

**DISSERTATION ON  
“A STUDY TO ASSESS THE EFFECTIVENESS OF  
PLANNED TEACHING PROGRAMME ON  
KNOWLEDGE REGARDING PREVENTION OF  
RENAL CALCULI AMONG PATIENTS ADMITTED IN  
MEDICAL WARD, RAJIV GANDHI GOVERNMENT  
GENERAL HOSPITAL ,CHENNAI-03”**

**M.SC (NURSING) DEGREE EXAMINATION  
BRANCH- I MEDICAL SURGICAL NURSING**

**COLLEGE OF NURSING  
MADRAS MEDICAL COLLEGE, CHENNAI-600 003**



*A dissertation submitted to*  
**THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY,  
CHENNAI- 600 032**

*In partial fulfillment of the requirement for the award of degree of*  
**MASTER OF SCIENCE IN NURSING**

**OCTOBER – 2019**

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## **CERTIFICATE**

This is to certify that this dissertation titled “**A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03** ” is a bonafide work done by THIRUPATHI.C, M.Sc. (N) II year student, College of Nursing, Madras Medical College, Chennai submitted to The Tamil Nadu DR.M.G.R Medical University, Chennai-03, in partial fulfilment of the requirements for the award of degree of Master of Science in Nursing, Branch I- MEDICAL SURGICAL NURSING, under our guidance and supervision during the academic period from 2017 – 2019.

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*A Dissertation submitted to*  
**THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY,  
CHENNAI**

*In partial fulfillment of the requirement for award of the degree*  
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*“To succeed in your mission, you must have single minded devotion to your goal”*

*– Dr.A.P.J.Abdul Kalam*

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## **ABSTRACT**

Renal calculi more commonly known as kidney stones which affects excretory and secretory function of the urinary system. Among the urologic disorder, kidney stones are one of the most painful, which are not a product of modern life and also unfortunately, among disorder of urinary tract, kidney stones are one of the most common disorder. Globally a large number of people are suffering from urinary stone problem. Kidney stones which are solid crystals that form from dissolved minerals in urine, can be caused by both environmental and metabolic problems. In economically developed countries almost 70% of all renal stones are observed to be calcium oxalate and phosphate stones. The patients should have knowledge regarding prevention of renal calculi in order to identify and prevent the recurrent of renal calculi.

**TITLE:** “A study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in Medical Ward, Rajiv Gandhi Government General Hospital, Chennai-03”.

**OBJECTIVES:** To assess the pretest level of knowledge regarding prevention of renal calculi among patients admitted in medical ward. To assess the effectiveness of planned teaching programme (post test ) on level of knowledge regarding prevention of renal calculi among patients admitted medical ward. To compare the pretest and post test level of knowledge regarding prevention of renal calculi. To find out the association between the post test knowledge score of patients with their selected demographic variables.

**METHODS AND MATERIALS:** This study was conducted with 60 samples (patients) in quantitative approach, pre experimental one group pre-test post-test design was used, sampling selection was done

by convenient sampling technique existing knowledge was assessed by using semi structured questionnaires after the pretest planned teaching programme was given regarding prevention of renal calculi in medical ward patients. After 7 days post test was conducted by using same tool.

**RESULTS:** The results show that patients were gained 75.20% score on knowledge in post test compare to pre test after planned teaching programme and the mean difference were 32.72 by using McNamara's chi-square test which is statistically significant.

**CONCLUSION:** Hence the planned teaching programme was instructionally effective, appropriate ,feasible .It would help the patients to prevent renal calculi and its recurrence.

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## LIST OF ABBREVIATION

<b>ABBREVIATION</b>	<b>EXPANSION</b>
ICD	International Classification Of Disease
PH	Potential Hydrogen
ANOVA	Analysis Of Variance
SD	Standard Deviation
PTP	Planned Teaching Programme
CI	Confidence Interval
NS	Non-Significant

## **CHAPTER-I INTRODUCTION**

Renal calculi are commonly known as kidney stones which affects excretory and secretory function of the urinary system. The urinary system is a group of organs that consist of two kidneys and two ureters with single bladder and urethra. The main function of this system is filtering the blood stream and excrete out the unwanted fluids and other chemical substance through the urine. Urine is liquid it contains excess mineral and vitamins with waste product of metabolism. It also maintains homeostasis with acid base balance and electrolyte balance of blood. Any occlusion in the pathway of obstructs the urine output and rather affects the entire system.

The formation of kidney stone is termed as renal calculi more commonly known as kidney stones. In medical condition the terminology of having urinary calculi is termed as nephrolithiasis or urolithiasis where the root word "Lith" meaning "a stone". People who live in hot climates and become dehydrated more faster are risk for renal calculi due to the loss of more fluids from the body.

Renal calculi lodge within the urinary system produce common symptoms like blood in the urine and pain in the abdomen, flank, renal colic that radiates from the lumbar region to the pubic region, sweating, nausea and vomiting.

It occurs 1 in 20 people at some time in their life. Stones are formed in the urinary tract when urinary concentration of substances such as calcium oxalate, calcium phosphate and uric acid are increased. This is referred to as super saturation and is depends on the amount of substance, certain factors favour the formation of stone including infection, urinary stasis and period of immobility.

Among the urologic disorder, kidney stones are one of the most painful, which are not a product of modern life and also unfortunately, among disorder of urinary tract, kidney stones are one of the most common disorder. Globally a large number of people are suffering from urinary stone problem. Kidney stones which are solid crystals that form from dissolved minerals in urine, can be caused by both environmental and metabolic problems. In economically developed countries almost 70% of all renal stones are observed to be calcium oxalate and phosphate stones.

People between 30 to 60 years of age most commonly affect with kidney stone in which it affects more commonly in men than women. It is estimated that renal colic, severe pain caused by a renal calculi affects 10-20% of men, and 3-5% of women. 12% of the population in India is expected to have urinary stones, out of which 50% may end up with loss of kidneys or renal damage. Among all types of stones recurrent stone formation is a common problem which acts as an important part of medical care of patients with stone disease.

The incidence of urinary stones have a significant impact on diet. The incidence have been steadily increasing, paralleling the rise in other disease with the so-called western diet. The risk of stone formation in men and women is highly increased by being obese, higher body mass index and experiencing weight gain. In the development of urinary stones, diet and fluid intake are the important factors. There is a change in average diet, when the income increases as per capita, with an increase in saturated and unsaturated fatty acid. The recently diagnosed higher risk for stone formation includes an increase in animal protein and sugar, and decrease in dietary fibre, vegetable protein and unrefined carbohydrates.

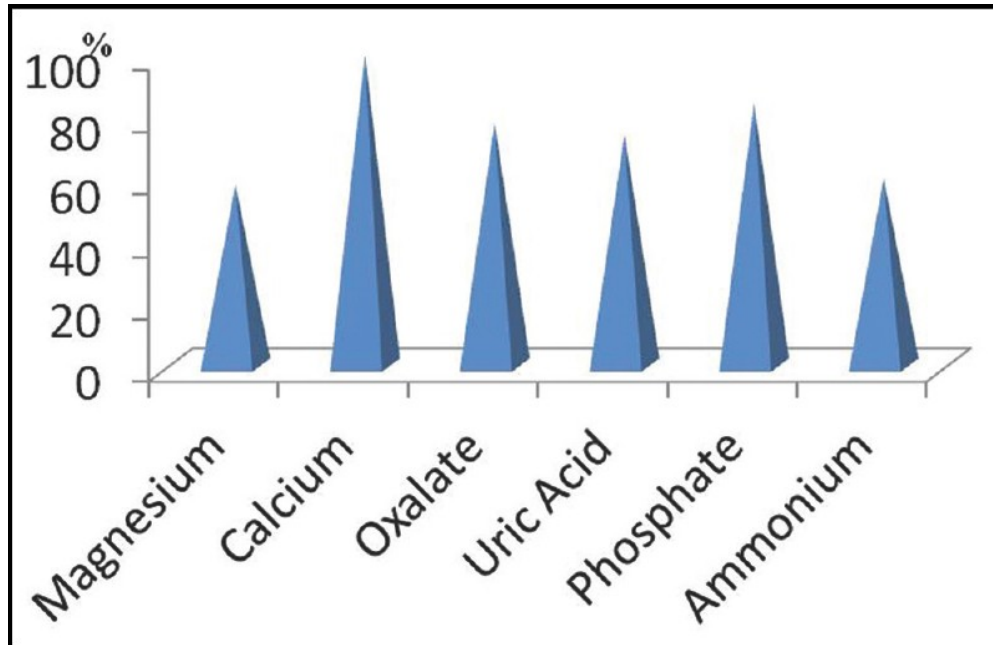
**Muldowney FP.et al. (2010)** found that hypercalciuria is associated with high dietary protein intake in calcium stone formation ingestion of a diet rich in animal protein (meat, fish, poultry, eggs, and dietary products) increase the risk for formation of calcium stones, reabsorption of calcium, parallels the renal reabsorption of sodium in the proximal tubule and loop of Henle. High sodium intake may also influence renal reabsorption of calcium in the distal tubule both directly or indirectly through its effect on parathyroid hormone levels. The disorder is less common in population who consume more protein primarily from the plant sources. High intake of protein can lead to an increase in glomerular unfilterable calcium concentration leading to the formation of calculi stone in the urinary pathway.

Renal calculi also has a risk in higher consumption of fructose. A decrease in the incidence of stones may be due to less energy dense diet which has been documented during years that decreased incidence of urinary stones is due to consumption of diet containing minimal fat and protein. There is also an increased risk of kidney stones among Postmenopausal women with low oestrogen levels and women's who have undergone Oophorectomy surgery.

Renal calculi can be prevented through adequate water intake about two to four liters per day. Avoiding more exposure of hot climate and over exposure of sunlight as well as dietary modification can be prevented for the formation stone.

### **1.1. BACKGROUND OF THE STUDY.**

Each year, more than half a million people go to emergency rooms for kidney stone problems. It is estimated that one in ten people will have a kidney stone at some time in their lives.



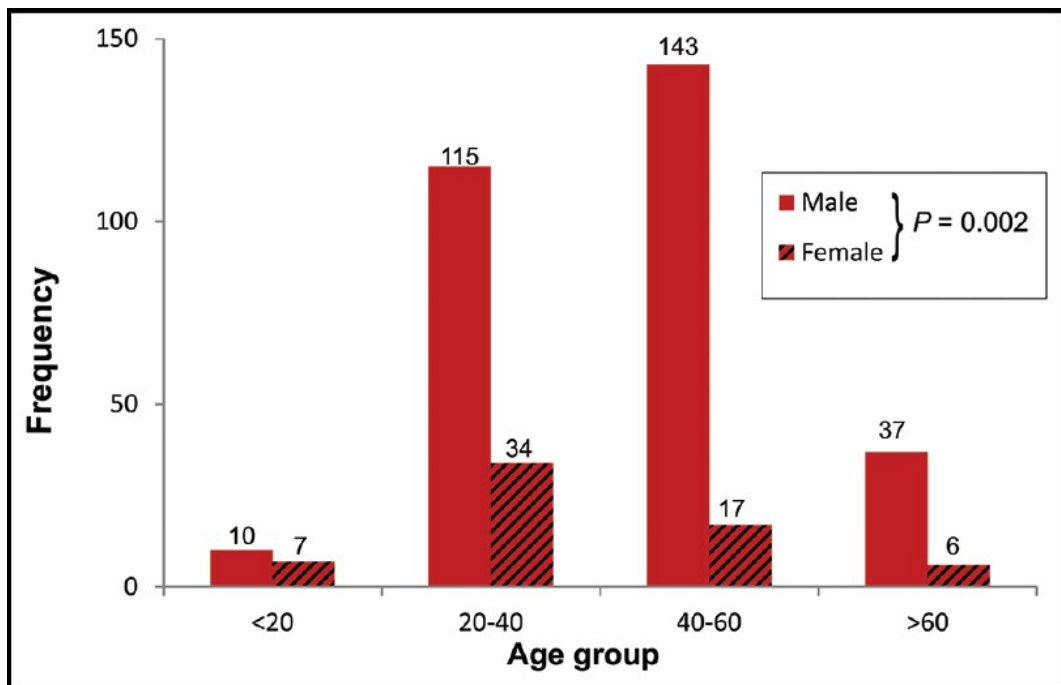
### 1.1 COMPOSITION OF RENAL STONE.

The prevalence of kidney stones in the United States increased from 3.8% in the late 1970s to 8.8% in the late 2000s. This increase was seen in both men and women, and both whites and blacks. The lifetime risk of kidney stones is about 19% in men and 9% in women. In men, the first episode is most likely to occur after age 30, but it can occur earlier. Other diseases such as high blood pressure, diabetes, and obesity may increase the risk for kidney stones. The lifetime prevalence (95%) of urinary stones in the study participants was 7.9% (5.7%–10.8%). Most participants (61.8%) had urinary stones in the past with no symptoms suggestive of urinary stones at present.

In Asia, about 1%–19.1% of the population suffer from renal calculi. However, due to variations in socio-economic status and geographic locations, the prevalence and incidence have changed in different countries or regions over the years. The research for risk factors of urinary tract stones is of predominant importance. The prevalence of urolithiasis is 5%–19.1% in West Asia, Southeast Asia, South Asia, as well as some developed countries (South Korea and Japan), whereas, it is only 1%–8% in most part of East Asia and North Asia. The recurrence rate ranges from 21% to 53% after 3–5

years. Calcium oxalate (75%–90%) is the most frequent component of calculi, followed by uric acid (5%–20%), calcium phosphate (6%–13%), struvite (2%–15%), apatite (1%) and cystine (0.5%–1%).

It is estimated that at least 10% of the population in the industrialized part of the world is afflicted by urinary tract stone disease. Kidney stones are common in industrialized nations with an annual incidence of 0.5% to 1.9%.<sup>1,2</sup> In India upper and lower urinary tract stones occur frequently but the incidence shows wide regional variation.<sup>3</sup> The incidence of renal calculi is comparatively low in the southern part of country compared to other parts.



### *1.2 Age Distribution Of Occurance Of Renal Calculi*

Studies report that people between 30 – 60 years of age are most commonly affected with kidney stone and it is common in women than men. World Health Organization (2017) reports that 1 in 20 people are affected every year. The National Health Survey estimates that 12% of population in India is expected to have urinary stones in which 50% may

end up with renal damage. The National Kidney Foundation reports that kidney stone affect 10-12% of the population in industrialized countries. The average life time risk of stone formation has been reported in the range of 5-10%. Recurrent stone formation is a common part of the medical care of patients with stone diseases. In India approximately 5-7 million populations suffers from stone disease.

**Umate. A et al. (2018)** carried out a descriptive evaluator approach on study to assess the effectiveness of planned teaching on knowledge regarding prevention of renal calculi among the general populations.60 samples were selected by non- probability convenient sampling technique data were collected by structured questionnaire. The study findings reveal that post-test mean knowledge score was higher 10.50 and pre-test mean knowledge score value was 5.65 hence it is statistically significant and planned teaching is effective. By analysing various study report the researcher concluded that the teaching programme regarding Prevention of renal calculi helps the individuals to acquire knowledge regarding Preventive measures.

## **1.2 NEED FOR THE STUDY**

Globally, kidney stone disease prevalence and recurrence rates are increasing with limited options of effective drugs. urolithiasis affects about 12% of the world population at some stage in their life time.It affects all ages, sexes and races but occurs more frequently in men than in women within the age of 20-49years. The relapsing rate of secondary stone formation is estimated to be 10-23% per year,50% in 5-10years, and 75% in 20 years of patient. However life time recurrence rate is higher in males, although the incidence of nephrolithiasis is growing among females.

In the united states kidney stones affects 1 in 11 people and it is estimated that 600,000 Americans suffer from urinary stones every year.



In Indian population, about 12% of them are expected to have urinary stones and out of which 50% may end up with loss of kidney functions.

In India approximately 5-7 million population suffer from stone disease and at least 7-10 per 1000 of Indian population needs hospitalization due to kidney stone.

In Asia about 1%-19.1% of the population suffer from urolithiasis 5%-19.1% of the west Asia, south population from Korea and Japan. 1%-8% of population from part of east Asia and North Asian countries. Recurrence rate ranges from 21%-53% after 3-5 years.

In Industrialized countries 10-12% of population affected by renal calculi. The average life time risk of stone formation has been reported in the range of 5-10%. The incidence of kidney stone is globally increasing with an estimated prevalence ranging up to 15% during life time, approximately 7% of women and 13% of men will develop a kidney stone.

Stone prevalence in calcium oxalate 75%-90% is the most frequent component of calculi, followed by uric acid 5%-10%, calcium phosphate 6%-13% struvite stone 2%-15% cystine 0.5%-1%. The incidence of urolithiasis reaches its peak in population aged over 30 years.

Based on this model, as a medical surgical nurse can empower and educate the patients regarding prevention of renal calculi. Medical surgical nurse plays a major role in health care settings. Nurse educator should emphasize the patients for providing adequate knowledge regarding prevention of renal calculi. It is the evidence based core competencies that prioritize the knowledge.

Nurse educator plays a major role in imparting knowledge to the patients.

- ❖ Wellness
- ❖ Community
- ❖ prevention
- ❖ Excellence integrity
- ❖ Compassion
- ❖ Team work and coordination
- ❖ Caring and compassion
- ❖ Research and evidence based practice
- ❖ Knowledge and vision
- ❖ Quality and safety



***Figure 1.3: Professional Practice Model***

Researcher found the importance of doing this study based on the literature and statistical values. The researcher takes interest in this study as he had come across a large number of renal calculi patients while he was working as a staff nurse in emergency department and in general ward, as well as he also had his personal experience of his uncle who suffered from renal calculi which is not detected earlier and they were not aware of the condition and delayed treatment lead him to several complication. The researcher also come across many patients with recurrence of renal calculi as they had deficit knowledge in further management and prevention of recurrence of renal calculi. By keeping this in mind the researcher with his own interest analyse a study to impart knowledge regarding prevention and management of renal calculi and make them aware regarding the occurrence, risk factors and prevalence of renal calculi.

### **1.3. STATEMENT OF THE PROBLEM**

A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03.

### **1.4. OBJECTIVES**

- ❖ To assess the pre-test level of knowledge regarding the prevention of renal calculi among patient's admitted in medical ward.
- ❖ To assess the effectiveness of planned teaching programme (post-test) on level of knowledge regarding prevention of renal calculi among patients admitted medical ward.
- ❖ To compare the pre-test and post-test level of knowledge regarding prevention of renal calculi.

- ❖ To find out the association between the post-test knowledge score of patients with their selected demographic variables.

## **1.5. OPERATIONAL DEFINITIONS**

### ***Assess***

It refers to estimate the knowledge of the patients regarding prevention of renal calculi.

