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A Study To Assess The Effectiveness of Planned Teaching Programme On Knowledge Regarding Dietary Awareness To Reduce The Risk Of Renal Stones Among The People Of Siddhpur City.

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ABSTRACT

INTRODUCTION:- The urinary system consists of kidney, ureters, bladder and urethra. The kidneys are two bean shaped organs. They remove extra water and waste from blood and converting into the urine Moreover, they also regulate body's salt, potassium and acid content. The formation of kidney stone is also known as renal calculi. Risk factors include dehydration, high fat diet, animal protein, high salt intake and obesity. In India approximately 5-7 million people suffer from renal stones and at least 1/1000 population needs hospitalization due to the kidney stone disease. Recurrence rate of kidney stone is 70-80% in males and 47-60% in females, with majority 80% of calcium oxalate stones. Renal stone disorders are wide spread particularly in countries with the dry hot climatic condition. In India 'stone belt' occupies the parts of Maharashtra, Gujarat, Punjab, Haryana, Delhi and Rajasthan. Stone disorders are common in men than in women. Majority of the people are between the 20-55 years of age. The aim of this study was to assess the effectiveness of planned teaching programme on knowledge regarding dietary awareness to reduce the risk of renal stone.

DESIGN: In this study, quantitative approach with pre experimental one group pre test and post test design was used to conduct study. Non-probability convenient sampling technique was adapt to 100 people from people of Siddhpur. Self structured knowledge was used to assess the level of knowledge regarding dietary awareness to reduce the risk of renal stones among the people of Siddhpur city.

RESULT:
in this study overall the highest percentage in the demographic data including the age group 48% (20-30), gender 52% (female), religion 86% (Hindu), marital status married (70%), family type 73% (joint), education status 45% (higher secondary),
occupation 50% (other), monthly income 38% (less than 5000), renal stone history 00% (no), type of water used to drink 55% (R.O.), take medication on regular basis 93% (no). Post test knowledge mean score (17.1+1.76) was higher than the pre test nowledge mean score (9.77+3.58). The calculated "T" value (25.77) was greater than the table value (1.98) at 0.05 level of significance. The pre test and post test mean % is 39.08% and 68.4% and different is 29.32%.so knowledge is increase after intervention. This indicates that the planned teaching programme is effective in increasing the knowledge regarding dietary awareness to reduce the risk of renal tone. Chi-square test to associate the level of knowledge and selected demographic variable.
CONCLUSION: The finding of the study revealed that the planned teaching programme is effective in increasing the knowledge regarding dietary awareness to reduce the risk of renal stone.
KEY WORDS: Assess, effectiveness, planned teaching programme, knowledge,
renal stone and dietary awareness.

INTRODUCTIO

Nephrolithiasis is common worldwide; it has different etiology of promoter and inadequacy of inhibitors mainly promote production and retention of crystals in renal tubul (Basavarj, Biyani, Browning, & cartledge, 2022) (Hirose, Tozawa, Okada, Hamamoto, & Shimizu, 2018).

Renal calculi are crystalline structures composed most commonly of calcium oxalate salts. They form when the concentrations of these ions, as well as solutes such as hydrogen ions, sodium ions and uric acid are present in the filtrate in higher than normal amounts. This condition is known as super saturation and supersaturated ions are more likely to come out of solution and crystallize. Risk factors for super saturation include dehydration, high fat diet, animal protein, high salt intake and obesity. Typically, the crystals form in the distal tubule, nephron loop and/or in collecting system. Most crystals simply pass unnoticed into the urine. However, sometimes the crystals adhere to the epithelium of the tubules, particularly in the collecting system and form seed crystals that lead to the formation of stones. The stones may remain in the collecting system or may break off and lodge in the calyces, renal pelvis and ureter. Stones lodged within the urinary system cause occurrence of common symptom of nephrolithiasis, severe pain and renal colic that radiates from the lumbar region to the pubic region. Other symptoms include hematuria (blood in the urine), sweating, nausea and vomiting. Nephrolithiasis can be diagnosed in several ways, including computed tomography scanes and an intravenous pyelogram. An IVP is a radiograph of the urinary system that uses a contrast medium such as iodine to reveal the structure of the renal pelvis, the major and minor calyces, the ureters and urinary bladder. The old Sanskrit literatures in India, the Vedas, the Puranas and the Samhita described first time about renal calculi and their remedies.

