INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X
Impact factor: 4.295
(Volume 4, Issue 1)
Available online at www.ijariit.com

Effects of Educational Program on MERS- Corona-Virus among Nurses Students at Jazan University 1439-2017

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ABSTRACT

The Middle Eastern Respiratory Syndrome Corona Virus (MERSCoV) firstly discovered among people living in Saudi Arabia. Aim of study is to The aim of the study is to evaluate effectiveness of Educational Program on MERS- Corona-Virus among nurses students at Jazan University 1439-2017 among nurses student at Sabia University College.

Keywords: *Nurses Students, Knowledge, MERS- Corona-Virus.*

1. INTRODUCTION AND BACKGROUND

The Middle Eastern Respiratory Syndrome Corona Virus (MERSCoV) firstly discovered among people living in Saudi Arabia. The affected areas of MERS include the Arabian Peninsula and its neighboring countries (including Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Kingdom of Saudi Arabia, State of Palestine, Syria, United Arab Emirates, Qatar and Yemen) There is more than 95% of the confirmed cases were reported by Middle East countries.(1) It is a respiratory tract diseases that threaten the global health which cause by a novel coronavirus (MERS-CoV) (2) .The virus was first isolated in Saudi Arabia at 2012 and The MERS-CoV is considered an epidemic in Saudi Arabia .(3)Male are more affect than female, and it occur among age between 45–59 and >60 years had the highest mortality rate (4).

In 2012 the virus was isolated from the sputum of a man in Jeddah, Saudi Arabia. Shortly thereafter, a report appeared of an almost identical virus detected in a patient in Qatar with acute respiratory syndrome and acute kidney injury; the patient had traveled recently to Saudi Arabia after the report of the first case in September 2012, the MoH responded by setting a case definition and circulating it to all healthcare workers, and introducing active surveillance and notification requirements. (5)
In Saudi since 2012 a total of 1413 cases was confirmed with the disease and 32 case with the disease without current symptoms; of them 610 died, 833 recovered, 2 patients under treatment(6).

For prevention of the occurrence of the disease and effective control measures Knowledge regard modes of transmission is important. The transmission of MERS is defined as sporadic, between family members, often occur in health care settings, and requiring close and prolonged contact (7)

Transmission of the infection by droplets from infected individuals during sneezing or coughing, also contaminated surfaces can be sources of infection, objects, and hands; and direct contact with orifices like the mouth, nose, and eyes. The infection can present itself clinically in the form of mild flu-like symptoms on one end of the spectrum to severe acute respiratory illness on the other, even resulting in death; especially in cases associated with co-morbidities(8)

The disease is often occur in a lower respiratory tract, the patient complain of Fever; cough; breathing difficulties; also come with pneumonia, which can progress to acute respiratory distress syndrome; multi organ failure and death among more than a third of the infected patients (7)
For the prevention of the disease, Standard Precautions good personal hygiene including proper hand hygiene is an effective way to prevent infection. Wear a medical mask when in close contact (i.e. within approximately 1 meter) and upon entering the room or cubicle of the patient (provided at: [9] till now no any vaccine discover for prevention of the disease.

Aim of the study

The aim of the study is to evaluate effectiveness of Educational Program on MERS- Corona-Virus among nurses students at Jazan University 1439-2017 among nurses student at Sabia University College.

Research Hypothesis

1-There will be an increase in self- knowledge regard the prevention of MERS- Corona-Virus after education program

Methodology
Study Design
Research Design

The research design selected for the study was a quasi-experimental one group pretest & Posttest design.

Study Setting

Sabia University College

Target Population

Students at level 5, 6 and 7

Inclusion Criteria

- Students who agree to participated in study
- Student at level 5,6 and 7

Exclusion Criteria

- Students who refused to participate in study.
- Students at level 3 ,2 and 1

Sample Size

Total coverage (52 students)

Sampling Techniques: Stratified stage sampling technique

Tool of Data Collection

Tool I: (Face to Face Questionnaire Sheet) Pretest Phase

This phase include the interview schedule designed of total number of 47 items. Consisted of 7 items pertaining to the demographic variables of the respondents such as age, sex, educational status, knowledge source of information about the disease, and 9 item regard knowledge about the nature of the disease, and 6 item regard signs and symptoms, and 8 items regard mode of transmission lastly 7 item regard the prevention of the disease, and 10 item regard the practicing way for prevention of the disease