### ***Effectiveness***

It refers to the significant increase in the level of knowledge of the patients regarding prevention of renal calculi which is measure from the response of Pre-test and Post-test.

### ***Knowledge***

It refers to the level of understanding of patients regarding prevention of renal calculi.

### ***Prevention***

It refers to systemic activities to debarring of renal calculi. It consists of measures regard to diet, hydration, bladder elimination and prevention of renal calculi.

### ***Renal Calculi***

These are collection of solid concentration of dissolved minerals inside the kidneys (urinary system).

### ***Medical Ward***

It is a unit of the hospital specialized for the treatment of patient with medical conditions.

## **1.6 ASSUMPTIONS**

- ❖ Patients will have some knowledge regarding the prevention of renal calculi prior to the administration of planned teaching programme.
- ❖ Adult may have to learn more about the risk factors and prevention of renal calculi.
- ❖ Planned teaching programme will increase the knowledge regarding prevention of renal calculi among the patients.

## **1.7 HYPOTHESES**

- H1 There will be significant difference between the pre-test and post-test level of knowledge regarding prevention of renal calculi among patients admitted in medical ward.
- H2 There will be significant association between the post test level of knowledge regarding prevention of renal calculi with their selected demographic variables.

## **1.8 LIMITATIONS**

- ❖ The study is limited to the period of data collection that is one month.
- ❖ The sample size is limited to 60 patients.
- ❖ Patient with medical condition admitted in medical ward in Rajiv Government General Hospital Chennai-03.

## **1.9 CONCEPTUAL FRAMEWORK**

Conceptual framework is a set of abstract and general concepts of the propositions that integrate those concepts into a meaningful configuration. King's goal attainment theory.

Theory describes a dynamic, interpersonal relationship in which a person grows and develops to attain certain life goals. If accurate perceptual interaction is present between the patient and investigator transactions will occur, the goal will be attained and satisfaction will occur.

There are 6 major components

### **PERCEPTION**

It refers to patient's representation of reality. It is non observable but it can be interfered. Hence the investigator has the perception for the assessment of demographic variables and pre-test assessment about the level of knowledge regarding prevention of renal calculi.

### **JUDGEMENT**

The investigator found that patients has inadequate knowledge regarding prevention of renal calculi thus decide to give education to patients to improve their knowledge about prevention of renal calculi.

### **ACTION**

Action refers to the matter, energy and information that enter into the system through its boundary. Action involves preparation of planned teaching programme on prevention of renal calculi.

### **REACTION**

The investigator reaction is to set goal which is increasing the knowledge prevention of renal calculi.

### **INTERACTION**

Interaction refers to the processing where the system transforms the energy matter. Interaction involves in introducing of planned

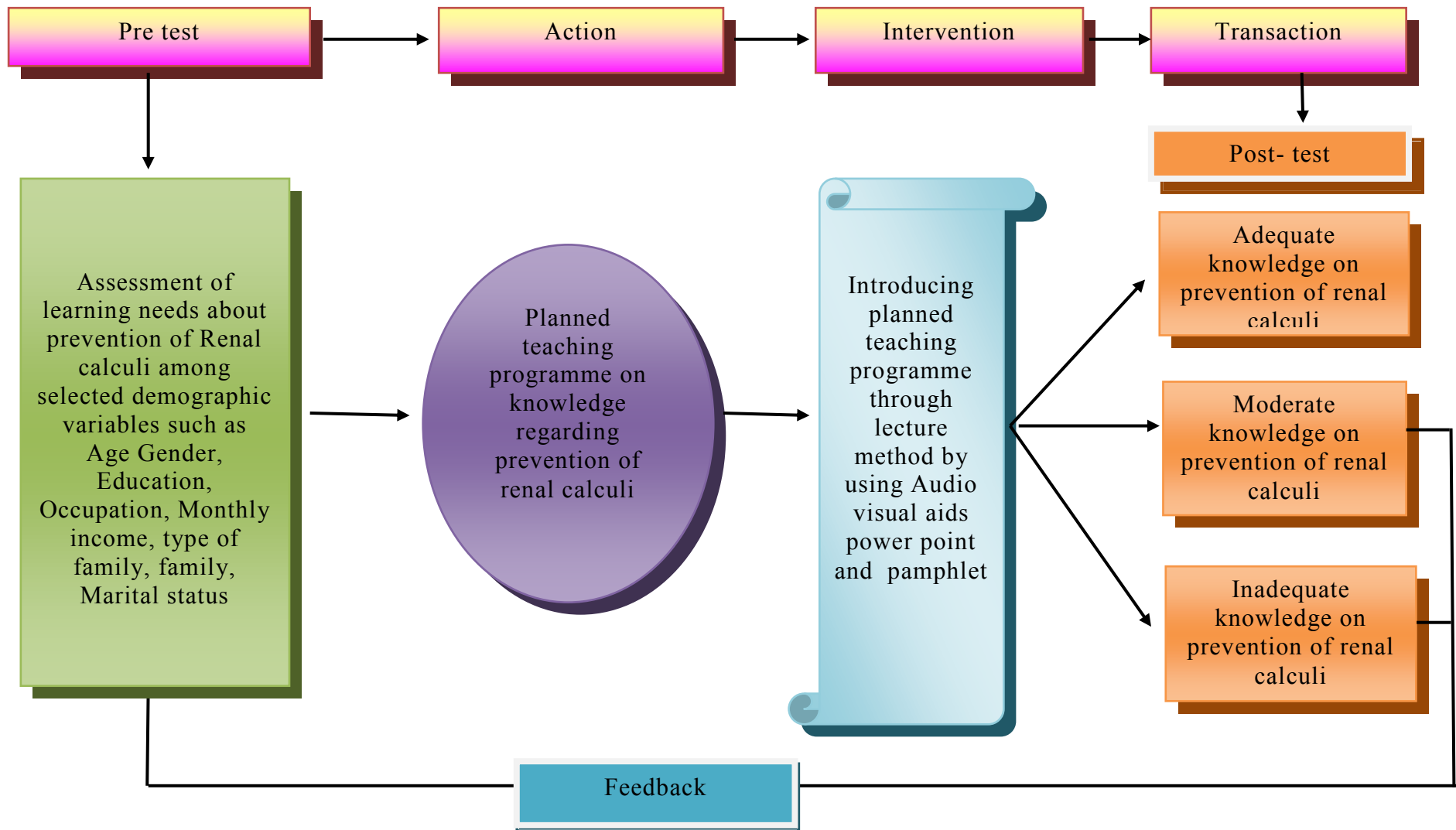
teaching programme through lecture method by using AV aids such as powerpoint and prevention of renal Information booklet.

### **TRANSACTION**

It refers to the matter, energy and information in the environment that are in an altered state. Transaction is the patient's diet, hydration bladder elimination and prevention of renal calculi.

### **FEED BACK**

It refers to the participant response to the stimuli. Feedback is the evaluation of teaching programme by using the same semi structured questionnaires.



**Figure 1.2: KING'S GOAL ATTAINMENT THEORY (2011)**



## **CHAPTER – II**

### **2.1 REVIEW OF LITERATURE**

Review of literature is a critical summary of research on a topic of interest generally prepared. It puts a research problem in proper context and identifies gaps and weakness on previous studies and justifies with a new investigation. The review of literature for the present study has been done from published article, textbooks, reports, google scholar, PubMed and Medline research.

The group of the study is based on the following

- 2.1.1 Studies related to renal calculi prevalence and incidence of renal calculi
- 2.1.2 Studies related to causes of renal calculi.
- 2.1.3 Studies related to patient education and prevention of renal calculi.

#### **2.1.1-STUDIES RELATED TO PREVALENCE AND INCIDENCE OF RENAL CALCULI**

*Prakash. Narayanasamy R et al. (2019)* conducted a cross-sectional study on prevalence and socio- demographic status on kidney stones patients in TamilNadu in India .150 populations in rural/ urban area selected. The study concludes that kidney stone patients were higher in the age group of (21-60 years) n46%. The results suggest that calcium stones are predominant in selected study area.

*Liu Y,Chen .Y et al. (2018)* carried out a study on epidemiology of urolithiasis in Asia. The research for risk factors of urinary tract stones is of predominant important .The recurrence rate range from 21% to 53% after 5-7years.calcium oxalate (75%-90%) is the most frequent component of calcium followed by uric acid 5%-20% apatite 1% and

cystine (0.5%-1%) as study was concludes that dietary habits as well as climatic factors play a crucial role in the development of stones.

**Brikowski, H et al., (2018)** carried out a study on climate related increase in the prevalence of urolithiasis in the united states .The histogram method used to predict the data. The predicated distribution of climate related changes in urolithiasis strongly depends on the from of climate related changes.in clinical model, stone risk depends on baseline risk and rise in temperature and therefore increase risk on concentrated in the midcontinent and west.

**Kumar. A Mishra et al, (2018)** carried out an epidemiological study on increasing incidence of renal calculi of renal calculi with high serum calcium, uric acid level and hot humid climate.187samples were selected based on the basic investigations and ultrasonography. The study concludes that major risk factors for developing kidney stones are hot and humid climate. There is an increase in prevalence of kidney stones in India and other parts of the world. The peak age group of recurrence of stones was 31-60 years.

**Pathan SA Mitra. et al, (2018)** conducted a retrospective cohort study of patients with acute renal colic presentation to emergency departments in Doha, Qatar and Australia. A total of 12,233 from Hamed General Hospital Emergency Department and 384 from Alfred emergency department were identified using ICD 9-CM codes, as an electronic template use to record the clinical variables. The study concludes that median stone size was larges in Hamed general hospital emergency department group (3-8mm) than Alfred emergency department (3-6mm). The findings suggest that the benefits of treatment including medical expulsion therapy will vary between two populations.

**Saranya .R Taranom et al, .(2017)** conducted survey study on prevalence of kidney stones among the respondents of vaniyambadi .

Taluk ,vellore .The study population 50 were selected based on hospital visit for a routine physical examination were invited to participate in the study concludes that prevalence of calculi based on sex, age and size of the kidney stones were selected.

*Dandekar RH et al, (2017)* carried out a cross sectional study on prevalence and risk factors associated with renal calculi disease at urban health training centre are of preambular TamilNadu. Multistage sampling technique used for data collection by interview method. The study concludes out of 27 clients, peoples all of them had problem of pain in the groin 88% clients had symptoms of burning maturation 22% clients had in blood in urine 51% client had a problem of difficulty while passing urine 29% clients had a problem of granules in the urine.

*Wang.W, Fan et al, .(2016)* conducted a study on prevalence of kidney stones in mainland china, A sample of 875 were selected within the age from 18to 80 years .The findings of the study reveals that the common risk factors were recorded for the renal stones and salts among patients were dehydration and nutrient .The relationship between the renal stones and dehydration and type of nutrient was statistically significant.

### **2.1.2-STUDIES RELATED TO RISK FACTORS OF RENAL CALCULI**

*Sandilya A, et al. (2019)*, carried out a retrospective study on urolithiasis in patients attending tertiary urological hospital in Dibrugrah, Assam ,India. A sample of 1041 patients were examined; data was collected from the records. The study reveals that most of the positive urolithiasis cases was consuming a non- vegetarian diet. Geographical distribution age and diet are factors that affect the occurrence of the disease.

*Nerli RB,patil.S et al.(2019)* conducted a study on renal stone disease in the border regions of Karnataka, Maharashtra and goa, role of diet, urinary PH and body mass index . study group were selected and detailed history of these patients were recorded and analysed. A total of 250 of these 160 from north western Karnataka ,43 from goa ,47 from Maharashtra. The study reveals that 29(11.6%) patients were diabetics incidence high in Maharashtra (50%) and goa (60%) calcium stones were most common in all three regions. The urinary PH is significantly lower in patients from goa.

*Ayush lohiy A, et al . (2019)* carried out a cross sectional study on population based estimate of urinary stones from ballabgarh,northern India.simple random sampling technique was used samples are selected age group of 18 years and above .the study concludes 86% response rate of the study in which 8% of peoples had lifetime prevalence of urinary stone and about20 to 40 years aged clients suffered from majority of urinary stones diagnosed. Thus, the study concludes high burden of urinary stones indicated in the working age population in northern India at the community level.

*Dongre RA, et al. (2017)* carried out a hospital based case control study on risk factors for kidney stones in rural Puducherry a sample of 70 cases and 140 controls were selected, information was collected by interview and review of radiologic records the associations of occurrence of kidney stone with genetic predisposition (OR-16.98, d-3.02) less frequency urine per day the study concludes that the risk of kidney stone was found high among those who had genetic predisposition and less frequency of urine per day.

*Geraghty R, et al. (2017)* conducted a study on worldwide impact of conducted a study on worldwide impact of warmer reasons on the incidence of renal colic and kidney stone disease. A total of 59 studies

were identified and 13 were included. The study concludes that worldwide trends on the incidence of renal colic and kidney stone disease seen be affected by reasonable variation favouring warmer months, with data suggesting that higher temperature has an associated with kidney stone disease.

*Elshehry A sd mohammed, et al. (2016)* conducted a retrospective study on urolithiasis visits and trends among emergency department, king Hamad university hospital, Bahrain 468 patients were diagnosed for urolithiasis. The study concludes that majority of the stones were located in the ureter and or in the kidney, 236 patient (48.6%) had kidney stones, 109 (22.4) patients had ureteric stones. Two patients (0.4%) had stone in the bladder and kidney 3 (0.6%) patients had stones in the bladder and ureter.

*Sofia .HN, Manickavasakam et al. (2016)* carried out a study on prevalence and risk factors of kidney stone or kalladaipu .666 patients were selected for the study .Date was collected by self-administered questionnaire' study concludes that a significant relationship between family history ,diet and life style modification, low fluid intake obesity are the major factors play a role in the development of renal calculi..

*Brikowski H, et al. (2016)* carried out a study on climate related increase in the prevalence of urolithiasis in the united states .The histogram method used to predict the data. The predicated distribution of climate related changes in urolithiasis strongly depends on the form of climate related changes.in clinical model, stone risk depends on baseline risk and rise in temperature and therefore increase risk on concentrated in the midcontinent and west.

### **2.1.3-STUDIES RELATED TO PATIENT EDUCATION AND PREVENTION OF RENAL CALCULI.**

*Mousa Almuhanna.A, et al. (2018)* conducted a quantitative cross-sectional study on public awareness towards renal stone causes, symptoms and management amongst studies. 475 samples were selected, and were given self-structured questionnaire. The study reveals that half of them had experienced renal stones 91.4% of them are aware that increased intake of water decreases formation of renal stones. P value=0.005 and the quantity of recommended daily fluid intake (p value=0.008) this indicates that all the participants are to some degree aware of renal stones prevention.

*Umate.A, Singh.S et al. (2018)* carried out a descriptive evaluator approach on study to assess the effectiveness of planned teaching on knowledge regarding prevention of renal calculi among the general populations. 60 samples were selected by non-probability convenient sampling technique data were collected by structured questionnaire. The study findings reveal that post-test mean knowledge score was higher 10.50 and pre-test mean knowledge score value was 5.65 hence it is statistically significant and planned teaching is effective.

*Derek Bos, Kevin kim et al. (2017)* carried out a prospective, cross sectional study on compliance of the recurrent renal stone former with current practice guidelines. Totally 300 clients participated in this study. The study reveals 55% are men, 69% clients had previous history of renal stone surgery 23% of clients had a family history of renal stone. 82% participants perceived education from their urologist and 59% of time respectively (p<0.05). the study concluded compliance to dietary modifications in this evaluation of recurrent stone formers was low.

*J.farm et al. (2017)* a study was carried out to develop nutrition education material and to know its impact of knowledge and practices of stone patient.60 samples were selected ,30 experimental group and 30 control group were selected for education intervention knowledge and practices were assessed before and after intervention .The results of the study revealed that, higher percentage of renal stone patients belonged to overweight and obese grade I category compared to control subjects improvement in dietary and life style pattern was observed after the intervention (53.33%) thus, it was conducted that nutrition education is useful in the management of urolithiasis

*Pethiyagoda AUB, et al. (2017)* carried out a descriptive cross-sectional study on survey of knowledge, attitudes practices on urolithiasis among final year students in university of Peradeniya. 102 students were selected, information collected by structured questionnaire. The study findings reveal that 55.5% had positive attitude towards the urolithiasis ,90.12% recommended to drink more than 2 liters of water therefore the knowledge and practices of medical students towards urolithiasis was good and attitudes were poor.

*Ahmood .M,Kamarany et al. (2016)*, conducted a cross – sectional observational study on renal stones among adult of Hodeidah as subtropical region in yemen,875 subjects were selected for this study, the information were collected by a self-conducted screening questionnaire .The results showed that renal stones were 27.31% and renal salts were 39.65%.19% subjects was treated pharmacologically 26% of subjects was treated traditionally and 14% was treated surgically.

***Shanthi.S, Shambhavi, et al. (2014)*** conducted a descriptive survey approach, to assess the knowledge of renal calculi among patients admitted in urology ward in Madurai. 100 samples were selected by purposive sampling technique. Data were collected by structured knowledge questionnaire. The result revealed that majority (17%) of samples had average knowledge, 80% had poor knowledge, and 3% has good knowledge regarding renal calculi. The association of knowledge score at  $p < 0.05$  level of significance

***Derek Bos Abara.E, et al. (2014)*** conducted a study to assess the knowledge attitudes and practice patterns among health care providers in the prevention of recurrent kidney stones in north Ontario, 68 health care providers were selected. The survey was distributed to all participants. The study reveals that 70% of the respondents were aware of the guidelines, 43% applied their knowledge in clinical practices, most primary care physician respondents were aware of appropriate preventive measures for recurrent kidney stones.

***Patel AC, Metha et al. (2013)*** carried out a study on epidemiological characteristics of renal stone patients and barriers in their dietary modification in Saurashtra region. A cross-sectional study was conducted in March 2013, a total of 50 patients with a radiologically diagnosed case of renal stone and interviewed through approved Proforma. The study concludes that kidney stone prevalence is higher in men (66%) in comparison to females and common with age group 31-40 years and the outcome variables ( $p < 0.05$ ) were considered as statistically significant.



## **CHAPTER- III METHODOLOGY**

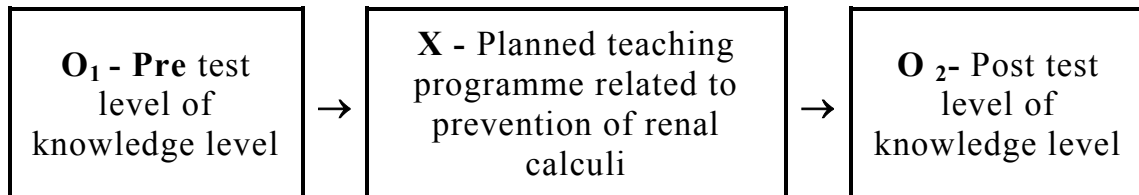
This chapter deals with the methodology adopted for the study and includes the description of the research design, setting of the study population, sample size, sampling technique, criteria for the selection of sample, tools and data collection procedure.

