ORIGINAL ARTICLE

"Effectiveness of the Health Promotion Teaching Program on Nurses' Knowledge about Preventing Transmission of Communicable Disease at Primary Health Care Centers in Al -Amara City-Iraq"

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ABSTRACT

Background: Promote and maintain knowledge on the transmission of communicable diseases by nurses in primary health centers, to allow nurse to develop health trends in people, build healthy competencies and help people understand health communications to family communications that prevent the spread of communicable diseases.

Objective: The purpose of the study is to evaluate the knowledge of nurses in primary health centers, as well as building educational programmers, regarding the prevention of transmission of Communicable disease.

Methodology: A quasi-experimental design has been carried out from (19) Primary Health Care Centers started from the 17th, November 2019 to 12th, April 2021. Select purposive sample comprised of 50 nurses is divided into two groups equally, study group were exposed to the nursing educational program, and control group. Constructed the study instrument by researcher. Questionnaire consisted of (56) questions to evaluate the nurses' knowledge about preventing transmission of Communicable diseases. The validity of the instrument obtained by 15 experts panel while reliability of instrument is determined using test and retest approach. The analysis of data by application of description statistic (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 deficit evaluation level while the control group has moderate levels of knowledge in health promotion and vaccination units in primary health centers on how to prevent transmission of communicable disease while improved knowledge is provided for post-test.

Conclusion: Study showed that there were no significant differences between the two groups with their knowledge at pretest. While in the post-test showed that there were a clear improvement in their knowledge related to preventing transmission of Communicable disease and confirmed high significant differences between the study and control groups.

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

INTRODUCTION

In today's world, communicable diseases (CDs) represent a significant health threat, which is transmitted globally as the result of increasing urbanization and international travel through mobile (groups of people/animals/things)[(1)]. A pathogen is a microorganism that causes diseases. Communicable diseases (CDs) have been described by the body as the result of the presence of a micro-organism [(2)].Communicable diseases (CDs) can be occur brought about by pathogenic microorganisms (causative agents), for example, viruses, bacteria, fungi, and parasites. Communicable diseases (CDs) can be transmitted from one individual to different, direct or indirect, through exposure to the vector from causative agents or the environment [(3)] [(4)]. The rapid worldwide spread of communicable diseases such as Severe Acute Respiratory Syndrome (SARS) coronavirus (SARS-CoV), which was first detected in southern China specifically in Guangdong, during November 2002, which resulted in more than (8000) infected person and (774) deaths have spanned to (37) countries during, 2002 and the Middle East Respiratory Syndrome (MERS) coronavirus (MERS-CoV), that emerged in Saudi Arabia in 2012 and was responsible (2494) lab.-confirmed cases of MERS have been recorded, and (858) associated deaths have occurred[(5)]. In December 2019 a coronavirus, SARS-CoV-2, was distinguished as the causative agent of an outbreak of viral pneumonia, which was first detected in China specifically in Wuhan, Hubei, that disease is presently called COVID-19, the virus has caused a global outbreak of disease similar to SARS throughout the world [(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)]. Although this approach focuses on communicable diseases, particularly the developed world, health support strategies for the prevention and management of communicable diseases are considered equally applicable [(12)]. The health-care professionals are supporting the knowledge of the nurses, by learning and preserving the wellbeing of uninfected individuals, by providing community members with significant and effective prevention measures by understanding fundamental concepts of Communicable disease control and many surrounding issues. [(1)]. The study's purpose is to identify the effectiveness of Health

Promotion Teaching Program on nurses' knowledge about preventing transmission of Communicable disease at primary health care centers in Al-Amara city , as well as to evaluate the nurses' knowledge about preventing transmission of Communicable Disease, and to identify the relationship between the nurses' knowledge and their demographic characteristics (age , gender, level of education, years of experience in nursing field, and training courses).

METHODOLOGY

A quasi- experimental design was used to achieve this study, by application of pre, post-test approach for study and control groups. This study applied in AL Amara city at (19) primary health care centers started from the 17th, November 2019 to 12th, April 2021. A purposive sample consisted of (50) nurses. The sample was divided into two groups randomly, each one consisted of (25) nurses as study group was exposed to Health Promotion Teaching Program while control group was not exposed. The Health Promotion Teaching 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 preventing transmission 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**: Knowledge of Nurses, to 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 : Deficit knowledge = (> 0.33): 1; Fair knowledge = (0.33-0.66):2; Good knowledge = (0.67-1.00):3.