Renal calculi is perceived as acute disorder but the growing stage of urolithiasis is a systemic disease that can lead to end stage renal disorder (Yoshida & Okada, 2020). The prevalence is increasing due to environmental cause and genetic predisposition. On an average 6% woman and 12% men are affected with renal stone (Stamatelou, Francis, Jones, Nyberg, & Curhan, 1817-1823)

Factor affecting nephrolithiasis occurrence Age and sex: Most vulnerable age for nephrolithiasis occurrence is 20-70 years. It is widely occurred in men as compared to women. Diet: High content of protein, sodium and low level of calcium increases the risk of nephrolithiasis. History of family: Family history of nephrolithiasis in-

creased risk of the nephrolithiasis occurrence. Dehydration: Nephrolithiasis predisposes with excretion of concentrated urine. Hypertension: Hypertension increases the risk of the nephrolithiasis. Obesity: Increase in Body Mass Index (BMI) also has increased risk of kidney stone. Inflammatory bowel diseases and gastric bypass surgery: They affect the absorption of the calcium ion and increases the precipitation of calcium and other stone forming substance which causes Nephrolithiasis.

Symptoms of renal calculi: Discomfort in the side and back and below the ribs. This discomfort usually occur only on the side of the renal calculi and does not cross over to the other side, Fluctuations in discomfort intensity, with periods of discomfort lasting 20-60 min, Discomfort waves radiating from the side and back to the lower abdomen and groin, Bloody, cloudy or foul-smelling urine, Discomfort, pain and inflammation on urination, Nausea and vomiting, Persistent urge to urinate, Fever and chills if an infection is present. Nephrolithiasis that do not cause these expressions may show up on x-rays when the patients seek medical care for other complications, such as blood in the urine or reappearing urinary tract infections 5 (Zhang, Wu, Wang, & Lan, 2022).

A kidney stone is preventing by modification of habit and life changes-avoid protein intake, usually protein is restricted to 60 gm per day to decrease urinary excretion of calcium and uric acid. A sodium intake of 3-4 g/day is recommended, low calcium diet, avoid intake of oxalate containing foods (e.g. Spinach, strawberries, tea, and peanuts etc. drink two glass of water at each night (Baggio, et al., 2020) Prevent calcium-oxalate kidney stones by Drink plenty of fluid, especially water Drink at least 3-4 L of fluid each day. Water is best. Milk, low-sugar drinks, tea and coffee are also suitable. Eat less salt (sodium) Salt increases the amount of calcium in your urine. This can cause stones. About 75% of the salt we eat comes from processed and packaged foods. Choose small servings of animal protein foods too much animal protein, such as meat, chicken, fish and eggs, will make your urine more acidic and more likely to form stones. Limit the amount you eat to one to two servings each day. Plant proteins such as legumes (dried beans, peas and lentils), tofu, nuts and seeds do not make your urine acidic. Have meatless meals made from legumes or tofu more often. Avoid high-dose vitamin C supplements Large amounts of vitamin C can increase the amount of oxalate in your urine. If you want to take a vitamin C supplement, take less than 1000 mg per day. Dietary Fiber is the indigestible part of plants. There are two types of fiber: soluble (dissolves in water) and insoluble. Both provide important functions in the body. Insoluble fiber (found in wheat, rye, barley, and rice) help to reduce calcium in the urine. It combines with calcium in the intestines, so the calcium is excreted with the stool instead of through the kidneys. Insoluble fiber also speeds up movement of substances through the intestine, so there will be less time for calcium to be absorbed. Soft or Carbonated Drinks Not only dehydrates making one more prone to kidney stones, but also contains phosphates, which is linked to higher kidney stone recurrence. Dark soft drinks tend to contain oxalates, which further increase one's susceptibility to kidney stones. Any caffeinated beverage is dehydrating, so for every cup of a caffeinated beverage you drink, do drink another glass of filtered water. Sugary drinks tend to mess with calcium and magnesium absorption, once again increasing one's risk for kidney stones. Your body must buffer the acidity of soft drinks with calcium from your own bones. As this calcium is eliminated through your urine, it slowly forms kidney stones. Carbonated beverage consumption has been linked with diabetes, hypertension, and kidney

stones, all risk factors for chronic kidney disease. With kids drinking so much in the way of sugary drinks and soda pop now, children as young as 5 are being affected with kidney stones (Pendick, 2022)

OBJECTIVE

1. To assess the knowledge regarding the dietary awareness to reduce the risk of renal stones among the people of Siddhpur city.

