Effectiveness of Health Education Program on Nurses' Knowledge toward Hemodialysis at Pediatric Teaching Hospitals in Baghdad City

فاعلية البرنامج التعليمي الصحي في معارف الممرضيين تجاه الانفاذ الدموي في مستشفيات الاطفال التعليميه في مدينة بغداد

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المستخلص

الاهداف : 1- تقييم فاعلية برنامج التثقيف الصحي على معارف الممرضين تجاه الانفاذ الدموي في مستشفيات الاطفال التعليميه.

2 – معرفة العلاقة بين معارف الممرضين غسيل الكلى وخصائصهم الديموغرافية.

المنهجية: تم تصميم الدراسة بنمط ما قبل التجريبي للممرضين العاملين في المستشفى حماية الطفل التعليمي والمستشفى الطفل المركزي التعليمي ،وتم اختيار عينة هادفة تكونت من (30) ممرض .يتم اختبارها في ثلاث فترات الاختبارالقبلي ، الاختبار البعدي الاول ، و اختبار البعدي الثاني. لقد تم اختبار المشاركين قبل تطبيق البرنامج التعليمي حيث بدأت محاضرات البرنامج التعليمي في الفترة من 19 إلى 22 يناير 2020 ثم بعد فترة تم اختبارهم إختباربعدي اولي (في 22 يناير 2020) ثم بعد فترة تم إجراء اختبار البعدي الثاني (في 23 فبراير 2020).

النتائج: تتضمن نتائج الدراسة مستوى منخفضًا في تقييم معرفة الممرضين قبل البرنامج التعليمي وأصبحت تقييمًا عاليًا بعد المشاركة في البرنامج في كل من الاختبار البعدي الاول و اختبار البعدي الثاني

التوصيات: تقوم هذه الدراسة بتنفيذ برنامج تعليمي يتعلق بمعرفة الممرضين حول مركز غسيل الكلى في المستشفى التعليمي حماية الطفل والمستشفى التعليمي الطفل المركزي في مدينة بغداد ، ويظهر تحسنًا جيدًا في معارف الممرضين ، لذلك يوصى بتنفيذه في جميع وحدات غسيل الكلى في العراق.

الكلمات المفتاحية: فاعلية برنامج التعليمي الصحي ، الانفاذ الدموي ، مستشفيات الاطفال التعليميه .

Abstract:

Objective(s): 1- Assess the effectiveness of health educational program on nurses' knowledge toward Hemodialysis at Pediatric Teaching Hospitals.

2-To find out the relationship between nurses' knowledge about hemodialysis and their demographic Characteristics.

Methods: The study was designed in a pre-experimental pattern for the nurses' working in the Child Welfare Teaching Hospital and the Child's Central Teaching Hospital, and a targeted sample consisting of (30) nurses was selected. It is tested in three periods of pre-test, the first post-test, and the second post-test. Participants were tested before implementing the tutorial (tutorial lectures began from 19 to 22 January 2020 and then after a period they were tested with a preliminary post-test (on January 22, 2020) and then after a second post-test exam was conducted (on February 23, 2020).

Results: The results of the study include a low level in the assessment of nurses' knowledge before the educational program and they became high after participating in the program in the first post-test and the second post-test

Recommendations: This study implement an educational program regarding nurses' knowledge about hemodialysis center in Children Welfare Teaching Hospital and Child's Central Teaching Hospital, in Baghdad city, and shows good improvement in nurses' knowledge, so it's recommended the implementation in all Iraq hemodialysis units.

Keywords: Effectiveness, Health education program, Hemodialysis, children's educational hospitals.

Introduction

Healthy kidneys clean the blood and remove extra fluid in the form of urine. They also make substances that keep the body healthy. Dialysis replaces some of these functions when the kidneys no longer work. Hemodialysis (HD) is treatment through medical procedure to remove fluid and waste products from the blood and to correct electrolyte imbalances. The HD is use to treat both acute (temporary) and chronic (permanent) kidney failure. (1)

Hemodialysis is a therapy for kidney failure that used a machine called a dialyzer to filter the patient's blood outside his body. This procedure can replace part of kidney task but is not a cure for kidney failure; however, it can help patient sense better and live longer. (2)

If the patient does not get enough dialysis, his body will retain the waste products and extra fluid that cause sick and feel tired. (3)

The HD is preventing death by restoring the intracellular and extracellular fluid environment that is characteristic of normal kidney function. This is accomplishing by the transport of solutes such as urea from the blood into the dialysate and by the transport of solutes such as bicarbonate from the dialysate into the blood. (4)

Hemodialysis (HD) is a widely used mode of renal replacement therapy in infants and children with end-stage renal disease (ESRD). It is use as a treatment that cleans the blood of excess waste products and removes excess fluid. (5)

Excess water and waste are removed through a semipermeable membrane by means of diffusion and osmosis. The child must have blood vessel access through which the blood can be removed and returned. Long-term HD in the pediatric age group is performed mainly through central venous catheters (CVC). Arteriovenous fistulas (AVF) or arteriovenous grafts (AVG).(6)

Hemodialysis requires specialized nursing care, including the establishment an interpersonal relationship. Hemodialysis patients need mental support to adapt to their current status, and nurses can help them become accustomed to their problems and fears of the disease by reducing anxiety, enhancing adaptability, and providing emotional support. The patients receive comfort from humans more than environment and modern facilities. (7)

Methodology

The pre-experiment study design was using the test-retest approach being tested in three periods pre-test, post-test-1, and post-test-2.