Validity of the Program content and the study instruments is determined by the panel of 15 experts. 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 about preventing transmission of communicable disease for the study and control groups at pre, and post tests

Test Period	Levels of Evaluation	Pre-Test		Post Test	
		Freq.	%	Freq.	%
Study Group	Deficit (0 - 0.33) : 1	16	64.0	0	0.0
	Moderate (0.34 – 0.67) : 2	9	36.0	2	8.0
	Good (0.68 – 1.00) : 3	0	0.0	23	92.0
	Total	25	100.0	25	100.0
	$\bar{x} \mp$ Std. Dev.	0.39 ∓ 0.102		0.83 ∓ 0.075	
Control Group	Deficit (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
	Total	25	100.0	25	100.0
	$\bar{x} \mp$ Std. Dev.	0.41 ∓ 0.085		0.43 ∓ 0.095	

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

Table -1- shows that the two-third of participants in the study group 16(64%) have deficit level of knowledge of evaluation at pre -test while control group 15(60%) were moderate level of knowledge. This table Also, shows high improvement in study group at post test 23(92%). While the majority of participants of control group are remained in the same level of evaluation in post tests 15(60). This reflect the effectiveness of an educational program on the nurses' knowledge in the study group at post-test.

Table (2): Distribution of nurses' responses and comparisons significant between (pre-test and post- test) for study and control groups related to knowledge regarding preventing transmission of communicable disease

Domains of knowledge Concerning preventing	Groups	Study Group	Control Group	C.S.	C.S.

transmission of communicable disease *	Responses	Pre-Test			Post Test			C.S. P-value	Pre-Test			Post Test			C.S. P-value	Pre x Pre (C X S)	Post x Post (C X S)
		F	%	Mean	F	%	Mean		F	%	Mean	F	%	Mean			
1. General information about Communicable disease (n=125)	Correct	58	46.4	0.46 M	107	85.6	0.86 G	P=0.000 HS	70	56.0	0.56 M	62	49.6	0.50 M	P=0.131 NS	P=0.130 NS	P=0.000 HS
	Incorrect	67	53.6		18	14.4			55	44.0		63	50.4				
2. The most common Communicable disease																	
2.1. Corona viruses	Correct	39	39.0	0.39 M	88	88.0	0.88 G	P=0.000 HS	37	37.0	0.37 M	38	38.0	0.38 M	P=0.849 NS	P=0.772 NS	P=0.000 HS
	Incorrect	61	61.0		12	12.0			63	63.0		62	62.0				
2.2 Tuberculosis TB	Correct	34	34.0	0.34 M	86	86.0	0.86 G	P=0.000 HS	35	35.0	0.35 M	44	44.0	0.44 M	P=0.129 NS	P=0.882 NS	P=0.000 HS
	Incorrect	66	66.0		14	14.0			65	65.0		56	56.0				
2.3 Mumps	Correct	48	38.4	0.38 M	108	86.4	0.86 G	P=0.000 HS	53	42.4	0.42 M	55	44.0	0.44 M	P=0.774 NS	P=0.521 NS	P=0.000 HS
	Incorrect	77	61.6		17	13.6			72	57.6		70	56.0				
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	43	43.0	0.43 M	P=0.549 NS	P=0.568 NS	P=0.000 HS
	Incorrect	57	57.0		17	17.0			61	61.0		57	57.0				
2.5 H1 N1	Correct	38	38.0	0.34 M	84	84.0	0.84 G	P=0.000 HS	45	45.0	0.45 M	46	46.0	0.46 M	P=0.880 NS	P=0.318 NS	P=0.000 HS
	Incorrect	62	62.0		16	16.0			55	55.0		54	54.0				
2.6 Viral hepatitis A and B	Correct	45	36.0	0.36 M	100	80.0	0.80 G	P=0.000 HS	45	36.0	0.36 M	52	41.6	0.42 M	P=0.329 NS	P=0.982 NS	P=0.000 HS
	Incorrect	80	64.0		25	20.0			80	64.0		73	58.4				
2.7 Scabies	Correct	38	38.0	0.34 M	83	83.0	0.83 G	P=0.000 HS	39	39.0	0.39 M	43	43.0	0.43 M	P=0.574 NS	P=0.885 NS	P=0.000 HS
	Incorrect	62	62.0		17	17.0			61	61.0		57	57.0				
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 D	84	84.0	0.84 G	P=0.000 HS	43	43.0	0.43 M	45	45.0	0.45 M	P=0.682 NS	P=0.080 NS	P=0.000 HS
	Incorrect	69	69.0		16	16.0			57	57.0		55	55.0				
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	44	44.0	0.44 M	P=0.449 NS	P=0.668 NS	P=0.000 HS
	Incorrect	58	58.0		20	20.0			61	61.0		56	56.0				
3.2.2 Disease prevention	Correct	40	40.0	0.40 M	84	84.0	0.84 G	P=0.000 HS	39	39.0	0.39 M	43	43.0	0.43 M	P=0.558 NS	P=0.886 NS	P=0.000 HS
	Incorrect	60	60.0		16	16.0			61	61.0		57	57.0				
3.2.3 Health education on communicable diseases	Correct	36	36.0	0.36 M	66	66.0	0.66 M	P=0.000 HS	44	44.0	0.44 M	36	36.0	0.36 M	P=0.219 NS	P=0.250 NS	P=0.000 HS
	Incorrect	64	64.0		34	34.0			56	56.0		64	64.0				

F: Frequencies, %: Percentages; M.S.: Mean of Score; C.S.: Comparison Significant, P:Probabiliy value; Level of Assessment= Poor (0 - 0.33) : 1; Fair (0.34 – 0.67) : 2; Good (0.68 – 1.00) : 3; N.S: Non Significant at (P> 0.05); HS: High Significant at (P< 0.01).

