Impact of Instructional Program on Nurses for Preventive Measures of Hepatitis (B and C) Infection Control in Medical City Hospitals

أثر البرنامج التعليمي على الممرضين حول تدابير الوقاية والسيطرة على عدوى انتقال التهاب الكبد الفيروسي نوع B وC في مستشفيات مدينة بغداد

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الخلاصة

خلفية الدراسة: التهاب الكبد الفيروسي هو مرض الوباء الصامت ويعتبر من الأمراض المعدية المسببة للوفاة ، ومقدمي الرعاية الصحية هم احد الأسباب المؤدية إلى نقل فيروس التهاب الكبد نوع B ونوع C إلى كل العاملين في مجال الرعاية الصحية والمرضى.

هدف الدراسة: تهدف الدراسة الحالية إلى:

1- تقييم معارف وممارسات الممرضين حول تدابير الوقاية والسيطرة على عدوى التهاب الكبد الفيروسي نوع B و ونوع C .

2- تقويم اثر البرنامج التعليمي على معارف وممارسات الممرضين حول تدابير الوقاية والسيطرة على عدوى التهاب الكبد الفيروسي نوع بي وسي.

3- إيجاد العلاقة بين أثر البرنامج التعليمي والعمر والمستوى التعليمي وسنين خدمة الممرضين .

منهجية الدراسة: دراسة شبه تجريبية أجريت في مستشفى بغداد التعليمي ومستشفى غازي الحريري للجراحات التخصصية، للمدة من 20 حزيران 2012 وحتى 28 حزيران 2013. و تكونت عينة الدراسة من (60) ممرض وممرضة في الوحدات الجراحية، وقسمت العينة بشكل متساوي إلى مجموعة الدراسة والمجموعة الضابطة ، وصمم الباحثان البرنامج التعليمي المتكون من (6) محاضرات تعلقت بمرض التهاب الكبد الفيروسي وكيفية انتقاله وطرق السيطرة عليه أثناء التعامل مع المريض والمستلزمات وتم تعريض مجموعة الدراسة للبرنامج وتم قياس اثر البرنامج على مجموعة الدراسة من خلال بناء أداة الدراسة والمتكونة من المعلومات الديموغرافية للممرضين وتقييم معارفهم ، وكذلك شملت فقرات المراقبة للممارسات التمريضية حول تدابير السيطرة على عدوى انتقال التهاب الكبد الفيروسي (A , B) وتم مقارنتها بمعارف وممارسات المجموعة الضابطة وتم تحديد مصداقية الاستبانة من خلال عرضها على 10 خبراء في مجال الاختصاص ، وقام الباحثان بتحليل البيانات من خلال تطبيق الإحصاء الوصفي (التكرارات، والنسب المئوية، ومتوسط الحساب)، والتحليل الاستدلالي (معامل ارتباط بيرسون واختبار (t)، وتحليل التباين واختبار t المزدوج)

النتائج: أشارت نتائج الدراسة بأن متوسط العمر كان 35 عاما، وان الغالبية العظمى لعينة الدراسة هم خريجو مدرسة التمريض، ومعظم أفراد العينة لقحوا بلقاح ضد التهاب الكبد الفيروسي

الاستنتاج: وبينت الدراسة بأن البرنامج التعليمي على مجموعة الدراسة كان مؤثرا" ووجود دلالة إحصائية مؤثرة بين معارف وممارسات الممرضين مع المستوى التعليمي وسنين الخبرة تحت مستوى دلالة ≤ 0.05 ،

التوصيات: توصي الدراسة بتطبيق البرنامج الوطني للتحصين ضد التهاب الكبد الفيروسي في جميع المؤسسات الصحية، والتأكيد على برامج التعليم الطبي المستمر لجميع االملاكات العاملة في المؤسسات الصحية والمتابعة المستمرة لتطبيق البرنامج.

Abstract:

Background: Viral hepatitis is a silent epidemic disease. Although it is a leading infectious cause of death, the delivery of health care has the potential to transmit hepatitis B virus and hepatitis C virus to both health care workers and patients.

Objectives of the study :the study aims to:

1- Assess the nurses knowledge and practices about preventive measures of Hepatitis (B and C) Infection Control.

