Effectiveness of an Educational Program on Nurses' Knowledge and Practices Concerning Nursing Management of patients' with Vascular Access in Dialysis Centers at Baghdad Teaching Hospitals

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Abstract

Objective(s): The aim of a present study is to determination the effect of an Educational Program on Nurses' Knowledge and Practices Concerning Nursing Management of patients' with Vascular Access in Dialysis Centers.

Method: A quasi-experimental (two –group pre-post -test) design was conducted at Baghdad teaching hospitals, at 14th October 2018 to 25 December 2019. Non-probability "purposive" sample of (80) staff nurse who have been working at hemodialysis units were selected from Baghdad teaching hospitals which include Al-Yarmook teaching hospital, Baghdad Teaching Hospital, and Al-Kindy Teaching hospital, Al-Karama Teaching Hospitals, Imamein-kadhimein Teaching Hospital, Surgical Specialties Hospitals. Nurses were divided into two groups, study groups consist of (40) nurses exposed to the nursing education program, and control group consist of (40) nurses.

Results: The results of the study indicated that The majority of staff nurses are female, and they graduated from high school nursing within the age group (23-27) years. The study indicates the nurse knowledge and practices Concerning Nursing Management of patients with Vascular Access in Dialysis was poor level. While posttest results showed that the nurse knowledge and practices was improved to high level which as the positive effect of program.

Keywords: *Nurses' knowledge and practices, Vascular Access, Complication of VA and management for patient with vascular access in hemodialysis.*

Introduction

The kidney disease at the end of stage of global health concerns. In 2013, it was nearly 3.2 million people receiving treatment worldwide. Bringing the number of people who develop ESRD Pal by an estimated 6% each year [1]. Dialysis is the treatment of chronic maintenance for the life of the savior of patients with kidney disease at the end of the stage. Renal disease final depends on the availability of efficient access hemangioma, and requires the establishment and use of the arrival of the blood vessels arterial successful access coordinator and educated multi-disciplinary team to ensure optimal blood vessels for each patient.[2] The nurses play an important role in the therapeutic success and outcome of the patients because they minimize the patients risk factors for infections through maintaining strict aseptic technique, changing the (HD) Catheter dressing, inspecting the solution for signs of contamination. Monitoring the patients closely before, during, and after an exchange and recording his vital signs.

Methodology

A quasi-experimental (two–group pre-post-test) design, at 14th October 2018 to 4th July, 2020 to find the effect of an Educational Program on Nurses' Knowledge and Practices Concerning Nursing

Management of patients' with Vascular Access in Dialysis Centers at Baghdad Teaching Hospitals. Non-probability "purposive" sample of (80) staff nurse who have been working at hemodialysis units were selected from Baghdad teaching hospitals which include Al-Yarmook teaching hospital, Baghdad Teaching Hospital, and Al-Kindy Teaching hospital, Al-Karama Teaching Hospitals, Imamein-kadhimein Teaching Hospital, Surgical Specialties Hospitals. The researcher constructed a questionnaire format based on a program in order to reach the objectives of the study, the questionnaire is composed of three main parts (demographic characteristics of the staff nurses It consists of (7) items which included: age, gender, marital status, level of education, Number of years in employment, Number of years in the hemodialysis units, number of training sessions, and the second part include knowledge of nurses' concerning Management of patients with Vascular Access (35) items, and the third part include observational check list for nurses' practices concerning Management of patients with Vascular Access (25) items. the researcher used SPSS version 23 to analyze the data. A pilot study was carried out between the periods it was conducted at Baghdad Teaching Hospitals during the period from 3th march to 1 march 17th 2018 on (10) nurses who work at hemodialysis units in Baghdad Teaching Hospital to determine the reliability of the questionnaire and content validity was carried out through the 26 experts. Reliability of the observational checklist was determined through the use of the inter-rater reliability method. Descriptive statistical analysis procedures (frequency, percentage, mean of score) and inferential statistical analysis procedures (Chi-square and t-test) were used for the data analysis.

