

" Effectiveness of Health Education Contact Program in Improving Nurses' Knowledge about Promoting Health and Preventing of Communicable Diseases at Primary Health Care Centers in Al -Amara City-Iraq"

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ABSTRACT

Background: Promoting and satisfying Nurses knowledge in health centers to promoting health and preventing of communicable diseases that help nurses develop health trends, build healthy behavior and enable people to understand their families' health messages on how to prevent the spread of transmitted communicable diseases.

Objective: The aim of this study is to evaluate the knowledge of the nurse in primary health care centers about the promoting health and preventing of communicable disease and to develop an educational program.

Methodology: Began their quasi-experimental design between 17 November 2019 and 28 December 2020 at (19) Primary Health Care Centers. Selected purposive samples of 50 nurses are divided into 2 groups equally; the study group were exposed to the nursing education program and the control group. The investigator has built the study instrument. Questionnaire comprised (56) questions on the promoting health and preventing of communicable disorders to evaluate knowledge among nurses. The validity of the tool is determined by the 15 expert panels while reliability of instrument is determined using test and retest approach. Data analysis using description statistics (frequency, percentage, arithmetic mean and standard deviations) and inferential statistical (ANOVA, t-test and chi-square test).

Results: The study shows that the majority of nurses have poor of knowledge in their pre-test evaluation when the control group has moderate knowledge of the promoting health and preventing of communicable in health promotion and immunization unit.

Conclusion: Study showed that the two groups with their knowledge did not differ substantially at pretest. During the after test and before test their knowledge of promoting

health and preventing of communicable disease has clearly improved and the study and control groups have confirmed high significant differences.

Keyword : Effectiveness; Health Promotion Program; Nurse; Knowledge; Preventing transmission of Communicable disease; Health Promotion and Immunization Unit.

Introduction

Communicable diseases in the world today consider that they represent an important threat to public health; mobile groups (groups of people, animals, and objects) transmit these globally through increasing urbanization and global travel. ⁽¹⁾. A microorganism that causes disease is a pathogen. The conditions characterized as communicable diseases (CD) are the consequences of the presence of a microorganism in/on the body ⁽²⁾. Communicable diseases (CDs), for instance viruses, bacteria, fungi, and parasites can be caused by pathogenic microorganisms (causative agents). Transmissible diseases (CDs) may be transferred by vector exposure of causative agents or environment from one person to another, direct or indirectly ⁽³⁾⁽⁴⁾. The rapid spreading of communicable diseases like Severe Acute Respiratory Syndrome (SARS) coronavirus in South China, first detected in Guangdong in November 2002, resulting in over (8,000) people infected, and (774) deaths in (37) countries, in years 2012 the Middle East Respiratory Syndrome (MERS-CoV), that emerged in Saudi Arabia and was responsible (2494) lab.-confirmed MERS cases were recorded and related deaths occurred (858) ⁽⁵⁾. In December 2019 a coronavirus, namely SARS-CoV-2, was identified as the cause of the viral pneumonia disease outbreak that first occupy a particular location in China in Wuhan, Hubei, which was currently called COVID-19. ⁽⁶⁾. Incidence of tuberculosis (TB) the mentioned mortality rate was estimated at (0.7) per (100 000) people in 2013 ⁽⁷⁾. In addition, Incidence of Mumps Cases in 2017, in Columbia in the U.S. revealed mumps infections was estimated at 4667 people⁽⁸⁾. Information estimated about (35000000) Health Care Workers (HCWs) included nurses worldwide, and about (3000000) exposures to blood borne viruses each year (2000000 HBV; 900,000 HCV and 300,000 HIV)⁽⁹⁾. According to the estimates by the Centers for Disease Control & Prevention (CDC) and (37,000) deaths in Europe, and health care related infections reported deaths (99,000) deaths in American health care setting ⁽¹⁰⁾⁽¹¹⁾. Despite the focus on communicable diseases, in particular in the developing world, health promotion strategies for preventive and disease control are equally valid ⁽¹²⁾ **Importance of the Study:** The importance of communicable diseases to highlight the limited capacity and resources available to ensure the

greatest impact on health and socio-economic development is a vital health strategy ⁽¹³⁾. Knowledge of nurses is supported through education and healthcare protection for uninfected persons, important and effective measures for community members to avoid diseases through the understanding of the fundamental concepts for control (CD's) and the many issues surrounding them ⁽¹⁾. **Objective of the study:** The main objective of the study is to determine the efficacy of the Health Promotion program for nursing knowledge of the promoting health and preventing of communicable conditions in primary health centers in Al-Amara city as well as to evaluate the knowledge of nurses on promoting health and preventing of communicable disease (age , gender, level of education, years of experience in nursing field, and training courses).