2. To assess the effectiveness of planned teaching programme on knowledge regarding the dietary awareness to reduce the risk of renal stones among the people of Siddhpur city.

3. To find out the association between knowledge with their selected demographic variable among the people of Siddhpur city.

OPERATIONAL DEFINITIONS:-

Assess

According to Cambridge dictionary "assess" means appraisal or evaluation.

In this study it refers to the evaluation of knowledge regarding renal diet to reduce risk of renal stones among the people of Siddhpur city.

Effectiveness:

According to Cambridge learner dictionary effectiveness is a successful or achieving the result that you want.

In this study it refers to improvement of knowledge after administration of planned teaching programme of people of Siddhpur city related to dietary awareness in renal stones.

Planned teaching programme

According to oxford dictionary planned teaching programme means giving systematic information to people that may enrich their knowledge.

In this study it refers to systemic organized teaching programme regarding dietary awareness to reduce risk of renal stones among the people of Siddhpur city.

Knowledge

According to Cambridge learner dictionary knowledge define information and understanding that you have in your mind.

In this study knowledge refers to the information that the people of Siddhpur city have regarding dietary awareness to reduce risk of renal stones.

Awareness

According to Cambridge dictionary awareness is a Knowledge that something exists, or understanding of a situation or subject at the present time based on information or experience.

In this study it refers to knowledge & understanding regarding dietary awareness to reduce risk of renal stones among the people of Siddhpur city.

Renal stones

According to Cambridge dictionary Renal stones a solid mass of hard material that can form in the kidney and cause pain.

People

According to oxford dictionary people is a human being in general or considered collectively.

In this study it refers to human being residing in Siddhpur city.

METHOD AND MATERIAL

The methodology used in the present study is a pre-experimental approach, a sub type of Quantitative approach was adopted for the present study a one group pre- test and post- test research design.

The study was carried among 100 people from Siddhpur city. The researcher used self- structured questionnaire to collect the demographic, self- structured questionnaire for assessment of knowledge regarding dietary awareness to reduce the risk of renal stones. Content validity of tool was found to be reliable. The reliability was calculated by split half and Karl and Pearsons correlation coefficient formula. The reliability of too was calculated and 'r' found to be r=0.871 which statistically significant. The purpose was to determine the clarity of items, presence of ambiguous items and to ensure the reliability and feasibility of the tool which was statistically reliable for the present study.

RESULT

Table 1, show the frequency and percentage distribution of sample by their demographic variables.

Result revel that in the pre test, 35 (35%) people have poor knowledge, and 61 (61%) people have adequate knowledge and 4 (4%) people have good knowledge. In the post test, 33 (33%) people have adequate knowledge and 67 (67%) people have good knowledge that shows the level of the knowledge has been improve after the intervention (Table 2).

Table 2, show the frequency and distribution of pre test and post test knowledge score.

There were 25 questions in the knowledge questionnaire. Only 1 option was correct for each question. 1 mark was given for wrong answer. These marks were further graded as a Poor, Adequate and Good.

The data in table 3 shows that the mean of post test knowledge scores (17.1±1.76) was higher than the mean pre test knowledge score (9.77±3.58). The calculated "T" value (25.77) was greater than the table value (1.98) at 0.05 level of significance.

Table 4, shows the association between demographical variables with pre test knowledge score.

There were no statistically significant association seen between demographic variables and pre test knowledge showing that pre test knowledge score is independent of the variable.