### **3.1 RESEARCH APPROACH**

A **Quantitative research approach** was used for the present study.

### **3.2 RESEARCH DESIGN**

In this study, the researcher used Pre experimental design in one group pretest and post test design.



#### **Key Notes:**

- O<sub>1</sub>** Pre test level of knowledge regarding prevention of renal calculi
- X** Planned teaching program related to prevention of renal calculi including definition, risk factors, signs and symptoms, prevention and management
- O<sub>2</sub>** Posttest knowledge regarding prevention of renal calculi

### **3.3 DURATION OF THE STUDY**

4 weeks(02.02.2019 to 04.03.2019)

### **3.4 STUDY SETTING**

The study was conducted at Rajiv Gandhi Government General Hospital, Chennai-03 .It is a hospital with 3500 beds is found and managed by the State Government of Tamil Nadu. As of 2018, the hospital receives an average of 12,000 outpatients per day. It is a multispecialty hospital that renders its specialization in providing comprehensive care in all specialties' such as general medicine, general surgery, cardiology, neurology, rheumatology, nephrology, orthopedics etc. The rationale for selecting this area is feasibility and availability of subject.

### **3.5 STUDY POPULATION**

#### ***Target population***

In this study target population is patient who is admitted in the medical ward Rajiv Gandhi Government General Hospital Chennai-03.who fulfills the inclusion criteria of sample selection.

#### ***Accessible population***

The patients available during the study time in medical ward, Rajiv Gandhi Government General Hospital, Chennai -03.

### **3.6 SAMPLE**

The study sample includes Patients admitted in the medical ward.

### **3.7 SAMPLE SIZE**

The sample size consists of 60 patients. Who fulfills the inclusion criteria of sample

### **3.8 SAMPLE CRITERIA**

The study sample was selected by following inclusion and exclusion criteria.

### ***3.8.1 Inclusion criteria***

- ❖ Patients above 30 years of age
- ❖ Patients who are willing to participate in the study
- ❖ Patients who know to read and write the Tamil and English language

### ***3.8.2 Exclusion criteria***

- ❖ Patients with abnormal renal parameters
- ❖ Patients with sensory impairment

## **3.9 SAMPLING TECHNIQUE**

The convenient sampling technique was used.

## **3.10 RESEARCH VARIABLES**

### ***3.10.1 Independent Variable***

The independent variable in this study is planned teaching programme on knowledge regarding prevention of renal calculi

### ***3.10.2 Dependent Variable***

The dependent variable in this study was level of knowledge regarding prevention of renal calculi .

## **3.11 DEVELOPMENT OF THE TOOL AND DESCRIPTION OF TOOL**

### ***3.11.1 Development of Tools***

The researcher developed the tool for the study based on the various of literature from various textbook, journals, PubMed and guidance from nursing and medical expert. Statistician also consulted in the development of the tool. The tool comprises of three sections as follows:

### ***3.11.2 Description of the tools***

#### **SECTION-A: SOCIO DEMOGRAPHIC DATA**

The Socio demographic variables such as age, gender, educational status, marital status, family income, diet, type of family, marital status, occupational status.

#### **SECTION-B: CLINICAL VARIABLES**

The levels of hemoglobin, blood pressure, body weight, urine output, frequency of maturation, type of pain.

#### **SECTION-C: SEMI STRUCTURED QUESTIONNAIRE RELATED TO KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI**

Semi Structured Questionnaire related to knowledge regarding prevention of renal calculi, which consists of 25 items and the answers were gathered by structured questionnaires.

### ***3.11.3 Scoring Procedure***

Table 3.1:Score in percentage Level of knowledge.

<b>S. No.</b>	<b>Grade</b>	<b>Percentage</b>	<b>Marks</b>
1.	Adequate knowledge	76 – 100%	18.76-25.0
2.	Moderate knowledge	51 – 75%	12.6-18.75
3.	Inadequate knowledge	0 – 50 %	< 12.5

### **3.12 CONTENT VALIDITY OF THE TOOL**

After construction of questionnaire for the study on “A study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward, Rajiv Gandhi Government General Hospital, Chennai-03”, it was tested for its validity and reliability.

Validity of the tool was assessed using content validity. Content validity was determined by experts from Nursing and Medical. They

suggested certain modifications in tool. After the modifications they agreed this tool for assessing effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward, Rajiv Gandhi Government General Hospital, Chennai-03.

### **3.13 ETHICAL CONSIDERATIONS**

After approval of the research committee in the college of nursing, Madras Medical College. A formal permission got from the Institute of general medicine to conduct the study in the Medical ward and ethical clearance from the Madras medical college ethical committee members, Chennai – 03. Confidentiality was assured to the sample and written consent obtained from each sample. The sample was ensuring they have rights to withdraw from the study if they found any difficulties during the intervention.

### **3.14 RELIABILITY OF THE TOOL**

After the pilot study Reliability of the tool was assessed by using Test retest method. Knowledge score reliability correlation coefficient value is 0.79 This correlation coefficient is very high suggest that it is a good tool for assessing effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward , Rajiv Gandhi Government General Hospital, Chennai-03.

### **3.15 PROTECTION OF HUMAN RIGHTS**

The researcher obtained the permission from the head of the medical surgical nursing department. The research proposal was approved by the dissertation committee-College of Nursing, Rajiv Gandhi Government General Hospital-Ethics committee, and the Director and HOD of Institute of General medicine and Research Centre, Chennai- 03, to conduct the main study. Both verbal and written

informed consent was obtained from all the study participants and the data collected was kept confidential, Positive benefits were explained to all the study subjects. They were also explained that they may withdraw from the study at any time without any penalty. Anonymity and confidentiality were maintained throughout the study.

### **3.16 PILOT STUDY**

In order to test the feasibility, relevance of the study, a pilot study was conducted with 10 patients. Convenient sampling techniques was used. Before and after planned teaching programme pre and post test was conducted. Those data were analyzed to find out the suitability of the study. The results of the study showed that there was a positive correlation between the knowledge of the patients with prevention of renal calculi and the investigator found that the study was feasible.

### **3.17 DATA COLLECTION PROCEDURE**

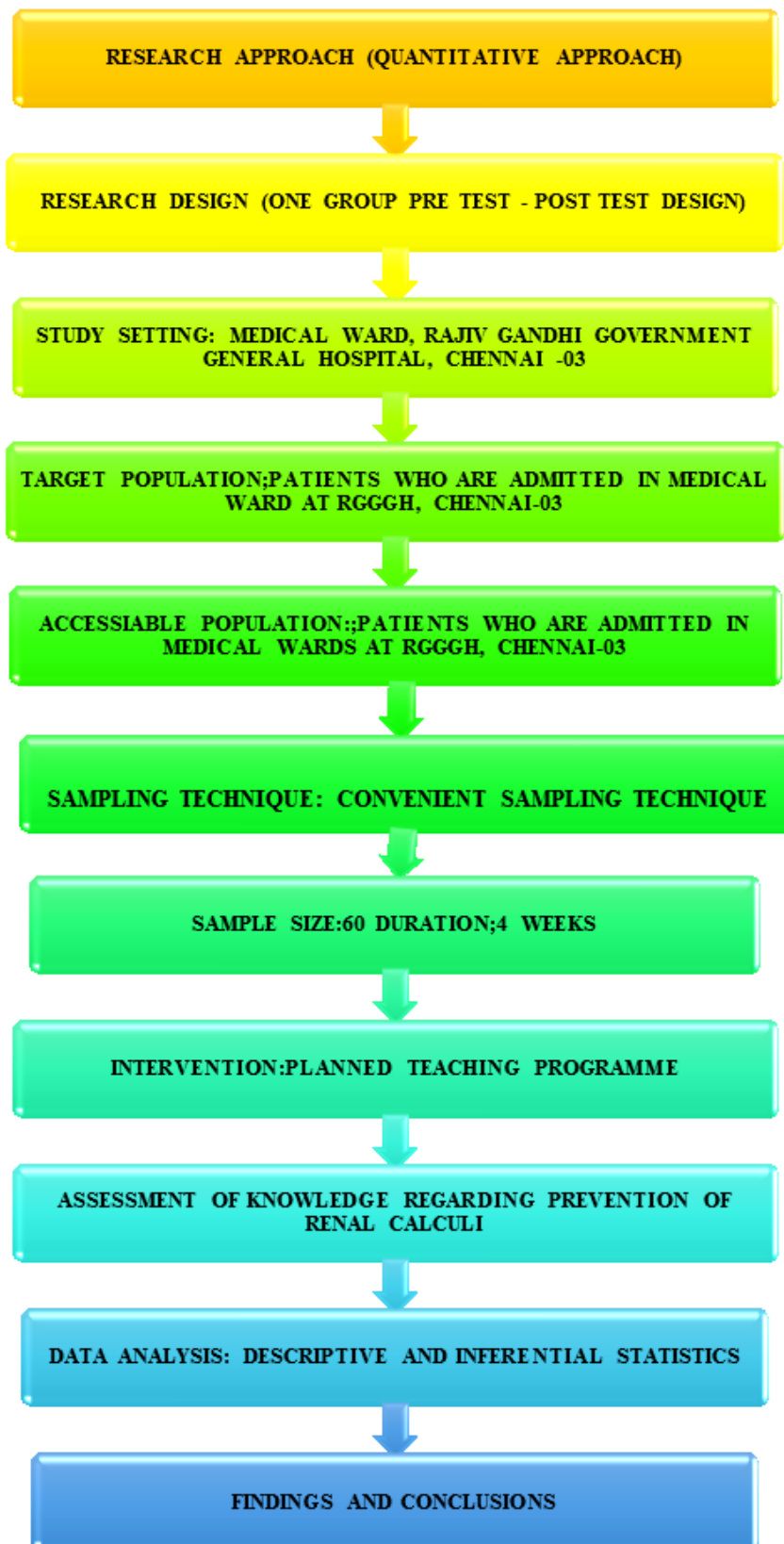
The period of data collection from 02.02.2019 to 04.03.2019 before starting the study, the researcher obtained the formal permission to conduct the study from the Principal, College of Nursing, Ethical Committee, and the Director of internal medicine. During this time of data collection, the investigator introduced himself to the selected group of medical ward patients. The study was explained and obtained the informed written consent from the patient. The sample selection procedure was done by using convenient sampling technique. After, that pre-test was conducted by semi-structured questionnaires. Pre-test knowledge was assessed. After conducting the pre-test, the planned teaching programme regarding prevention of renal calculi given to clients through the laptop and booklets. The duration of the teaching was 45 minutes, two times daily with 12 hours interval the same teaching programme given to the client for three consecutive days, and the post-test was conducted using the same question on the 7<sup>th</sup> day of

data collection period. Each day 3-4 patients were assessed during the data collection period. The investigator maintains the good rapport with the patients and clarifies the doubts. The researcher finished the data collection procedure successfully.

### **3.18. PLAN FOR DATA ENTRY AND DATA ANALYSIS**

- ❖ Demographic variables in categories were given in frequencies with their percentages.
- ❖ Knowledge score was given in mean and standard deviation.
- ❖ The association between demographic variables and knowledge score were analyzed using Pearson chi-square test
- ❖ Quantitative knowledge score in pretest and posttest were compared using student's paired t-test.
- ❖ Qualitative level of knowledge in pretest and posttest was compared using Stuart-Maxwell test /extended McNemar test
- ❖ Association between knowledge gain score with demographic variables are assessed using one-way ANOVA F-test and student independent t –test.

**FIGURE 3.1: SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY**





## **CHAPTER-IV DATA ANALYSIS AND INTERPRETATION**

This chapter explains the statistical analysis performed in the collected data. Analysis is a method for rendering quantitative, meaningful and providing intelligible information .so that research problem can be studied and tested by the relationship between the variables.

### **ORGANIZATION OF DATA**

#### ***Section - I***

Deals with socio – demographic characteristics of the sample

#### ***Section – II***

Deals with clinical information of the sample

#### ***Section - III***

Deals with knowledge level before structure teaching programme.

#### ***Section - IV***

Deals with knowledge level after structure teaching programme.

#### ***Section- V***

Deals with association of selected demographic variables with overall knowledge before and after the intervention.

## SECTION – I

**Table 4.1: distribution of the demographic profile of the study participants (N=60)**

Demographic variables		No. of patients	%
Age	30 - 40 years	6	10.00%
	41 - 50 years	20	33.34%
	51 - 60 years	23	38.33%
	Above 60 years	11	18.33%
Gender	Male	28	46.67%
	Female	32	53.33%
Educational qualification	Professionals	0	0.00%
	Graduate or postgraduate	3	5.00%
	Intermediate	3	5.00%
	High school	7	11.67%
	Middle school	16	26.67%
	Primary school	19	31.66%
	Illiterate	12	20.00%
Occupation	Legislators, senior officials & managers	0	0.00%
	Professionals	0	0.00%
	Technicians and associate professionals	0	0.00%
	Clerks	4	6.67%
	Skilled workers, shop & market scale workers	8	13.33%
	Skilled agricultural & fishery worker	19	31.67%
	Craft & related trade workers	6	10.00%
	Plant & machine operators & assemblers	5	8.33%
	Elementary occupation	15	25.00%
	Unemployed	3	5.00%

Demographic variables		No. of patients	%
Monthly income of the family	Below Rs.5,000	20	33.33%
	Rs.5,001-10,000	25	41.67%
	Rs.10,001-15,000	10	16.67%
	Rs.15,001-20,000	5	8.33%
	Above Rs.20,001	0	0.00%
Type of family	Joint family	20	33.33%
	Nuclear family	40	66.67%
Marital status	Married	57	95.00%
	Un Married	0	0.00%
	Widow / Widower	3	5.00%
	Divorced	0	0.00%
Languages known	Tamil	47	78.33%
	English	0	0.00%
	Both Tamil and English	10	16.67%
	Other language	3	5.00%
Diet	Vegetarian	8	13.33%
	Non Vegetarian	52	86.67%
Life style	Sedentary	38	63.33%
	Moderate	16	26.67%
	Heavy worker	6	10.00%

Table 4.1: shows the demographic information of Patients those who are participated for the following study.

***Data presented in table 1 shows the following***

**Age:** Maximum 38.33% of the patients belong to age group of 51-60 years,33.34% of the peoples belong to age group of 41-50 years,18.33% of patients belong to the age group of above 60 years,10.00% of patients belong to age group of 30-40 years.

**Gender:** 53% of patients were female and 46.67% of patients were female.

**Educational qualification:** 31.66% of patients were primary school,26.67% of patients were middle school ,20% of patients were illiterate,5% of patients were intermediate,5% of patients were graduate or post graduate.

**Occupation:** 31.67% of patients were skilled agricultural workers, 25% of patients were elementary occupation,13% of patients were skilled workers, 10% of patients were craft workers,8.33% of patients were plants and machine operators, 6.67% of patients were clerks, 5% of patients were unemployed.

**Income:** 41.67% of patients have monthly income about (5000-10,000),33.33% of patients have monthly income about (<5000),16.67% of patients have monthly income about (10,000 – 15,000), 8.33% of patients have monthly income about (15,000 – 20,000).

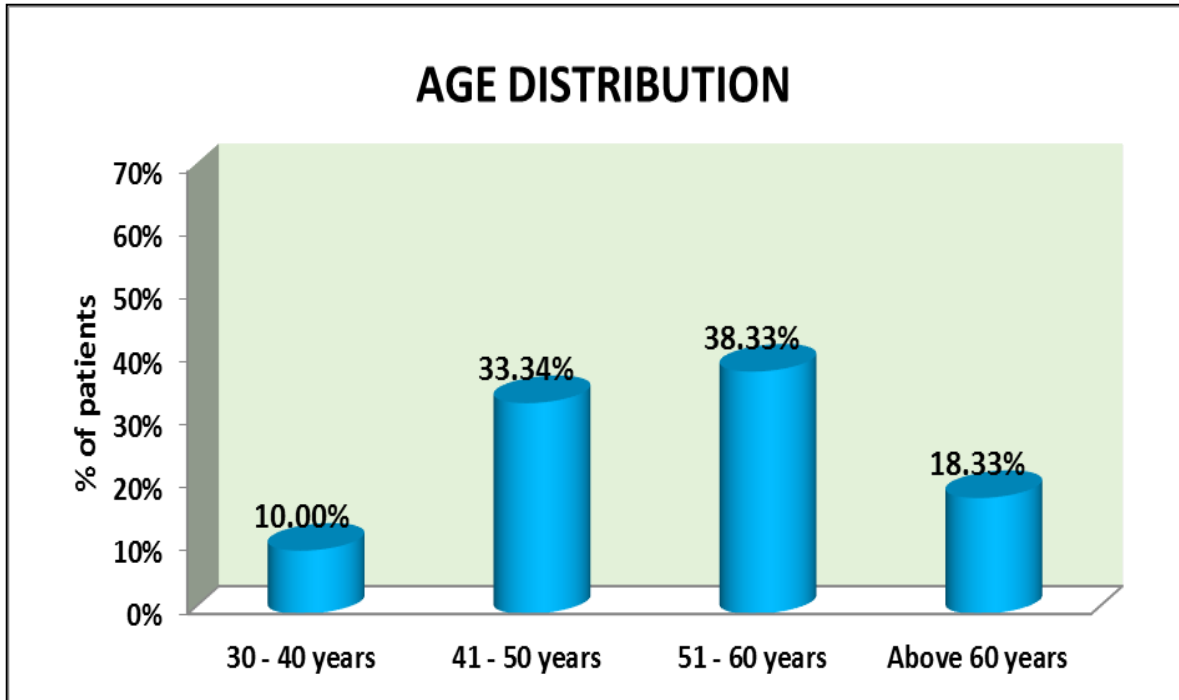
**Type of Family:** 66.77% of patients were joint family, 33.33% of patients were joint family.

