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"A Study To Assess The Effectiveness Of Self-Instructional Module (Sim) On Knowledge Regarding Kidney Diseases And Renal Diet Among Patient Admitted In A Selected Hospital"

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ABSTRACT

The most common form of kidney diseases is chronic kidney disease, Kidney stones, nephritis, and Urinary tract infections. A pre-experimental design and evaluative approach was used in the study. Purposive sampling technique was used to collect data from 50 patients (those who are above 18 years old and In the present study it refers to selected kidney diseases like chronic kidney diseases, urinary tract infection, kidney stone, nephritis.) Pretest knowledge was measured by structured knowledge questionnaire and SIM on knowledge regarding kidney diseases and renal diet was administered. Post test data was collected by the same tool after 7 days. The analysis revealed that in pretest the mean knowledge scores of the patients at pre-test mean knowledge scores of the patients was 10.72±2.46 and found to have inadequate (35.73%) knowledge regarding kidney diseases and renal diet. Findings of the study showed a significant improvement in post-test knowledge scores compared to pre-test knowledge scores indicating the effectiveness of SIM in improving the level of knowledge of patients. Periodic assessment and imparting knowledge will improve the health status of patients suffering with kidney diseases.

KEY WORDS : Knowledge, kidney diseases and renal diet, Self-instructional Module (SIM)

INTRODUCTION

The human body is composed of various cell types, tissues, organs, and other biological systems that work together to perform a variety of specialized tasks necessary for sustaining good health. The excretory system is a vital system that plays a significant part in our body. One biological mechanism that aids in the removal of nitrogenous waste products from metabolism and in preserving equilibrium within our bodies is the excretory system.[1]

Urine is expelled by the kidneys after the blood has been filtered to remove waste. The urinary tract, which is made up of the ureters, bladder, and urethra, functions as a plumbing system that collects, stores, and releases urine from the kidneys during urination. The urinary system not only filters and removes waste from the body, but it also keeps blood pressure, calcium, pH, ions, and water in balance.[2] Kidney problems can impact our body's capacity to filter excess water from the blood, clean the blood, and regulate blood pressure. The synthesis of red blood cells and the metabolism of vitamin D, which is essential for healthy bones, may also be impacted.[3]

Kidney illnesses arise when the kidneys are damaged and unable to function normally. High blood pressure, diabetes, and other chronic (long-term) illnesses can all cause damage. Chronic kidney disease, kidney stones, nephritis, polycystic kidney disease, and urinary tract infections are the most prevalent types of kidney diseases. Kidney ailments are more likely to develop in people with diabetes. About 44% of new occurrences of kidney disease are caused by diabetes, making it the most common cause. High blood pressure, having other family members with chronic kidney disease, being elderly, or being of African, Hispanic, Asian, or American Indian heritage may also increase the risk of developing renal illnesses.[4]

Women are more likely than men to have kidney disease (14% vs. 12%). Kidney dysfunction can manifest in different degrees of severity and at any age. Waste materials and fluid can accumulate in the body when the kidneys are damaged. Ankle swelling, nausea, weakness, restless nights, and dyspnea can result from that. Symptoms and severity determine how kidney disorders are managed. If therapy is not received, the damage may worsen, and the kidneys may eventually fail.[3]

A renal diet focuses on limiting foods high in protein and phosphorus, as well as restricting calcium, sodium, and potassium intake. By adhering to this diet, patients can decrease the amount of waste their body generates, which helps support kidney function.[7]

Excess fluid in the body can lead to swelling, difficulty breathing, and high blood pressure, so it's important to limit fluid intake as kidney function declines, since the kidneys can no longer remove excess fluid. If the patient is not yet on dialysis, they should reduce protein consumption, but if they are undergoing dialysis, they need to increase protein intake to compensate for protein loss during the treatment. High potassium levels are dangerous and, as kidney function worsens, potassium can build up to dangerous levels, potentially causing the heart to stop. An imbalance in sodium levels can lead to kidney stones and swelling in the eyes, hands, and ankles. Proper sodium balance is essential for muscle function and maintaining fluid and blood pressure control. Phosphorus helps maintain healthy bones by working with calcium, but too much phosphorus can interfere with calcium absorption, leading to weakened bones. Therefore, it's important to limit phosphorus-rich foods.[6]