Methodology

To do this study, the preliminary, pre-test and post-test approach for the study and control groups was used as a quasi-experimental design. This study was carried out from 17, November 2019 to 28, December 2020 in AL Amara City (19) Primary Health Centers. There were (50) nurses in a purposive sample. The sample has been randomly divided into two categories. Each consisted of (25) nurses, since the study group had been exposed to the educational program. The program consisted of six sessions and have implemented in eight day and time each session was one hour. Constructed the study instrument by researcher. Questionnaire consisted of (56) questions to evaluate the nurses' knowledge about promoting health and preventing of Communicable Diseases., it consisted of three parts: First part. Self-administered questionnaire sheet regarding demographic characteristics of the nurses consisted of (5) variables (age, gender, level of education, years of experience in nursing, and training sessions). Second part: Questionnaire Nurses' knowledge about Common Communicable Diseases, it was composed of (35) questions in four domains (General information about Communicable disease consisted of (5) items, nurses' knowledge relative to their information about Coronaviruses consisted of (4) items, nurses' knowledge relative to their information about Tuberculosis TB consisted of (4) items, nurses' knowledge relative to their information about (Measles Mumps Rubella) consisted of (9) item nurses' knowledge relative to their information about H1N1 consisted (4) item nurses' knowledge relative to their information about Viral hepatitis A and B (5).and nurses' knowledge relative to their information about Scabies consisted of (4) items). **Third Part:** Nurses' knowledge about Health Promotion Approaches it was composed of (16) questions in four domains (nurses'

knowledge relative to general information of the health promotion program consisted of (4) items, nurses' knowledge relative to their information about Health Protection consisted (4) item, nurses' knowledge relative to their information about Disease prevention consisted (4) item, and nurses' knowledge relative to their information about Health education on communicable diseases consisted (4) item. Each question comprised of (4) alternatives for multiple choice. The questions were scored as correct (1) point and incorrect (0) point. Scores of response are categorized according to the following : Poor knowledge = (> 0.33): 1; Moderate knowledge = ($0.33-0.66$):2; Good knowledge = ($0.67-1.00$):3.

The panel of 15 experts determines validity of the Program content and the study instruments. Reliability of instrument via use of Alpha Cronbachs' reliability, it is a high acceptance level (0.80). Analyze data through a statistical approach (frequency, percentage, Mean of score and standard deviation and an inferential statistical approach (T- test, Chi-Square & ANOVA test).

Results and Finding:

Table (1): Overall evaluation of nurses' knowledge to promoting health and preventing communicable disease in pre- and post-test study and control groups

Test Period	Levels of Evaluation	Pre-Test		Post- Test	
		Freq.	%	Freq.	%
Study Group	Poor (0 - 0.33) : 1	16	64.0	0	0.0
	Moderate (0.34 – 0.67) : 2	9	36.0	5	20.0
	Good (0.68 – 1.00) : 3	0	0.0	20	80.0
	Total	25	100.0	25	100.0
		0.39 ± 0.102		0.81 ± 0.114	
Control Group	Poor (0 - 0.33) : 1	10	40.0	10	40.0
	Moderate (0.34 – 0.67) : 2	15	60.0	15	60.0
	Good (0.68 – 1.00) : 3	0	0.0	0.0	0.0
	Total	25	100.0	25	100.0
	$\bar{x} \pm \text{Std. Dev.}$	0.41 ± 0.085		0.43 ± 0.092	

$\bar{x} \pm S.D.$ =Arithmetic Mean ($\bar{x}$) and Std. Dev. (S.D.) .

Table -1- shows a poor evaluation knowledge for two-thirds of study group 16 participants 16(64%) , and a moderate level of knowledge for control group 15 (60%).This table also shows a significant improvement in the study group at a good level of 20 (80%) after testing. Although the majority of control group at the same evaluation level in post-tests 15 (60%). This shows the efficacy of a nurses' knowledge educational program in the study group after testing..

