

ORIGINAL ARTICLE

An Interventional Program for Nursing Staff about Prevention of Corona Virus Disease

MOHAMMED RAJEH TARRAR¹, SABAH ABBAS AHMED²

¹M.Sc.N. Student, Adult Nursing Department, College of Nursing/ University of Baghdad. Ministry of health

²Prof. Dr. College of Nursing/ University of Baghdad, Email: dr.sabah@conursing.uobaghdad.edu.iq

Corresponding author: Mohammed Rajeh Tarrar, Email: mohammed.rajeh1202a@conursing.uobaghdad.edu.iq, Cell: 96407801336776

ABSTRACT

Objectives: The objectives of the study is determining the effectiveness of interventional program on nursing staffs' knowledge about prevention of Covid-19.

Methodology: A pre-experimental design (one group design: pre-test and post-test) conducted at Isolation Ward in Al-Diwaniyah Teaching Hospital. The study period from (13th October, 2021 to 4th March, 2022) on a non-probability (purposive) sample consisting of (34 nurses) working in Isolation Ward.

Results: The study demonstrated that all the study sample responses at the pre-test were low knowledge with a statistical mean of scores (1.2817). Other than the post-test, the table shows that (100%) of the study sample have high knowledge at the mean of scores (1.8978). Also, the results revealed a highly significant difference between the pre-test and post-test of the study sample after participated in the interventional program at the p-value (0.0001). In addition to, this study indicated that there were significant differences in nurses' knowledge in post-test compared to pre-test (in the post test M= 1.89 versus in the pretest M= 1.28 at p-value 0.0001).

Conclusion: The level of nurses' knowledge was not as required (poor). After giving the interventional program the knowledge of nursing staff was improved.

Keywords: Interventional program, Nursing staff, Prevention of COVID-19.

INTRODUCTION

Coronaviruses are a huge group of viruses that cause illnesses in animals or humans. Severe acute respiratory syndrome (SARS-CoV2) COVID-19 is spread from person-to-another by respiratory droplets. Droplets are loosed if a person with COVID-19 sneezes, coughs, or talks. Droplets containing virus can land on the mucus membranes of mouths or noses of people who are closed or may be breathed into the lungs. A social distancing of at least 1 meter (3 ft.) between people is suggested by the World Health Organization (WHO) to prevent infection, while CDC suggests that a physical distance of at least 1.8 meters (6ft) between persons ⁽¹⁾.

In its quest to prevent and control the spread of COVID 19 inside the hospital, CDC recommended following and applying infection prevention and control (IPC) practices for both infected and suspected patients. These practices include (patient placement, personal protective equipment (PPE), aerosol generating procedures (AGPs), limit visitation and environmental infection control) in addition to transmission based precautions such as contact and droplet precautions ⁽²⁾.

METHODOLOGY

Study design : quantitative pre-experimental study (one group pretest-posttest design) has been conducted. Study period started from (13th October, 2021 to 4th March, 2022). The researcher used a non- probability (purposive) sampling method on (34) nurses working at isolation ward in Al-Diwaniyah Teaching Hospital.

The study instrument : consists of Two parts: the first part is demographic data for study sample which of age, gender, years of experience, years of experience in isolation ward, training courses related infection control.. The second part is the self-administered questionnaire of Knowledge about prevention of COVID-19 form. This part consist of one domain that contains (19) multiple-choice questions.. The validity of the instrument and the interventional program were identified by presenting it to 11 experts. Descriptive and inferential statistics were used to analyze the results of the study using the Statistical Package of Social Sciences (SPSS) version 25 and Microsoft Excel (2010).

Ethical Considerations: Approval achieved from the Council of the Nursing College/ University of Baghdad and Ethical Researches Committee for the study. Then the researcher submitted a detailed description including the study objectives and methodology (questionnaire) in order to obtain official permission from the Ministry of Planning (Central Statistical Organization) and to Al-Diwaniyah Health Directorate to carry out the study. After

that, the researcher sent a permission to Al-Diwaniyah Teaching Hospital in order to ensure the agreement and cooperation. Written informed consent has been obtained from each nurse.