Result

Table (1): Comparison Between Nurses' Knowledge (Pre–Post) Test in the Study and Control Groups About the General Information of Anatomy and Renal Failure and Hemodialysis

List	Items	Study Group N= 40								Control Group N= 40							
		Pre-test				Post-test				Pre-test				Post-test			
		Yes	No	M.s.	Ass	Yes	No	M.s.	Ass	Yes	No	M.s.	Ass	Yes	No	M.s.	As
1	The location of the kidney	18	22	1.45	F	39	1	1.98	P	30	10	1.75	F	23	17	1.58	F
2	The location of liver in	9	31	1.23	F	34	6	1.85	P	20	20	1.50	F	17	23	1.43	F
3	Length of kidney in human	11	29	1.28	F	38	2	1.95	P	12	28	1.30	F	13	27	1.33	F
4	The kidney contain on	5	35	1.13	F	29	11	1.73	P	4	36	1.10	F	8	32	1.20	F
5	Nephron is	13	27	1.33	F	33	7	1.83	P	14	26	1.36	F	14	26	1.35	F
6	The kidney work to filter	5	35	1.13	F	34	6	1.85	P	2	38	1.05	F	6	34	1.15	F
7	The renal failure not happen	5	35	1.13	F	34	6	1.85	P	6	34	1.15	F	9	31	1.23	F
8	In renal failure the amount	10	30	1.25	F	29	11	1.73	P	2	38	1.05	F	6	34	1.15	F
9	Causes of Chronic Renal	2	38	1.05	F	30	10	1.75	P	8	32	1.20	F	10	30	1.25	F
10	The general principle of	5	35	1.13	F	33	7	1.83	P	10	30	1.25	F	11	29	1.28	F
Total		**317**	**1.20**	**F**	**33**	**67**	**1.83**	**P**	**108**	**292**	**1.27**	**F**	**117**	**283**	**1.29**	**F**	

Table (1) presents Nurses' knowledge in the study and control groups before and after the implementation of the educational program which shows clearly that Nurses' knowledge in the study group is high level (good) when compared between pre and post tests, while there are no differences from the control group with respect to the total mean of score.

Table (2): Comparison Between Nurses' practices (Pre – Post) Test in The Study and Control Groups About Nursing care through Hemodialysis.

List	Items	Study Group N= 40										Control Group N= 40									
		Pre-test					Post-test					Pre-test					Post-test				
		Always	Sometime	Never	M.s.	AS	Always	Sometime	Never	M.s.	AS	Always	Sometime	Never	M.s.	AS	Always	Sometime	Never	M.s.	AS
1	Monitoring of vital signs	-	3	37	1.08	P	3	37	-	2.08	F	-	9	31	1.23	P	-	4	36	1.10	P
2	Monitor the patient, connections	-	23	17	1.58	P	32	8	-	2.80	G	-	20	20	1.50	P	-	4	36	1.10	P
3	Monitoring the patient in the case of bleeding …..	-	8	32	1.23	P	23	17	-	2.58	G	-	9	31	1.23	P	-	6	34	1.15	P
4	Blood monitoring in the venous, arterial…..	-	9	31	1.23	P	23	17	-	2.58	G	-	8	32	1.20	P	-	6	34	1.15	P
5	Follow-up of urea in the blood – creatinine	-	5	35	1.13	P	23	17	-	2.58	G	-	18	32	1.20	P	-	3	37	1.08	P
Total		**0**	**48**	**152**	**1.24**	**P**	**124**	**92**	**2**	**2.79**	**G**	**0**	**64**	**146**	**1.37**	**P**	**0**	**23**	**177**	**1.11**	**P**

M = mean, Ass.= assessment, Level of assessment: (1-1.66) = Poor;(1.67-2.33) = Fair; (2.34-3.00) = Good

Table (2): presents Nurses' practices ' in the study and control groups before and after the implementation of the educational program, it shows clearly that the Nurses' practices in study group is a high level (good) when compared between pre and post tests, while there are no differences to the control group with respect to the total mean of scores.

Table (3): Significant Differences between Knowledge and Practices among Nurses with regard to their Age Group.

