A Study to Assess the Knowledge Regarding Care Of Patients Undergoing Hemodialysis among Staff Nurses and Nursing Students in Narayana Medical College Hospital, Nellore.

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Abstract:
Background: kidneys are vital organs of our body and are integral to maintain the body’s homeostasis. Dysfunction of kidney is very common now a day and may occur at any age with varying degrees. kidney problems are acute and chronic, kidney failure from stage 1 to stage 5 and end stage renal failure. Hemodialysis is the process, by which the crystalline substances will pass through a semipermeable membrane, usually employed to remove waste and toxic products from the blood in cases of renal insufficiency. Taking care involves interactive actions that must be built on the ethical dimension between the caregiver and the client. Knowledge regarding care of hemodialysis is essential for care givers.

Objective: To assess the level of knowledge regarding care of patients undergoing hemodialysis among staff nurses and nursing students in Narayana medical college and hospital.

Materials and Methods: Descriptive cross sectional design and convenient sampling technique was followed which included 30 samples were used. Data was collected using structured questionnaire. Data analysis was done with SPSS.

Results: Shows that with regard to level of knowledge regarding care of patients undergoing hemodialysis among staff nurses 4(26.7%) had inadequate knowledge, 9(60%) had moderately adequate knowledge and 2(13.3%) had adequate knowledge. Among nursing students 12(80%) had inadequate knowledge, 3(20%) had moderately adequate knowledge. Conclusions: In the present study concluded that comparing the level of knowledge between staff nurses and nursing students, staff nurses having adequate level of knowledge than Nursing students regarding care of patients undergoing hemodialysis.

Key words: hemodialysis, homeostasis and osmosis

INTRODUCTION: kidneys are vital organs of our body and are integral to maintain the body’s homeostasis. Dysfunction of kidney is very common now a days and may occur at any age with varying degrees. kidney problems are acute and chronic kidney failure from stage 1 to stage 5 and end stage renal failure. hemodialysis is the process, by which the crystalline substances will pass through a semipermeable membrane, usually employed to remove waste and toxic products from the blood in cases of renal insufficiency. Hemodialysis was first developed by Thomas graham in 1884 and Dr William koff is considered as father of dialysis. Watson stated dialysis is a therapeutic procedure used in acute and chronic failure to lower the blood level of metabolic waste products (urea, creatinine, uric acid) and toxic substances and to correct abnormal electrolyte and fluid balances. Two methods currently in use are continuous ambulatory peritoneal dialysis and hemodialysis. Hemodialysis takes places outside of the body using a dialysis machine to which an artificial kidney is attached.

Dialysis is a lifesaving process. Hemodialysis is the process by diffusion that is fluid move from an area of higher concentration in the blood to a lower concentration in the dialysate. The dialysate is a solution made up of all electrolytes in their extra cellular concentration. Excess water is removed from the blood by osmosis in which water moves from an area of higher solute concentrate to an area of lower solute concentration. In ultrafiltration, water moves under high pressure of an area of lower pressure cleaned blood is returned to the body.
Dialysis solution are available commercially in 1 or 2 liter plastic bags with glucose concentration of 1.5%, 2.55% and 4.25%. The electrolyte composition is similar to that of plasma. First dialysis should be short time that is 2-3 hours to allow gentle clearance of nitrogenous waste. The average range is 4-6 hours.

There are some pre-dialysis responsibilities for the nurse. The patient and family should receive a simple explanation of purpose of dialysis and what to expect during the procedure. There should be the concern from the patient and family members. For dialysis, the patient is positioned comfortably in a bed or a reclining chair with the limb, AV fistula exposed and supported. Temperature, pulse, respiration, lying and standing blood pressure. Weight is recorded before dialysis is commenced to provide a baseline. Blood specimens are obtained when the needles are introduced for laboratory determination of hematocrit, electrolytes, blood urea and creatinine level and clotting time. A vascular access site is examined for signs of hematoma or infection. Observe the condition of the skin and for edema.

During dialysis the patient is monitored continuously for indication of effectiveness of treatment and signs of complications. Observing and recording vital signs, equipment used, rate of flow, composition and temperature of dialysate heparinization and blood clotting time.

After the dialysis procedure, the artery line is clamped as much blood as possible the dialyzing circuit line is returned to the patients. Dressing is applied to needle site and the area observed. It may necessary to apply some pressure for period of 5 to 10 minutes. The patient vitals, weight on lying and standing, pulse and temperature are recorded for comparison with the original baseline observation.

The complications include hypotension, hypovolemia, chest pain, back pain, diaphoresis, tachycardia, dizziness, painful muscle cramps, dysthymias, air embolism, loss of blood, hepatitis, sepsis. Regulation of diet pattern is also important aspects in case of patients undergoing hemodialysis; people on dialysis need to have high protein food and have a control of salt, potassium and phosphorus, so choose more fruits and vegetables.

So after searching and analyzing many studies I found that there is a great need to assess the nurse’s knowledge regarding care of patients undergoing hemodialysis in dialysis ward.

