A Study to Assess The Effectiveness of Self Instructional Module (SIM) on Knowledge Regarding Life Style of Renal Failure Patients Undergoing Hemodialysis in Apollo Hospitals, Visakhapatnam

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Abstract: _Background: Chronic renal disease is a major health issue in various regions of the world. The number of cases of end-stage renal disease (ESRD) is rising in both developed and developing countries, greatly expanding the need for chronic dialysis and renal transplantation. Lifestyle modifications regarding lifestyle factors, specifically diet and exercise behaviors, can delay the progression of chronic kidney disease._ Materials and Methods: _A quantitative research approach with a pre-experimental research design was used to learn about the lifestyle of renal failure patients receiving hemodialysis at Apollo Hospitals in Visakhapatnam. The convenient sampling technique was used to select 60 patients with renal failure after transplantation. Data were collected using a pre-tested knowledge questionnaire. The data was analyzed using descriptive and inferential statistics._ Results: _The self-instructional module was found to be effective in increasing knowledge regarding the lifestyle of renal failure patients undergoing hemodialysis. The calculated "t" value for knowledge (17.1) is higher than the table value (2.66) at the 0.05 level of significance._ Conclusion: _The study revealed that lifestyle is more effective in improving the quality of life of renal failure patients undergoing hemodialysis. Patients with renal failure must maintain a healthy lifestyle. All nurses who are involved in caring for renal failure patients at dialysis units should encourage and educate the patients to change their lifestyles for improved quality of life._

Keywords: efficiency, knowledge, way of life, renal failure, and hemodialysis

1. Introduction

Chronic kidney disease (CKD) is a major public health burden [1, 2], with a global prevalence of 11% in the general adult population [1]. CKD is defined as the presence of kidney damage, manifested by abnormal albumin excretion or decreased kidney function, quantified by measured or estimated glomerular filtration rate (GFR), that persists for more than 3 months [3, 4]. The high prevalence of chronic kidney disease (CKD) raises concerns worldwide [5, 6, 7] lifestyle modification in the home and clinical settings is recommended to reduce fear and improve self-care abilities and coping strategies [8]. Chronic kidney disease in an individual is maintained by diet, exercise, and day-to-day activities. As a result of technological development, the lifestyle, obesity, smoking, poor diet, and lack of exercise for people in modern countries have changed a lot. There is a remarkable change in food habits as well as physical activities. So the kidney disease can be controlled by various measures like adopting a healthy diet, taking medication, exercising, and engaging in relaxation techniques like yoga and meditation [9].

2. Material and Methods

A quantitative research approach with pre-experimental study was conducted at Apollo Hospitals, Visakhapatnam to assess the effectiveness of self instructional module on knowledge regarding life style of renal failure patients undergoing hemodialysis. The convenient sampling technique was used to select 60 renal failure patients. The study duration was 2 months (August to September). We assumed that the confidence interval was 10% and the confidence level was 95%.

Hypothesis:

H_1:-There will be a significant difference between the pre-test and post-test knowledge scores regarding lifestyle modification of renal failure patients undergoing hemodialysis.

H_0-There will be no significant difference between the pre-test and post-test knowledge of lifestyle modification of renal failure patients undergoing hemodialysis.

Inclusion criteria: The study includes renal failure patients undergoing hemodialysis who are
- Admitted at Apollo Hospitals in Visakhapatnam.
- Able to write and read Telugu and English

Exclusion criteria: The study excludes renal failure patients undergoing hemodialysis who are
- Not willing to participate in the study
- Not available at the time of data collection.

Procedure methodology:
Formal permission was obtained from the Deputy Medical Superintendent, Nursing Superintendent, and Dialysis Unit Head authorities of Apollo Hospitals, Visakhapatnam. The purpose of the study was explained to the subjects, and their consent was obtained.

