

Awareness of Nurses Concerning the Procedure of Hemodialysis and Related Complications

وعي الممرضين حول الاجراءات المتخذة في الديليزة الدموية وعلاقتها بالمضاعفات

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الخلاصة

الهدف: تهدف الدراسة الحالية الى تحديد الخصائص الديموغرافية للممرضين وكذلك تقييم معارفهم فيما يتعلق بإجراءات الغسيل الدموي والمضاعفات المرتبطة بها في مستشفى كركوك العام.

المنهجية: أجريت دراسة وصفية استخدم فيها أسلوب التقييم، وتم تطبيقها على الممرضين للفترة من السادس من شباط 2011 ولغاية الثاني من حزيران 2011. أختيرت عينة غرضية (غير احتمالية) مكونة من (19) ممرض وممرضة من الذين يعملون في وحدة الغسيل الدموي في مستشفى كركوك العام في مدينة كركوك لغرض الدراسة. تم جمع المعلومات باستخدام استمارة الاستبانة التي صممت لغرض الدراسة باستخدام مقياس (اعرف، غير متأكد، لا اعرف) وكانت الاستبانة مكونة من ثلاثة اجزاء حيث تضمنت الصفات الديموغرافية للممرضين ومعلومات لها علاقة بإجراءات الغسيل الدموي والمضاعفات المرتبطة بها. تم تحليل البيانات من خلال تطبيق أسلوب التحليل الأحصائي الوصفي للبيانات (التكرارات، النسب المئوية والوسط الحسابي). حددت معارف الممرضين في الجزئين (الثاني والثالث) من الاستبانة كالتالي: (كافية = 2,33 - 3)، (متوسطة = 1,67 - 2,32)، (غير كافية = 1 - 1,66).

النتائج: أشارت نتائج الدراسة أن الفئة العمرية (23 - 27) مثلت النسبة الأعلى (42%) من اعمار الممرضين، أكثر من نصف الممرضين (58%) كانوا من الذكور، وثلثي افراد العينة (68%) كانوا من المتزوجين. فيما يتعلق بسنوات الخدمة، اظهرت الدراسة بان ثلث الممرضين (37%) كانت لديهم خدمة اقل من سنة و ان ثلثي عينة الدراسة (68%) هم من خريجي الكلية.

الاستنتاجات: استنتجت الدراسة بان معارف الممرضين كانت غير كافية فيما يخص (وضع القنطرة الخاصة لاجراء الغسيل و كيفية العناية بالمرضى المصاب بتشنج العضلات، ألم الصدر و صعوبة التنفس بالإضافة لعدم توثيق الممارسات التمريضية من قبل الملاك التمريضي) كما استنتجت الدراسة ان معارف الممرضين فيما يتعلق بإجراءات الغسيل الدموي كانت متوسطة لكل من اجراءات الغسيل الدموي والمضاعفات المرتبطة بها.

التوصيات: أوصت الدراسة بأن يصمم كتيب مطبوع عن العناية التريضية خاصة بإجراءات الغسيل الدموي بالإضافة الى وجوب اشراك الممرضين في التعليم التمريضي المستمر لتعزيز معارفهم في مجال اختصاصهم و تعميم ضرورة التوثيق التمريضي.

Abstract

Objectives: This study performed to determine Sociodemographic characteristics of the nurses and assess their awareness concerning the procedure of hemodialysis and related complications in under treatment patients with hemodialysis in Kirkuk General Hospital.

Methodology: A descriptive study, which uses the assessment approach and it was conducted on nurses from February 6th, 2011 to June 2nd, 2011, using non-probability sampling a purposive sample of (19) subject (male and female nurses) who worked at hemodialysis unite in Kirkuk General Hospital/ The City of Kirkuk. The data were collected through the utilization of a questionnaire, which was developed for the purpose of the study by using the scale (I know, Uncertain, I don't know). It was comprised of three parts, which included the nurses' demographic characteristics, Information related to the hemodialysis procedure and the complication of hemodialysis. Data were analyzed through the application of descriptive statistical data analysis approach (frequency, percentage, mean of scores), Awareness of the nurses in items of (Part II and III) are determined as following:- (adequate = 2.33-3), (moderate = 1.67-2.32), and (inadequate = 1-1.66).

