

A DESCRIPTIVE STUDY TO ASSESS THE KNOWLEDGE REGARDING HOME MANAGEMENT AMONG PATIENTS UNDERGOING HEMODIALYSIS IN SELECTED HOSPITALS OF PUNE CITY

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ABSTRACT

Background: Globally over 1.5 million chronic kidney disorders survive with either hemodialysis or peritoneal dialysis. There are over 1,30,000 patients receiving dialysis and the number is increasing by about 232 per million population, a reflection of increasing longevity in general. Hemodialysis is the most common modality followed by transplantation. India is estimated to have about 1,20,000 patients on hemodialysis. A patient in the final stages of kidney disease requires dialysis to mechanically eliminate fluid, waste products, and electrolytes from their bloodstream. End-stage renal disease is a chronic condition that shortens the life expectancy of patients.

Methodology: In present study, researcher adopted Non-Experimental description design. It was carried out on 100 samples. The Non-probability Convenient sampling method was used to data was collected using demographic profile and clinical profile. The study was conducted in selected Primary schools. Data analysis was done mainly using descriptive statistics.

Result: 100 sample and data collected through structured demographic questionnaires regarding home management among patients undergoing hemodialysis. The result revealed that Majority of knowledge 54% (54) shows Average knowledge, 24% (24) shows poor knowledge and 22% shows Good knowledge with Mean **11.38 and SD 3.07**. The result shows that there is no association with knowledge regarding home management among patients undergoing hemodialysis. Demographic variables are Age, gender, education, occupation ,duration of operation, are not associated with a significant level of 0.05.

Conclusion: Study concluded that there is need of empathize more on this topic in the syllabus under the subject Medical & surgical nursing and community health nursing. More emphasis should be given for health education to create awareness about depression & coping strategies for students in the community by the health care professionals.

Categories: Medical & Surgical Nursing, Community Health Nursing

Keywords: (Knowledge, home management, hemodialysis)

INTRODUCTION

Chronic diseases, including diabetes mellitus, cardiac diseases, and end-stage renal diseases, are steadily increasing in both developed and developing countries as a result of increasing life expectancy and changes in lifestyle. The most prevalent and severe health issue is acute and chronic renal failure. Chronic kidney disease encompasses conditions that impair the kidneys' capacity to maintain health, as per the National Kidney Foundation.^{1,2}

Chronic renal failure is a progressive irreversible deterioration in renal function in which the body's ability to maintain metabolic, fluid and electrolyte balance fails, resulting in uremia which render the patient to depend upon hemodialysis for the maintenance of the internal milieu and to avoid uremia.³

Chronic renal disease is a major health issue in various parts of the world. The number of patients with end stage renal disease (ESRD) is increasing in both developed and developing countries, greatly expanding the need for chronic dialysis and renal transplantation.⁴

Patients having chronic kidney disease/end stage renal disease undergoing hemodialysis deal not only with stressful chronic illness but complex and demanding treatment regimens, affecting quality of life of both patients and their families.⁵

Haemodialysis is a medical procedure that is used to correct electrolyte imbalances in patients whose kidneys are no longer able to function properly and to remove excess fluid and harmful waste products from their blood. It is performed using a dialyser and haemodialysis machine, which are also referred to as "artificial kidneys." Haemodialysis is one of three renal replacement therapies. The kidneys are responsible for the regulation of body electrolytes and the maintenance of the acid-base balance. The excretory system's primary function is to regulate the fluid and electrolytes, thereby removing waste, in order to preserve the body's state of homeostasis. Kidney and lower urinary tract dysfunction is prevalent and can manifest at any age, with varying degrees of severity. Dialysis is necessary when the kidneys are unable to remove an adequate amount of waste and fluid from the bloodstream to maintain health.⁶

Patients having chronic kidney disease/end stage renal disease undergoing hemodialysis deal not only with stressful chronic illness but complex and demanding treatment regimens, affecting quality of life of both patients and their families. The prevalence of chronic kidney disease (CKD) is high and it is gradually increasing. Individuals with CKD should introduce appropriate measures to hamper the progression of kidney function deterioration as well as prevent the development or progression of CKD-related diseases. Diet plays an important role in patients with end stage renal disease (ESRD) and a slight increase in any component of diet can make a major difference in pathogenesis of disease. A kidney-friendly diet may help to protect kidneys from further damage. Patients with kidney damage should limit the intake of certain foods to reduce the accumulation of unexcreted metabolic products and also to protect against hypertension, proteinuria and other heart and bone health problems.⁷