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of self-instructional module (SIM) on knowledge regarding kidney diseases and renal diet among patient admitted in a Adichunchanagiri Hospital & Research Centre B G nagara"

OBJECTIVES OF THE STUDY

1. To assess the knowledge of patients regarding kidney diseases and renal diet in terms of pre-test score.
2. To develop and implement Self Instructional Module on knowledge regarding kidney diseases and renal diet among patients with kidney diseases.

3. To determine the effectiveness of Self-Instructional Module regarding kidney diseases and renal diet in terms of post-test score.

4. To find out the association between pre-test knowledge score with selected demographic variable.

METHODOLOGY

Research Approach

The research approach used in this study is evaluative research approach.

Research Design

In the present study the pre-experimental (one group pre-test and post-test) design was adapted.

Table 1: - Schematic representation of research design

Group	Pre-test	Intervention	Post-test
E	O_1	X	O_2

Key: -
E - Experimental group.

O_1- The pre-test to assess the level knowledge regarding kidney diseases and renal diet.
X- Administration of self-instructional module on knowledge regarding kidney diseases and renal diet among patients.
O_2 - Post-test to assess the knowledge regarding kidney diseases and renal diet amongpatient with kidney diseases after administering self-instructional module.

Population

Target population: In this study, the target population consists of all patients with kidney diseases in Adichunchanagiri Hospital and Research Center, B G Nagara.

Accessible Population: In this study, accessible population consists of patients with kidney diseases admitted at Adichunchanagiri Hospital and Research Center, B G Nagara. who meet the inclusive criteria.

Sample

Inthis study the sample consisted of patients with kidney diseases in Adichunchanagiri Hospital and Research Center,B G Nagara.

Sampling Technique

In this study, Non probability Purposive sampling technique was adopted.

Sample Size

The total sample size of this study is 50 members.

Variables

Variables of the present study were the following

Dependent variables:

In this study dependent variable is knowledge of patient measured by structured questionnaires.

Independent variable:
In this study the independent variable is a self-instructional module on kidney diseases and renal diet.

Socio Demographic variables:
Age, gender, religion, education, occupation, diet, family history of kidney diseases and source of information are the socio demographic variables.

RESULTS

The results of data analysis are presented under the following headings.

Section I: Analysis of Socio-demographic characteristics of study participants under the study.

Section II: Comparison of pre-test and post-test knowledge of study participants.

Section III: Analysis of association between pre-test level of knowledge and selected socio-demographic variables of study participants.

SECTION-1: DESCRIPTION OF SOCIO-DEMOGRAPHIC CHARACTERISTICS OF STUDY PARTICIPANTS

TABLE–2: Distribution of socio-demographic variables. (N=50)

SL.NO	SOCIO DEMOGRAPHIC VARIABLES	CATEGORIES	FREQUENCY	PERCENTAGE OF FREQUENCY
1	**Age in years**	21-30	11	22.00%
		31-40	11	22.00%
		41-50	16	32.00%
		Above 51	12	24.00%
2	**Gender**	Male	23	46.00%
		Female	27	54.00%
		Trans gender	0	0.00%
3	**Educational status**	Non formal education	3	6.00%
		Primary education	25	50.00%
		Higher education	17	34.00%
		Degree and above	5	10.00%
4	**Religion**	Hindu	31	62.00%
		Christian	4	8.00%
		Muslim	6	12.00%
		Others (specify)	9	18.00%
5	**Type of diet**	Vegetarian	11	22.00%

		Non vegetarian	3	6.00%
		Mixed	36	72.00%
6	**Occupational**	Self employed	9	18.00%
		Coolie worker	22	44.00%
		Agriculture	13	26.00%
		Home maker	6	12.00%
7	**Is there anyone having kidney disease in your family**	Yes	7	14.00%
		No	43	86.00%
8	**Any previous knowledge regarding kidney disease and real diet**	Yes	17	34.00%
		No	33	66.00%
	If yes, Source of information,	Electronic media	1	2.00%
		Print media	9	18.00%
		Health personnel	4	8.00%
		Relatives, Family members	2	4.00%
		Friends/Neighbors	1	2.00%

COMPARISON OF PRE-TEST AND POST-TEST KNOWLEDGE AMONG PATIENT WITH KIDNEY DISEASES

H_1: There will be significant improvement in post-test knowledge scores as compared to pre-test knowledge scores.