2- Evaluate the impact of instructional program on nurses knowledge and practices about preventive measures of Hepatitis (B and C) Infection Control.

3- Findout the relationship between impact of instructional program and nurses age, level of education, and year of experiences.

Methodology :A quasi-experimental design study was carried out at Baghdad teaching hospital and Ghazi Al-Hareri for Specialist Surgeries hospital, during the period from June, 20th 2012 to June, 28th 2013, the study samples was composed of (60) nurses who working in the surgical ward unit, those nurses are divided equally into the study and the control groups. The researchers construct the instructional program which consist of(6) sessions related to viral hepatitis, mode of transmission, and method of control during contact with patients and facilities, and it was expose the study group for the conducted program and then measures the impact of program on knowledge and practices of the study group by conduct the instrument which composed of demographic data for nurses, assessment of the nurses' knowledge, and observational checklist of nurses practices for preventive measures of Hepatitis (B and C) Infection Control, and differentiated with control group, the validity of the instrument are determined through a panel of (10) experts, The researcher analyzed the data through the application of descriptive frequency, percentages; mean of scores; and the inferential analysis (Pearson correlation coefficient and t-test, ANOVA and paired t-test),

Result: the results of the study revealed that the mean of age is 35 years, the majority of the staff are nursing school graduated , most of them have HBV immunization,

Conclusion: the study confirms that the instruction oriented program on nurses study group is significant, and that there were statistical differences between level of education and year of experiences with knowledge and practices at P ≥0.05,
Recommendation: The study recommends that the application for national program of immunization against viral hepatitis at all health centers and continuous medical educational program for all staff in the health center, and continuous follow up to applying the program of preventive measures for HVB, and HVC
Keywords: Infection control, HVB, HVC, Protective measures

INTRODUCTION

Viral hepatitis is a systemic, viral infection in which necrosis and inflammation of liver cells produce a characteristic cluster of clinical, biochemical, and cellular changes, five definitive types of viral hepatitis have been identified: hepatitis A, B, C, D, and E. Hepatitis A and E are similar in mode of transmission (fecal–oral route), whereas hepatitis B, C, and D share many characteristics. The increasing incidence of viral hepatitis is a public health concern. The disease is important because it is easy to transmit, has high morbidity, and causes prolonged loss of time from school or employment. It is estimated that 60% to 90% of cases of viral hepatitis go unreported. The occurrence of subclinical cases, failure to recognize mild cases, and misdiagnosis are thought to contribute to the underreporting. Although approximately 40% of all persons in the United States have antibodies against hepatitis A virus, many cannot recall an earlier episode or the occurrence of the symptoms of hepatitis. (CDC, 2013)

Norton et al. (2012) stated that more than 400 million people worldwide (5% of the world's population) are currently HBsAg-reactive, indicating that they are currently infected with hepatitis B virus (HBV), and as many as 50% of the world's population have had HBV infection, as reflected by the presence of anti-HBs. HBV is endemic in areas containing 45% of the world's population. In endemic areas, rates of current infection range from 8% to 25%, and exposure rates (based on the presence of anti-HBs) range from 60% to 85%. In low prevalence areas such as the United States, the prevalence of chronic HBV infection is 0.1–0.2% (1.25 million), and the annual incidence of new HBV infections is 200,000–300,000. HBV is transmitted primarily by perinatal, percutaneous, and sexual routes. The virus can also be transmitted by unapparent percutaneous routes and close person-to-person contact, presumably via open cuts and sores, especially among children in endemic areas (eg, sub-Saharan Africa, which has a prevalence of chronic HBV infection of just under 10%).

Ethical Consideration

Viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation. An estimated 4.4 million Americans are living with chronic hepatitis; most do not know they are infected**.** The delivery of health care has the potential to transmit Hepatitis B virus (HBV) and Hepatitis C virus (HCV) to both health care workers and patients. Outbreaks of HBV and HCV infection have occurred in outpatient settings, hemodialysis units, long-term-care facilities, and hospitals, primarily as a result of unsafe injection practices; reuse of needles, finger stick devices, and syringes; and other lapses in infection control.(CDC, 2011)

METHODOLOGY:

Design of the Study: A quasi-experimental design study is carried out through the application of pre-test and post-test approach for the study and control groups

Setting of the Study: The present study is carried out in the Baghdad Teaching Hospital and Ghazi Al-Hareri for Specialist hospital in Baghdad City June, 28th 2013.