**Marital Status:** 95% of patients were married, 5% of patients were unmarried.

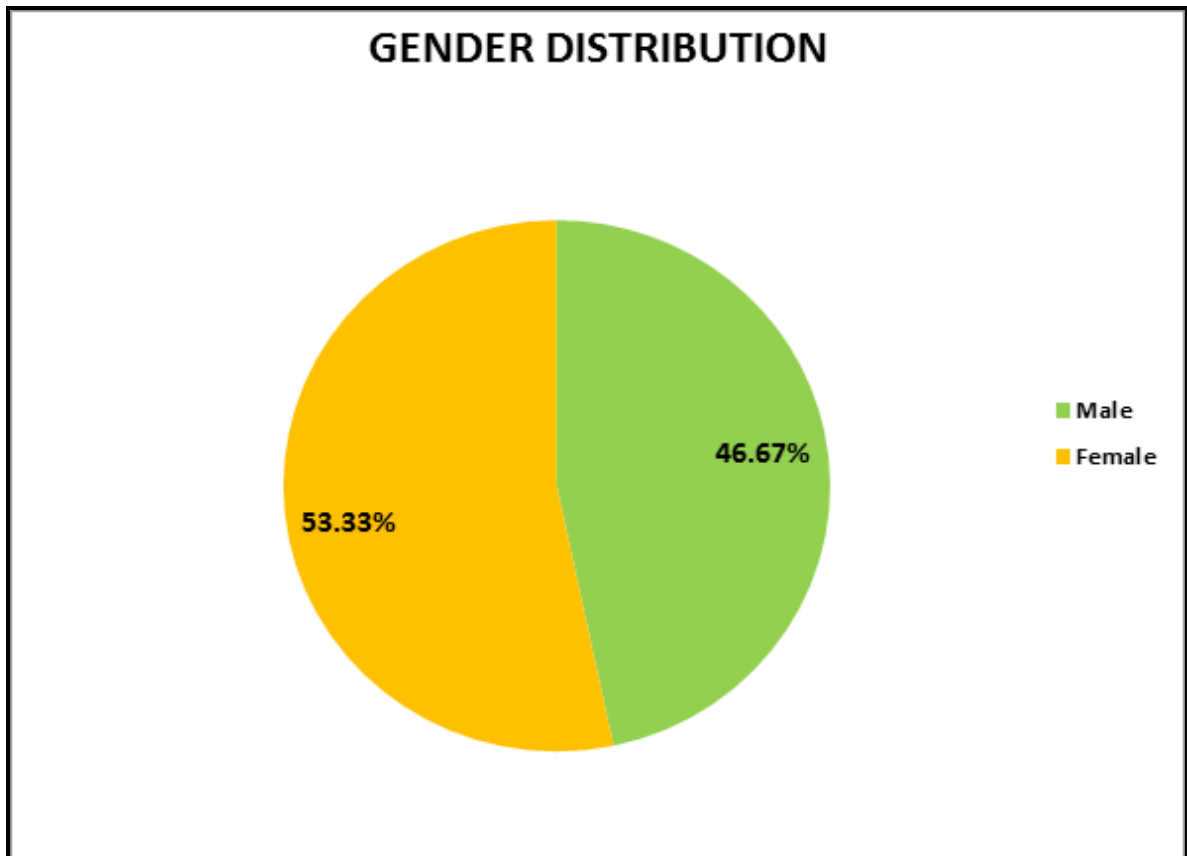
**Languages known:** 78.33% of patients known Tamil and 16.67% of patients known as both Tamil and English,5% of patients known other languages.

**Diet:** 86.67% of patients taking non vegetarian diet, 13.33% of patients taking vegetarian diet.

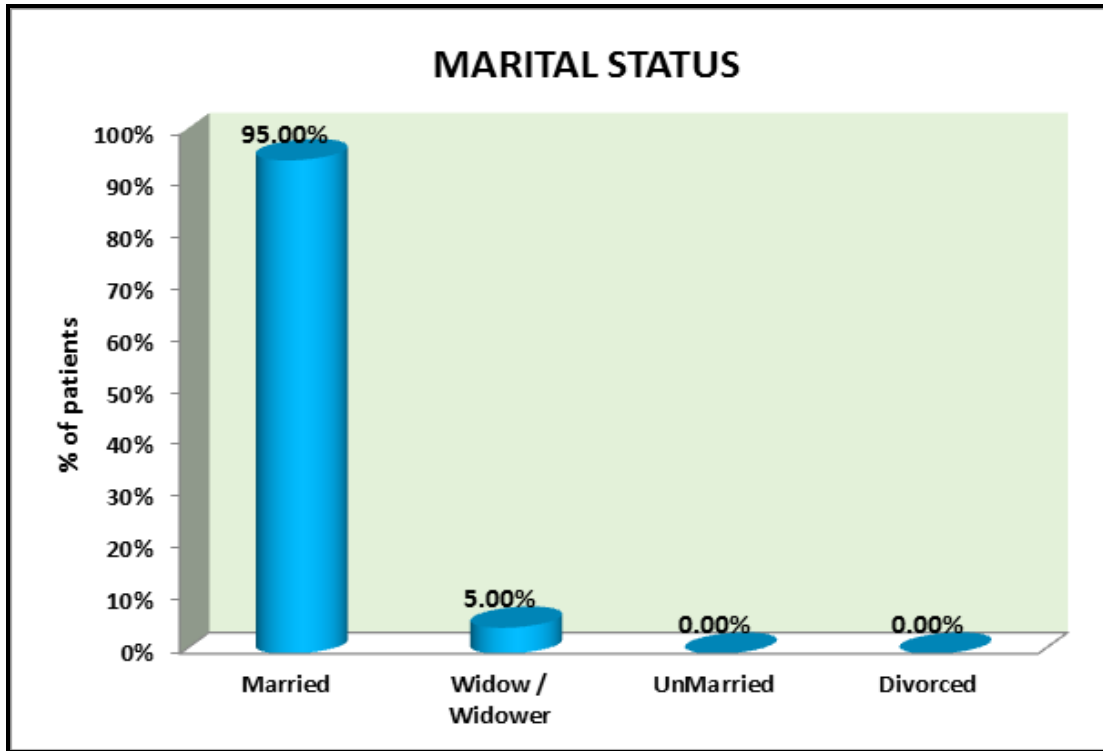
**Life Style:** 63.33% of patients are sedentary workers, 26.67% of patients are moderate workers, 10% of patients are heavy workers.



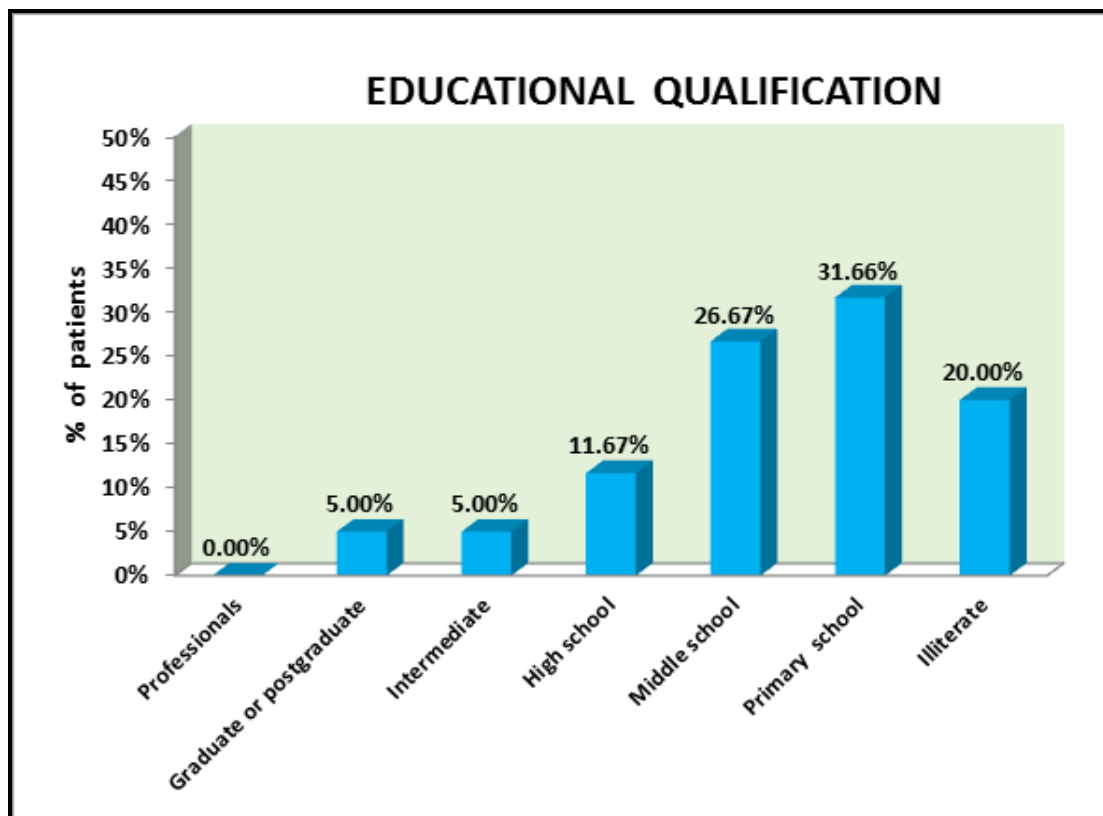
**Figure 4.1:** cylindrical diagram shows age wise distribution of the participants



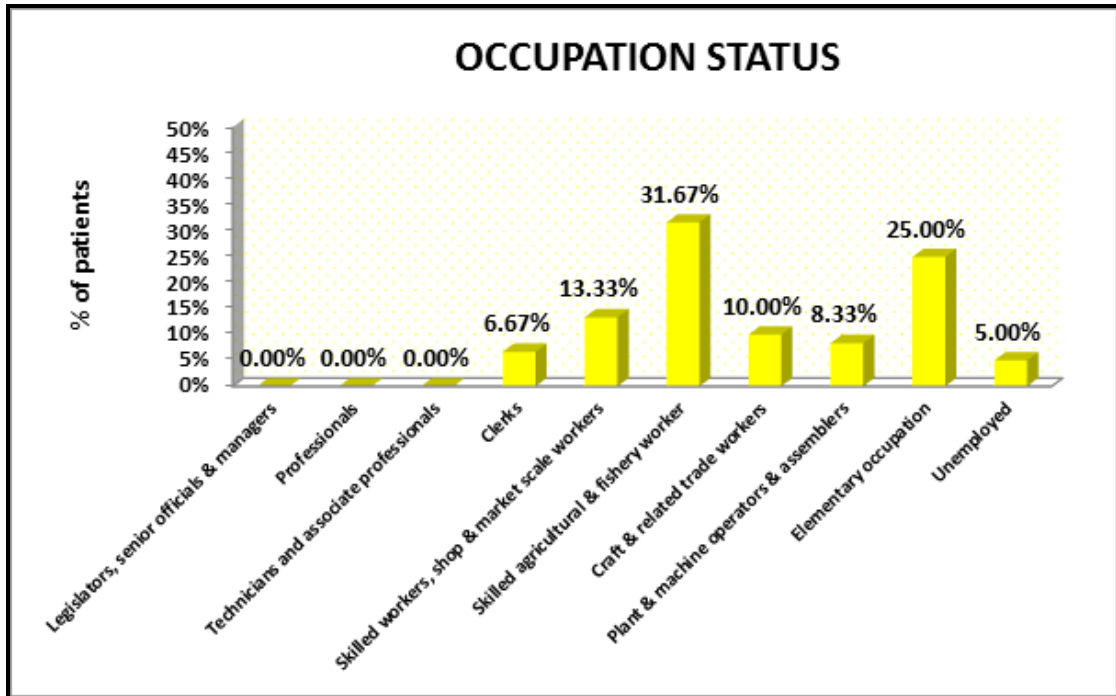
*Figure 4.2 :Pie diagram shows gender wise distribution of the participants*



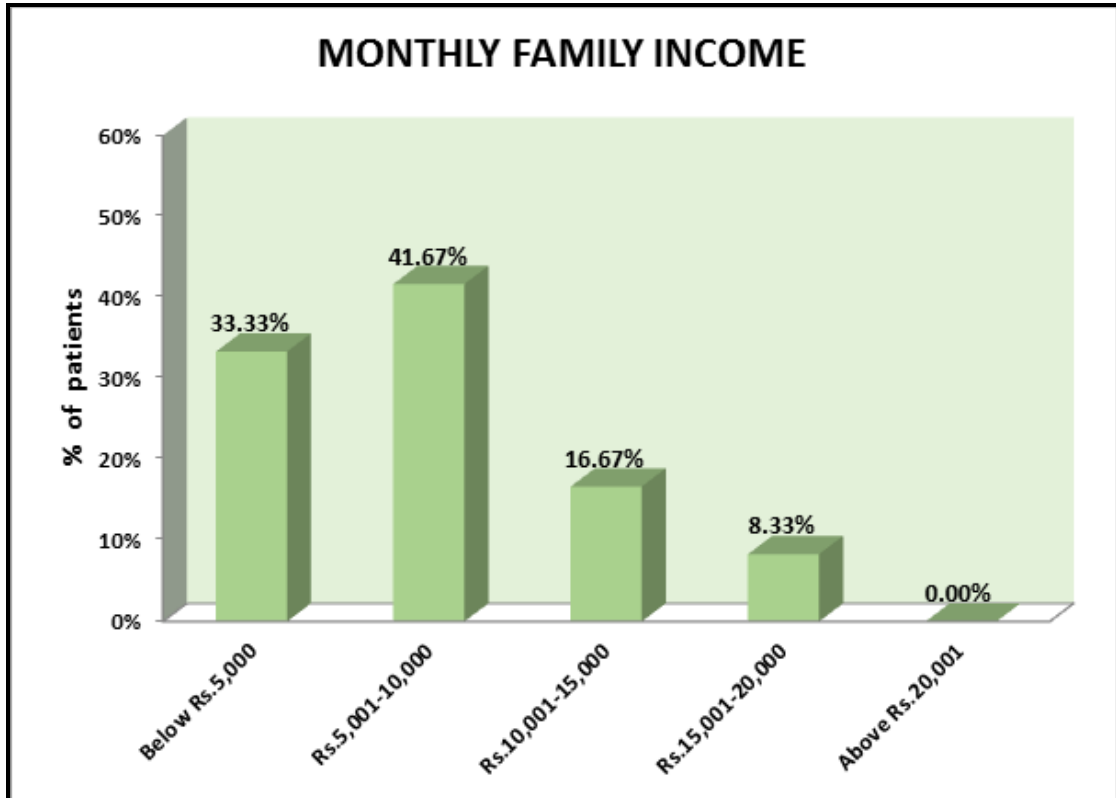
*Figure 4.3: Cylindrical diagram shows Distribution of marital status of the participants*



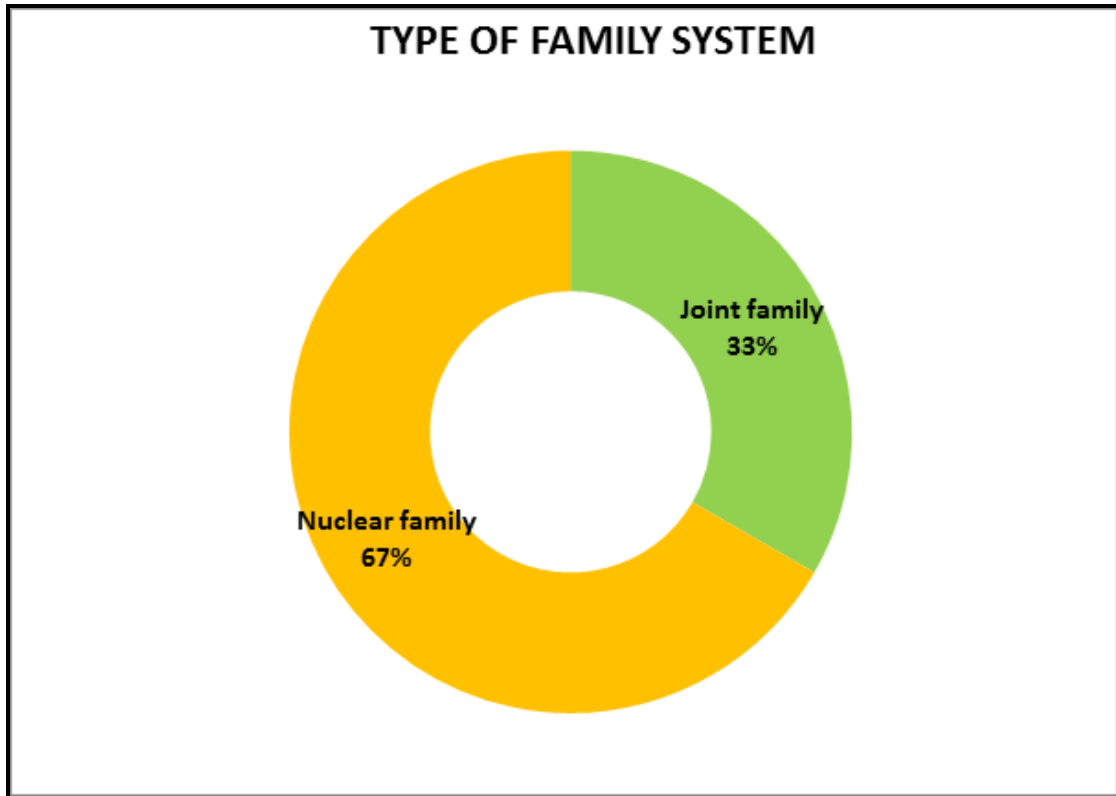
*Figure 4.4: Bar diagram shows distribution of educational status of the study participants*



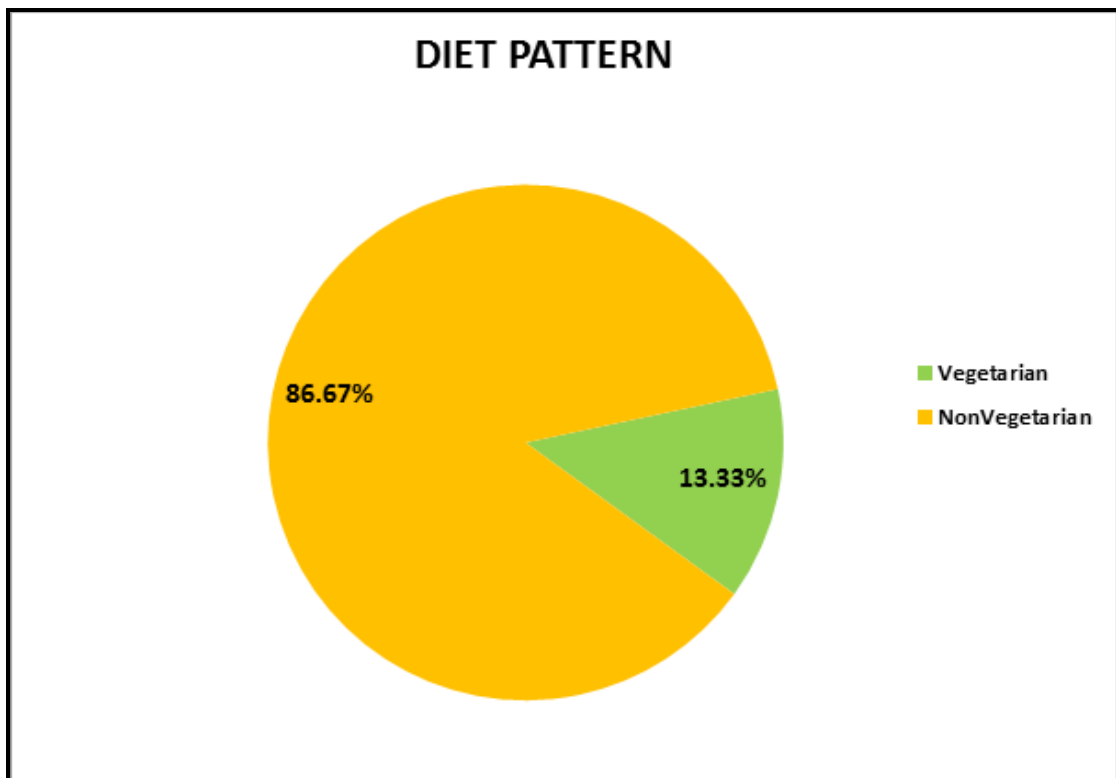
*Figure 4.5: Bar diagram shows distribution of the occupational status of the study participants*