Table (2): Distribution of nurses responses and significant comparisons between (pre-test and post-test) for Study and control groups with respect to knowledge on preventing communicable disease transmission

Domains of knowledge Concerning Preventing transmission of communicable disease *	Groups Responses	Study Group							Control Group							C.S.
		Pre-Test			Post- Test			C.S. P-value	Pre-Test			Post-Test			C.S. P-value	Post-C Post-S (C X S)
		F	%	Mean	F	%	Mean		F	%	Mean	F	%	Mean		
1. General information about Communicable disease	Correct	58	46.4	0.46	109	87.2	0.87	P=0.000 HS	70	56.0	0.56	61	48.8	0.49	0.129 NS	P=0.000 HS
	Incorrect	67	53.6	M	16	12.8	G		55	44.0	M	64	51.2	M		
2. The most common Communicable disease																
2.1. Corona viruses	Correct	39	39.0	0.39	79	79.0	0.79	P=0.000 HS	37	37.0	0.37	42	42.0	0.42	0.401 NS	P=0.000 HS
	Incorrect	61	61.0	M	21	21.0	G		63	63.0	M	58	58.0	M		
2.2 Tuberculosis TB	Correct	34	34.0	0.34	84	84.0	0.84	P=0.000 HS	35	35.0	0.35	48	48.0	0.48	P=0.037 NS	P=0.000 HS
	Incorrect	66	66.0	M	16	16.0	G		65	65.0	M	52	52.0	M		

2.3 Mumps	Correct	48	38.4	0.38 M	92	73.6	0.74 G	P=0.000 HS	53	42.4	0.42 M	51	40.8	0.41 M	P=0.774 NS	P=0.000 HS
	Incorrect	77	61.6		33	26.4			72	57.6		74	59.2			
2.4 Measles and Rubella	Correct	43	43.0	0.43 M	83	83.0	0.83 G	P=0.000 HS	39	39.0	0.39 M	42	42.0	0.42 M	P=0.633 NS	P=0.000 HS
	Incorrect	57	57.0		17	17.0			61	61.0		58	58.0			
2.5 H1 N1	Correct	38	38.0	0.34 M	76	76.0	0.76 G	P=0.000 HS	45	45.0	0.45 M	50	50.0	0.50 M	P=0.438 NS	P=0.000 HS
	Incorrect	62	62.0		24	24.0			55	55.0		50	50.0			
2.6 Viral hepatitis A and B	Correct	45	36.0	0.36 M	106	84.8	0.85 G	P=0.000 HS	45	36.0	0.36 M	49	39.2	0.39 M	P=0.613 NS	P=0.000 HS
	Incorrect	80	64.0		19	15.2			80	64.0		76	60.8			
2.7 Scabies	Correct	38	38.0	0.38 M	84	84.0	0.84 G	P=0.000 HS	39	39.0	0.39 M	40	40.0	0.40 M	P=0.885 NS	P=0.000 HS
	Incorrect	62	62.0		16	16.0			61	61.0		60	60.0			
Part three: Health promotion approach to preventing																

transitional of Communicable diseases																
3.1 General information about the health promotion program	Correct	31	31.0	0.31 P	74	74.0	0.74 G	P=0.000 HS	43	43.0	0.43 M	43	43.0	0.43 M	P=0.892 NS	P=0.000 HS
	Incorrect	69	69.0		26	26.0			57	57.0		57	57.0			
3.2 Preventive measures in health promotion program include:																
3.2.1 Health Protection from infectious diseases	Correct	42	42.0	0.42 M	80	80.0	0.80 G	P=0.000 HS	39	39.0	0.39 M	43	43.0	0.43 M	P=0.566 NS	P=0.000 HS
	Incorrect	58	58.0		20	20.0			61	61.0		57	57.0			
3.2.2 Disease prevention	Correct	40	40.0	0.40 M	74	74.0	0.74 G	P=0.000 HS	39	39.0	0.39 M	45	45.0	0.45 M	P=0.399 NS	P=0.000 HS
	Incorrect	60	60.0		26	26.0			61	61.0		55	55.0			
3.2.3 Health education on communicable diseases	Correct	36	36.0	0.36 M	87	87.0	0.87 G	P=0.000 HS	44	44.0	0.44 M	38	38.0	0.38 M	P=0.398 NS	P=0.000 HS
	Incorrect	64	64.0		13	13.0			56	56.0		62	62.0			

F: Frequencies, %: Percent; C.S.: Comparison Significant; C X S: Testing coincidence between Control and Study groups; Level of Evaluation: P= poor (0 - 0.33) : 1; M= Moderate (0.34 – 0.67) : 2; G= Good (0.68 – 1.00) : 3; N.S: Non-Significant at (P> 0.05); HS: High Significant at (P< 0.01).