Despite rapid progress in the science and technology of renal replacement therapy (RRT), the mortality rate of patients with ESRD remains high. Dietary interventions are essential in individuals with kidney diseases and nutritional recommendations vary depending on each patient's stage of progression, cause of disease, medications and other treatment methods. The primary complications that arise with most ESRD patients include hypertension, electrolyte imbalances (e.g. high potassium, low calcium and high phosphate), excessive body fluids and anaemia. The modification of food cannot directly improve the working of the kidney, but it reduces the excess load on functioning of the kidney and improves the quality of the life of chronic renal failure patients undergoing hemodialysis.⁸

Patient's compliance to dietary modifications is one of crucial element of dietary management of renal failure. Health professionals should ensure that the patients are adequately educated to follow the dietary restrictions. They should be aware of the factors behind noncompliance in hemodialysis patients and assist them in making lifestyle changes. But unfortunately no direct

relationship was observed between dietary knowledge and any compliance measures. Dietary and fluid compliance was observed in only 35.5% and 40.3% of the patient's respectively.⁹

MATERIAL AND METHODS

Study design: Non-Experimental descriptive design was used for this research design.

Study duration: The present study was carried out during the period between 01/04/2024 to 31/01/2025.

Place of study: The study was conducted in selected hospitals of Pune city .

Sample Size: The approximate sample size for the study was determined by estimated prevalence of the variable of interest that was the rate of identification and management of high risk mothers 20% taken into consideration with total number of population size which is less than 1000. The desired level of confidence and absolute precision (acceptable margin of error) was assumed to be 5%. So required sample size for the present study as per calculation is 100.

Sampling technique: In the present study a non-probability Purposive sampling technique was chosen for sample selection.

Consent: Written informed consent was obtained from all the participants after explaining to them all the contents of the patient information sheet, before data collection.

Privacy and confidentiality: Efforts were taken to ensure the privacy & confidentiality of all the information collected from the participating patients. Data was collected after explaining the purpose of the research study in the local language (Marathi).

Inclusion and exclusion criteria: The sample selection criteria included participants willing to participate and those who could understand either English or Marathi. Individuals who met these criteria were considered eligible for the study. However, those undergoing regular hemodialysis were excluded from participation. This approach ensured that the study focused on a specific group relevant to the research objectives while maintaining clarity in participant selection. By setting these inclusion and exclusion criteria, the researcher aimed to enhance the reliability and applicability of the findings. Careful selection helped ensure that the data collected accurately reflected the study population, contributing to meaningful and valid research outcomes.

Data collection: A questionnaire was developed to collect the required information from the participant and to assess knowledge regarding home management among patients undergoing hemodialysis.

The investigator selected the following tool for data collection. The tools were constructed according to the objective of the study it consists of 2 sections.

Section A- Demographic data it includes the demographic data such as age, gender education, occupation, Residential area.

Section B- Knowledge questionnaire there is multiple-choice questions on Self Structured Questionnaire to assess knowledge regarding home management among patients undergoing hemodialysis.

Statistical Analysis

Data was entered using Microsoft Excel 2019 for Windows. Summarization and analysis of data was carried out by using the Software 'Statistical Package for Social Sciences (SPSS version 20) Statistics like Mean and Standard Deviation were calculated for quantitative

data. To test the significance of the difference, various statistical tests such as unpaired t-test, and chi-square test were used wherever necessary. For the correlation coefficient of various study factors, Karl Pearson's coefficient of correlation is used.

RESULTS

Table 1: Distribution of the Demographic profile

Demographic Variables	F	%
1. Age in years		
a. 18-27	16	16.00
b. 28-37	21	21.00
c. 38-47	31	31.00
d. 48- 60	32	32.00
2. Gender		
a. Male	65	65.00
b. Female	35	35.00
3. Education		
a. Illiterate	10	10.00
b. Primary Education	11	11.00
c. Secondary education	39	39.00
d. Graduation	30	30.00
e. Post graduation and above	10	10.00
4. Occupation		
a. Government servant	21	21.00
b. Private sector	39	39.00
c. Self employed	30	30.00
d. Not working	10	10.00
5. Duration of operation		
a.<1 hour	33	33.00
b. 1-4 hour	60	60.00
c. > 4 hour	7	7.00

The study found that the largest age group among participants was 48-60 years (32%), followed by 38-47 years (31%), 28-37 years (21%), and 18-27 years (16%). Males constituted 65% of the sample, while females made up 35%. Regarding education, 39% had secondary education, 30% were graduates, 11% had primary education, and 10% were illiterate. In terms of occupation, 39% worked in the private sector, 30% were self-employed, 21% were government employees, and 10% were unemployed. Operation time varied, with 60% undergoing procedures lasting 1-4 hours, 33% under 1 hour, and 7% exceeding 4 hours.