*Figure 4.6: Bar diagram shows distribution of the family income of the study participants*

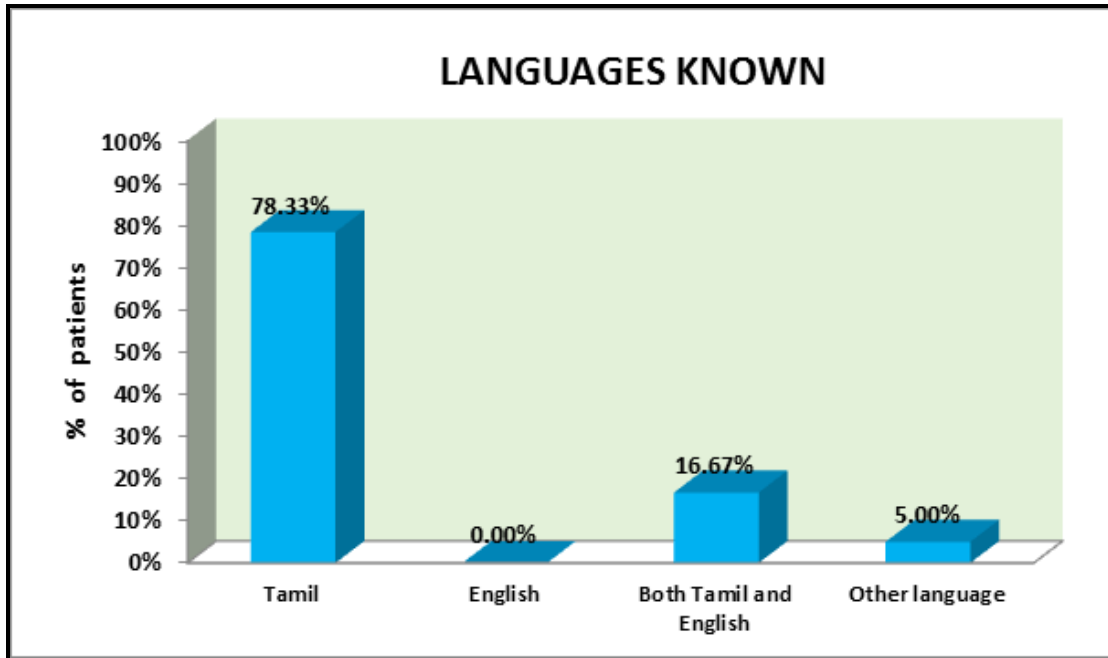


*Figure 4.7: Doughnut diagram shows distribution of type of family of the study participants*

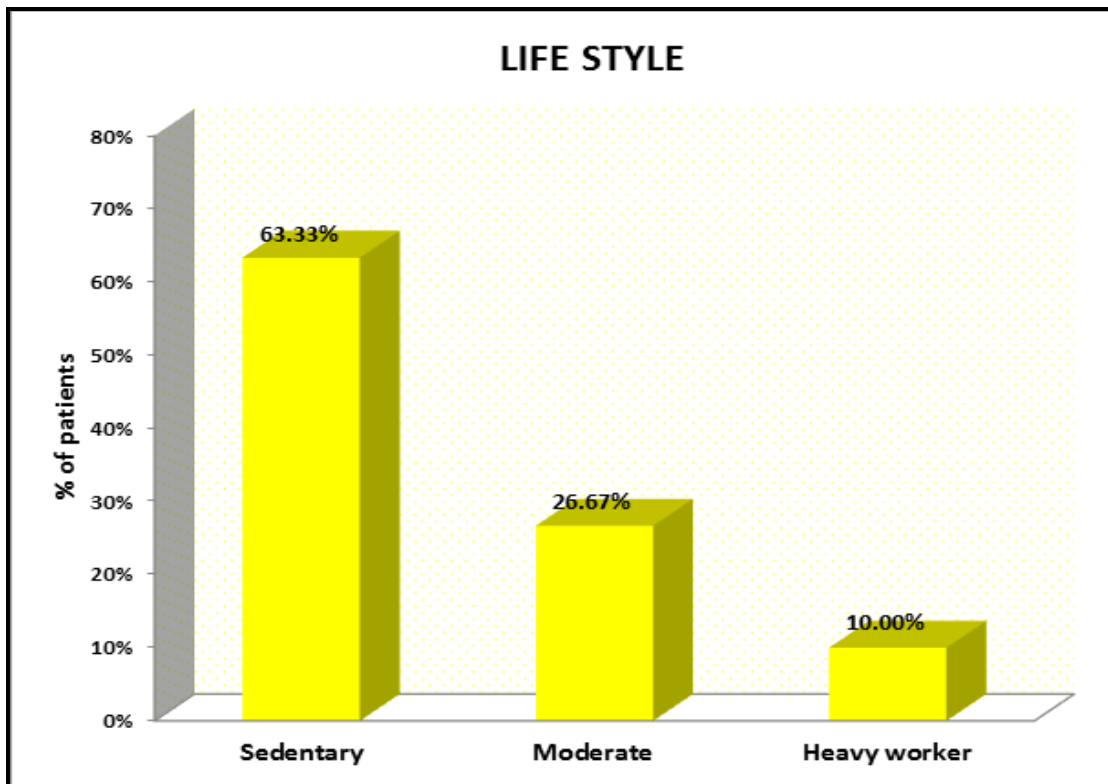


*Figure 4.8: Pie diagram shows distribution of diet pattern of the study participants*





*Figure 4.9: Bar diagram shows distribution of languages known of the study participants*



*Figure 4.10: Bar diagram shows distribution of life style of the study participants*

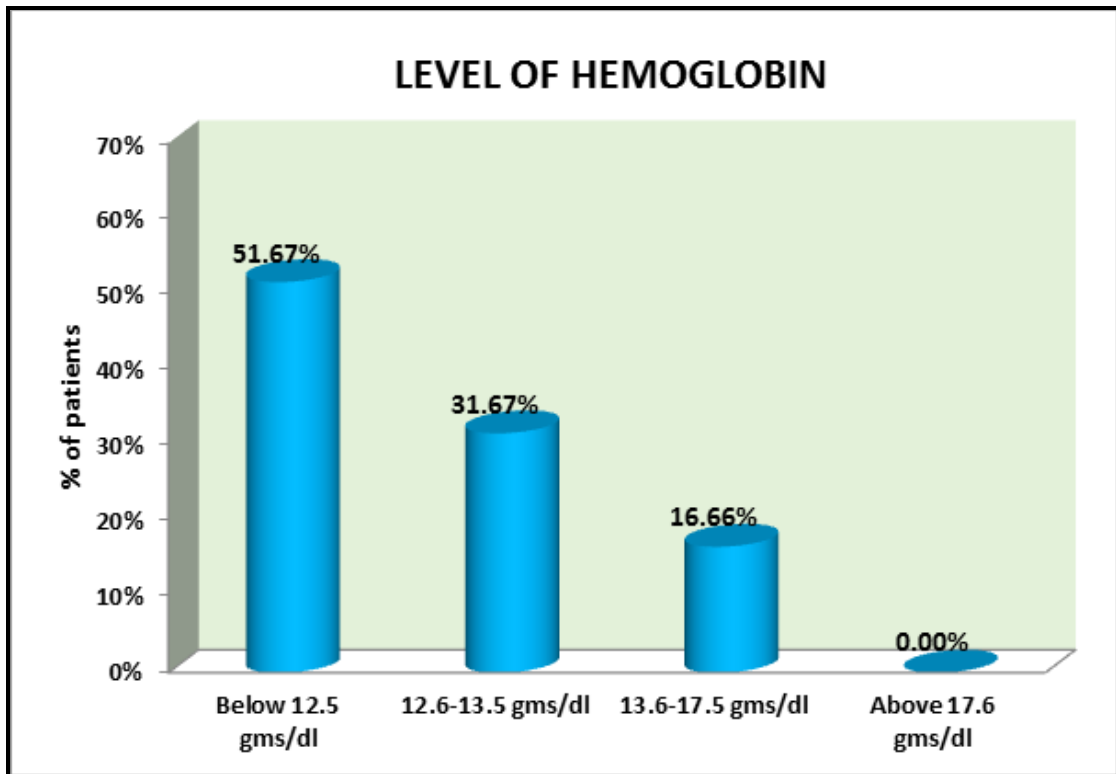
## SECTION-II

**Table 4.2: Clinical Variables**

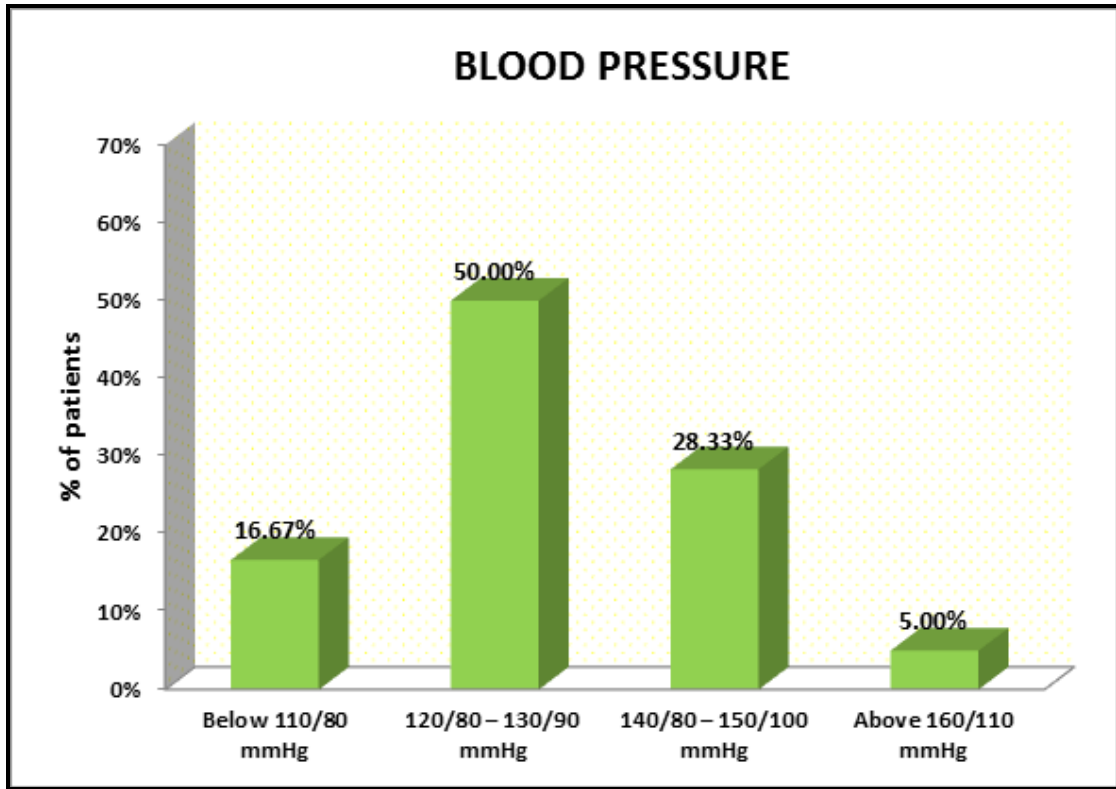
Clinical variables		No. of patients	%
Level of Hemoglobin in grams	Below 12.5 gms/dl	31	51.67%
	12.6-13.5 gms/dl	19	31.67%
	13.6-17.5 gms/dl	10	16.66%
	Above 17.6 gms/dl	0	0.00%
Blood pressure in mmHg	Below 110/80 mmHg	10	16.67%
	120/80– 130/90 mmHg	30	50.00%
	140/80–150/100mmHg	17	28.33%
	Above 160/110 mmHg	3	5.00%
Body weight in kilogram	Less than 50 kgs	7	11.67%
	50 – 70 kgs	38	63.33%
	71 – 90 kgs	14	23.33%
	Above 90	1	1.67%
Urine output in ml/24hrs	Below 490 ml	4	6.67%
	500 – 1000 ml	34	56.66%
	1100 – 1600 ml	18	30.00%
	Above 1700 ml	4	6.67%
Frequency of micturition	Less frequent to urinate	7	11.67%
	More frequent to urinate	28	46.66%
	Urgent need to urinate	25	41.67%
	No urge to urinate	0	0.00%
Type of pain	No pain	0	0.00%
	Severe pain	23	38.33%
	Sharp pain	25	41.67%
	Radiating pain	12	20.00%

Table 4.2.Predicts that majority 51.67% of patients level of heamoglobin in grams is below 12.5 gms/dl, 50% of patients blood pressure is between 120/80 – 130/90 mmof Hg,63.33% of patients body

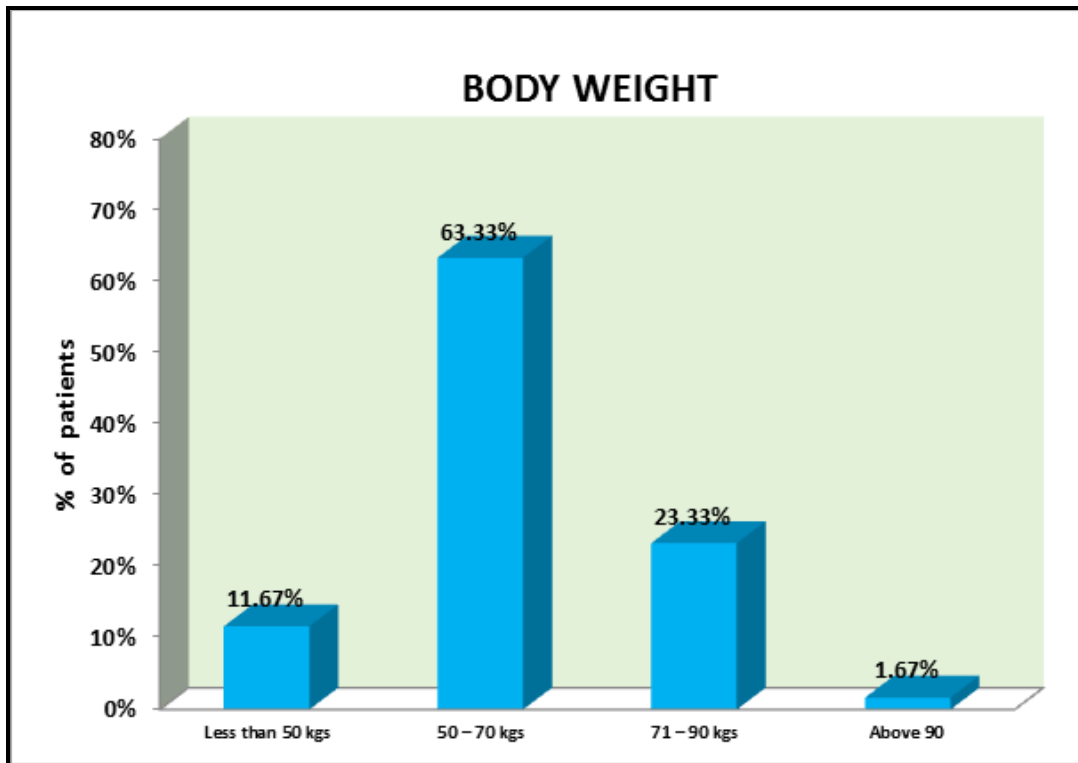
weight is between 50-70 kgs, 56.66% of patients urine out put is 500 – 1000ml , 46.66% of patients frequency of maturation more frequent to urinate, 41.67% of patients type of pain is sharp pain.