The study group participants are test prior implementing the educational program (the educational program lectures started from 19th - 22th of January 2020) then after period they are test post-test-1(in 22th January, 2020) then after a while the post-test-2 had been conducted (in 23th February, 2020).

The setting of the study was at the Children Welfare Teaching Hospital and Child's Central Teaching Hospital, in Baghdad city, which are a governmental hospitals specialized in HD kidney.

A non - probability purposive sample selected (30) from nurses who

were working in HD unit the sample (30) nurses enrolled as a study group.

The researcher constructed a questionnaire format based on program in order to reach the objectives of the study, which consists of two parts; First part: It is concern with the patients' demographic data that include (age, gender, economic situation, educational level, number of years of work in the field of nursing in general, number of years works in the field of hemodialysis unit, Have you ever participated in training courses in the field of hemodialysis).

Second part: includes five domains each one have multiple choice questions, the participant shall choose one answer. The overall sum of questions within part II is forty eight questions. The correct answers are used to test participants' knowledge. The questionnaire items aims for the study purposes and it involves relevant topics to the study subject and the educational program.

The questionnaire form and the health educational program handled to (17) experts. Those experts had more than seven years of experience in their field of specialty.

The reliability of the instruments was determined through the applying of present program on pilot study by uses the test-re-test approach. The data was analyzed through the use of the Statistical Package of Social Sciences (SPSS) version 23.

Through descriptive statistics (Frequency, percentage, mean, mean of scores, total of scores, and standard deviation) and statistical inferential (t-test, person correlation coefficient, and analysis of variance ANOVA).

Ethical considerations

The Institutional Review Board (IRB) in college of nursing /university of Baghdad reviewed contents of program and questionnaire before conducting a study. Informed consent was taken orally before participating in the study. After that information regarding study title and objectives had been given. Two official requests were submitted through the College of Nursing / University of Baghdad to medical city directorate/ Ministry of Health (MOH) to take approval for data collection from Iraqi center for cardiac disease and Al-Karkh health directorate/ Ministry of Health (MOH) to take approval for data collection from Ibn-Albetar specialist center for cardiac surgery in Baghdad city.

Results

Table (1): Distribution of the Study Sample by their Demographic Characteristics.

Socio-demographic Characteristics	Frequency	Percent
Gender		
Male	**6**	**20.0**
Female	**24**	**80.0**
Total	**30**	**100.0**
Age (years)		
18-27	**15**	**50.0**
28-37	**11**	**36.7**
38-47	**2**	**6.7**
48-57	**1**	**3.3**
58-67	**1**	**3.3**
Total	**30**	**100.0**
The economic situation		
Moderate	**23**	**76.7**
High	**7**	**23.3**
Total	**30**	**100.0**
The number of years of work in the field of nursing in general		
1-5 years	**16**	**53.3**
6-10 years	**7**	**23.3**
11-15 years	**3**	**10.0**
16- 20 years	**2**	**6.7**
21 And above	**2**	**6.7**
Total	**30**	**100.0**

The results out of this table reveal that the highest percentage (80%) 24 nurses of the female. In addition, the table shows that higher percentages of age (50.0%) 15 nurses were the age of nurses between (18-27) years old. In regards to the economic situation the table shows (76.7%) 23 nurses the economic are moderate. In addition, the table shows that (53.3%) 16 nurses of nurses was the number of years of work in the field of nursing in general between (1-5) years.

Table (2): Comparison between the Two Pre-test and Post-test 1 Periods by Using Paired sample Test Related p-value 0.05

Paired Samples Test									
	Paired Differences					t(calculate)	df	Sig.(2) tailed	p-value
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Posttest -1 Pre_test	39.83333	9.04046	1.65055	36.45757	43.20910	24.133	29	.000	0.05

Sd. = Standard Deviation, T. = test, df. = Degree of freedom, S. =Significance at P<0.05. %. = percentage,

This table shows a high Significance statistical difference relationships between pre test and post test-1. When the p-value< 0.05(sig.=0.000<level of p-value =0.05).

Table (3): Comparison between the Two Pre-test and Post-test 2 Periods by Using Paired Sample Test Related p-value 0.05.

Paired Samples Test									
	Paired Differences					t(calculate)	df	Sig.(2)tailed	p-value
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Posttest-2 Pre_test	36.70000	9.18826	1.67754	33.26905	40.13095	21.877	29	.000	0.05

Sd.= Standard Deviation, T.= test, df.= Degree of freedom, Sig.=Significance at P<0.05.

This table shows a high Significance statistical difference relationships between pre test and post test-2. When the p-value< 0.05(sig.=0.000<level of p-value =0.05).