Table 2: Related to score of level of knowledge Regarding Home Management Among Patients Undergoing Hemodialysis

LEVEL OF KNOWLEDGE	f	%	Mean	SD
POOR (0 - 7)	24	24	11.38	3.07

AVERAGE (8-14)	54	54		
GOOD (15-20)	22	22		

The analysis of participants' knowledge levels revealed that 24% had poor knowledge, scoring between 0-7. A majority, 54%, demonstrated an average level of knowledge with scores ranging from 8-14. Meanwhile, 22% exhibited good knowledge, scoring between 15-20. The mean knowledge score was 11.38, with a standard deviation of 3.07, indicating moderate variability in participants' knowledge levels. These findings suggest that while most participants had an average understanding, a significant portion had poor knowledge, highlighting the need for further education and awareness.

Table 3: related to association between association between knowledge regarding Home Management of undergoing haemodialysis and selected demographic variable.

Demographic Variables	Average	Good	Poor	D F	Chi Table value	Chi calculated	P value	Remark
1. Age in years								
a. 18-27	6	5	5	6	12.592	6.627	0.357	No Association
b. 28-37	9	8	4					
c. 38-47	19	4	8					
d. 48- 60	19	6	7					
2. Gender								
a. Male	31	18	16	2	5.991	2.794	0.247	No Association
b. Female	22	5	8					
3. Education								
a. Illiterate	3	4	3	8	15.507	7.717	0.462	No Association
b. Primary Education	7	2	2					
c. Secondary education	25	5	9					
d. Graduation	13	10	7					
e. Post graduation and above	5	2	3					
4. Occupation								
a. Government servant	14	2	5	6	12.592	9.258	0.16	No Association
b. Private sector	23	6	10					
c. Self employed	13	11	6					
d. Not working	3	4	3					
5. Duration of operation								
a.<1 hour	16	9	8	4	9.488	4.284	0.369	No Association
b. 1-4 hour	34	14	12					
c. > 4 hour	3	0	4					

The chi-square analysis found no significant association between knowledge levels and demographic variables ($p > 0.05$). Age, gender, education, occupation, and operation duration did not statistically impact knowledge. Although some groups showed higher knowledge levels, the differences were not significant, suggesting other unexamined factors may influence knowledge variation.

DISCUSSION

This study can be discussed with Veena D Sakhardande regarding knowledge on home management for haemodialysis among selected patients in Pune city. This was a quantitative descriptive survey study of 60 patients who are receiving Hemodialysis, aged 18-60 years. The patients selected for study were Chronic Kidney Disease patients who were receiving Hemodialysis. The assessment of knowledge was carried out and was found that 75% of the samples receiving Hemodialysis had good knowledge on home management of Hemodialysis and 25% of them had average knowledge. The study concluded that: The assessment of knowledge on Home Management of Hemodialysis among patients receiving hemodialysis and suffering from the chronic kidney disease is very much important. This will help to prevent complications and give new ideas to live life with modification of life style.¹⁰

Another similar study done by Zhongxia examined the knowledge, attitude, and practice of 493 hemodialysis patients at a hospital in Nanjing, China. Results showed that higher knowledge scores were linked to younger age, higher education, and not living alone, while better practice was associated with a shorter dialysis history. Positive correlations were found between knowledge and practice ($r = 0.220$, $p < 0.001$) and attitude and practice ($r = 0.453$, $p < 0.001$), but not between knowledge and attitude. These findings highlight factors influencing hemodialysis adherence and suggest the need for targeted educational interventions.¹¹

CONCLUSIONS

Statistically, there is no significant association found between the knowledge regarding home management of hemodialysis among patients. Although the patients were having average knowledge of home management of hemodialysis, so there is a need to emphasize more on this topic in the syllabus under the subject Medical & surgical nursing and community health nursing. More emphasis should be given for health education to create awareness about depression & coping strategies for students in the community by the health care professionals.

Additional information

Disclosures

Human subjects: Authors have confirmed that human participants involved in this study.

Animal subjects: All authors have confirmed that this study did not involve animal subjects or tissue.

Conflicts of interest: The authors declare that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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