The results of this table show that, depending on the correct response of the nurses, there was a moderate evaluation of nurses' knowledge concerning the whole domain of pretest communicable diseases for the control group. Although after delivery of the training program, the knowledge evaluation of Nurses in the post-test study group is improved, it is raised to a good level. When analyzed by independent sample t-test

Nurses' Knowledge Variables	Pre- Test				Post –Test			
	ANOVA	d.f	p-value	Sig.	ANOVA	d.f	p-value	Sig.
Age	0.999	21	0.413	NS	1.782	21	0.181	NS
Experiences Years in Nursing Field	1.043	21	0.394	NS	4.765	21	0.011	S
Participation in Training Courses	0.899	22	0.421	NS	0.072	22	0.931	NS
	Pre- Test				Post -test 2			
	t-test	d.f	p-value	Sig.	t-test	d.f	p-value	Sig.

Gender	1.537	23	0.138	NS	3.327	23	0.003	HS
Level of Education	1.380	23	0.181	NS	1.000	23	0.328	NS

Table (3): Association of the knowledge of nurses with their demographic variables

d.f = degree of freedom, P = probability value, Sig.= Significant, S= Significant at($P < 0.05$), HS= High Significant at ($P < 0.01$), NS= Non Significant at ($P > 0.05$).

Table -3- shows that there is no statistically significant association between nurses' knowledge and their demographic variables at (pretest, post-test), except (Gender and Experiences Years in Nursing Field) in post-test are showed highly significant differences in relationships to nurses' knowledge were found.

Discussion:

Part I: Discussion Effectiveness of Health Education Contact Program in Improving Nurses' Knowledge about Promoting Health and Preventing of Communicable Diseases at Primary Health Care Centers in Al -Amara City at (Pre-Post Tests)

Table -1- Demonstrated that 16 (64 %) of the two-thirds of the study group participants had poor evaluation knowledge and that 15 (60%) had a moderate control. The table furthermore showed a high level of knowledge improvement in the post-testing 20 (80%). Most control group at the same evaluation level in post-tests at 15 (60%). This shows the effectiveness of a post-test study group education program

The results of the present study show that nurses have poor knowledge before program application but have had a positive impact on a high level of knowledge among nurses about the promoting health and preventing communicable diseases following education program.⁽¹⁴⁾

Table 2 statistically indicates a high level of significant difference in all domain of knowledge of the nurses in relation to the promoting health and preventing of communicable diseases (between pre- and post-testing of the study group as well as post-testing between the study and control group). In all of the above items there were statistically significant difference in the P value (<0.01) between the two groups (<0.01).⁽¹⁵⁾

Part II: Discussion of the relationship between Nurses' Knowledge with demographical characteristics for study group at (Pre Test, Post Test)

Table -3- shows that the statistically significant association between knowledge of nurses and the demographic variables (pre-test, after-test) does not exist, with the exception of (gender and Experiences Years in Nursing Field) in the after-testing .This study has demonstrated that the relationship between the knowledge of the nurses and age has not been significant⁽¹⁶⁾. This totally agrees with a study published by⁽¹⁵⁾ it shows that a significant relationship between nurses' knowledge and their gender post-test (at $P=0.024$). This result has been supported by a recent study, which revealed that the statistical difference between knowledge, score among nurses and their educational level is significant.⁽¹⁷⁾ The study revealed a significant statistical relationship between years of experience and the full post-testing knowledge, they don't update their knowledge and may have no time for searching and increasing their knowledge, therefore nurses carryout certain aspects of care without knowledge. This result support by⁽¹⁵⁾ show that the knowledge and experiences years in

nursing field of the Nurses knowledge have been significantly relationship. Training course in the health promotion and immunization units in particular can improve the science of nurses whose work leads to the dream of comprehensive care that can therefore be given, and does not show statistical differences between knowledge and training courses for nurses at (p value 0.072)⁽¹⁸⁾.

Conclusions.

1. Not every nurse within the PHCCs approved by the Iraqi Ministry of the Health in health promotion and immunization were properly trained in health promotion with the objective of promoting health and preventing of communicable diseases.
2. The results of this study demonstrate that the knowledge of the nurses shows that two thirds (64%) of study group participants had a pre-test knowledge poor while the control group, was moderately 15 (60%) aware of PHCC in Al-Amara City.
3. After implementing an education program to promoting health and preventing of communicable diseases, the Nurses' knowledge scores are increased.