Results: The study had revealed that an age group (23 - 27) year represent the grater percentage of the sample which constitutes (42.0 %), and more than half of the nurses were male which represent (58.0 %). Relative to the subjects' marital status, two third (68.0%) of the sample were married. Concerning the years of employment, one third (37.0%) of the nurses have worked for (<1) year and more than two third (68%) of the nurses were college graduate.

Conclusions: The study concluded that the nurses had inadequate awareness regarding catheter placement, care of (muscle cramp, chest pain, and shortness of breathing). and majority of them did not document every nursing procedure. Grand mean for total mean of scores for nurses awareness concerning the procedure of hemodialysis was (2.31), and (2.30) for the complications of hemodialysis. The study concluded that nurses awareness were moderately adequate concerning both the procedure of hemodialysis and related complications.

Recommendations: A standardized written protocol, special for hemodialysis procedure and managing related complications needs to develop for the nursing staff. In addition, the nurses should participate in continues nursing education to enforce their knowledge regarding their selection (hemodialysis and related complication, and generalization the necessity of nursing documentation.

Key word: Awareness, Nurses, Procedure, Hemodialysis, Complication.

INTRODUCTION

Dialysis is an effective means of correcting metabolic toxicities at any age, although the mortality rate in infants and young children is greater than adults in the presence of other, non renal diseases and in the presence of anuria or oliguria ⁽¹⁾.

The incidence and prevalence of chronic kidney disease in Canada have increased dramatically over the last 2 decades. Over 30,000 Canadians have kidney failure requiring dialysis or transplant to stay alive ⁽²⁾, while the incidence of end-stage renal disease (ESRD) in the United States has increased by almost 8% per year for the past 5 years, with more than 300,000 patients being treated ⁽³⁾. End –stage renal disease are a therapeutic challenge because of the chronicity of their disease and their disease and their total dependence upon a machine and the health professionals who are responsible for treatment by these machines; their very existence constantly reminds them of the delicate balance between life and death that is supported by this life –sustaining technology ⁽⁴⁾.

Hemodialysis nursing is a specialized area of nursing practice focusing on needs of patients with renal failure and their families across the lifespan. This specialized care requires the nurse to promote competent, safe, ethical care, and demonstrate current specialty knowledge and practice ⁽⁵⁾.

Patient education is a fundamental and essential component of nursing practice that improves the health of individuals and provides necessary knowledge and skills for managing chronic illness such as kidney disease. The ultimate goal of patient education is to achieve long-lasting changes in behavior by providing knowledge, skills, and abilities that allow patients to make autonomous decisions and take ownership of their care to improve their own outcomes ⁽⁶⁾.

The study aimed to assess and the quality of health care services produced by the nurses in hemodialysis unite and detect the weak points in their clinical practice to be enhance for the reason of that nephrology nursing practice requires a common knowledge base to care for pediatric, adult, and geriatric patients with kidney disease.

METHODOLOGY

A descriptive study, which uses the assessment approach and it was conducted on nurses from February 6th, 2011 to June 2nd, 2011, using Non - Probability (a purposive sample) of (19) subject (male and female nurses) who worked at heamodialysis unite in Kirkuk General Hospital/ The City of Kirkuk. The data were collected through the utilization of a questionnaire which was developed for the purpose of the study by using the scale (I know, Uncertain, I don't know) . It was comprised of three parts which included the nurses' demographic characteristics, Information related to the heamodialysis procedure and the complications of hemodialysis. Data were analyzed through the application of descriptive statistical data analysis approach (frequency, percentage, mean of scores). Awareness of the nurses in items of both part (II and III) are determined as the following: - (adequate =2.33-3), (moderate =1.67-2.32), and (inadequate=1-1.66).