RESULTS

Table 1: Study Sample Demographic Data N=34

Demographic data	Rating and intervals	Frequency	Percent
Age / years	20-29	17	50
	30 – 39	10	29.4
	40 – 49	5	14.7
	50 +	2	5.9
Gender	Male	22	64.7
	Female	12	35.3
Years of Experience in Employment	1-5	12	35.3
	6-10	13	38.2
	11-15	3	8.8
	16-19	3	8.8
	20 +	3	8.8
Years of Experience in Isolation Ward	1-5	16	47.1
	6-10	9	26.5
	11-15	7	20.6
	16-19	2	5.9
Number of Training session about infection control	Yes	0	0
	No	34	100

Table (1) shows the demographic characteristics of the study sample. The study results show that the dominant age group of nursing staff is (50%) of the age group (20-29) years old. Regarding gender, the table shows that (64.7%) of nurses are males. concerning years of experience in employment, the table reveals that (38.2%) of the nurses have (6-10) years of experience in nursing. In regards to years of experience in the isolation ward, the table shows that the majority of nurses (47.1%) have (1-5) years of experience in the isolation ward. The table shows that all the study sample (100%) did not have training sessions about infection control

Table 2: Overall Evaluation of Nurses' Knowledge Regarding Prevention of Covid-19 at the Pre-Test and Post-Test.

Periods	Levels	Frequency	Percent	Overall mean	Overall evaluation
Pre-test	Low	32	94.1	1.2817	Low
	Fair	2	5.9		
	High	0	0.0		
Post-test	Low	0	0.0	1.8978	Good
	Fair	0	0.0		
	High	34	100		

Cutt off point (0.33); Low (1-1.33); Fair (1.34-1.67); Good (1.68 and more)

Table (2) demonstrates that all the study sample responses at the pre-test are low knowledge with a statistical mean of scores (1.2817). Other than the post-test, the table shows that (100%) of the study sample have high knowledge at the mean of scores (1.8978).

Table 3: Mean Difference (Paired Sample T-Test) Between the Overall Evaluation of Nurses' Knowledge at the Pre-Test and Post-Test

Periods	Mean	N	Std. Deviation	t-value	d.f.	p-value
Pre-test	1.2817	34	.0818	22.905	33	.0001 HS
Post-test	1.8978	34	.1352			

Table (3) shows a highly significant difference between the pre-test and post-test of the study sample after participated in the interventional program at p-value (0.0001).

Table 4: Analysis of Variance (ANOVA) of the Overall Nurses' Knowledge according to Some Demographic Data

Studied variables	Rating and Interval	N	Mean	Std. Deviation	F	p-value
Age / years	20-29	17	1.8824	.0940	1.21	.323 NS
	30-39	10	1.8895	.0630		
	40-49	5	1.9368	.0686		
	50 +	2	1.9737	.0372		
Years of Experience in Employment	1-5	12	1.9123	.0849	1.53	.217 NS
	6 – 10	3	1.8664	.0821		
	11 – 15	3	1.8772	.0607		
	16 – 19	3	1.9825	.0303		
	20+	3	1.9123	.0804		
Years of Experience in Isolation Ward	1-5	6	1.9145	.0789	3.18	.038 S
	6 – 10	9	1.8947	.0911		
	11 – 15	7	1.8346	.0363		
	16 – 19	2	2	.0		

Table (4) shows a significant association between nurses' knowledge in post-test and years of experience in the isolation ward at p-value (0.038), but the other results indicate that there is no association between nursing staffs' knowledge and the other demographic data at p-value more than (0.05).