Financial disclosure

There is no financial disclosure.

Conflict of interest

None to declare.

Ethical Clearance

The College of Nursing has approved all experimental protocols and all experiments have been conducted in conformity with approving guidelines.

References:

1. Allender, J.A., Rector C. and Kristine D.W Community health nursing promoting and protecting the public's health, Wolters Kluwer Health, 8th Edition, Wolters Kluwer Health | Lippincott Williams & Wilkins, (2014). 349 -350
2. Taylor C, Liillis C and Le Mone P, Fundamentals of nursing the art and science of nursing care, 4th Ed, New York: Lippincott Co, (2001). 534-562.
3. Liz E., Kim S., Rose G.,and Stephen B., Essential practice for infection prevention and control: Guidance for nursing staff, Royal College of Nursing, uk,(2012).10-23.

4. World Health Organization (WHO), Infections and infectious diseases A manual for nurses and midwives in the WHO European Region, (2001). 4-24.
5. Al-Omari, A., Rabaan, A. A., Salih, S., Al-Tawfiq, J. A., & Memish, Z. A., MERS coronavirus outbreak: Implications for emerging viral infections. *Diagnostic microbiology and infectious disease*, (2019). 93(3), 265-285. *Nursing Education.org*. Critical Care Nurse (CCN) – *Nursing Education.org* <https://www.nursingeducation.org/careers/critical-care-nurse/2019>.
6. Centers for Disease Control and Prevention (CDC), Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Setting (2020).
7. Glaziou P., Sismanidis C., Floyd K., & Raviglione M., Global epidemiology of tuberculosis. *Cold Spring Harbor perspectives in medicine*, (2015). 5(2), 17798.
8. Centers for Disease Control and Prevention (CDC), Notes from the field: complications of mumps during a university outbreak among students who had received 2 doses of measles-mumps-rubella vaccine—Iowa, July 2015–May 2016. *MMWR. Morbidity and mortality weekly report*, (2017). 66(14), 390.
9. Karmode M, Jolly D, Langkham B, Thomas MS, Holmes W and Gillord S (2005). Compliance with universal / standard precautions among health care workers in rural north India. *AJIC*; (2005). 33(1) : 27.
10. World Health Organization,(WHO), Report on the burden of endemic health care-associated infections worldwide. (2011), 3-12
11. Kleven., M., Edwards, J., Richards, J., Horan, T., Gaynes, R., Pollock D., & Cardo D. Estimating health care-associated infections and deaths in U.S.hospitals *Public Health Rep*; (2002). 122 (2), 160-166.
12. World Health Organization (WHO), Bangkok Charter for Health Promotion in a Globalized World. Consensus statement. 6th Global Conference on Health Promotion; 2005 Aug 11; Bangkok
13. World Health Organization. (2017). Health 2020. A European policy framework and strategy for the 21st century. People.
14. Wu C., Effectiveness Of A Specific Infection Control Education Program For Taiwanese Nursing Students, Queensland University Of Technology, Institute Of Health And Biomedical Innovation, School Of Nursing, (2007). 115-138.

15. Al-Jubory, M. N. Construction of an Educational Program for Primary School Teachers About Communicable Disease Control in Kirkuk Governorate [MSc. thesis]. Mosul: University of Mosul (2012), 87-105
16. Al-Jourani, K. R., Effectiveness of health education program on science teachers' level of awareness communicable diseases control in primary schools in Baghdad city [PhD. dissertation]. Baghdad: University of Baghdad, (2014), 60-63
17. Al-Husain, A.F., Effectiveness of an Education Program on Teachers' Knowledge about Early Detection of Communicable Diseases at Primary Schools in Ai- Hillah City [PhD. dissertation]. Babylon: University of Babylon, (2019), 81-86
18. AL-Rusaitem, A. A., Effectiveness of an Educational Program on Nurses' Knowledge and Practices Concerning Nursing Care For Critically – ill Patients at Critical Care Units in Misan Governorate Hospitals [PhD. dissertation]. Baghdad: University of Baghdad, (2020), 151-160
19. Mohammed E, Critical Care Nurses' Knowledge and Practice Regarding Administration of Total Parenteral Nutrition at Critical Care Areas in Egypt. *Journal of Biology, Agriculture and Healthcare*, (2014). 4(13), 10-22.