Table (4): Association between Knowledge of the Nursing Staff about the Hemodialysis for Pre-test, Post-test 1 and Post-test 2 and their Socio-Demographic Characteristics:

Domain	ANOVA-Test						
			Sum of Squares	Df	Mean Square	F	Sig.
The gender	PRETEST	Between Groups	4.800	1	4.800	.056	.814
		Within Groups	2379.500	28	84.982		N.S
		Total	2384.300	29			
	POST TEST I	Between Groups	.675	1	.675	1.751	.196
		Within Groups	10.792	28	.385		N.S
		Total	11.467	29			
	POST TEST II	Between Groups	6.533	1	6.533	.464	.502
		Within Groups	394.667	28	14.095		N.S
		Total	401.200	29			

Age	PRETEST	Between Groups	440.930	4	110.233	1.418	.257
		Within Groups	1943.370	25	77.735		N.S
		Total	2384.300	29			
	POST TEST I	Between Groups	.688	4	.172	.399	.808
		Within Groups	10.779	25	.431		N.S
		Total	11.467	29			
	POST TEST II	Between Groups	2.739	4	.685	.043	.996
		Within Groups	398.461	25	15.938		N.S
		Total	401.200	29			
	PRETEST	Between Groups	106.437	1	106.437	1.308	.262
		Within Groups	2277.863	28	81.352		

The economic situation		Total	2384.300	29			
	POST TEST I	Between Groups	.013	1	.013	.032	.858
		Within Groups	11.453	28	.409		
		Total	11.467	29			
	POST TEST II	Between Groups	8.616	1	8.616	.615	.440
		Within Groups	392.584	28	14.021		N.S
		Total	401.200	29			
The number of years of work in the field of nursing in general	PRETEST	Between Groups	356.336	4	89.084	1.098	.379
		Within Groups	2027.964	25	81.119		N.S
		Total	2384.300	29			
	POST TEST I	Between Groups	1.002	4	.251	.599	.667

		Within Groups	**10.464**	**25**	**.419**		**N.S**
		Total	**11.467**	**29**			
	POST TEST II	**Between Groups**	**23.405**	**4**	**5.851**	**.387**	**.816**
		Within Groups	**377.795**	**25**	**15.112**		**N.S**
		Total	**401.200**	**29**			

df. = Degree of freedom, S.=Significance at P<0.05, F.= F-test, ANOVA.= Analysis of Variance.

This table revealed that there were no significant association between the nurses' knowledge about hemodialysis and demographic status in pre-test, post-test1, and posttest -2 at P value >0.05 level.

Discussion:

Table (1) The finding of the present study shows that more than three-quarters of the study sample were female and remaining were male this totally agrees with study was conducted in hemodialysis at Khartoum city teaching hospitals that showed the majority of the study sample (82.5%) were female and the remaining were male.[8]

In addition ,the majority of the participants in the present study are in the age group of 18-27, these outputs agree with study was conducted in hemodialysis units in Zagazig city in Egypt country and the number of sample was 50 where the results revealed that more than half 54 % of studied nurses their ages ranged between twenty to less than thirty years.[9] While was more than three quarters of the study sample within medium level of the economic situation this result supported by a study conducted at Baghdad city appeared of 72.0%, of participants were medium the economic level.[10]

This study found of the half participates was within of 1-5 years' experience in nursing field the same line with study which was conducted on 25 nurses , in Iraq on nurses' knowledge toward Peritoneal Dialysis at pediatric teaching Hospitals found the near of half (48%) have (1-5) experience in nursing field.[11]

Table 2 announced that there is a strong significant relationship between the pre-test and the post-test 1 where the p- value<0.05 this indicates an increase in the knowledge of the nursing staff after giving the educational program by the researcher. These results are approved in Egypt they describe a statistical significant increase between pre and post-test 1at (P< 0.001), after they are exposed to an educational program.[12]

Table (3) confirm that there is a strong statistical relationship between the pre-test and the post-test2.noticing that there is elevation in nurses' knowledge due to effect educational program where the p-value <0.05.This results are agree with study was conducted in Baghdad city on sample of 25 nurses, they included the results indicated that the nurses‟ knowledge at low level in pre-test (mean= 33.6000) and became high level in post 2 (mean=73.8800). [11]

Table (4) revealed that there were no significant association between the nurses' knowledge about hemodialysis and demographic status in both pre-test, post-test1, and posttest -2 at P>0.05 level. Correspond with study was conducted in Minia that was study effect of educational program about infection control precautions for nurses in pediatric hemodialysis units while the participants were 36 nurses show the results no significant in pre-test p-value = 0.9 ,post-1p- value = 0.3, and post- test 2 p- value = 0.3.[13]

Recommendation:

1. This study implement an educational program regarding nurses' knowledge about hemodialysis center in Children Welfare Teaching Hospital and Child's Central Teaching

Hospital, in Baghdad city, and shows good improvement in nurses' knowledge, so it's recommended the implementation of this educational program in all Iraq hemodialysis hospitals.

2. The need for care guidelines with an ongoing educational programs to increase and refresh nurses' knowledge about hemodialysis, these Guidelines could be printed and distributed by hospitals in the specific areas for using as a reference.

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