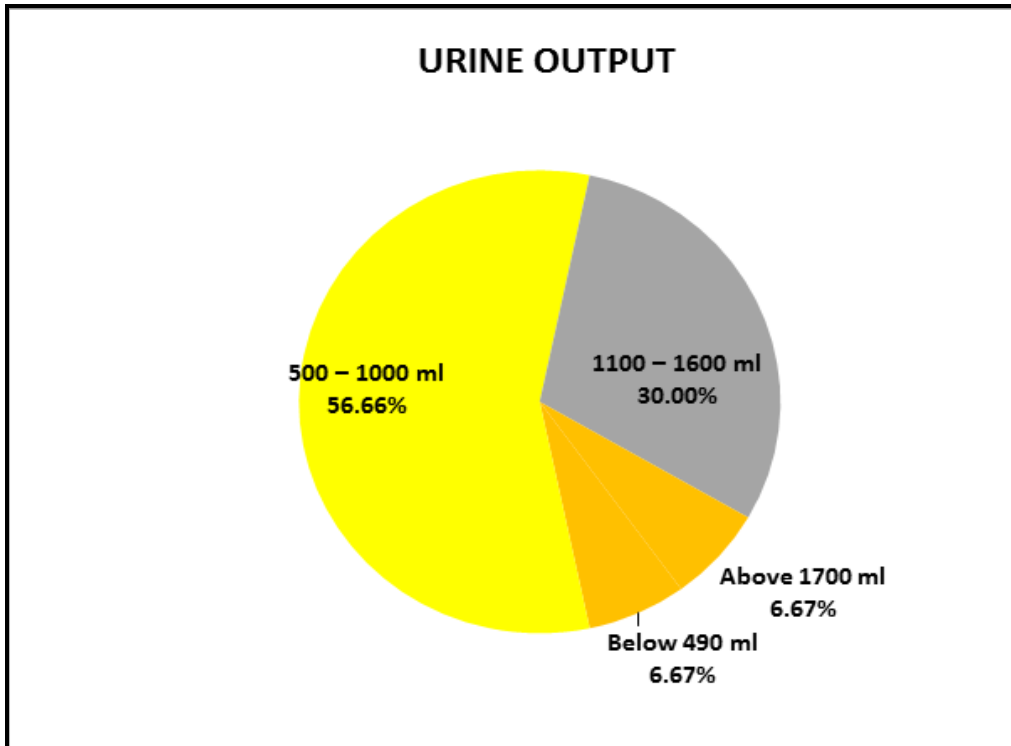
*Figure 4.11: Cylindrical diagram shows distribution of level of hemoglobin of the study participants*



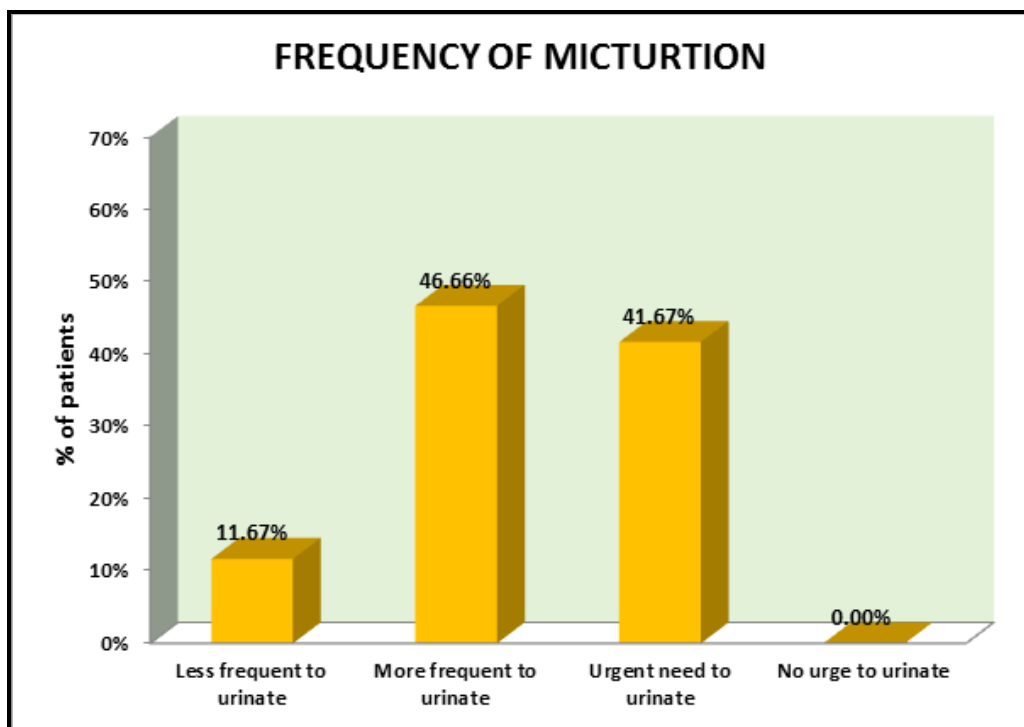
*Figure 4.12: Bar diagram shows distribution of blood pressure of the study participants*



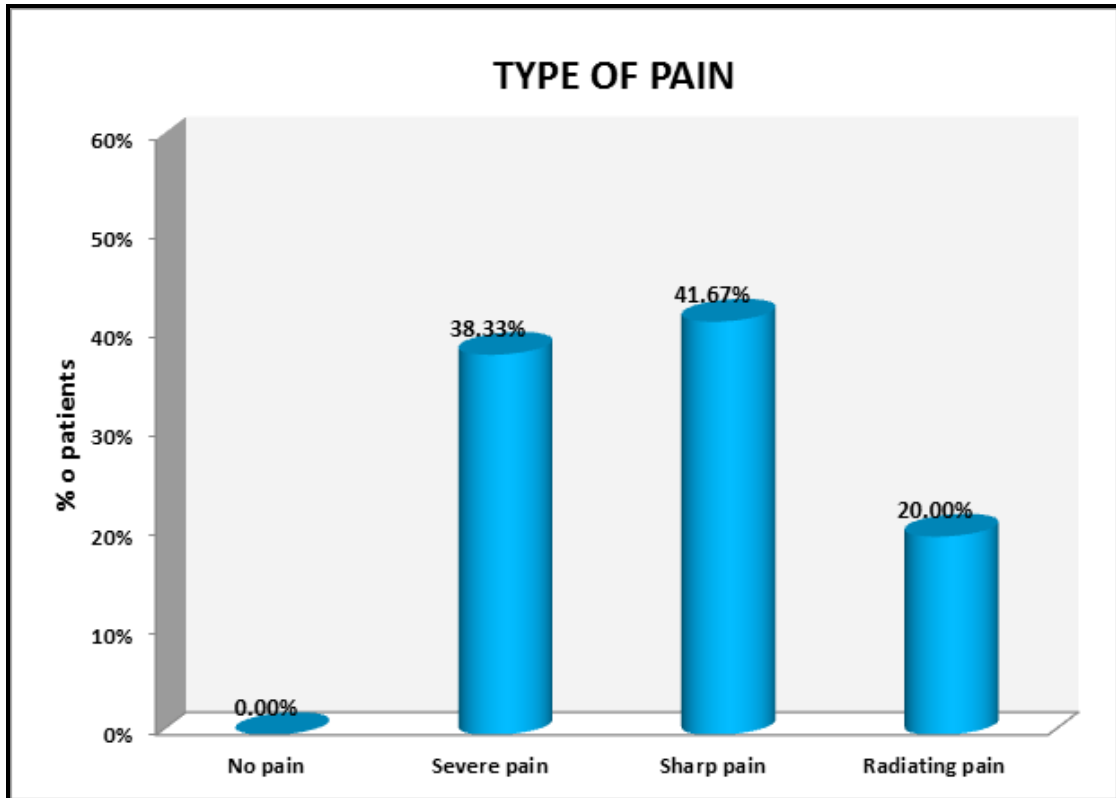
*Figure 4.13: Bar diagram shows distribution of body weight of the study participants*



*Figure 4.14: Pie diagram shows distribution of urine output of the study participants*



*Figure 4.15: Bar diagram shows distribution of frequency of micturition of the study participants*



*Figure 4.16: Cylindrical diagram shows distribution of type of pain of the participants*

**SECTION-III: TO ASSESS THE PRETEST LEVEL OF KNOWLEDGE REGARDING THE PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD**

Pre-test percentage of knowledge score regarding renal calculi under each domain is tabulated below.

*Table 4.3: Pretest percentage of patients knowledge score.*

<b>Domains</b>	<b>Maximum score</b>	<b>Mean score</b>	<b>SD</b>	<b>% of mean score</b>
Introduction	2	1.17	.49	58.50%
Causes	5	1.95	1.03	39.00%
Risk factors	3	1.10	.80	36.67%
Signs and symptoms		.53	.50	53.00%
Prevention	8	3.35	1.34	41.88%
Management	6	2.52	1.36	42.00%
Total	25	10.62	2.09	42.48%

Table.4.3 shows each domain wise pre-test percentage of knowledge on prevention of renal calculi among patients admitted in medical ward They are having maximum score in the domain Knowledge on Introduction (58.50%) They are having minimum score in the domain Causes (39.00%) Overall percentage of knowledge score is (42.48%).

**Table 4.4 :Pretest level of patients knowledge score**

<b>Level of knowledge</b>	<b>No. of Patients</b>	<b>%</b>
Inadequate	48	80.0%
Moderate	12	20.0%
Adequate	0	0.0%
Total	60	100.0%

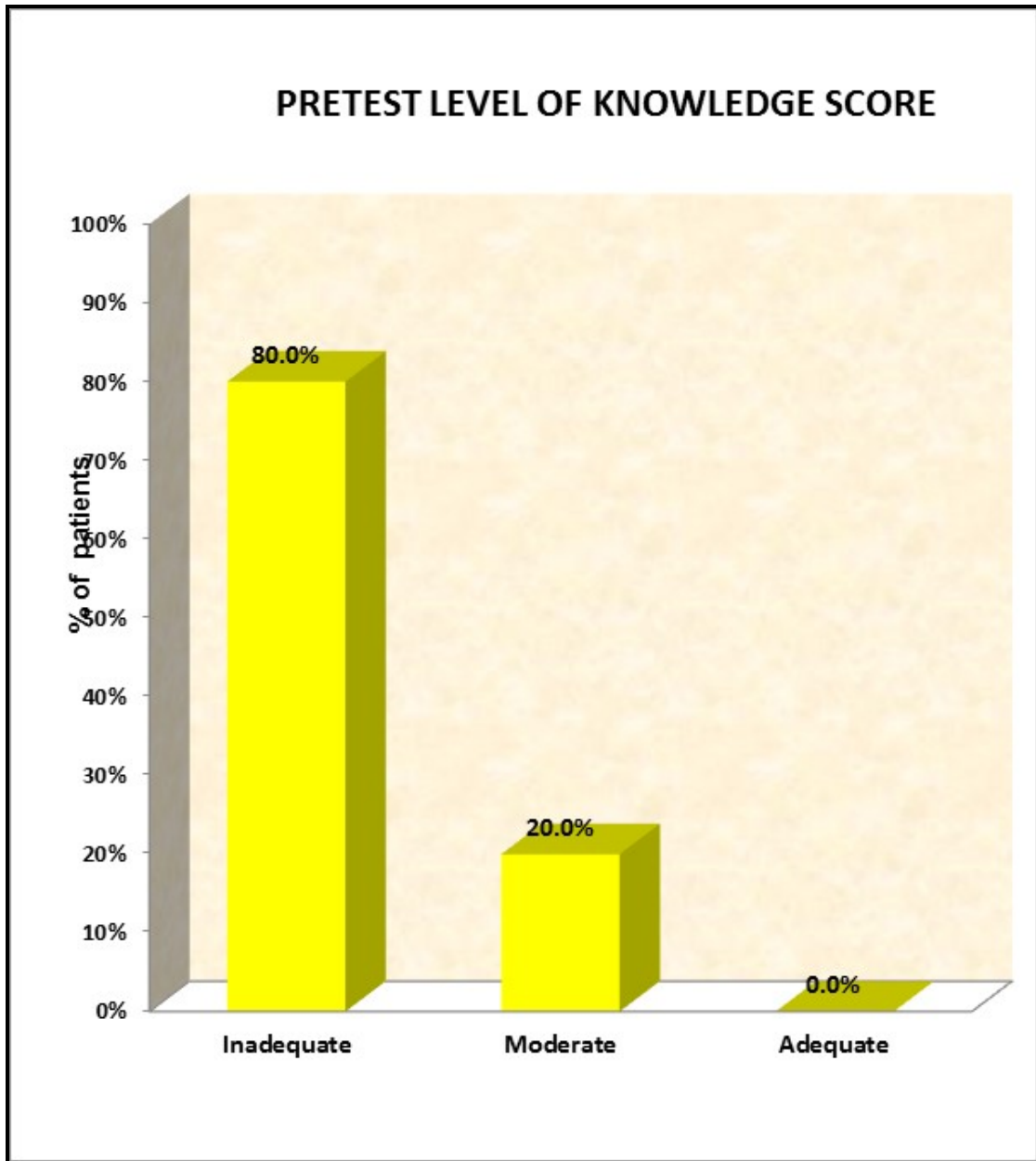
Table 4.4 Shows the patients pre-test level of knowledge in which there are 80.0% of the Patients are having inadequate level of knowledge score, 20,0% of the Patients are having moderate knowledge score and none of the Patients are having Adequate level of knowledge score.

**Table 4.5 Knowledge score interpretation:**

Min=0 Max=1 Total questions=25 Maximum marks= 25

<b>Grade</b>	<b>Percentage</b>	<b>Marks</b>
Inadequate knowledge	0 – 50%	0.00-12.50
Moderate knowledge	51 – 75%	12.51-18.75
Adequate knowledge	76 – 100 %	18.76-25.00





*Figure 4.17: Bar diagram shows Pre test knowledge score of the study participants*

**SECTION – IV: TO ASSESS THE POST LEVEL OF KNOWLEDGE REGARDING THE PREVENTION OF RENAL CALCULI.**

***Table 4.6: Posttest Percentage Of Knowledge Score Regarding Prevention Of Renal Calculi Among Patients Admitted In Medical Ward.***

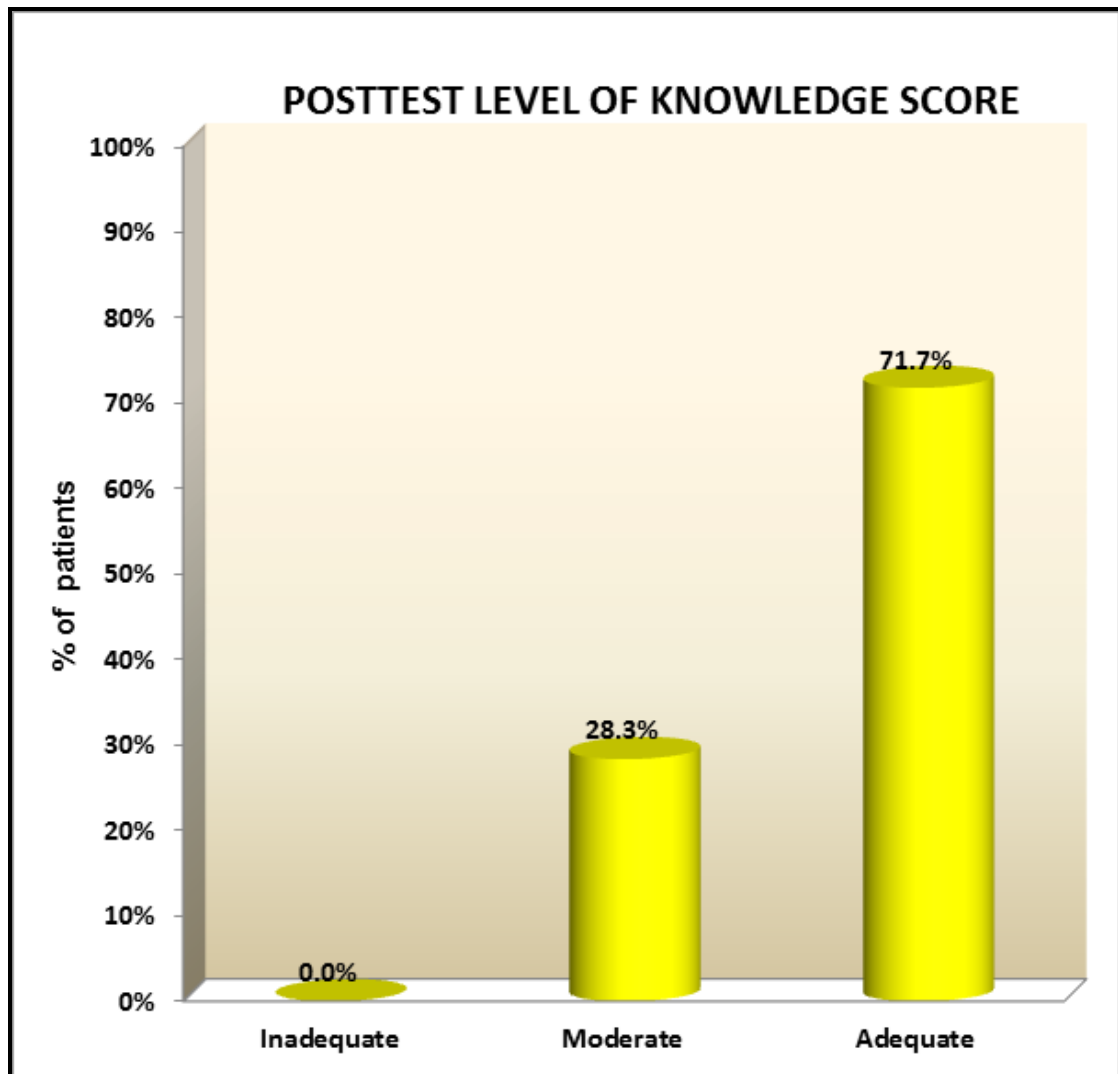
<b>Domains</b>	<b>Maximum score</b>	<b>Mean score</b>	<b>SD</b>	<b>% of mean score</b>
Introduction	2	1.72	.45	86.00%
Causes	5	4.03	1.06	80.60%
Risk factors	3	2.17	.87	72.33%
Signs and symptoms	1	.73	.45	73.00%
Prevention	8	5.77	1.20	72.13%
Management	6	4.38	.88	73.00%
Total	25	18.80	2.44	75.20%

Table.4.6 shows each domain wise knowledge on prevention of renal calculi among patient admitted in medical ward , Rajiv Gandhi Government General Hospital, Chennai-03. They are having maximum score in the domain Knowledge on causes (80.60%) They are having minimum score in the domain Preventive measures (70.67%) Overall percentage of knowledge score is 75.85%.

***Table 4.7: Posttest Level Of Knowledge Score***

<b>Level of knowledge</b>	<b>No. of Patients</b>	<b>%</b>
Inadequate	0	0.0%
Moderate	17	28.3%
Adequate	43	71.7%
Total	60	100.0%

Table 4.7. shows the significantly improved patients' level of knowledge on prevention of renal calculi. In general, none of the Patients are having inadequate level of knowledge score, 28,3% of the Patients are having moderate knowledge score and 71.7%of the Patients are having Adequate level of knowledge score.



*Figure 4.18: Cylindrical diagram shows the distribution of post test level of knowledge of the study participants*

**Table 4.8: Comparison Of Domainwise Pretest And Posttest Knowledge Score**

Knowledge on	Pretest		Posttest		Mean Difference	Student's paired t-test
	Mean	SD	Mean	SD		
Introduction	1.17	.49	1.72	.45	0.55	t=7.16 P=0.001 *** DF= 59 , Significant
Causes	1.95	1.03	4.03	1.06	2.08	t=10.23 P=0.001 *** DF= 59 , Significant
Risk factors	1.10	.80	2.17	.87	1.07	t=6.62 P=0.001 *** DF= 59 , Significant
Signs and symptoms	0.53	.50	0.73	.45	0.20	t=2.68 P=0.001 *** DF= 59 , Significant
Prevention	3.35	1.34	5.77	1.20	2.42	t=11.00 P=0.001 *** DF= 59 , Significant
Management	2.52	1.36	4.38	.88	1.86	t=9.49 P=0.001 ***
Overall	10.62	2.09	18.80	2.44	8.18	t=19.57 P=0.001 *** DF= 59 , Significant

\*\*\* very high significant at  $P \leq 0.001$  DF= Degrees of Freedom

*Table 4.8 compares the overall knowledge score before and after the administration of **planned teaching programme**.*

Considering **Introduction** domain score, in pretest *Patients* are having 1.17 score and in posttest they are having 1.72 score, so the difference is 0.5. This difference is large and statistically significant difference.

Considering **Causes** domain score, in pretest *Patients* are having 1.95 score and in posttest they are having 4.03 score, so the difference is 2.08. This difference is large and statistically significant difference.

Considering **Risk factors** domain score, in pretest *Patients* are having 1.10 score and in posttest they are having 2.17 score, so the difference is 1.07. This difference is large and statistically significant difference.

