for the educational program.

Variables	Classification	Groups				Sig.
		Study		Control		
		F	%	F	%	
Nurses' knowledge about coronaviruses and their prevention	Poor	3	12.0	21	84.0	HS
	Moderate	9	36.0	4	16.0	
	High	13	52.0	0	0	
	Total	25	100.0	25	100	
	T-test= 7.042 df= 48 P. value=0.000					
Nurses' knowledge about physical therapy for patients infected with the Corona pandemic virus	Poor	3	12.0	22	88.0	HS
	Moderate	2	8.0	3	12.0	
	High	20	80.0	0	0	
	Total	25	100.0	25	100	
	T-test= 11.173 df=48 P. value=0.000					
Total knowledge	Poor	3	12.0	23	92.0	HS
	Moderate	2	8.0	2	8.0	
	High	20	80.0	0	0	
	Total	25	100.0	25	100,0	
	T. test = 12.297 df= 48 p. value0.000					

Table 3: Comparing between Pre and Post the Educational Program for the Study Group

Variables	Classification	Study				Sig.
		Post		Pre		
		F	%	F	%	
Nurses' knowledge about the Coronavirus and its prevention	Poor	3	12.0	20	80.0	HS
	Moderate	9	36.0	4	16.0	
	High	13	52.0	1	4.0	
	Total	25	100.0	25	100.0	
	T-test=-6.292 df = 24 P. value=0.000					
Nurses' knowledge about physical therapy for patients infected with the Corona pandemic virus	Poor	3	12.0	16	64.0	HS
	Moderate	2	8.0	9	36.0	
	High	20	80.0	0	0	
	Total	25	100.0	25	100.0	
	T-test= -7.957 df = 24 p. value = 0.000					
Total total	Poor	3	12.0	21	84.0	HS
	Moderate	2	8.0	4	16.0	
	High	20	80.0	0	0	
	Total	25	100.0	25	100	
	T-test= -9.110 df=24 P. value=0.000					

The nurses' knowledge about the Corona pandemic and its prevention, and the nurses' knowledge about the physical therapy of patients infected with the Corona pandemic virus, were questions that were chosen before the application of the program, as the result showed that all the answers to the two areas in the knowledge are statistically non-significant The total knowledge is non-significant and the majority of sample subjects are poor.

These results disagreed with those reached by Alwani[7] where the results found by the research were that nurses have good knowledge and correct answers about the Corona pandemic virus. While the results agree with the research of Zhang[8], which found that nurses have weak knowledge about the

Corona pandemic virus. The total practical aspect is non-significant and the majority of sample subjects are poor. These are inconsistent with the findings of Al-Shahrani[9]

in Saudi Arabia who found that nurses' knowledge about physical therapy had significant.

As for the second part, the practical aspect of nurses working in isolation wards for physiotherapy for people infected with the Coronavirus, the results found that nurses have poor in this aspect with a weak percentage (72%). The results did not agree with the results found by Eggmann[10], which showed good results for the research participants about physical therapy had significant. The researcher concludes that nurses do fill the gap in Knowledge in the aforementioned field for workers in the isolation unit, because the Coronavirus is a modern disease and is constantly changing, nurses have very little knowledge about the Corona virus pandemic, as well as a few courses on these topics, and the change of nurses' locations between hospital departments also contributed to the lack of focus in participating in the courses, so courses on this topic should be increased.

Table (2) shows that the study found high significance in all areas. In addition, the table showed that the majority of nurses in the study group had a high percentage of knowledge in all areas, the first cognitive aspect was (52%) and the second was (80%) while the groups for the practical side High significant, the control percentage was (80.) It had a low knowledge rate in all fields.

Table (3) shows the presence of statistically significant changes between the administration of the study group before and after the administration of the educational program. These results are in agreement with the results of the research of Sahar[11], which found that nurses have a strong knowledge. These results agreed with those reached by Alwani[7], where the results found by the research were that nurses have good knowledge and correct answers about the Corona pandemic virus. The total knowledge is highly significant and the majority of sample subjects are good.

The researcher believes that the cooperation of nurses and their desire to increase knowledge of the Corona pandemic or physical therapy, as well as the opinions of experts and the supervisor, were clearly shown through the results obtained by the researcher, which are good ratios, and this gives me an indication that the more courses and information given to nurses helps in making nurses skilled and knowledge.

CONCLUSION

The findings were obtained by the researcher when evaluating the Coronavirus and nurses' practice about physical therapy for patients with COVID-19. They were not significant before applying for the program. There is a highly statistically significant difference between the study group and the control group in the post-testing of all domains in nurses' knowledge. Also, find that Most of the nurses of the study group in all fields are at a high level of knowledge while the control group is still at a poor level.

Recommendation: The researcher suggests the following based on the findings and conclusions of this study recommended:

Providing a brochure or guide for nurses working in the isolation unit that includes information about the Coronavirus and the traces resulting from it, so that each nurse carries it in his pocket to review it daily.

Providing a guidebook on physical therapy methods and explaining the best methods and distributed to nurses, as well as making guiding signs in all rooms for patients so that the benefit of the nurses as well as patients

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