Sample of the Study: A purposive (Non-probability) sample of (60) nurses are selected. The sample is divided into two groups; (30) nurses (study group) are exposed to the nursing instructional program and (30) nurses are not exposed to the program, considered as the control group.

Instrument Construction: The researches construct instructional program based on review of literature which consist of 6 sessions related to nature of viral Hepatitis, mode of transmission, methods of control measures during contact with patients and facilities**, and to** evaluate the impact of instructional program, the researchers has constructed the instrument which consists of three parts:

Part I: The demographic data includes nurses' characteristic, such as age, gender, level of education, years of experience, marital status, and training session

Part II: it concerned with assessment of the nurses' knowledge after program, which composed of 20 multiple choice questions.The test covers relevant points from the major content area of the instructional program. For the purpose of this study, the number of correct responses or the knowledge questionnaire is used as the measure of the level of knowledge. Each question is comprised of 4 alternatives.

Part III: Observational checklist of nurses' practices. This checklist consists of 53 items divided into 6 parts;

A. Part one: is concerned with nurses' practices related to hand hygiene; (22) items.
B. Part two: is concerned with nurses' practices related to cleaning and disinfection; (4) items.
C. Part three: is concerned with nurses' practices related to personal protective equipment (PPE); (11) items.
D. Part four: is concerned with nurses' practices related to safe injection practices; (7) questions.
E. Part five: is concerned with nurses' practices related to needle stick and sharps injury prevention; (4) questions.
F. Part six: is concerned with nurses' practices related to respiratory hygiene (cough protection); (6) questions.

Validity of the questionnaire: The content validity of the instructional program and the study instruments (the knowledge test and observational checklist), are established through a panel of (10) experts

Reliability of the Knowledge Items: Test-retest has been obtained through evaluating 10 nurses selected from Ghazi Al-Hareri for specialist surgeries according to the knowledge test questionnaire; twice within two weeks, Pearson Correlation Coefficients is used, It is =(0.84)

Reliability of the observational checklist: It has been obtained by evaluating (10) nurses selected from Ghazi Al-Hareri for specialist surgeries. The reliability coefficient is = (0.89).

Statistical Methods: Data have been analyzed through the use of Statistical Package for Social Science (SPSS version 16 application). Descriptive Data Analysis (Frequencies, Percentages, Mean of Scores) and Inferential Statistical (Pearson Alpha Correlation Coefficient, Paired T-Test, T-test, Analysis of Variance) was used to analyzed the results of present study.

RESULTS:

Table 1:Distribution of the study Samples (Study and Control) By Socio-demographic Characteristics

List	Variables	Control Group		Study Group	
		NO.:30	%	NO.:30	%
1	**Gender**				
	Male	17	**56.7**	18	**60**
	Female	13	43.3	12	40
2	**Age (years)**				
	20-29	9	30	7	23.3
	30-39	9	30	11	**36.7**
	40-49	10	**33.3**	10	33.3
	50-59	2	6.7	2	6.7
3	**Marital Status**				
	Single	7	23.3	6	20
	Married	23	**76.7**	24	**80**
4	**Level of Education**				
	Nursing school graduate	2	6.7	3	10
	Secondary nursing school graduate	16	**53.3**	15	**50**
	Institute of nursing graduate	9	30	10	33.3
	College of nursing graduate	3	10	2	6.7
5	**Years of experiences**				
	< 5	12	**40**	5	16.7
	5-9	5	16.7	7	23.3
	10-14	6	20	5	16.7
	15-19	2	6.6	3	10
	20 and more	5	16.7	10	**33.3**
6	**Training Course**				
	Non	7	23.3	5	16.7
	1-3	16	**53.3**	14	**46.7**
	4-6	6	20	9	30
	7-9	1	3.4	2	6.6
7	**HBV Immunization**				
	Yes	14	46.7	24	**80**
	No	16	**53.3**	6	20
8	**Have viral hepatitis infection**				
	Yes	0	0	0	0
	No	30	100	30	100
9	**Check for viral hepatitis periodically**				
	Yes	0	0	0	0
	No	30	100	30	100
10	**Check for viral hepatitis when have needle stick**				
	Yes	0	0	0	0
	No	30	100	30	100