Tool II: (Educational Programme)

The materials of the program, handouts and posters were reviewed by expertise committee in the field of infectious disease .Educational Program on MERS- Corona-Virus and precaution for prevention. Timetable of 12 hours education for students which consist of the definition of the disease, mode of transmission and signs and symptoms and the prevention method.
Post test phase:
This phase include evaluation of effectiveness of educational program after 3 months through using the same structure interview sheet which used in pre-test regarding MERS- Corona-Virus as same as in the pre test

Methods of Data Collection

Data collected into a database file. Pair test analysis performed by using the SPSS 20

2. RESULTS

In table (1) 52 students enrolled in the study, their age 20-22 represent 98/1% and more than 22 represent only 1.9% 86.5 are single and 51.9% in level 5 while 23.1 in level 6 and the rest in level 7.

Most of students received their information about the disease from internet + TV and magazine which represent 69.2% while 75% did not have any information about the disease as illustrated in table(2)

In table (3) illustrated the differet changes occur in level of knowledge regard the nature of the disease (MERS-CoV) with p value 0.00001which improved after the education program
There was significant such as MERS-CoV cannot be seen with the naked eye; multiplies faster than other viruses; SARS disease produced from MERS-CoV and produce colds
In table (4) presents knowledge about signs and symptoms of the disease. There was a significant difference in the level of knowledge about signs and symptoms of MERS-CoV before and after the program with the students having a better understanding after the teaching
Program the percentage of students reporting cough, fever, rhinorrhea, difficulty of breathing followed by pneumonia and kidney failure as symptoms of MERS-CoV in the post test was much higher in comparison to the pretest

Table (5) showed knowledge about the transmission of the disease. There was significant difference in the exchange of knowledge about the transmission of MERS-CoV. Student showed percentage of knowledge increased after the program for modes of transmission such
As air through coughing and sneezing, handshaking, touching, kissing, pathogenicity of the virus, and polluted hands. Although, student answered the question about the duration of life of the virus outside the body not exceeding 24 hours p value 0.2199

Table (6) showed the improvement in knowledge regard methods of prevention. The results showed that students gained knowledge in avoiding exposure to people with cold infection, coughing and sneezing, avoiding contact with things used by someone with cold infection, taking vaccine for influenza and better understanding that there is no vaccine or specific treatment protective against MERS-CoV with significant differences in the pre-test and post-test.

In table (7) the results about ways of practices against MERS-CoV are explained in Table 6. Students showed better understanding for utilizing masks on the face; the use of tissue that can be discarded or single use, avoid touching your nose, mouth or eyes in case of infection; with significant differences in the pre-test and post-test.

Table 1: Demographic Table No. (52)

Demographic	**No**	%
Age		
20-22 Years	**51**	**98.1**
More than 22 Years	**1**	**1.9**
Marital Status		
Single	**45**	**86.5**
Married	**7**	**13.5**
Education level		
Level 5	**27**	**51.9**
Level 6	**12**	**23.1**
Level 7	**13**	**25.0**

Table (2) About Source of Disease No (52)

Information about source of disease	no	%
Do you Suffer from Influenza before		
yes	7	13.5
No	39	75.0
not sure	6	11.5
I do not have any information about Corona Virus Cell with		
yes	7	13.5
No	37	71.2
not sure	8	15.4

I have some information from Television, Magazine or Internet		
yes	36	69.2
No	8	15.4
not sure	8	15.4
I have some information from Scientific Journal and Articles		
yes	24	46.2
No	13	25.0
not sure	15	28.8

Table (3) Knowledge Regard the Nature of Disease Pre and Post Test No (52)