Table 1:- frequency and percentage distribution of sample by their demographic variables

Sr. no.	Demographic variable		Frequency	Percentage (%)
1	**Age group (years)**	20-30	48	48%
		31-40	25	25%
		41-50	27	27%
2	**Gender**	Male	48	48%
		Female	52	52%
3	**Religion**	Hindu	86	86%
		Muslim	14	14%
		Christen	0	0%
		Other	0	0%
4	**Marital status**	Single	26	26%
		Married	70	70%
		Divorce	2	2%
		Widow/widewe	2	2%
5	**Family type**	Nuclear	27	27%
		Joint	73	73%
		Extended	0	0%
6	**Education status**	Primary	8	8%
		Secondary	25	25%
		Higher Second-ary	45	45%
		Graduate & above	22	22%
7	**Occupation**	Government employs	10	10%
		Private employs	20	20%
		Self employs	20	20%
		Other	50	50%
8	**Monthly income (in rupees)**	Less than 5000	38	38%
		5001- 10000	12	12%
		10001- 15000	14	14%
		Above 15001	36	36%
9	**Do you have renal dis-**	Yes	0	0%

	ease			
		No	100	100%
10	**Dietary pattern**	Vegetarian	74	74%
		Non vegetarian	1	1%
		Eggetarian	0	0%
		Mixed	25	25%
11	**Which type of water you use to drink**	Municipal corporation water	42	42%
		R.O. water	55	55%
		Tube wale water	0	0%
		Other	1	1%
12	**Do you take any medication on regular basis (e.g. calcium tablet)**	Yes	7	7%
		No	93	93%

Table 2:- Frequency and percentage distribution of pre test and post test knowledge

LEVEL OF KNOWLEDGE	**PRE TEST**		**POST TEST**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Poor	35	35%	0	0%
Adequate	61	61%	33	33%
Good	4	4%	67	67%

Table 3:- Mean, mean difference, standard deviation and "T" test value of pre test and post test knowledge score.

Knowledge Scale	**Mean**	**Mean Dif-ferent**	**SD**	**"T" test value**		**DF**
				Calculated "T" Value	**Table "T" Val-ue**	
Pre test	**9.77**	**7.33**	**3.58**	**25.77**	**1.98**	**99**
Post test	**17.1**		**1.76**			

Table 4:- Chi- square value for association of knowledge of the people with their selected demographic variables.

Sr. No	Demographic Variables	F.	Knowledge			Chi Square		D.F.	Association
			Poor	Adequate	Good	C.V.	T.V.		
1	**Age in years**					3.59	9.49	4	Not significant
	(a) 20-30	48	14	33	1				
	(b) 31-40	25	9	15	1				
	(c) 41-50	27	12	13	2				
2	**Gender**								
	(a) Male	48	16	31	1	1.11	5.99	2	Not significant
	(b) Female	52	19	30	3				
3	**Religion**								
	(a) Hindu	86	31	51	4	1.13	5.99	2	Not significant
	(b) Muslim	14	4	10	0				
	(c) Christian	0	0	0	0				
	(d) Others	0	0	0	0				
4	**Marital status**								
	(a) Single	26	8	18	0	14.5	12.59	6	Significant
	(b) Married	70	27	40	3				
	(c) Divorced/ Divorcee	2	0	2	0				
	(d) Widow/ widowe	2	0	1	1				
5	**Family type**								
	Nuclear	27	9	17	1	0.06	5.99	2	Not signifi-cant
	Joint	73	26	44	3				

	Extended	0	0	0	0				
6	**Education status**								
	Primary	8	4	4	0	4.22	12.59	6	Not signifi-cant
	Secondary	25	10	14	1				
	Higher Secondary	45	17	26	2				
	Graduate & above	22	4	17	1				
7	**Occupation**								
	Government employs	10	2	8	0	4.80	12.59	6	Not signifi-cant
	Private employs	20	10	10	0				
	Self employs	10	7	12	1				
	Other	50	16	31	3				
8	**Monthly income (in rupees)**								
	Less than 5000	38	13	23	2	5.11	12.59	6	Not signifi-cant
	5001- 10000	12	3	9	0				
	10001- 15000	14	8	6	0				
	Above 15001	36	11	23	2				
9	**Do you have renal disease**								
	Yes	0							Cannot be computed
	No	100	35	61	4				
10	**Dietary pattern**								
	Vegetarian	74	29	41	4	4.54	9.49	4	Not signifi-cant
	Non vegetarian	1	0	1	0				
	Eggetarian	0	0	0	0				

	Mixed	25	6	19	0				
11	**Which type of water you use to drink**								
	Municipal corporation water	42	18	22	2	4.21	9.49	4	Not significant
	R.O. water	55	15	38	2				
	Tube wale water	0	0	0	0				
	Other	3	2	1	0				
12	**Do you take any medication on regular basis (e.g. calcium tablet)**								
	Yes	7	3	3	1	2.52	5.99	2	Not significant
	No	93	32	58	3				

DISCUSSION

The study finding of the present were analyzed and discussed with the finding of the similar studies which confirmed that PTP was effective in increasing the knowledge regarding dietary awareness to reduce the risk of renal stones among the people of Siddhpur city.