A pre-test was conducted for 60 respondents using a knowledge questionnaire. After the completion of the pre-test, the respondents were provided with a self instructional module on the lifestyle of renal failure patients. The self instructional module is available in both Telugu and English. All the questions from the subjects were clarified. A post-test was conducted after 7 days of training intervention.

After the post-test, the researcher thanked and appreciated all the subjects for their goodwill.

Statistical analysis
The data were analyzed using descriptive and inferential statistics based on the objectives and hypothesis of the study.

3. Result

After post-test data were analyzed by using descriptive and inferential statistics, the following were the knowledge score results regarding the lifestyle of renal failure patients undergoing hemodialysis.

Table 1: Frequency and percentage distribution according to demographic variables

S. no	Demographic variable	Frequency	Percentage (%)
1.	**Age**		
	a) 20-35	16	26.6
	b) 36-50	34	56.6
	c) 51-65	8	13.4
	d) Above 65	2	3.4
2.	**Educational qualification**		
	a) Illiterate	12	20
	b) Primary education	16	26.6
	c) Secondary education	25	41.6
	d) Graduate and above	7	11.6
3.	**Sex**		
	a) Male	60	100
	b) Female	0	0
4.	**Religion**		
	a) Hindu	42	70
	b) Muslim	6	10
	c) Christian	11	18.4
	d) Other	1	1.6
5.	**Dietary pattern**		
	a) Vegetarian	12	20
	b) Non vegetarian	48	80
6.	**Body built**		
	a) Thin	27	45
	b) Moderate	24	40
	c) Obese	7	11.6
	d) Very obese	2	3.4
7.	**Duration of disease**		
	a) 1-5 months	6	10
	b) 6-10 months	22	36.6
	c) 1 1-15 months	14	23.4
	d) 16-24 months	18	30
8.	**Personal habits**		
	a) Alcohol	15	25
	b) Smoking	8	13.4
	c) Alcohol and smoking	35	58.4
	d) Tobacco chewing	2	3.4
	e) None of the above	0	0
9.	**Associated illness**		
	a) Diabetes	22	36.6
	b) Hypertension	24	40
	c) Cardio vascular disease	8	13.4
	d) Obesity	5	8.4
	e) None of the above	1	1.6

Table No.1 narrates the frequency and percentage distribution of sociodemographic variables among renal failure patients undergoing hemodialysis on knowledge regarding lifestyle. Out of 60 renal failure patients undergoing hemodialysis, 34 (56.6%) were aged between 36-50 years, 16 (26.6%) were aged between 20-35 years, 8 (13.3%) were aged between 51-65 years, and 2 (3.3%) were aged above 65 years.

It is observed that, out of 60 renal failure patients undergoing hemodialysis, 60 (100%) were males. In relation to educational qualification, 25 (41.6%) were in secondary

education, 16 (26.6%) were in primary education, 12 (20%) were illiterate, and 7 (11.6%) were postgraduate and above.

The above table reveals information about the religion of renal failure. Patients undergoing surgery included 42 (70%) Hindus, 11 (18.4%) Christians, 6 (10%) Muslims, and 1 (1.6%) of another religion.

From the above table, it is evident that out of 60 renal failure patients undergoing hemodialysis, 48 (80%) were non-vegetarians and 12 (20%) were vegetarians.

Table-1 narrates that, 27 (45%) were thin, 24 (40%) were moderately body built, 7 (11.6) were obese and 2 (3.4%) were over obese.

In terms of disease duration, 22 (36.6%) of 60 patients are 6-10 months, 18 (30%) are 16-24 months, and 14 (23.4%) are 25-34 months.11–15 months, and 6 (10%) were 1–5 months.

The above table describes regarding personal habits of renal failure Out of 60 hemodialysis patients, 35 (58.4%) were alcoholics and smokers; 15 (25%); 8 (13.4%) were smokers; and 2 (3.4%) were tobacco chewers.

The table shows that, out of 60 renal failure patients undergoing hemodialysis, 24 (40%) were having hypertension, 22 (36.6%) were having diabetes, 8 (13.4%) were having cardiovascular disease, and 1 (1.6%) were not having any associated illness.