Knowledge	**Pre**		**Post**		**P value**
	no	%	no	%	
A Precise micro-organism that cannot be seen with naked eye					
yes	18	34.6	32	61.5	<0.00001
no	1	1.9	5	9.6	
Not sure	33	63.5	15	28.8	
The virus live intruder inside a cell to ensure reproductive, most of the viruses cause varying severity of diseases					
yes	14	26.9	25	48.1	0.01372
no	3	5.8	8	15.4	
Not sure	35	67.3	19	36.5	
Corona viruses multiplies faster than other viruses					
yes	15	28.8	30	57.7	< 0.05
no	2	3.8	3	5.8	
Not sure	35	67.3	19	36.5	
The closer source of the virus is bats					
yes	3	5.8	14	26.9	0.01540
no	9	17.3	11	21.2	
Not sure	40	76.9	27	51.9	
The SARS disease produced from corona virus					
yes	3	5.8	15	28.8	< 0.001
no	8	15.4	8	15.4	
Not sure	41	78.8	29	55.8	
Corona viruses can cause colds					
yes	15	28.8	36	69.2	
no	2	3.8	6	11.5	<0.00001
Not sure	35	67.3	10	19.2	
Corona virus causes a variety of diseases in livestock and pets					
yes	16	30.8	32	61.5	
no	1	1.9	9	17.3	0.5
Not sure	35	67.3	11	21.2	
The causes of upper respiratory tract infections: Bacteria					
yes	7	13.5	28	53.8	0.00686
no	6	11.5	13	25.0	
Not sure	39	75.0	11	21.2	
The causes of upper respiratory tract infections: Virus					
yes	11	21.2	33	63.5	<0.00001
no	3	5.8	5	9.6	
Not sure	38	73.1	14	26.9	

Table (4) Knowledge Regard the Symptoms of Disease Pre and Post Test No (52)

Symptoms	Pre		Post		P value
	no	%	no	%	
Cough					
yes	21	40.4	46	88.5	<0.00001
no	1	1.9	0	0	
Not sure	30	57.7	6	11.5	
Fever					
yes	25	48.1	46	88.5	<0.00001
no	17	32.7	1	1.9	
Not sure	10	19.2	5	9.6	
Difficulty breathing					
yes	18	34.6	44	84.6	<0.00001
no	17	32.7	1	1.9	
Not sure	17	32.7	7	13.5	
Pneumonia					
yes	15	28.8	37	71.2	<0.00001
no	19	36.5	2	3.8	
Not sure	18	34.6	13	25.0	
Kidney failure					
yes	8	15.4	23	44.2	0.17377
no	22	42.3	12	23.1	
Not sure	22	42.3	17	32.7	
Rhinorrhea					
yes	14	26.9	39	75.0	
no	18	34.6	2	3.8	<0.00001
Not sure	20	38.5	11	21.2	

Table (5) Knowledge Regard the Transmission of Disease Pre and Post Test No (52)

Transmission	Pre		Post		P value
	no	%	no	%	
The air through coughing and Sneeze					
yes	23	44.2	44	84.6	<0.00001
no	17	32.7	1	1.9	
Not sure	12	23.1	7	13.5	
Shake hands with someone who has a cold					
yes	19	36.5	38	73.1	<0.00001
no	21	40.4	2	3.8	
Not sure	12	23.1	12	23.1	
Touching things used by someone with a cold					
yes	15	28.8	36	69.2	<0.00001
no	22	3.8	3	5.8	
Not sure	15	67.3	13	25.0	
Kissing someone with a cold					
yes	17	32.7	36	69.2	<0.00001
no	21	40.4	4	7.7	
Not sure	14	26.9	12	23.1	
The virus can maintain its ability to pathogencity for a period that may extend for hours					
yes	21	40.4	38	73.1	< 0.001
no	16	30.8	1	1.9	
Not sure	15	28.8	13	25.0	

Corona viruses are considered weak and the duration of their life outside the body not exceeding 24 hours					
yes	8	15.4	23	44.2	0.2199 Not significant
no	29	55.8	13	25.0	
Not sure	15	28.8	16	30.8	
Stay away with a distance of less than half meter when you talk with an infected cold person					
yes	14	26.9	32	61.5	
no	20	38.5	4	7.7	<0.001
Not sure	18	34.6	16	30.8	
The polluted hands					
yes	19	36.5	34	65.4	<0.00001
no	17	32.7	4	7.7	
Not sure	16	30.8	14	26.9	

Table (6) Knowledge Regard the Prevention of Disease Pre And Post Test No (52)

Prevention	Pre		Post		P value
	no	%	no	%	
Enough Sleeping					
yes	17	32.7	33	63.5	<0.00001
no	19	36.5	10	19.2	
Not sure	16	30.8	9	17.3	
Avoid close contact to people with cold infection					
yes	21	40.4	40	76.9	<0.00001
no	20	38.5	4	7.7	
Not sure	11	21.2	8	15.4	
Avoid sharing tool with a cold infected person					
yes	16	30.8	40	76.9	<0.00001
no	24	46.2	6	11.5	
Not sure	12	23.1	6	11.5	
Take antibiotics before infection					
yes	17	32.7	37	71.2	<0.00001
no	23	44.2	7	13.5	
Not sure	12	23.1	8	15.4	
Taking medicines for cold and flu symptoms before the start of the disease					
yes	15	28.8	45	86.5	<0.00001
no	5	9.6	2	3.8	
Not sure	32	61.5	5	9.6	
Taking vaccines or vaccines for influenza disease					
yes	20	38.5	45	86.5	<0.00001
no	2	3.8	2	3.8	
Not sure	30	57.7	5	9.6	