TABLE- 3: Comparison between pre-test and post-test levels regarding kidney diseases and renal diet among patients with kidney diseases. (N=50)

LEVEL OF KNOWLEDGE	PERCENTAGE OF KNOWLEDGE SCORES	No. of study participants.		Percentage of frequency	
		PRETEST	POSTTEST	PRETEST	POSTTEST
INADEQUATE	**≤50%**	46	0	92.00%	0.00%
MODERATELY ADEQUATE	**50-75%**	4	9	8.00%	18.00%
ADEQUATE	**>75%**	0	41	0.00%	82.00%
Total		50	50	100.	100.

				00%	00%

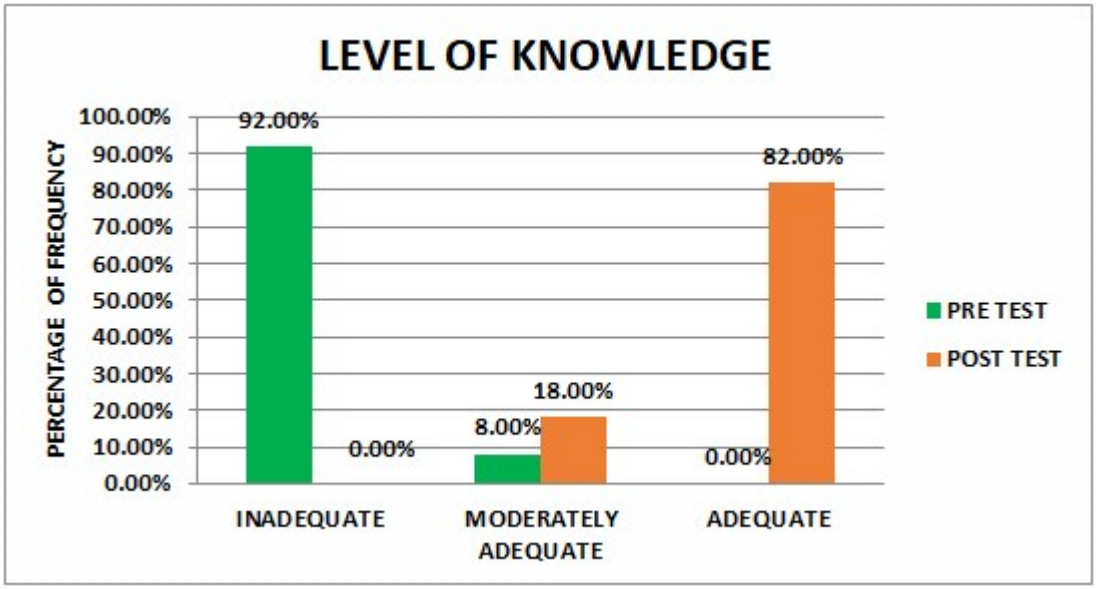

Figure 3 : Pyramid diagram comparing pre-test and post-test level of knowledge among study participants.

Table 3 and figure 3 despite that the majority 92% of the patients had inadequate knowledge and 8% had moderate knowledge in the pretest. and 18% of the patients had moderate knowledge and 82% had adequate knowledge in the post test.

TABLE-4 : Mean and Mean% of pre-test, post-test, and Enhancement knowledge scores regarding kidney diseases and renal diet among patients with kidney diseases. (N=50).