No: Number of each group = 30nurses%: percentage

The findings of table 1 indicated that the majority of the study samples were males for study and control groups (56.7%)(60%) respectively, 36.7% of the study group at age 30-39 years old and 33.3% of the control group at age 40-49 years old, (80%) and (76.7%)of the study and control groups were married respectively, most of the study and control groups are graduated from secondary nursing school, 33.3% of study group have >=20 year of experiences, and 40% of control group have > than 5 years of experience, (46.7%) and (53.3%) of the study and control groups trained from 1- 3 courses of training related to infection control respectively, and the majority of nurses as a study group immunized with HBV 80% and 53.3% of a control group immunized with HBV.

Table 2: Pre-Test Nurses Knowledge Responses for the Study and Control Groups

List	Knowledge Items	Control Group				Study Group			
		Cor.	%	Incor.	%	Cor.	%	Incor.	%
1	Definition of viral hepatitis	23	76.7	7	23.3	23	76.7	7	23.3
2	Types of viral hepatitis	14	46.7	16	53.3	5	16.7	25	83.3
3	Treatment of viral hepatitis	21	70.0	9	30.0	14	46.7	16	53.3
4	Causes of HBV and HCV	28	93.3	2	6.7	26	86.7	4	13.3
5	Signs and Symptoms of viral hepatitis	8	26.7	22	73.3	8	26.7	22	73.3
6	First year of viral hepatitis	2	6.7	28	93.3	2	6.7	28	93.3
7	Definition of liver	2	6.7	28	93.3	5	16.7	25	83.3
8	Functions of liver	8	26.7	22	73.3	12	40.0	18	60.0
9	Functions of bile salt	21	70.0	9	30.0	24	80.0	6	20.0
10	Lab test to diagnose liver cirrhosis	14	46.7	16	53.3	12	40.0	18	60.0
11	Immunization for which type	14	46.7	16	53.3	12	40.0	18	60.0
12	HBV incubation period	8	26.7	22	73.3	3	10.0	27	90.0
13	Person who can have immunization	20	66.7	10	33.3	15	50.0	15	50.0
14	Doses of HBV vaccine	5	16.7	25	83.3	9	30.0	21	70.0
15	Prevalence of HCV	12	40.0	18	60.0	8	26.7	22	73.3
16	Mode of HCV transmission	27	90.0	3	10.0	27	90.0	3	10.0
17	HCV treatment or immunization	3	10.0	27	90.0	8	26.7	22	73.3
18	HCV and HBV prevention	21	70.0	9	30.0	22	73.3	8	26.7
19	PPE Knowledge	12	40.0	18	60.0	21	70.0	9	30.0
20	Container types for used needles	6	20.0	24	80.0	12	40.0	18	60.0
	Total	13.5	45	16.5	55	13.4	44.7	16.6	55.3

Cor.: Correct **Incor.: Incorrect** **%: percentage**

Table 2 presented the nurses responses regarding knowledge which of 83.3% and 53.3% of responses for study and control study are incorrect about types of viral hepatitis respectively,

93.3% of nurses responses were incorrect for the study and control study about the first year of viral hepatitis, majority of nurses response for the study and control groups about the definition of liver were incorrect,90.0% of study groups were incorrect responses about HBV incubation period, 73.3% of control group responses were incorrect about HBV incubation period, 73.3% of study group responses about HCV treatment or immunization, and 90% of control group nurses responses were incorrect about HCV treatment or immunization.