RESULTS

Table (1) Distribution of the sample by their demographic characteristics

seq.	Age group	Frequency	Percentages %
1	(18-22)	1	5.0
2	(23-27)	8	42.0
3	(28-32)	4	21.0
4	(33-37)	4	21.0
5	(≥ 38)	2	11.0
Total		19	100%
	Gender	F	%
1	Male	11	58.0
2	Female	8	42.0
Total		19	100%
	Marital status	F	%
1	Single	6	32.0
2	Married	13	68.0
Total		19	100%
	Years of employment	F	%
1	(<1)	7	37.0
2	(1-5)	5	26.0
3	(6-10)	6	32.0
4	(16-20)	1	5.0
Total		19	100%
	Level of Education	F	%
1	Graduate of secondary nursing school.	3	16.0
2	Graduate of medical institute.	3	16.0
3	Graduate of the College of Nursing.	13	68.0
Total		19	100%

Table (1) had revealed that an age group (23 – 27) year represents the greater percentage of the sample which constitutes (42.0 %). The study findings had depicted that more than half of the nurses were male which represents (58.0 %). Relative to the subjects' marital status, two third of the sample were married and they accounted for (68.0%). Concerning to the nurses years of employment, the finding of the study revealed that one third of the nurses have worked for (<1) year which represent (37.0%) of the sample.

The study despite that more than two third of the nurses were college graduate which constitutes (68%).

Table 2: Mean of scores for items of nurses' awareness toward the procedure of dialysis in Hemodialysis unit.

Seq.	Variables	I Know (3)		Uncertain (2)		I don't know (1)		M.S
		F	%	F	%	F	%	
2.1	Importance of hand washing between patient and other.	16	84.0	3	16.0	0	0.0	2.83
2.2	Wearing gloves before dealing with the pt.	16	84.0	1	5.0	2	11.0	2.72
2.3	Using sterile technique during insertion of the catheter.	15	79.0	4	21.0	0	0.0	2.78
2.4	Check of vascular access site for signs of infection.	9	47.0	5	26.0	5	26.0	2.20
2.5	Check vascular access site for functioning .	6	32.0	8	42.0	5	26.0	2.04
2.6	Importance of checking B/P before, during and after the procedure.	16	84.0	1	5.0	2	11.0	2.72
2.7	Necessity of checking V/S every 30-60 minute.	15	79.0	2	11.0	2	11.0	2.67
2.8	Catheter insertion accurately (placement).	2	11.0	5	26.0	12	63.0	1.46
2.9	The component of dialysat solution.	6	32.0	9	47.0	4	21.0	2.09
2.10	Set the speed of the blood stream through the (circuit set of dialysis).	7	37.0	8	42.0	4	21.0	2.15
2.11	Importance of measuring the patient weight pre and post dialysis.	10	52.0	4	21.0	5	26.0	2.25
2.12	Types of vascular access sit.	15	79.0	2	11.0	2	11.0	2.67
2.13	Deal with all alarms in the machine.	10	52.0	6	32.0	2	11.0	2.30
2.14	Importance of (PPE) using in the unit especially for Hepatitis pt..	7	37.0	9	47.0	3	16.0	2.19
2.15	Necessarily document machine setting and each nursing procedure during and after hemodialysis.	4	21.0	6	32.0	7	37.0	1.62

MS = Mean of scores F = frequency % = percentage

Table (2) indicates that the mean of score was adequate in (6) items (1,2, 3,6,7,12), and moderately adequate in (7) items (4,5,9,10,11,13,14) and inadequate in (2) items (8 and 15) which indicated that the nurses showed inadequate awareness about the catheter insertion accurately and documentation of machine setting for each procedure.

Grand mean for total mean of scores was (2.31) which means that the nurses awareness concerning the procedure of hemodialysis was moderately adequate.

Table 3: Mean of scores for items of nurses' awareness regarding the complications of hemodialysis.

Seq.	Variables	I Know (3)		Uncertain (2)		I don't know (1)		M.S
		F	%	F	%	F	%	
3.1	Dealing with change in B/P.	11	58.0	4	21.0	4	21.0	2.36
3.2	Correct air embolism.	11	58.0	6	32.0	2	11.0	2.46
3.3	Correct a problem related with clotted dialysis.	14	74.0	4	21.0	1	5.0	2.68
3.4	Treatment of muscle cramp.	7	37.0	4	21.0	8	42.0	1.94
3.5	Chest pain and shortness of breath.	6	32.0	5	26.0	8	42.0	1.88
3.6	Precautions when dealing with hepatitis patient.	11	58.0	4	21.0	4	21.0	2.36
3.7	Management of rupture dialysis (blood loss).	12	63.0	4	21.0	3	16.0	2.46

MS = Mean of scores F = frequency % = percentage

Table (3) indicates that the mean of score was adequate in (5) items (1,2,3,6,7), and moderately adequate in (2) items (4,5).