Results of table-2- are showed there are high significant differences(between pre and post tests of study group, as well as post- test between study and control group) in all domains for nurses' knowledge related to knowledge regarding preventing transmission of communicable disease. While shows that there are no significant differences between (pre and post-tests of control group, and pre-test between study and control group).

Statistically, for pre and post-1 tests in study group for all domains related to nurse knowledge on preventing the transmission of communicable disease, there are very significant differences, while, the control group has shown that there are no significant variations (pre and post) in all domains pairing tests.

Table (3): Association between Nurses' Knowledge with Their Demographic Variables

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**	**1.152**	**21**	**0.351**	**NS**
Experiences Years in Nursing Field	1.043	21	0.394	**NS**	2.687	21	0.073	NS
Participation in Training Courses	0.899	22	0.421	**NS**	0.065	22	0.937	NS
	Pre- Test				**Post –test**			
	t-test	**d.f**	**p-value**	**Sig.**	**t-test**	**d.f**	**p-value**	**Sig.**
Gender	**1.537**	**23**	**0.138**	**NS**	**0.455**	32	0.654	NS
Level of Education	1.380	23	0.181	**NS**	1.385	23	0.179	NS

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 -5- shows that there is no statistically significant association between nurses' knowledge and their demographic variables at (pretest, post-test).

DISCUSSION

Part I: Discussion Effectiveness of Health Promotion Program on Nurses' Knowledge about preventing transmission of communicable disease in PHCCs at (Pre-Post Tests)

Table -1- shows that the two-thirds of study group participants 16 (64%) have pre-test deficit in their evaluation knowledge and the 15 (60%) control group was moderate. The table in addition, the study group showed high improvements in good level of knowledge in the post tests, 23(92%). In post tests, the majority of control participants remained at the same evaluation level 15. (60).This indicates the effectiveness of Promotion Teaching Program at the post-test in the study group.

The findings of the present study indicate that the nurses have weak knowledge before application of program but have had a positive impact on a high degree of knowledge among nurses on prevention transmission of communicable diseases after implementation of an educational program [13].

Statistically, results of **table-2-** are showed there are high significant differences(between pre and post tests of study group, as well as post- test between study and control group) in all domains for nurses' knowledge related to prevention transmission of communicable diseases. There were statistical significant difference between both groups presented by P value (<0.01) in all the above mentioned items [14] .The study showed that there was a highly statistically significant relationship between nurses' knowledge level regarding pre and post program implementation, and positive impact on increased knowledge [15] [16].

Part II: Discussion of The Relationship between Nurses' Knowledge with Demographical Characteristics for Study Group at (Pre Test, Post Test)

Table -3- shows that there is no statistically significant association between nurses' knowledge and their demographic variables at (Pre Test, Post-Test). The approximate acquisition without any major demographic difference could be due to a number of factors: small sample size, the importance of the program tropes to the Community, which requires that nurses be more concerned to prevent all the health problems, the simplicity with which the information is presented and complemented by the actuality of the information provided, Dependence on discussion and feedback on each information, and stay away from routine information presentation and the use of audiovisuals, as well as the desire of nurses to register and participate in all sessions.

This result support by study which showed that there was no significant relationship between nurses knowledge and age [16] [17]. This totally agrees with a study published by [15] it shows that no a significant relationship between nurses' knowledge and their gender. This result supported by recent study, which revealed that there were no significant statistical difference in knowledge, score among group of nurses and their level of education [17]. The current study revealed no significant statistical relationship

between years of experience in the field of nursing and total knowledge scores, 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[15][17]. Training courses especially in the health promotion units and immunization unit can improve the scientific framework of the nurses whose working there, so, will lead to a dream of comprehensive care that can be given, and it shows no statistical differences association between nurses' knowledge training courses at (p value 0.524)[18] .

CONCLUSIONS

1. Not all health promotion and immunization health nurses in PHCCs approved by the Iraqi Ministry of Health have been adequately trained for the promotion of health in order to prevent the transmission of communicable diseases.
2. The findings of this study show the knowledge of nurses that two-thirds of study group participants 16(64%) had a pre-test deficit of evaluation knowledge while the control group 15(60%) was moderately aware of PHCC in Al-Amara City.

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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.

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