Table 3: Post-Test Nurses Knowledge Responses for the Study and Control Groups

	Knowledge Items	Control Group				Study Group			
		Cor.	%	Incor	%	Cor.	%	Incor	%
1	Definition of viral hepatitis	22	73.3	8	26.7	27	90	3	10
2	Types of definitive viral hepatitis	16	53.3	14	46.7	28	93.3	2	6.7
3	Treatment of viral hepatitis	20	66.7	10	33.3	25	83.3	5	16.7
4	Causes of HBV and HCV	27	90	3	10	28	93.3	2	6.7
5	Signs and Symptoms of viral hepatitis	10	33.3	20	66.7	17	56.7	13	43.3
6	First year of viral hepatitis	4	13.3	26	86.7	18	60	12	40
7	Definition of liver	2	6.7	28	93.3	10	33.3	20	66.7
8	Functions of liver	7	23.3	23	76.7	15	50	15	50
9	Functions of bile salt	19	63.3	11	36.7	25	83.3	5	16.7
10	Lab test to diagnose liver cirrhosis	15	50	15	50	18	60	12	40
11	Immunization for which type	16	53.3	14	46.7	24	80	6	20
12	HBV incubation period	8	26.7	22	73.3	7	23.3	23	76.7
13	Person who can have immunization	21	70	9	30	20	66.7	10	33.3
14	Dose of HBV vaccine	8	26.7	22	73.3	21	70	9	30
15	Prevalence of HCV	13	43.3	17	56.7	23	76.7	7	23.3
16	Methods of HCV transmission	26	86.7	4	13.3	27	90	3	10
17	Does HCV treatment or immunization	5	16.7	25	83.3	19	63.3	11	36.7
18	HCV and HV prevention	22	73.3	8	26.7	24	80	6	20
19	PPE included	15	50	15	50	24	80	6	20
20	Container type for used needles	10	33.3	20	66.7	22	73.3	8	26.7
	Total	14.3	47.7	15.7	52.3	21.1	70.3	8.9	29.7

Cor.: Correct **Incor.: Incorrect** **%: percentage**

Table 3 presented the post-test nurses knowledge (study group) which of the knowledge related to definition of viral hepatitis, types of definitive viral hepatitis, treatment of viral hepatitis, causes of HBV and HCV, functions of bile salt, and methods of HCV transmission was correct responses after educational program.

Table 4. Pre and Post-Test of Nurses Practices for Study and Control Groupsby Total Mean of Score

List	Practices domains	Control						Study					
		Pre	MS	Ass.	Post	MS	Ass.	Pre	MS	Ass.	Post	MS	Ass.
1	**Hand hygiene**	29.53	1.55	M	29.80	1.56	M	29.83	1.57	M	31.20	1.64	M
2	**Cleaning and disinfection**	4.67	1.16	L	4.87	1.21	L	4.87	1.21	L	5.17	1.29	**L**
3	**PPE**	15.90	1.44	L	16.13	1.46	L	16.27	1.47	L	18.77	1.70	M
4	**Safe injection practices**	18.33	2.61	H	18.20	2.60	H	18.40	2.62	H	18.60	2.65	H
5	**Needle stick and sharps injury prevention**	10.43	2.60	H	10.43	2.60	H	10.53	2.63	H	10.57	2.64	H
6	**Respiratory Hygiene**	8.00	1.33	L	8.03	1.33	L	8.00	1.33	L	8.13	1.35	**L**

Table 4 presented the total mean of score for the nurses practices for the study and control groups during pre and post test which revealed that the practices for the control group during pre and post test, but there were changes in assessment levels for the study group during pre and post test which as the knowledge changed from low to medium, and PPE changes from low to medium levels.

Table 5: Comparisons Between the Nurses' knowledge and Practices of the Study Group Regarding Age.

list	Domain		Sum of Squares	df	Mean Square	F	Sig P≥0.05
1	Knowledge	Between Groups Within Groups Total	1.843 154.023 155.867	3 26 29	.614 5.924	.104	.957 N.S.
2	Hand hygiene	Between Groups Within Groups Total	3.277 93.523 96.800	3 26 29	1.092 3.597	.304	.822 N.S.
3	Cleaning and disinfection	Between Groups Within Groups Total	1.121 31.045 32.167	3 26 29	.374 1.194	.313	.816 N.S.
4	PPE	Between Groups Within Groups Total	1.156 78.210 79.367	3 26 29	.385 3.008	.128	.943 N.S.
5	Safe injection practices	Between Groups Within Groups Total	.540 12.660 13.200	3 26 29	.180 .487	.370	.775 N.S.
6	Needle stick and sharps injury prevention	Between Groups Within Groups Total	.893 6.474 7.367	3 26 29	.298 .249	1.195	.331 N.S.
7	Respiratory Hygiene	Between Groups Within Groups Total	.402 3.065 3.467	3 26 29	.134 .118	1.136	.353 N.S.