DISCUSSION

Table(1) the result revealed that the highest percentage of participants' age was (50%) between (20-29) years old. This finding supported by a study in Sichuan Provincial hospital, China. They found that percentage of participants at age group (20-30) years was (49.3%)⁽³⁾.

The study demonstrated that the majority of nursing staff were males at percentage (64.7%). These findings are in line with a study conducted in Iraq regarding some sterilization techniques and found that more than half of the nursing staff are males in ratio 70% and 30% of females⁽⁵⁾.

Regarding years of experience in nursing, (38.2%) of nursing staff have (6-10) years in nursing field. These results confirmed by Egyptian study who found that about half of nurses (51.4%), their experience ranged from 5-10 years. (47.1%) of participants have (1-5) years of experience in isolation ward⁽⁵⁾.

The study revealed that the total number of nurses (100%) have not participate in any infection prevention courses. This totally agreed with a study done at critical care units in Al-Najaf AL-Ashraf City hospitals to evaluate nurses practices concerning sterile techniques and found that (100%) of the nurses did not take training sessions about infection control strategies⁽⁶⁾.

Table(2,3)

In the pre-test, the study results revealed that the knowledge of nursing staff regarding prevention of COVID-19 was low. While In the post-test trials, nursing staffs' knowledge has been enhanced after the application of the interventional program as shown in table (2).These results confirmed by a study done at primary health care centers in Iraq in which knowledge of nurses was improved after application of the educational program⁽⁷⁾.

A highly statistically significant difference was found by this study among the subjects' overall responses in two periods of measurements "pre-test and post-test" (at p-value= 0.0001). This difference indicate the enhancement of nurses' knowledge at the post-test after participated in the interventional program compared with pre-test scores as shown in table (3).The results agree with a study accomplished at General Farasan Hospital, Egypt. Shows that there was a statistically significant difference between pre and after implementation of the program regarding knowledge about COVID-19 at (p<0.001)⁽⁵⁾.

Table (4):

No statistically significant difference among nursing staffs' age and their knowledge regarding prevention of COVID-19 in post-test at p-value (0.323), which prove the effectiveness of the program for all ages.

The study result revealed a non-significant difference among nurses knowledge about prevention of COVID-19 and their level of education in post-test at p-value (0.08) in which about half (47.1%) of participants graduated from college of nursing.

There was no significant difference between nursing staffs' knowledge and years of experience in employment in post-test at (p-value=0.217). This may be due to that COVID-19 is a newly emerged epidemic and nurses had poor knowledge regarding this issue in addition to, they may abandon reading and developing themselves after being graduated. Also, they did not receive training sessions about prevention of COVID-19.

All results above are in congruence with a study conducted in Iran to assess of Iranian nurses' knowledge and anxiety toward COVID-19 during the current outbreak. Who found no significant association between nursing staffs' knowledge and their age, educational level and years of experience at (p>0.05)⁽⁸⁾.

A statistically significant association between nursing staffs' knowledge about prevention of COVID-19 and their years of experience in isolation ward at p-value (0.038). These findings are in line with a study in Iraq reported that there was a statistically significant improvement for knowledge regarding prevention of HCAs by nurses who are working in ICU, facing and providing care for infected people⁽⁹⁾.

CONCLUSION

The level of nurses' knowledge was not as required (poor).After giving the interventional program the knowledge of nursing staff was improved. The researcher concluded that the interventional program was effective in improving knowledge of nurses regarding prevention of COVID-19. There are no significant association between the overall nursing staffs' knowledge in the post-test with all demographic characteristics except years of experience in isolation ward at p-value (0.038).

Recommendation: Providing training courses regarding prevention of COVID-19 for all nurses especially in isolation ward which is the role of the continuous medical education unit. Working under the Iraqi National Guide to Infection Control in Health Institutions, which was issued in 2009 in cooperation with the World Health Organization. In order to implement of infection prevention strategies and continuous monitoring, the study recommend to establish an infection prevention department in every hospital.

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