OBJECTIVES OF THE STUDY:
• To assess the level of knowledge regarding care of patients undergoing hemodialysis among staff nurses.
• To assess the level of knowledge regarding care of patients undergoing hemodialysis among nursing students.
• To compare the level of knowledge regarding care of patients undergoing hemodialysis with their selected socio demographic variables.
• To find out the association between the level of knowledge regarding care of patients undergoing hemodialysis among staff nurses with their selected socio demographic variables.
• To find out the association between the level of knowledge regarding care of patients undergoing hemodialysis among nursing students with their selected socio demographic variables.

MATERIALS AND METHODS:

Sampling and data collection: Descriptive cross sectional design, used to assess the level of knowledge regarding care of patients undergoing hemodialysis among staff nurses and student nurses in Narayana medical college hospital. Non-probability convenient sampling was used. Staff nurses and student nurses who were eligible, can understand regional language, who were available during data collection and voluntarily willing to participate in the study. Who are sick, who are on leave were excluded. Prior Permission was obtained from ethical clearance committee Participants signed an informed consent and were told they could withdraw from the study at any time for any reason.

DESCRIPTION OF TOOL

PART I: Deals with demographic variables include age, gender, educational qualification, working experience, source of information, attended any CNE programme.

PART II: It deals with structured questionnaire to convey the knowledge regarding care of patients undergoing hemodialysis among staff nurses and student nurses. It consists of 50 multiple choice question. Each question gives success answer as 1 score. If not answering gives 0 score.
Score Interpretation: The score was interpreted as follows:

- Inadequate knowledge: 0-16
- Moderately adequate: 17-33
- Adequate knowledge: 34-50

Data analysis: Data was analysed by using descriptive and inferential statistics. Frequency, percentage, item analysis, mean, standard deviation and chi-square test were done.

Results: The results showed that frequency and percentage distribution with regard to age 15(100%) staff nurses are 21-25 years, gender of 15(26.67%) staff nurses are females, educational qualification 15(100%) studied BSc (N), working experience 7(46.67%) have <1 year experience, 8(53.33%) have 1-3 years experience, source of information 4 (26.7%) gained from text books, 1(6.67%) from curriculum and 10(66.7%) from All the above and attended CNE 5 (33.3%) are attended and 10 (66.7%) are not attended. Results show that frequency and percentage distribution among with regard to age 3(20%) nursing students are 18-19 years, 7 (46.7%) are 20-21 years, 2(13.3%) are 22-23 years and 3(20%) are above 23 years, educational qualification 13(86.7%) studied BSc (N) and 2(13.3%) P.B.B.Sc (N), studied year of course 1(6.7%) students are studying 1st year and 5(33.3%) are studying 2nd year, 5(33.3%) are studying 3rd year and 4(26.7%) are studying 4th year, source of information 5(33.3%) gained from curriculum, 3(20%) from journals and 1(6.7%) gained from internet, 6(40%) from all the above and attending any CNE programme 1 (6.7%) are attended and 14(93.3%) are not attended.

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<th>Percentage distribution of level of knowledge between staff nurses and nursing students</th>
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<th>Table-1: comparison of mean and standard deviation of knowledge scores between staff nurses and nursing students</th>
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For staff nurses there was no significant association between age, educational qualification and attending CNE programme, gender, working experience and source of information and for nursing students there was no significant association between age, educational qualification,
year of course, source of information and attending CNE programme.

**DISCUSSION:** The discussion of the present study was based on the findings obtained from the descriptive and inferential statistical analysis of collected data. It is presented in the view of the objectives of the study. The study related to level of knowledge regarding care of patients undergoing hemodialysis among staff nurses 7(46.7%) had inadequate knowledge, 9(60%) had moderate knowledge and 2(13.3%) had adequate knowledge for nursing students 12(80%) had inadequate knowledge, 3(20%) had moderately adequate knowledge.

For staff nurse’s results Shows that with regard to association of level of knowledge regarding care of patients undergoing hemodialysis among staff nurses and selected demographic variables. For staff nurses there was significant association with working experience, the calculated value is less than the table value at P=0.05. There was no significant association between the level of knowledge among staff nurses with their selected sociodemographic variables. The calculated value is less than the table value.so statistically there is no significant association between the level of knowledge among nursing students with their selected sociodemographic variables.

**CONCLUSION:**

In the present study concluded that comparing in the present study concluded that comparing the level of knowledge between staff nurses and nursing students, staff nurses having adequate level of knowledge than nursing students regarding care of patients undergoing hemodialysis.

**RECOMMENDATIONS:**

- A similar study can be replicated on a large sample to generalize the findings.
- An experimental study can be conducted to assess the effectiveness of teaching programme on care of patients undergoing hemodialysis.
- Similar study can be done on different hospital settings.
- A comparative study can be undertaken to compare the knowledge of staff nurses and nursing students on care of patients undergoing hemodialysis.

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