Grand mean for total mean of scores was (2.30) which means that nurses awareness concerning complication of hemodialysis was moderately adequate

DISCUSSION:

The nurses have worked for (<1) year which represent (37%) of the sample. This result appeared due to the new expansion in the hemodialysis unit recently and they attract new graduated nurses (academic nurse) to work in the unit which represent (68%) of the sample. and this result is clear from their age group. In a study released in the May 2008, which shows a strong link between nurses' educational level and patient outcomes, they found that every 10% increase in the proportion of bachelor nurses on the hospital staff was associated with a 4% decrease in the risk of death ⁽⁷⁾.

The result of table (2) showed that most of the nurses had adequate awareness in (6) items, and moderately adequate awareness in (7) items, this result may appeared due to that most of the sample were college graduate (holding enough knowledge and qualification to learn and develop their skills day by day). In February 2007, the Council of Physician and Nurse Supply released a statement calling for a national effort to substantially expand baccalaureate nursing programs. In the statement, the Council noted that a growing body of research supports the relationship between the level of nursing education and both the quality and safety of patient care ⁽⁸⁾.

In addition, the majority of the nurses had inadequate knowledge regarding catheter insertion (placement), this resulted due to that they depend on double lumen or other accessible vascular access sites in which the doctor only perform catheter insertion and the majority of the nurses do not document every nursing procedure which implemented on the patients. In addition, a study reported that nephrology nurse is a part of the team available to take referrals and communicate with the other team members in order to schedule procedures appropriately and then to perform procedures as needed ⁽⁹⁾. Furthermore, there is the need for a vascular access coordinator (VAC), a highly specialized role that has developed because of the complexity of vascular access for HD ⁽¹⁰⁾.

The study findings in table (3), had depicted that more than half of the study had know how to deal with changes in B/P, correction of air embolism a precaution when dealing with hepatitis patients, in addition, (74%) of the nurses were know how to correct a problem related with clotted dialysis. A semi – experimental study showed regarding the complication of hemodialysis that (66.7%) of hemodialysis patients complaining from hypotension, and (50%) of them had muscle spasm ⁽¹¹⁾. Furthermore, other statement reported that although air embolism can occur during insertion of a hemodialysis catheter, it is more commonly seen as a complication of catheter removal ⁽¹²⁾.

In regard to muscle cramp, (42%) of the nurses did not know the treatment of muscle cramp , chest pain and shortness of breathing., this result appeared due to that the nursing staff did not attend a training session in other center or sharing in continues nursing education concerning complication management during heamodialysis but they acquire their skill by daily practice experience only and from their colleague. A semi – experimental study were performed in Tehran concluded that the nurses decrease hemodialysis complications in patients by performing programmed nursing care ⁽¹¹⁾.

CONCLUSIONS

1. The study concluded that (42 %) of nurses were from age group (23 – 27) year, more than half of them were male which represents (58 %) , and two third of them were married which accounted for (68%). One third of the nurses have worked for (<1) year which represent (37%), and more than tow third of the nurses were college graduate which constitutes (68%).
2. The study showed that nurses knowledge were moderately adequate concerning both the procedure of hemodialysis and related complications.
3. The nurses had inadequate knowledge regarding catheter placement , care of (muscle cramp, chest pain and shortness of breathing). and majority of them do not document every nursing procedure.

RECOMMENDATIONS

1. A standardized written protocol, special for hemodialysis procedure and managing related complications needs to be developed for the nursing staff.
2. In addition, the nurses should participate in continues nursing education to enforce their knowledge regarding their selection (hemodialysis and related complication
3. The nurses needed for training to develop their skill, depend on themselves (catheter placement) and document every nursing procedure.

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