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A study to assess the effectiveness of structure teaching programme regarding the knowledge and attitude of dietary management among patients undergoing hemodialysis at selected tertiary care hospital

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Abstract

Diet is an important factor for patients undergoing dialysis because of the effects of uremia. Goals of nutritional therapy are to minimize uremic symptoms and fluid and electrolyte imbalances, to maintain good nutritional status through adequate protein, calorie, vitamin, and mineral intake; and to enable the patient to eat a palatable and enjoyable diet. So the investigator conducted a study to assess the effectiveness of structure teaching programme regarding the knowledge and attitude of dietary management among patients undergoing hemodialysis at Apollo DRDO hospital, Hyderabad. A Quasi experimental one group pre-test and post test design was selected to assess the effectiveness of structure teaching programme regarding the knowledge and attitude of dietary management among patients undergoing hemodialysis, For this study total 45 patients undergoing dialysis were selected by using purposive sampling technique. The study was conducted in Apollo DRDO Hospital Hyderabad. Data was collected with the help of structured knowledge questionnaires with the permission from Nursing Head and Ethical approval from Apollo Hospital Jubilee hills. This study concluded that maximum participants had adequate knowledge after structured teaching programme and good attitude regarding their dietary management. The Results showcased that the pre–test mean Knowledge score was +8.4 and Standard Deviation (SD) ±4.59 whereas the post-test mean Knowledge score of was ±21.8 and Standard Deviation (SD) ±4.86. The calculated paired't' value was (13.4) which is more than the table value (1.684) at 0.05 level of significance. The study shows that maximum participants 39(86.6%) had adequate knowledge after structured teaching programme and good attitude 35(77.7%) regarding their dietary management .The study has Shown that the structured teaching program was effective in increasing the knowledge and attitude regarding dietary management among the patients undergoing haemodialysis.

Keywords: Knowledge; Attitude; Nutritional Status; Hemodialysis Patients**;** Dietary Management.

1. Introduction

The National kidney Foundation (2019) dietary management is an essential part of hemodialysis patient's overall care. Renal Nutrition found that following a diet low in sodium, phosphorous and protein improved the clinical outcomes and quality of life of hemodialysis patients.

Dwyer JT (2017) Dietary management is crucial for patients with end-stage renal disease who undergo hemodialysis. Hemodialysis is a procedure that remove excess fluids and waste products from the blood because the kidneys are no longer able to function effectively. A well-planned diet helps hemodialysis patients maintain proper nutrition, prevent malnutrition, and mange complications related to kidney failure. Proper dietary management includes restricting or modifying certain nutrients to maintain the balance of minerals, fluids, and electrolytes in the body.

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Hemodialysis patients require a higher protein intake than the general population to maintain Muscle mass. Limit their fluid intake to avoid excess fluid buildup. Restriction of fluid is also part of the dietary prescription because fluid accumulation may occur, leading to weight gain, heart failure, and pulmonary edema. With the initiation of hemodialysis, the patient's dietary intake usually still requires some restriction of dietary protein, sodium, fluid intake.

2. Material and methods

2.1. Research approach

For this study we adopted Quantitative research approach.

2.2. Research design

The research design adopted for the study was Quantitative experimental one group pretest, posttest research design.

2.3. Hypothesis

- H0- The patients undergoing dialysis will not have adequate knowledge on dietary management.
- H1- There was a significant difference between pre test and post-test knowledge score.
- H2- There was a significant association between demographic variables and knowledge on dietary management patients undergoing hemodialysis

2.4. Description of Variables

- Independent variables: Structured Teaching Program regarding dietary management for patients undergoing hemodialysis.
- Dependent variables: knowledge and attitude on dietary management among patients undergoing hemodialysis.

2.5. Duration of the study

15 days

2.6. Sample

The sample selected for the present study were the patient undergoing hemodialysis on OPD basis fulfilling the inclusion criteria.

2.7. Inclusion criteria

- Male and female patients.
- Patients who are reported to dialysis unit for hemodialysis as OPD basis.
- Patients who are interested to participate in this study.
- Patients who know Telugu, Hindi, English.

2.8. Exclusion criteria

- Patients who were critically ill.
- Patient with visual and auditory impairment.
- Patients admitted in ward undergoing dialysis

2.9. Sample size

45 patients undergoing hemodialysis.

2.10. Sampling method

Purposive sampling technique was used to select the sample of hemodialysis patients undergoing dialysis in Apollo DRDO Hospital.