The results of table 5 revealed that there were not statistical differences between nurses knowledge and practices for the study sample regarding age at p value P≥0.05

Table 6: Comparisons between Nurses' (knowledge and practices) for Study Group with their level of Education.

list	**Domain**		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Knowledge	Between Groups Within Groups Total	47.100 108.767 155.867	3 26 29	15.700 4.183	3.753	**.023 S.**
2	Hand hygiene	Between Groups Within Groups Total	16.300 80.500 96.800	3 26 29	5.433 3.096	1.755	.181 N.S.
3	Cleaning and disinfection	Between Groups Within Groups Total	2.167 30.000 32.167	3 26 29	.722 1.154	.626	.605 N.S.
4	PPE	Between Groups Within Groups Total	10.867 68.500 79.367	3 26 29	3.622 2.635	1.375	.272 N.S.
5	Safe injection practices	Between Groups Within Groups Total	2.567 10.633 13.200	3 26 29	.856 .409	2.092	.126 N.S.
6	Needle stick and sharps injury prevention	Between Groups Within Groups Total	.633 6.733 7.367	3 26 29	.211 .259	.815	.497 N.S.
7	Respiratory Hygiene	Between Groups	.867	3	.289	2.889	**.055**

		Within Groups Total	2.600 3.467	26 29	.100		S.

Table 6 shows that there were significant difference concerning nurses' level of education with their knowledge and respiratory hygiene practices, but no significant difference other practices.

Table 7: Comparisons between nurses' (knowledge and practices) for study group with their years of experiences.

list	Domain		Sum of Squares	df	Mean Square	F	Sig. P:≥0.05
1	Knowledge	Between Groups Within Groups Total	20.800 135.067 155.867	4 25 29	5.200 5.403	.962	.445 N.S.
2	Hand hygiene	Between Groups Within Groups Total	11.567 85.233 96.800	4 25 29	2.892 3.409	.848	.508 N.S.
3	Cleaning and disinfection	Between Groups Within Groups Total	2.767 29.400 32.167	4 25 29	.692 1.176	.588	.674 N.S.
4	PPE	Between Groups Within Groups Total	9.433 69.933 79.367	4 25 29	2.358 2.797	.843	.511 N.S.
5	Safe injection practices	Between Groups Within Groups Total	.400 12.800 13.200	4 25 29	.100 .512	.195	.939 N.S.
6	Needle stick and sharps injury prevention	Between Groups Within Groups Total	1.467 5.900 7.367	4 25 29	.367 .236	1.554	.217 N.S.
7	Respiratory Hygiene	Between Groups Within Groups Total	.767 2.700 3.467	4 25 29	.192 .108	1.775	.166 N.S.

No statistical difference was found between nurses' year of experiences regarding their knowledge and practices at P:≥0.05 which presented in table 7.

DISCUSSION

Table 1 presented the demographic characteristics of the nurses which indicates that (60%) of nurses are males in a study group and (56.7%) in control groups, (36.7%) of the study group at age (30-39) years and(33.3%) in control group between (40-49) years, majority of the nurses (80%) of the study group and (76.7%) in a control group was married, According to level of education, a half of the sample in both groups (study and control) are secondary nursing school graduated, 33.3% of nurses have a twenty and more year of experiences in a study group, and (40%) of them have less than 5 years, According to training course in control infection, 46.7% of the nurses in a study group and 53.3% in control groups have 1-3 times of training course, High percent (80%) of nurses in a study group and **(**53.3%) of a control group was immunized against to HBV, All nurses 100% in study and control group do not infected with viral hepatitis during their professional lives, and 100% of a study and control group was not doing periodically test for hepatitis after needle-stick during work. These results agree with Abaas, (2009) presented in their study during applying their program on nurses in Ibn Al-Kuff Spinal Cord Injury Hospital in Baghdad which as the gender in the a study group was 63.3% and 76.7% of the nurses in a control groups was males, 53.3%of them at age 30-39 years for the study group and 50% of nurses was at 40-49 years for control groups. The average age of a study group was between (35.7± 7.9 years) while the average of age for the control groups was between (38.4 ± 6.28 years). Majority of the nurses