Mean			Mean%			Calculated Paired t-test value
PRETEST	POSTTEST	ENHANCEMENT	PRETEST	POSTTEST	ENHANCEMENT	
10.72	24.48	13.76	35.73	81.60%	45.87%	**29.04 (S) Df=49**

(S)= SIGNIFICANT AT 0.05 LEVEL **t (0.05, 49df)=2.02**

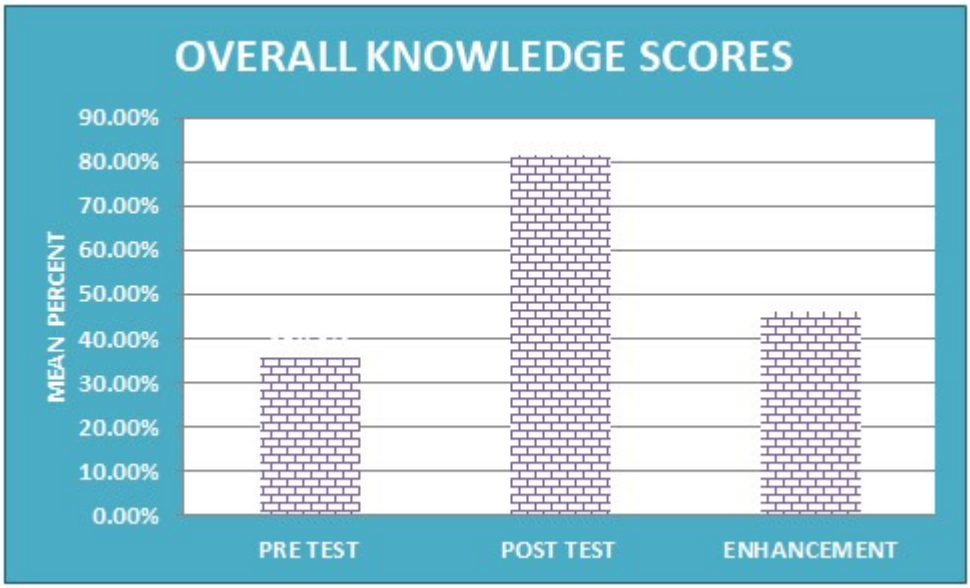

Figure 4 : Cylinder diagram shows Mean% of pre-test, post-test and enhancement knowledge scores among study participants.

Table 4 and figure 4 despite that the total difference in the mean of overall knowledge score was 13.76(45.87%) and with the 't' value of 29.04 and found to be significant at the level of 0.05. It means there is significant difference between pre test and post test level of knowledge regarding kidney diseases and renal diet among patient with kidney diseases. Hence the **hypothesis H1 is accepted**.

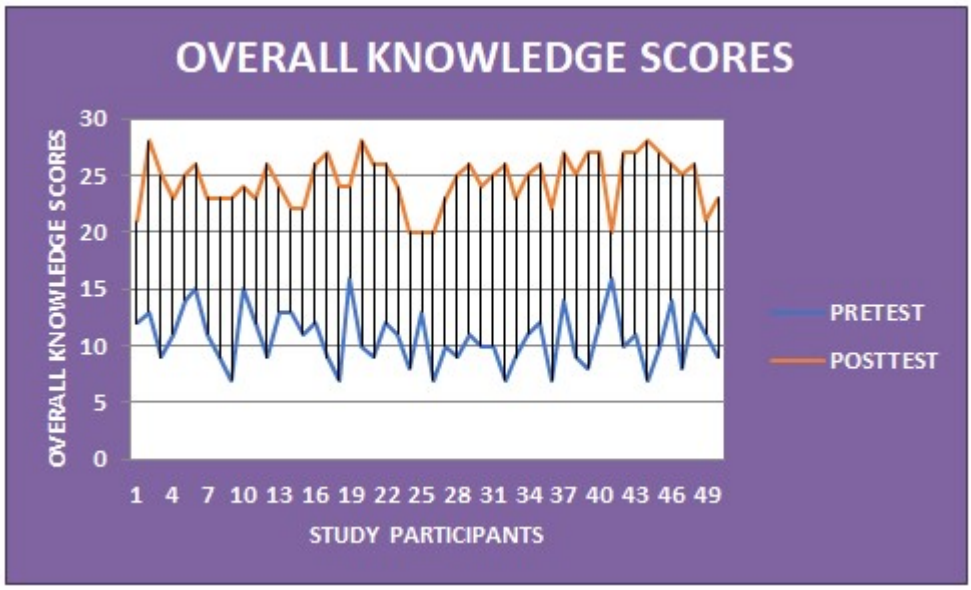

Figure 5: Line diagram showing overall pre-test and post-test knowledge scores among study participants.