2.11. Settings of the study

The setting of the study was dialysis Unit of Apollo DRDO Hospital.

The setting for the study was chosen as per the convenience, feasibility, interest and curiosity of the investigator.

2.12. Ethical considerations

Permission taken from Nursing head prior to data collection and Ethical Clearance was obtained from Apollo Hospitals Jubilee hills Hyderabad. IEC Application No:AHJ-ACD-006/02-23.

2.13. Development of the tool

The instrument selected in a research should be the vehicle that would best obtain data for drawing conclusion pertinent to the study and add to the body of knowledge in the discipline. It may take the form of a questionnaire, an interview schedule, or some other type of tool for eliciting information. The tool used for data collection is a self administered structured questionnaire developed by the investigator. The instrument was organized under the following sections

The tool consists of 2 parts

- Part A: Deals with demographic data of patients undergoing dialysis like, Age, Gender, religion, Occupation, Weight of the patient, duration of renal failure, previous information on dietary management, associated comorbidities, patients using alternative modalities of treatment and food allergies.
- Part B: Deals with questions to assess the knowledge on dietary management. It consists of 30 multiple choice questions. Each question consists of 4 choices in which one is correct answer.

2.14. Data collection method

The proper permission was obtained from DMS, Nursing head of Apollo DRDO Hospital and Ethical committee from Apollo Hospital jubilee hills Hyderabad. The study was carried out after obtaining informed consent from the patients who were willing to participate in the study. Pretest was conducted through structured interviewed questionnaire. Structure teaching programme on Dietary management was taken for the patient who were participating in the study. Posttest was conducted for the same patients after 10 days of providing structured teaching programme.

2.14.1. Tool used for data collection

The proper permission was obtained from DMS, Nursing head of Apollo DRDO Hospital and Ethical committee from Apollo Hospital jubilee hills Hyderabad. The study was carried out after obtaining informed consent from the patients who were participating in the study. After the completion of dialysis duration of the patient PI and Co-Investigator conducted pre-test through structured interviewed questionnaire for group of patients in dialysis unit for 10min and thereafter Structure teaching programme on Dietary management was provided to the patient by PI and Co-Investigator. Structured knowledge questionnaire and structured opinionnaire was developed with help of expertise in field of Nephrology and was used to assess the knowledge and attitude regarding dietary management among patient undergoing hemodialysis. The tool was translated to Telugu and Hindi and was validated by experts for content and translation.

3. Results

Data was analyzed by using Descriptive statistics and Inferential statistics

The analyzed data is organized under following sections

3.1. Section 1

Table 1 Frequency and percentage distribution of subjects according to the demographic variables

Demographics	Frequency	Percentage
Age		
less 30	5	11%
31-50	7	15.5%
51-60	27	60%
more 60	6	13.3%
Gender		
Male	32	71.1%
Female	13	28.8%
Transgender	0	0
prefer not to say	0	0
Religion		
Hindu	28	62.2
Muslim	14	31.1
Christian	3	6.6
Others	0	0
Occupation		
Govt job	12	26.6%
Private job	19	42.2%
Self –employed	7	15.5%
Un-employed	7	15.5%
Weight		
less than 30kgs	6	13.3%
30-40kgs	12	26.6%
40-50kgs	20	44.4%
more than 50kg	7	15.5%
How long you have renal failure?		
less than 1years	13	28.8%
1-5yrs	14	31.1%
More than 5years	18	40%
Do you have any information about dietary management in hemodialysis?		
Yes	33	73.3%
No	12	26.6%
Do you have any other medical condition apart from renal failure?		
Yes	26	57.7%

No	19	42.2%
Are you taking other treatments (siddha, Homeopathy, Ayurveda, Yunani)?		
Yes	0	
No	45	100%
Are you allergic to any of the food items?		
Yes	1	2.2%
No	44	97.7%