Table 2: Frequency and Percentage Distribution of Pre-Test and Post-Test Level Of Knowledge Scores Regarding Life Style of Renal Failure Patients Undergoing Hemodialysis

Variable	Level of knowledge	Score	Pre-test		Post-test	
			(f)	%	(f)	%
Knowledge	Poor knowledge ($\leq$50%)	0-14	47	78.4	0	0
	Average knowledge (51-60%)	15-20	13	21.6	31	51.6
	Good knowledge ($\geq$70%)	21-27	0	0	29	48.4

Table-2 shows that there was poor knowledge about the lifestyle of renal failure patients undergoing hemodialysis among 47 (78.4%) in the pre-test but not in the post-test. The pre-test average knowledge of renal failure patients undergoing hemodialysis was 13 (21.6%), and the post-test average knowledge was 31 (51.6%). The percentage of renal failure patients undergoing hemodialysis who had good knowledge about their lifestyle was 0% in the pre-test and 48.5% in the post-test.

Table 3: Mean, standard deviation and paired 't' test for knowledge Scores Regarding Life Style of Renal Failure Patients Undergoing Hemodialysis

Variable	test	f	Mean	SD	Mean difference	paired 't' test	Table value
Knowledge	Pre-test	60	12	3.3	8.6*	17.1*	2.66*
	Post-test		20.6	4.17			

From the above table, it is evident that the self-instructional module was found to be effective in improving the knowledge regarding the lifestyle of renal failure patients undergoing hemodialysis, and the calculated "t" value (17.1*) is higher than the table value (2.66*). This shows the mean difference of 8.6 is not by chance but significant statistically at the 0.05 level of significance. Hence, the H$_1$ hypothesis was accepted and the null hypothesis was rejected.

4. Discussion

The aim of the study was to assess the effectiveness of SIM on knowledge regarding lifestyle of renal failure patients undergoing hemodialysis in Apollo hospitals, Visakhapatnam. A pre-experimental one group pre-test post-test research design was used to evaluate the effectiveness of SIM (self instructional module) on life style.

A total of 60 renal failure patients undergoing hemodialysis were selected using the convenient sampling technique. A structured questionnaire was used to collect the data from the subjects. A pre-test was conducted after explaining the purpose of the study to the renal failure patients undergoing hemodialysis. Self instructional module (SIM) was given to the patient, which was translated in both Telugu and English simultaneously after the completion of the pre-test on the first day. A post-test was conducted after 7 days. The data analysis was done by using descriptive and inferential statistics.

In the pre-test knowledge scores, the mean value was 12±3.3 while the post-test knowledge scores had a mean value 20.6±4.17, and it was evident that the SIM (self instructional module) was effective in improving the knowledge of renal failure patients undergoing hemodialysis with a mean difference of 8.6*. The calculated 't' value (17.1*) is higher than the table value (2.66*), which shows the mean difference is not by chance but statistically significant at the 0.05 level of significance. The findings of the study Was in agreement by (2022) T. Gomathi, Dr. M. Geetha study which shows that pre-test knowledge scores mean value was 15.77±3.9 while the post-test knowledge scores mean value 22.6±2.97. The calculated 't' value (16.87*) was higher than the table value at the level of 0.05 significance[9].

5. Conclusion

Lifestyle is a regular daily activity that people accept in their lives as acceptable, so these activities affect people's health. Individuals perform activities by choosing a lifestyle that protects and promotes health and prevents diseases, such as adhering to the appropriate diet, sleep, and activity, exercise, body weight control, non-smoking, and alcohol, and avoiding the diseases and social values that comprise this lifestyle complex. Self instructional module regarding the lifestyle of renal failure patients has shown greater impact. It has been decided that in the future, all renal failure patients undergoing hemodialysis at Apollo Health City in Visakhapatnam will be given a self instructional module to improve their quality of life.

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