(96.7%) in a study group, and (100%) in a control group was married. According to level of education most of their sample in both groups was a secondary nursing school graduated

Concerning the nurses knowledge about the anatomy and functioning of the liver the results revealed that (93.3%) and (83.3%) have deficit. Also for laboratory test and investigation (53.3%) and (60%) for both study and control groups, The study findings shows that (76.7%) of both study and control groups know the definition of viral hepatitis, Concerning the types of viral hepatitis, (83.3%) of study group not have enough information toward the types in contrast with (53.3%) of control group, Regarding the treatment of viral hepatitis 70% of the study groups have good knowledge , and just 53.3% for study group, In relation for causes of HBV and HCV (93.3%) and (86.7%) of control and study groups in sequence can understand the causes, The result of the study discovers that (73.3%) of nurses was not know the signs and symptoms of viral hepatitis, (60%) of the study group and (53.3%) of the control group not remember which types of viral hepatitis can be immunized, or have vaccine, 90% of the study and control groups was know the mode of HCV transmission, Just (73.3%) and (60%) of the nurses for study and control groups know the prevention and control methods that can be used for HCV and HBV. While (60%) of control group do not have enough knowledge about PPE in contrast with (70%) of study group.Such finding is supported by Allison et.al., (2009) they assessed the factors influencing infection control practices among health care workers in nursing homes. they conducted a cross-sectional survey of HCWs (N = 392) in 4 nursing homes to assess whether knowledge, beliefs, and perceptions influence reported hand hygiene habits. They revealed that the positive perceptions and beliefs regarding effectiveness of infection control in nursing homes were associated with reported appropriate glove use and fingernail characteristics among HCWs table 2.

Through the implementation of the health instruction program, the results indicated that there are highly significant between the pre and post test related to knowledge, hand hygiene, cleaning and disinfection and personal protective equipment, significant differences was founded for safe injection practices and respiratory hygiene, while no statistical differences between needle stick and sharp injury prevention. Nasir, (2011) explain that the hepatitis B virus (HBV) infection is common in Pakistan. and can lead to cirrhosis and hepatocellular carcinoma, there is direct need for its prevention. While there are many strategies to achieve this goal, immunization against HBV is of prime significance. The problem is awareness and motivation to receive the vaccine and at the same time complete the full course. It has been reported that vaccine course has been incomplete in medical students and doctors. (table 3 and 4)

The results of the present study report that there is no significant differences between the demographic characteristics and post test for study group in relation to knowledge and practices domains with age, but there were statistical differences with hand hygiene domain, Related to level of education, the results reveal that there is significant differences between nurses' knowledge and respiratory hygiene practice with post test study group, while no significant differences with other practices domain, The present study revealed that there were no significant differences between the nurses' knowledge and practices regarding a year of experiences in a surgical ward for the study group (table 5,6,and 7).

CONCLUSION:

1. Most of the nurses in study group have experienced (20 and more) years, with (1-3) times of training courses, more of than have HBV immunization, and all of nurses have not viral hepatitis infection.

2. The knowledge test for pre implementation program shows the deficit and incorrect answers for most items in compare with post program for study group
3. The comparison of the pre and post-test of the study group with control group was high mean of scores for study group at knowledge and practices than for control group.
4. The study findings revealed that there were significant differences between level of education of nurses and knowledge, and significant with respiratory hygiene practices domains for the study sample.

RECOMMENDATION:

Based on the early stated conclusions, the study can recommend that:

1. A special continuation educational program for all nurses for all hospital units.
2. Try to Applying the national program of immunization against viral hepatitis for health care workers.
3. Involve the updated methods for health care workers as general and nurses especially for safe working places, prevention and control from nosocomial infections in secondary nursing school curriculum.
4. Programmed the training schedule in the hospital to deals all nurses and based in evaluation of nurses according to number of training course

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