The above table shows that

- Age of the patients were 5(11%) were less than 30 years, 7(15.5%) were between 31-50 years, 27 (60%) are from 51-60 years and above 60 were 6(13.3%).
- In pertaining to gender 32(71.1%) were males and 13(28.8%) were females
- In regards to Religion of patients 28(62.2%) were from Hindu religion, 14(31.1%) were from Muslim religion, 3(6.6%) were from Christian religion.
- Occupation of the patients 12(26.6%) were Govt employees, 19(42.2%) were private employees, 7(15.5%) were Self-employed and 7(15.5%) were unemployed.
- Related to weight of the patients 6(13.3%) less than 30kgs, 12(26.6%) were 30-40 kgs, 20(44.4%) 40-50 kgs and 7(15.5%) were more than 50kgs.
- Regarding duration of renal failure 13(28.8%) were less than 1 year, 14(31.1%) were 1-5 years and 18(40%) were from more than 5 years.
- Related to previous information on dietary management 33(73.3%) were having information and 12(26.6%) were having no information
- In regards with patients suffering with any other medical conditions 26(57.7%) were having other conditions and 19(42.2%) were not having any other condition.
- In pertaining to patients using other treatment 45(100%) were not using any treatment
- Related to patients with food allergy 44(97.7%) were not allergic to food and 1 (2.2%) were allergic to food.

3.2. Section 2

Table 2 Pre and Posttest knowledge scores of patients undergoing Dialysis regarding dietary management

Knowledge	**Score Intervals**	**Pre test Scores**		**Post test Scores**	
		Frequency	**Percentage**	**Frequency**	**Percentage**
Poor	0-3	15	33.3	NIL	0
Average	4-6	25	55.5	6	13.3
Good	7-10	5	11.1	39	86.6

The above table shows that in Pretest 15 (33.3%) had poor knowledge, 25(55.5%) had average knowledge, and 5 (11.1%) had adequate knowledge. In the Posttest 6(13.3%) had average knowledge and 39(86.6%) had adequate knowledge on dietary management.

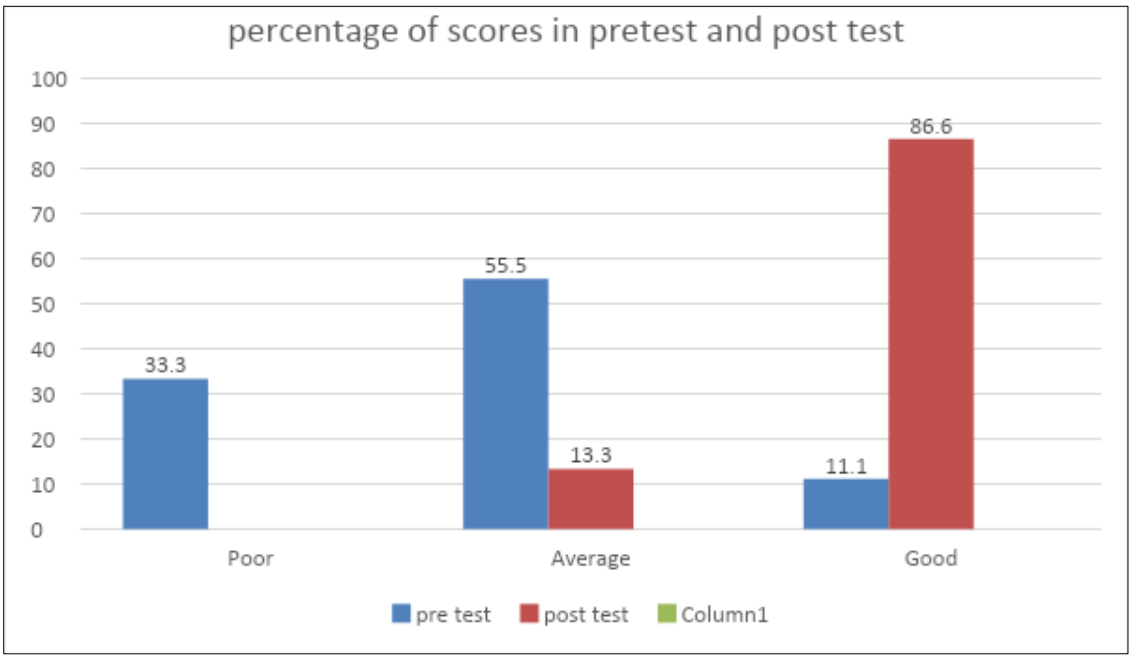

Figure 1 Pre and Posttest knowledge scores of patients undergoing Dialysis regarding dietary management.