The results showed a higher post test knowledge score in comparison to the pre test knowledge score. The effective PTP on knowledge regarding dietary awareness to reduce the risk of renal stone among the people of Siddhpur city.

The findings of other research studies are consistent with these findings which showed that PTP is effective in enhancing knowledge among people.

Umete Amup Singh Seema conducted a study on effectiveness of Planned Teaching on knowledge regarding the prevention of renal calculi Among The general population. And the aimed to improve the level of knowledge of knowledge of general population. The result of this study shows that 6 (10%) were having average knowledge in pre test, 44 (73.33%) having good knowledge and 10 (10%) having the excellent knowledge in post test. To and the effectiveness of planned teaching ‘t’ test was applied and t value was calculated, post test score was significantly higher at 0.05 level than the pre test score (Umate Anup, February 2018).

Kalal r. Sasirekha b. conduct a study on knowledge related to dietary guidelines to reduce the risk of renal stones. Dietary therapies are specific for types of stones the increase intake of water and other fluid. Dietary guidance help people aware, manage, and avoid further complication due to these types of stones (B.).

Babita devi coundct a study to evaluate the effectiveness of planned teaching programme on renal calculi and its management among the renal calculi patients in selected hospitals in manglore taluk. The final sample size was 48. There was a significant difference between pre test and post test knowledge scores ($t(47) = 32.81$, $p<0.05$: table value = 2.02). there was significant association between pre test knowledge score and the findings of the study show that the planned teaching programme was effective in all the areas in improving the knowledge of the patients with renal calculi (Devi, 2015)

CONCULSION

From the observations, we can conclude that there was a statistically significant improvement seen in knowledge score after interventation. Thus intervention was very helpful in improving the knowledge score of the people of Siddhpur city. We find no association between demographic variables and the knowledge score. To conclude intervention was very helpful in improving of knowledge regarding

REFERENCE

1. Basavaraj, D.R., C.S. Biyani, A.J. Browning and J.J. Cartledge, 2022. The role of urinary kidney stone inhibitors and promoters in the pathogenesis of calcium containing renal stones. 126-136.
2. Hirose, M., K. Tozawa, A. Okada, S. Hamamoto and H. Shimizu et al., 2018. Glyoxylate induces renal tubular cell injury and microstructural changes in experimental mouse. Urol. Res., 36: 139-147.
3. Yoshida, O. and Y. Okada, 2020. Epidemiology of urolithiasis in Japan: A chronological and geographical study. Urol. Int., 45: 104-111.
4. Stamatelou, K.K., M.E. Francis, C.A. Jones, L.M. Nyberg Junior and G.C. Curhan, 2023. Time trends in reported prevalence of kidney stones in the United States: 1976-1994. Kidney Int., 63: 1817-1823.
5. Zhang, C.Y., W.H. Wu, J. Wang and M.B. Lan, 2022. Antioxidant properties of polysaccharide from the brown seaweed Sargassum graminifolium (Turn.) And its effects on calcium oxalate crystallization. Mar. Drugs, 10: 119-130.
6. Baggio, B., A. Budakovic, M.A. Nassuato, G. Vezzoli, E. Manzato, G. Luisetto and M. Zaninotto, 2020. Plasma phospholipid arachidonic acid content and calcium metabolism in idiopathic calcium nephrolithiasis. Kidney Int., 58: 1278- 1284.
7. Pendick, D., 2020. 5 steps for preventing kidney stones. Harvard Health Publications, Harvard Medical School.
8. umate anup, singh seema ,global journals for research analysis Volume-7, Issue-2, February-2018 • Issn No 2277 – 8160.
9. kalal r. sasirekha b. international journal of nursing education and research vol. 6 page no 73- 75.
10. Devi, CH Babita 2015, RGUHS Digital Repository,Dissertations, Faculty of Nursing,Medical Surgical Nursing http://hdl.handle.net/123456789/2777.