SECTION-III ASSOCIATION BETWEEN THE SELECTED DEMOGRAPHIC VARIABLES AND THE PRE TEST KNOWLEDGE AMONG STUDY PARTICIPANTS

OBJECTIVE 4:- To find out the association between pre-test knowledge score with selected demographic variable.

H_2: There will be significant association between pre-test knowledge scores and selected demographic variables of patient with kidney diseases.

TABLE 59: ASSOCIATION BETWEEN PRE-TEST LEVEL OF KNOWLEDGE OF PATIENTS AND THEIR SOCIO-DEMOGRAPHIC VARIABLES. (N=50)

	SOCIO DEMOGRAPHIC VARIABLES	CATEGORIES	PRETEST LEVEL OF KNOWLEDGE		CHI SQUARE VALUES	DF	P VALUE
			INADEQUATE	MODERATE			
	Age in years	21-30	11	0	2.26 (NS)	3	0.52
		31-40	10	1			
		41-50	15	1			
		Above 51	10	2			
	Gender	Male	19	4	5.10 (S)	1	0.02
		Female	27	0			
		Trans gender	0	0			
	Educational status	Non formal education	2	1	3.15 (NS)	3	0.36
		Primary education	23	2			
		Higher education	16	1			
		Degree	5	0			

		and above					
	Religion	Hindu	28	3	1.10 (NS)	3	0.78
		Christian	4	0			
		Muslim	6	0			
		Others (specify)	8	1			
	Type of diet	Vegetarian	9	2	2.10 (NS)	2	0.34
		Non vegetarian	3	0			
		Mixed	34	2			
	Occupational	Self employed	9	0	2.25 (NS)	3	0.52
		Coolie worker	19	3			
		Agriculture	12	1			
		Homemaker	6	0			
	Is there anyone having kidney disease in your family	Yes	6	1	0.43 (NS)	1	0.50
		No	40	3			
	Any previous knowle	Yes	17	0	2.23	1	0.13
		No	29	4			

	dge regarding kidney disease and real diet				**(NS)**		
	If yes, Source of information,	Electronic media	1	0	*****	*****	*****
		Print media	9	0			
		Health personnel	4	0			
		Relatives, Family members	2	0			
		Friends/Neighbors	1	0			

(NS)= NOT SIGNIFICANT (S) = SIGNIFICANT AT 0.05 LEVEL

Table-5 shows χ^2 value revealed that there was significant association between knowledge scores with gender of the patients with kidney diseases. at the probability level of at 0.05. it means that there is was significant association between the pre-test knowledge scores and selected demographic variables of patents with kidney diseases. Hence **H2 is accepted.**

DISCUSSION

After administration of the self-instructional module 18% of the patients had moderate knowledge and 82% had adequate knowledge regarding kidney diseases and renal diet in the post-test.

The overall posttest mean knowledge obtained by the patients was 24.48 (81.60%) with standard deviation 2.25

The total difference in the mean of overall knowledge score was 13.76 with the 't' value of 29.04 and found to be significant at the level of 0.05. It means there is significant difference between pre-test and post-test level of knowledge regarding kidney diseases and renal diet among patients with kidney diseases. Current literature suggests no comparative similar studies available to discuss on the findings.

RECOMMENDATIONS

Based on the findings of the study the following recommendations havebeen made:

- A similar study can be replicated on a large sample to generalize the findings.
- A similar study can be conducted in different settings.
- A true experimental study can be conducted to assess the effectiveness of SIM kidney diseases and renal diet.

Conflict of Interest- There is no conflict of interest of authors in this study
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