3.3. Section 3

Table 3 Pre and Posttest attitude scores of patients undergoing Dialysis regarding dietary management

Attitude	Pre test Scores		Post test Scores	
	Frequency	Percentage	Frequency	Percentage
Poor	8	13.3	0	0
Neutral	33	75.5	10	22.2
Good	4	11.1	35	77.7

The above table shows that in Pre test 33(75.5%) of patients have neutral attitude towards dietary management in dialysis, 8(13.3%) were having good attitude and 4(11.1%) were having poor attitude on dietary management. In Post test 35(77.7%) of patients had good attitude towards dietary management and 10(22.2%) of patients had neutral attitude towards dietary management.

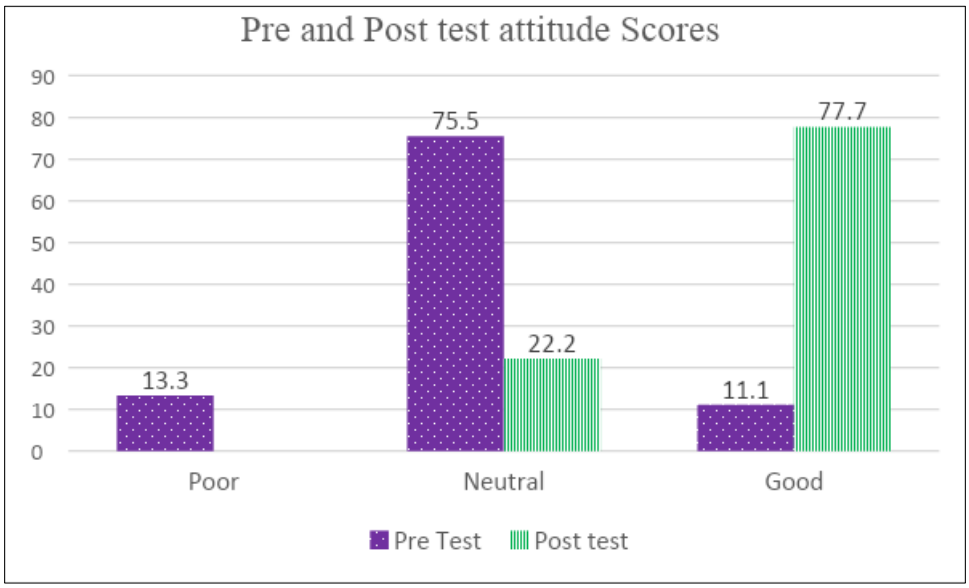

Figure 2 Pre and Post test knowledge scores of patients undergoing Dialysis regarding dietary management

Table 4 Association between selected demographic variables with level of knowledge regarding of dietary management among patients undergoing hemodialysis

Demographics	**Number**	**Inadequate**	**Average**	**Adequate**	**Chi Square**	**df**	**Critical value (p=0.05)**	**Significance**
Age					13.01	6	12.59	Significant
less 30	5	0	1	4				
31-50	7	0	2	5				
51-60	27	0	4	23				
more 60	6	0	1	5				
Gender					9.21	6	12.59	Non-Significant
Male	32	0	3	29				
Female	13	0	2	11				
Transgender	0	0	0	0				
prefer not to say	0	0	0	0				
Religion					6.44	6	12.59	Non-Significant
Hindu	28	0	1	27				
Muslim	14	0	2	12				
Christian	3	0	0	3				
Others	0	0	0	0				
Occupation					12.72	6	12.59	
govt job	12	0	0	12				
private job	19	0	3	16				
self –employed	7	0	2	5				

un-employed	7	0	1	6				Significant
Weight					12.89	6	12.59	
less than 30kgs	6	0	5	1				
30-40kgs	12	0	4	8				
40-50kgs	20	0	1	19				Significant
more than 50kg	7	0	0	7				
How long you have renal failure?								
less than 1years	13	0	0	13	9.72	4	9.49	Significant
1-5yrs	14	0	2	12				
More than 5years	18	0	1	17				
Do you have any information about dietary management in haemodialysis?								
Yes	33	0	6	27	6.16	2	5.99	Significant
No	12	0	2	10				
Do you have any other medical condition apart from renal failure?								
Yes	26	0	6	20	2.62	2	5.99	Non-Significant
No	19	0	1	18				
Are you taking other treatments (siddha,Homeopathy,Aurveda,Yunani)?								
Yes	0	0	0	0	0.71	2	5.99	Non-Significant
No	45	0	4	41				
Are you allergic to any of the food items?								
Yes	1	0	0	1	1.26	2	5.99	Non-Significant
No	44	0	2	42				

Above table represents

The above table shows that there was significant association between knowledge on dietary management among patients undergoing dialysis and their demographic variables like age, occupation, weight of the patient, Duration of Kidney Failure and previous information on dietary management.