Table (7) Knowledge Regard the Practice Regard Prevention of Disease Pre And Post Test No (52)

Practice	Pre		Post		P value
	no	%	no	%	
Personal cleanliness					
yes	29	55.8	47	90.4	<0.00001
no	3	5.8	2	3.8	
Not sure	20	38.5	3	5.8	

The use of masks on the face					
yes	26	50.0	48	92.3	<0.00001
no	3	5.8	0	0	
Not sure	23	44.2	4	7.7	
The use of tissue that can be discarded or single-use					
yes	27	51.9	48	92.3	
no	3	5.8	1	1.9	<0.00001
Not sure	22	42.3	3	5.8	
Vaccination against flue (influenza)					
yes	29	55.8	47	90.4	<0.00001
no	0	0	1	1.9	
Not sure	23	44.2	4	7.7	
Vaccination of one or more person in the family at home					
yes	26	50	46	88.5	<0.00001
no	0	0	1	1.9	
Not sure	26	50	5	9.6	
Avoid contact with infected persons					
yes	25	48.1	47	90.4	
no	1	1.9	1	1.9	<0.00001
Not sure	26	50.0	4	7.7	
Avoid touching your nose, mouth or eyes in case of infections					
yes	28	53.8	48	92.3	
no	1	1.9	1	1.9	<0.00001
Not sure	23	44.2	3	5.8	
Avoid the exposure to patient sneezing spray					
yes	27	51.9	48	92.3	
no	2	3.8	1	1.9	<0.00001
Not sure	23	44.2	3	5.8	
Washing food and fruit well					
yes	27	51.9	49	94.2	<0.00001
no	1	1.9	0	0	
Not sure	24	46.2	3	5.8	<0.00001
Wash your hands with soap or Antibacterial cleanser powder continuously all the time					
yes	26	50.0	48	92.3	
no	1	1.9	0	0	<0.00001
Not sure	25	48.1	4	7.7	

3. DISCUSSION

As shown in the analysis the nurses students (98.1%) their age between 20-22 years (86.5%) are single, while half of them in level 5, Majority of the respondents had gained knowledge about MERS from TV as shown by this study. This result is supported by study which showed that participants' main source of knowledge about such kind of virus was TV.[10]

The current study showed that the nurse students have the significantly higher score in the post-test compared to pre-test regard the nature of disease and the symptoms of disease and the mode of transmission p value<0.00001 which indicate that education program made good effects on knowledge of students regard the nature of the disease , symptoms and mode of transmission similar results shown in study done at Al-Ahsa which showed that the knowledge of students improved after education program p value <0.001[11] which support the hypothesis
Regard prevention of the disease all the respondents improve their knowledge regard prevention of the disease after education program taking of enough sleep, tools of avoiding contacts with infected person and not sharing his tool and taking medicine as prophlacting for cold,p value <0.00001

For the practicing regard prevention of MERS-CoV infection, the students reported good infection control practices after education program, use of of masks on the face, The use of tissue and discard after use, Avoid touching nose, mouth or eyes in case of infections, Wash hands with soap or Antibacterial cleanser powder continuously all the time. These results were very encouraging and of particular concern as adherence to such procedures could lead to decreased morbidity and mortality related to MERS-CoV infection. Similarly, to

study done in Hofuf Hospital, Saudi Arabia in which the respondents reported high level of healthcare workers compliance to infection control practices with no difference between doctors and nurses .[12]

4. CONCLUSION

In hospitals there is above average risk for exposure to infectious diseases. Student nurses travel between hospital and university, with the capacity to act as a conduit of pathogens to large, susceptible populations. Nursing colleges must respond thoroughly to protect students and staff and prevent spread of disease into the university community in the midst of an epidemic.

5. RECOMMENDATION

One day teaching program is not enough to understand the disease and mode of transmission and prevention we recommend further education program with long period.

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