Age Program	Study group (N=40)				Control group (N=40)			
	Chi-square	Df	P-value	Sig.	Chi- square	Df	P-value	Sig.
Knowledge	66.308	5	0.141	N.S	50.060	5	0.551	N.S
Practices	59.522	10	0.024	S	64.460	10	0.008	S

df: Degree of freedom, P: Probability value, Sig: Significance, N.S: Not significant, S: Significant, H.S: High significant

This table **(3)** indicates that there is no significant association between nurses' knowledge with their age group among the study and control group. But the findings show that there is significant association between nurses' practices and their age group among both groups at p-value 0.024 and 0.008

Table (4): Significant Differences between Knowledge and Practices among Nurses with regard to their Educational Level

Education Program	Study group (N=40)				Control group (N=40)			
	Chi-square	df	P-value	Sig.	Chi- square	Df	P-value	Sig.
Knowledge	21.764	3	0.933	N.S	59.450	3	0.019	S
Practices	31.358	6	0.144	N.S	41.086	6	0.085	N.S

df: Degree of freedom, P: Probability value Sig: Significance, N.S: Not significant, S: Significant, H.S: High significant

This table (4) indicates that there is no significant association between nurses' knowledge and practices with regard to their level of education among the study group at p-value ≤ 0.05.

The findings among the control group show that there is significant association between nurses' Knowledge with their level of education at p-value= 0.019, while there is no significant association between nurses' practices with their educational level.

Discussion

Table (1) demonstrates the total mean of score for Nurses' knowledge which assigned that there is high level knowledge (1.98) good, for Nurses' after implementing the educational program to the study group while no alteration is found of Nurses' knowledge in the control group from pre to the post-test with consideration to the total mean of scores.

This outcome supported by [6] suggested that the majority of nurses surveyed had satisfactory knowledge of hemodialysis description, and more than half had satisfactory knowledge about pre-dialysis assessment of patient condition.

This outcome confirmed by[7] showed that most nurses do not have adequate information about early detection of AKI, so there is a need to establish and implement training programs with the goal of developing skills and competencies to prevent and detect early AKI.

This study supported by[8] that stated the knowledge of nurses about renal failure and hemodialysis, it was found that the majority of nurses (83.3 per cent) had a high level of awareness relevant to child care undergoing hemodialysis. This can be explained by the many years of experience that most nurses have had. These agree with [9] who reported the nurses who studied were better in their overall information percentage ratings.

Table (2) Demonstrates the total mean of scores for Nurses' practices which indicate that there are high level practices (2.00) for Nurses' after implementing the educational program in the study group while no change is found concerning Nurses' practices in the control group in the pre and post tests with respect to the total mean of scores.

This result supported by [3] who show in their study that the majority of nurses reflect a fair knowledge about of nurses' knowledge toward providing care to patients with Vascular Access Hemodialysis and These finding show that the nurses who were working in HD units need to develop their knowledge to be up -to data of any knowledge related to vascular access.

This finding was reinforced by [10] who found in their experiment that by contrasting the degree of awareness between staff nurses and nursing students, staff nurses had an acceptable level of knowledge relative to nursing students about hemodialysis patient treatment.

This table **(3)** indicates that there is no significant association between nurses' knowledge with their age group among the study and control group. But the findings show that there is significant association between nurses' practices and their age group among both groups at p-value 0.024 and 0.008.

This research coincides with[8] It indicates that the finding in this study indicated that there is a significance of statistical between the age of nurses surveyed and the standard of practice at p value (0.001). This research conflicts with (Mahmood, 2016).[3] It indicates that there is a substantial association between the expertise of nurses and their age at p ≤ (0.01) level.

This table **(4)** indicates that there is no significant association between nurses' knowledge and practices with regard to their level of education among the study group at p-value ≤ 0.05.

The findings among the control group show that there is significant association between nurses' Knowledge with their level of education at p-value= 0.019, while there is no significant association between nurses' practices with their educational level.

This result is supported by [3] It shows that there is was a significant relationship at p ≤ (0.05) level between nurse's knowledge and their level of education. This finding coincides with Bakey's (2008) study, which reported that there was a strong association between the expertise of nurses and their level of education.

Conclusion

There is a modification in nurses' means before and after the appliance the educational program. The educational program has special effects on all age groups in both genders, and all learning levels, and all groups in marital status and all years in experience groups.

Recommendation:

1. Continuous nursing educational and work-related to training programs of dialysis unit concerning vascular access must be well organized within Baghdad teaching hospitals and prepared with the essential educational facilities and resources necessary to promotion the knowledge and skills of practicing nurses, which will be revealed on better result and service for the patients.
2. The multidisciplinary approaches will be used in the care of patients needing dialysis in the long term. Patients, the families of patients, the nurse and other dialysis workers, the renal dietitian, the nephrologists, the social worker and the psychologist should be included.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Adults Nursing Department and all experiments were carried out in accordance with approved guidelines.

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