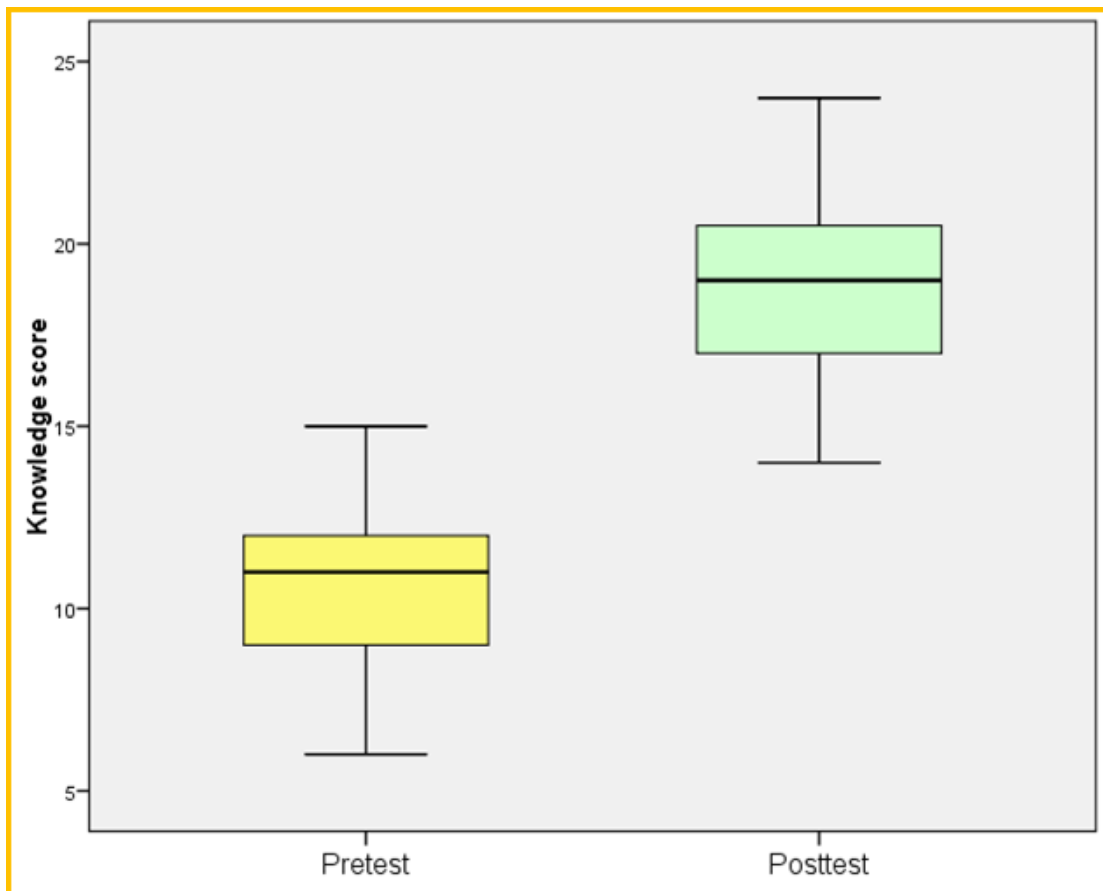
Considering **Signs and symptoms** domain score, in pretest *Patients* are having 0.53 score and in posttest they are having 0.73 score, so the difference is 0.20. This difference is large and statistically significant difference.

Considering **Prevention** domain score, in pretest *Patients* are having 3.35 score and in posttest they are having 5.77 score, so the difference is 2.42. This difference is large and statistically significant difference.

Considering **Management** domain score, in pretest *Patients* are having 2.52 score and in posttest they are having 4.38 score, so the difference is 8.18. This difference is large and statistically significant difference

Considering **overall knowledge score**, in pretest *Patients are* having 10.62 score and in posttest they are having 18.80 score, so the difference is 8.18. This difference is large and statistically significant difference.

Statistical significance was calculated by using student's paired 't' test.



***Figure 4.19: Box Plot Compares the Patients' knowledge score before and after the administration of Planned Teaching Programme.***

**Table 4.9: Each Domainwise Pretest And Posttest Percentage of Knowledge Score**

<b>Domains</b>	<b>Pre test score</b>	<b>Post test Score</b>	<b>% of knowledge gain score</b>
Introduction	58.50%	86.00%	27.50%
Causes	39.00%	80.60%	41.60%
Risk factors	36.67%	72.33%	35.66%
Signs and symptoms	53.00%	73.00%	20.00%
Prevention	41.88%	72.13%	30.25%
Management	42.00%	73.00%	31.00%
Overall	42.48%	75.20%	32.72%

Table 4.9 shows each domain wise knowledge gain score among Patients. In pre test students are having 42.48% of knowledge score and in post test they are having 75.20%. So they gained 32.72% after administration of PTP.

**Table 4.10: Comparison Of Pretest And Posttest Level Of Knowledge Score**

<b>Level of knowledge</b>	<b>Pre test</b>		<b>Post test</b>		<b>Extended McNemar's test</b>
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	
Inadequate	48	80.0%	0	0.0%	$\chi^2=40.60$ P=0.001***(S)
Moderate	12	20.0%	17	28.3%	
Adequate	0	0.0%	43	71.7%	
Total	60	100.0%	60	100.0%	

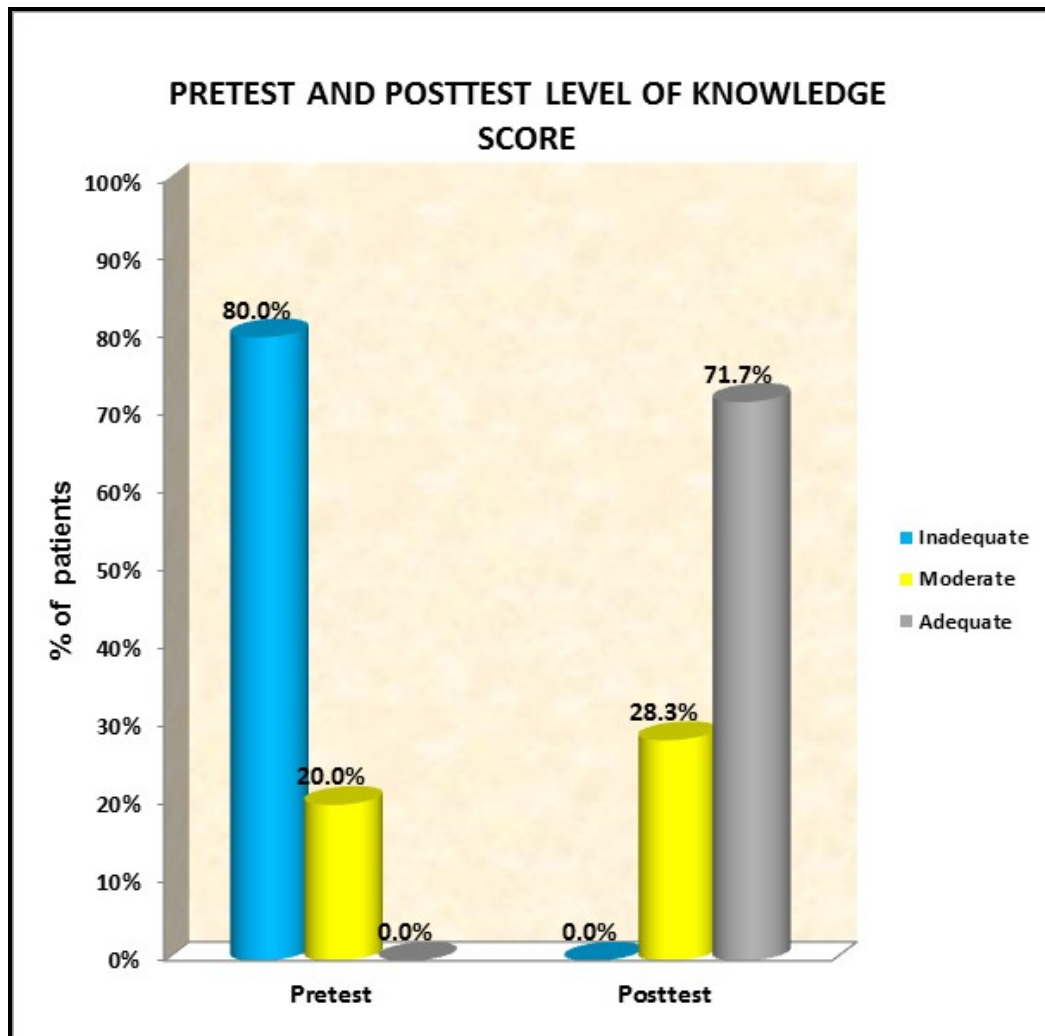
\*significant at  $p \leq 0.001$  level

Table 4.10. shows the comparison of pre test and post-test level of knowledge score among Patients.

Before PTP, 80.0% of the Patients are having inadequate level of knowledge score, 20.0% of the Patients are having moderate knowledge score and none of the Patients are having Adequate level of knowledge score.

After PTP, none of the Patients are having inadequate level of knowledge score, 28.3% of the Patients are having moderate knowledge score and 71.7% of the Patients are having Adequate level of knowledge score.

Level of knowledge gain score between pretest and posttest was calculated using Extended McNemar's chisquare test.



*Figure 4.20 :cylindrical diagram shows Pre test and post test level of knowledge score of the study particiapnts*



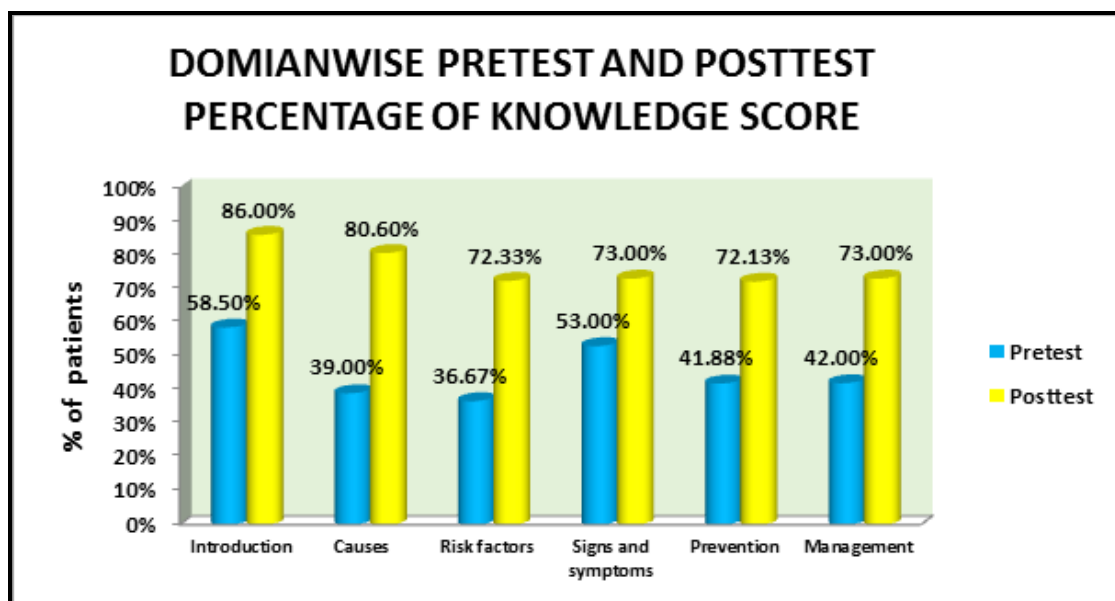
**Table 4.11: Effectiveness And Generalization Of Knowledge Gain Score**

	Max score	Mean score	Mean Difference of knowledge gain score with 95% Confidence interval	Percentage of knowledge gain score with 95% Confidence interval
Pretest	25	10.62	8.18(7.34 – 9.02)	32.72% (29.36% –36.08%)
Posttest	25	18.80		

Table 4.11 shows the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward.

On an average, in posttest after having PTP, patients are gained 32.72% knowledge score than pretest score.

Differences and generalization of knowledge gain score between pretest and posttest score was calculated using and mean difference with 95% CI and proportion with 95% CI.



**Figure 4.21: Cylindrical diagram shows the Pre test and post test level of knowledge score of the study participants**

**SECTION-V: TO ASSOCIATE THE POST-TEST LEVEL OF KNOWLEDGE REGARDING THE PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD WITH THEIR SELECTED DEMOGRAPHIC VARIABLES**

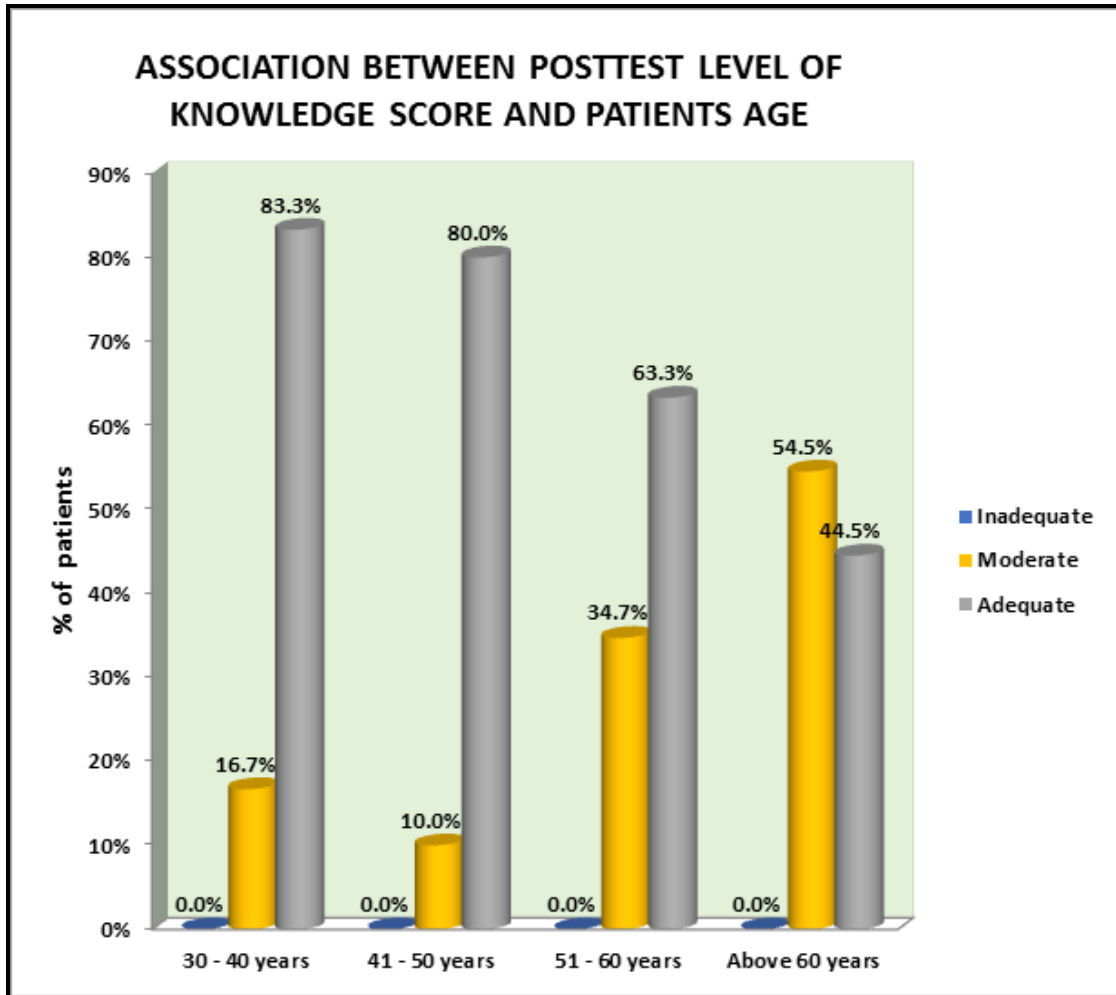
*Table 4.12: Association between the post-test level of Knowledge score and Patients Demographic variables*

Demographic variables		Post test level of knowledge score						n	Chi square test
		Inadequate		Moderate		Adequate			
		n	n %	n	n %	n	n %		
Age	30 - 40 years	0	0.0%	1	16.7%	5	83.3%	6	$\chi^2=7.91$ P=0.05*(S)
	41 - 50 years	0	0.0%	2	10.0%	18	80.0%	20	
	51 - 60 years	0	0.0%	8	34.7%	15	63.3%	23	
	Above 60 years	0	0.0%	6	54.5%	5	44.5%	11	
Gender	Male	0	0.0%	4	14.3%	24	85.7%	28	$\chi^2=5.10$ P=0.02*(S)
	Female	0	0.0%	13	40.6%	19	59.4%	32	
Educational qualification	Professionals	0	0.0%	0	0.0%	0	0.0%	0	$\chi^2=8.40$ P=0.13(NS)
	Graduate or postgraduate	0	0.0%	0	0.0%	3	100.0%	3	
	Intermediate	0	0.0%	1	33.3%	2	66.7%	3	
	High school	0	0.0%	2	28.6%	5	71.4%	7	
	Middle school	0	0.0%	6	37.5%	10	62.5%	16	
	Primary school	0	0.0%	8	42.1%	11	57.9%	19	
	Illiterate	0	0.0%	0	0.0%	12	100.0%	12	
Occupation	Legislators, senior officials & managers	0	0.0%	0	0.0%	0	0.0%	0	$\chi^2=3.81$ P=0.70(NS)
	Professionals	0	0.0%	0	0.0%	0	0.0%	0	
	Technicians and associate professionals	0	0.0%	0	0.0%	0	0.0%	0	
	Clerks	0	0.0%	1	25.0%	3	75.0%	4	
	Skilled workers, shop & market scale workers	0	0.0%	3	37.5%	5	62.5%	8	
	Skilled agricultural & fishery worker	0	0.0%	5	26.3%	14	73.7%	19	
	Craft & related trade workers	0	0.0%	1	16.7%	5	83.3%	6	
	Plant & machine operators & assemblers	0	0.0%	3	60.0%	2	40.0%	5	
	Elementary occupation	0	0.0%	3	20.0%	12	80.0%	15	
	Unemployed	0	0.0%	1	33.3%	2	66.7%	3	

Demographic variables		Post test level of knowledge score						n	Chi square test
		Inadequate		Moderate		Adequate			
		n	n %	n	n %	n	n %		
Monthly income of the family	Below Rs.5,000	0	0.0%	11	55.0%	9	45.0%	20	$\chi^2=10.70$ P=0.01**(S)
	Rs.5,001-10,000	0	0.0%	4	16.0%	21	84.0%	25	
	Rs.10,001-15,000	0	0.0%	1	10.0%	9	90.0%	10	
	Rs.15,001-20,000	0	0.0%	1	20.0%	4	80.0%	5	
	Above Rs.20,001	0	0.0%	0	0.0%	0	0.0%	0	
Type of family	Joint family~	0	0.0%	2	10.0%	18	90.0%	20	$\chi^2=4.96$ P=0.03*(S)
	Nuclear family	0	0.0%	15	37.5%	25	62.5%	40	
Marital status	Married	0	0.0%	15	26.3%	42	73.7%	57	$\chi^2=2.28$ P=0.12(NS)
	Un Married	0	0.0%	0	0.0%	0	0.0%	0	
	Widow / Widower	0	0.0%	2	66.7%	1	33.3%	3	
	Divorced	0	0.0%	0	0.0%	0	0.0%	0	
Languages known	Tamil	0	0.0%	13	27.7%	34	72.3%	47	$\chi^2=1.71$ P=0.88(NS)
	English	0	0.0%	0	0.0%	0	0.0%	0	
	Both Tamil and English	0	0.0%	4	40.0%	6	60.0%	10	
	Other language	0	0.0%	0	0.0%	3	100.0%	3	
Diet	Vegetarian	0	0.0%	3	37.5%	5	62.5%	8	$\chi^2=1.86$ P=0.39(NS)
	NonVegetarian	0	0.0%	14	26.9%	38	73.1%	52	
Life style	Sedentary	0	0.0%	10	26.3%	28	73.7%	38	$\chi^2=0.38$ P=0.53(NS)
	Moderate	0	0.0%	5	31.3%	11	68.8%	16	
	Heavy worker	0	0.0%	2	33.3%	4	66.7%	6	

NS=not significant S= Significant P> 0.05 not significant \*P≤0.05 significant.