The above table shows that there was no significant association between knowledge on dietary management among patients undergoing dialysis and their demographic variables like gender, religion,Associated medical conditions, Patients using alternative treatments and Food allergies.

3.4. Section 4

Table 5 Effectiveness of structured teaching programme among dialysis patients regarding dietary management

Aspects	**Pre test**		**Post-test**		**Mean Difference**	**SD Mean difference**	**t - value**	**Critical value**
Knowledge	Mean	SD	Mean	SD	13.4	23.8	13.1	1.684
	8.4	4.59	21.8	4.86				

The above table shows that the mean 8.4 and SD is 4.59 in Pre test, Mean 21.8 and 4.86 SD were for Post test. The calculated t value 13.4 is more than the table value 1.684 which shows that the mean difference is not by chance and it

is statistically significantly at 0.05 level of significance. This shows that the structured teaching program is effective in increasing the knowledge and attitude of the patients undergoing dialysis.

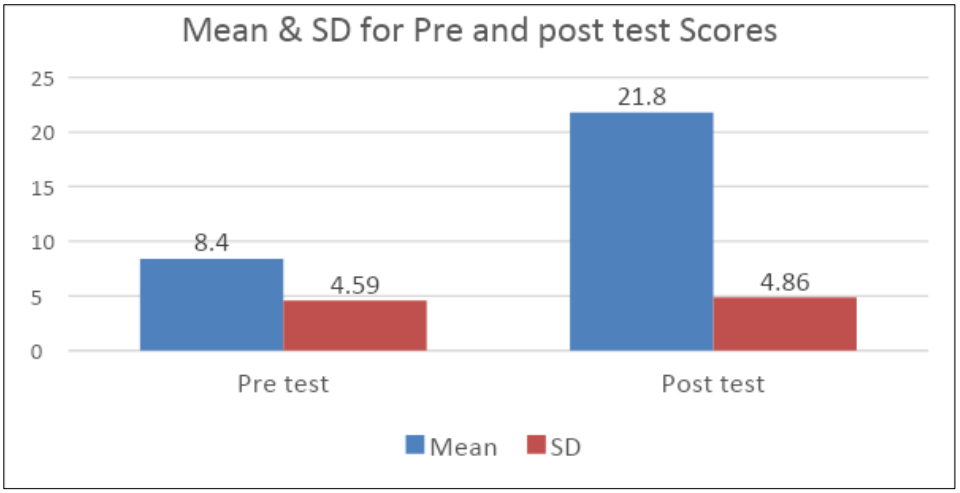

Figure 3 Effectiveness of structured teaching programme among dialysis patients regarding dietary management

4. Discussion

Gangadhar.etal (2017) conducted a study to Assess the Knowledge and Attitude of Patients Undergoing Hemodialysis Regarding their Dietary Management in the District Hospital at Karwar (UK), Karnataka with the View to Prepare Dietary Guide .The results showed that 66.6% of dialysis patients have average knowledge and 53% of dialysis patients have good attitude regarding their dietary management. There was no significant association was found with selected demographical with knowledge and attitude score. The study concluded that majority of patients have average level of knowledge and attitude regarding their dietary management. Dietary guide will help to upgrade their knowledge and attitude. It is also essential for nurse to develop awareness regarding their dietary management in order to improve health and avoid life threatening complications among dialysis patients.The result of the present study clearly shows that after structured teaching programme the patients undergoing dialysis had improved knowledge on dietary management. The calculated 't' test value (13.4) is more than table value(1.64) at 0.05 level of significance. Hence the researcher agrees with study as there is significant correlation between two studies.

5. Conclusion

All the hemodialysis patients must receive a diet pattern and personalized dietary information through guidance. Assessment of dietary management of haemodialysis patient plays a vital role in everyday life. Regular patient and family education about the dietary management is mandatory for maintaining the health and welfare of the patients undergoing dialysis. Hence there was a need to increase more awareness and develop a positive attitude on the necessary dietary management for patients undergoing haemodialysis.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

The ethical approval is obtained from Institutional Ethics Committee -Biomedical Research Apollo Hospital, Hyderabad. Session held on 29.4.2023.IEC Application No:AHJ-ACD-006/02-23.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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