Table 4.12 shows the association between post test level of knowledge score and Patients demographic variables. Younger Patients, male patients , more income patients and joint family patients are having more knowledge score than others. Statistical significance was calculated using chi square test.



*Figure 4.22 Cylindrical diagram shows the Association between the post test level of knowledge score and patients age*

**Table 4.13: Association between the post-test level of Knowledge score and patients Clinical variables**

Clinical variables		Post test level of knowledge score						n	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Level of Hemoglobin in grams	Below 12.5 gms/dl	0	0.0%	6	19.4%	25	80.6%	31	$\chi^2=3.01$ P=0.22(NS)
	12.6-13.5 gms/dl	0	0.0%	8	42.1%	11	57.9%	19	
	13.6-17.5 gms/dl	0	0.0%	3	30.0%	7	70.0%	10	
	Above 17.6 gms/dl	0	0.0%	0	0.0%	0	0.0%	0	
Blood pressure in mmHg	Below 110/80 mmHg	0	0.0%	3	30.0%	7	70.0%	10	$\chi^2=0.82$ P=0.84(NS)
	120/80 – 130/90 mmHg	0	0.0%	7	23.3%	23	76.7%	30	
	140/80 – 150/100 mmHg	0	0.0%	6	35.3%	11	64.7%	17	
	Above 160/110 mmHg	0	0.0%	1	33.3%	2	66.7%	3	
Body weight in kilogram	Less than 50 kgs	0	0.0%	1	14.3%	6	85.7%	7	$\chi^2=2.05$ P=0.56(NS)
	50 – 70 kgs	0	0.0%	13	34.2%	25	65.8%	38	
	71 – 90 kgs	0	0.0%	3	21.4%	11	78.6%	14	
	Above 90	0	0.0%	0	0.0%	1	100.0%	1	

Clinical variables		Post test level of knowledge score						n	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Urine output in ml/24hrs	Below 490 ml	0	0.0%	2	50.0%	2	50.0%	4	$\chi^2=2.93$ P=0.40(NS)
	500 – 1000 ml	0	0.0%	7	20.6%	27	79.4%	34	
	1100 – 1600 ml	0	0.0%	7	38.9%	11	61.1%	18	
	Above 1700 ml	0	0.0%	1	25.0%	3	75.0%	4	
Frequency of micturition	Less frequent to urinate	0	0.0%	1	14.3%	6	85.7%	7	$\chi^2=1.66$ P=0.43(NS)
	More frequent to urinate	0	0.0%	10	35.7%	18	64.3%	28	
	Urgent need to urinate	0	0.0%	6	24.0%	19	76.0%	25	
	No urge to urinate	0	0.0%	0	0.0%	0	0.0%	0	
Type of pain	No pain	0	0.0%	0	0.0%	0	0.0%	0	$\chi^2=2.35$ P=0.30(NS)
	Severe pain	0	0.0%	9	39.1%	14	60.9%	23	
	Sharp pain	0	0.0%	6	24.0%	19	76.0%	25	
	Radiating pain	0	0.0%	2	16.7%	10	83.3%	12	

NS=not significant S= Significant P> 0.05 not significant \*P≤0.05 significant.

Table 4.13 shows the association between post test level of knowledge score and Patients clinical variables. None of the variable are significant. Statistical significance was calculated using chi square test.

**Table 4.14: Association between the Knowledge gain score and Patients Demographic variables**

Demographic variables		Knowledge Gain Score						n	One way ANOVA F-test/t-test
		Pretest		Posttest		Gain score =post-pre			
		Mean	SD	Mean	SD	Mean	SD		
Age	30 - 40 years	9.83	3.06	19.50	1.97	9.67	3.08	6	F=2.87 P=0.05*(S)
	41 - 50 years	10.40	1.85	20.00	2.32	9.60	3.35	20	
	51 - 60 years	10.96	1.92	18.48	2.95	7.52	3.46	23	
	Above 60 years	10.73	2.41	17.28	1.79	6.55	2.81	11	
Gender	Male	10.43	2.22	19.38	2.39	8.95	2.90	28	t=2.04 P=0.05*(S)
	Female	10.78	2.00	18.01	2.52	7.23	3.55	32	
Educational qualification	Professionals	0.00	0.00	0.00	0.00	0.00	0.00	0	F=0.86 P=0.51(NS)
	Graduate or postgraduate	10.00	2.00	18.33	.58	8.33	2.52	3	
	Intermediate	11.33	3.21	18.00	3.61	6.67	2.08	3	
	High school	8.86	2.12	18.71	3.09	9.86	4.14	7	
	Middle school	10.31	1.89	18.56	2.25	8.25	2.18	16	
	Primary school	11.05	1.93	18.37	2.73	7.32	4.06	19	
	Illiterate	11.33	2.06	20.17	1.59	8.83	2.72	12	
Occupation	Legislators, senior officials & managers	0.00	0.00	0.00	0.00	0.00	0.00	0	$\chi^2=0.50$ P=0.80(NS)
	Professionals	0.00	0.00	0.00	0.00	0.00	0.00	0	
	Technicians and associate professionals	0.00	0.00	0.00	0.00	0.00	0.00	0	
	Clerks	10.50	3.11	19.25	3.86	8.75	3.86	4	
	Skilled workers, shop & market scale workers	10.63	2.45	18.38	3.66	7.75	5.04	8	
	Skilled agricultural & fishery worker	10.37	2.09	19.32	2.54	8.95	3.44	19	
	Craft & related trade workers	9.67	2.34	18.67	2.07	9.00	3.29	6	
	Plant & machine operators & assemblers	10.00	1.87	17.80	2.05	7.80	1.64	5	
	Elementary occupation	11.40	1.50	18.73	1.62	7.33	1.95	15	
Unemployed	11.33	2.89	18.33	2.08	7.00	4.00	3		

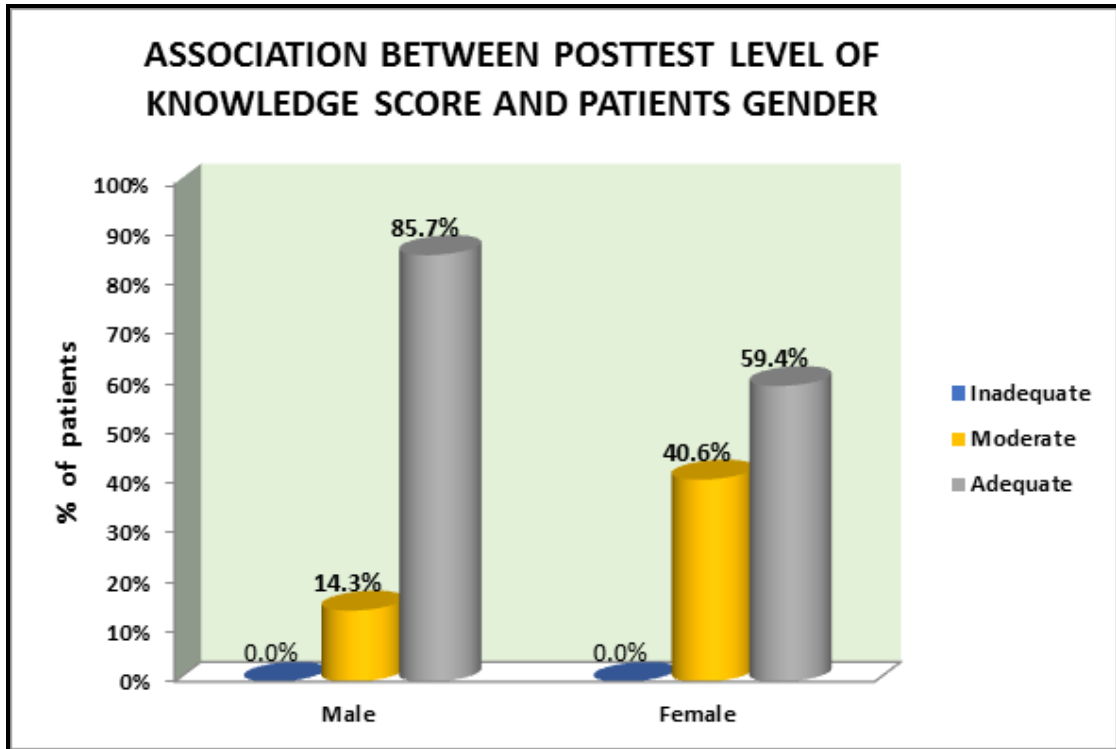
Demographic variables		Knowledge Gain Score						n	One way ANOVA F-test/t-test
		Pretest		Posttest		Gain score =post-pre			
		Mean	SD	Mean	SD	Mean	SD		
Monthly income of the family	Below Rs.5,000	10.35	2.32	16.80	2.78	6.45	4.16	20	F=5.70 P=0.01**(S)
	Rs.5,001-10,000	10.68	2.01	18.40	2.29	7.72	2.97	25	
	Rs.10,001-15,000	10.40	1.78	19.30	1.95	8.90	2.23	10	
	Rs.15,001-20,000	11.80	2.28	21.30	1.79	9.50	1.00	5	
	Above Rs.20,001	0.00	0.00	0.00	0.00	0.00	0.00	0	
Type of family	Joint family	10.70	1.42	19.68	1.85	8.98	2.47	20	t=2.05 P=0.05*(S)
	Nuclear family	10.58	2.37	17.71	2.66	7.13	3.56	40	
Marital status	Married	10.8	2.2	18.5	2.2	8.37	3.21	57	F=3.80- P=0.06(NS)
	Un Married	0.00	0.00	0.00	0.00	0.00	0.00	0	
	Widow / Widower	11.33	1.53	16.00	.00	4.67	1.53	3	
	Divorced	0.00	0.00	0.00	0.00	0.00	0.00	0	
Languages known	Tamil	10.26	2.02	18.87	2.40	8.62	3.22	47	F=2.01 P=0.14(NS)
	English	0.00	0.00	0.00	0.00	0.00	0.00	0	
	Both Tamil and English	11.90	2.02	18.50	3.06	6.60	3.27	10	
	Other language	12.00	1.73	18.67	.58	6.67	1.53	3	
Diet	Vegetarian	9.13	1.73	18.13	2.53	9.00	2.83	8	t=0.58 P=0.44(NS)
	Nonvegetarian	10.85	2.06	18.90	2.44	8.06	3.30	52	
Life style	Sedentary	10.39	2.16	19.13	2.23	8.74	2.97	38	F=1.54 P=0.22(NS)
	Moderate	10.75	2.08	17.94	2.24	7.19	2.83	16	
	Heavy worker	11.67	1.51	19.00	3.90	7.33	5.28	6	

NS=not significant S= Significant  $P > 0.05$  not significant  $*P \leq 0.05$  significant

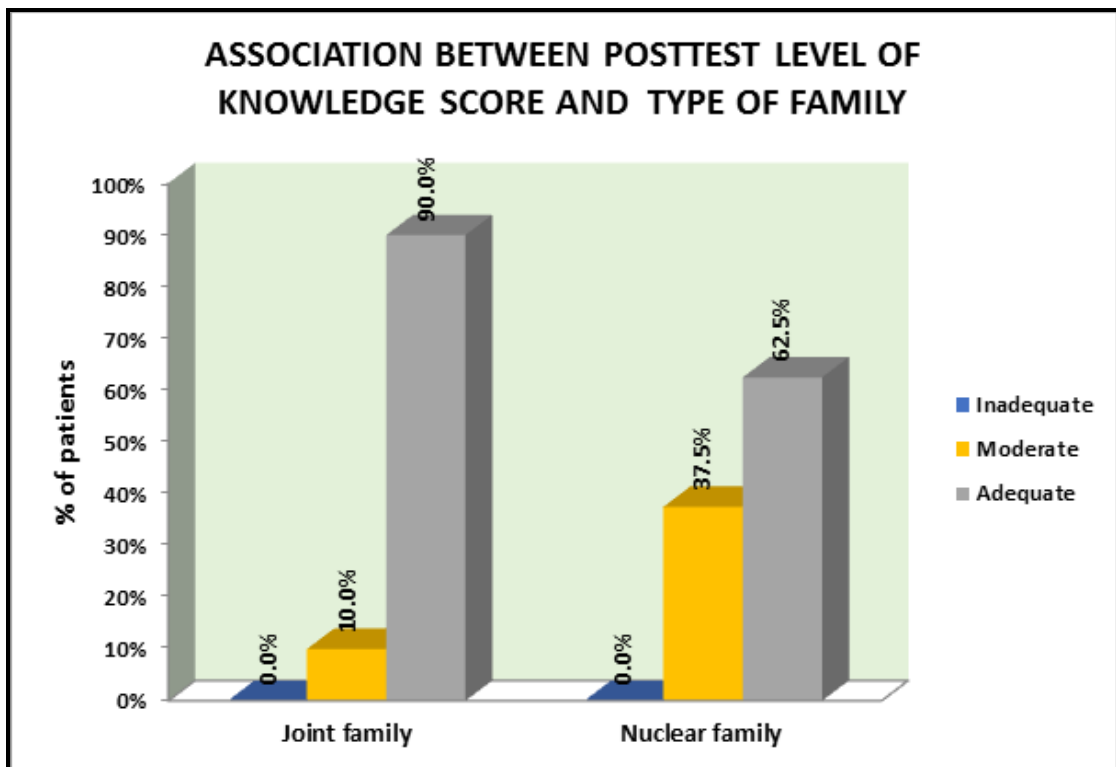
Table 4.14 shows that Younger Patients, male patients , more income patients and joint family patients are having more knowledge score than others.

Statistical significance was calculated using One way ANOVA F-test/t-test.

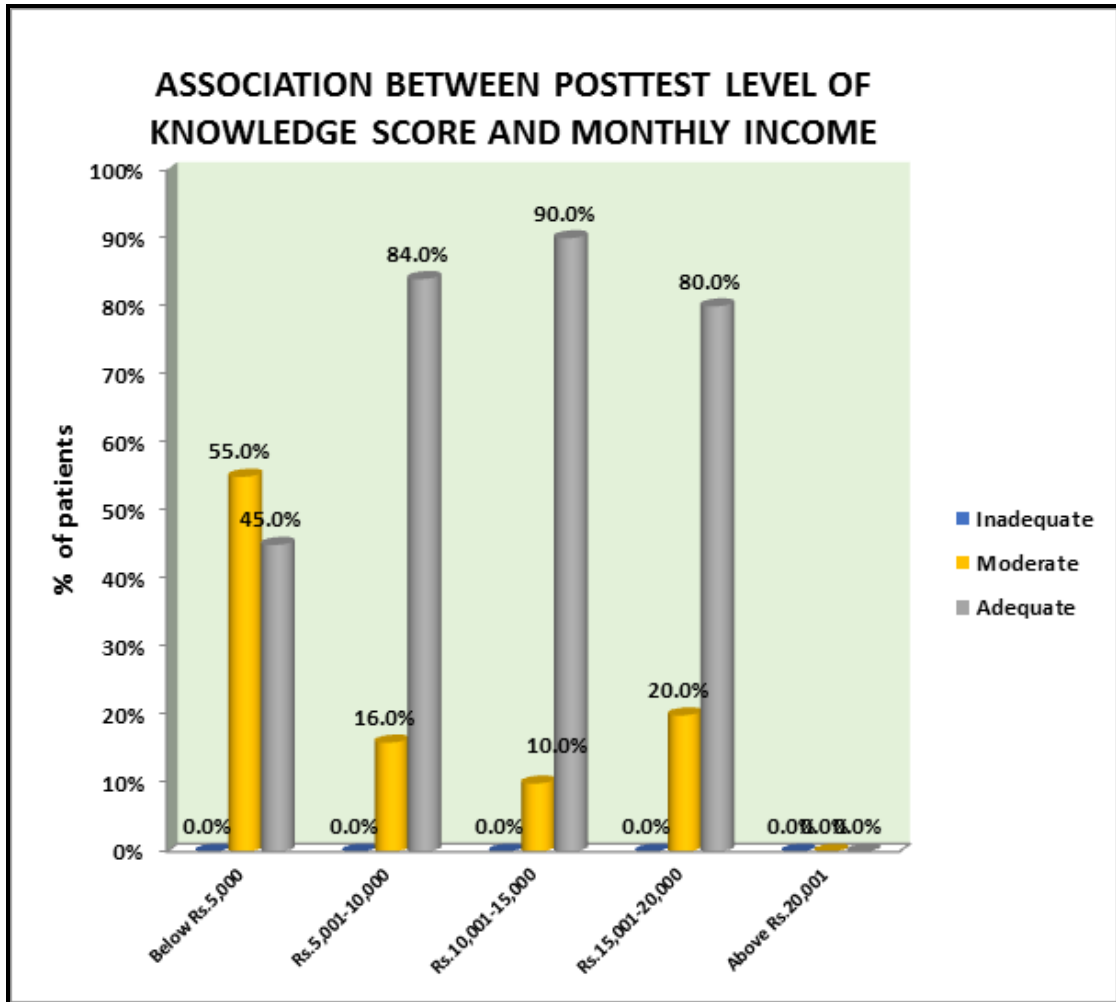




*Figure 4.23 Cylindrical diagram shows the Association between post test level of knowledge and patients’s gender.*



*Figure 4.24 Multiple bar diagram shows the Association between post test level of knowledge and patients’s type of family.*



*Figure 4.25 Cylindrical diagram shows the Association between post test level of knowledge and patients's monthly income.*

**Table-4.15: Association between the Knowledge gain score and patients Clinical variables**

Clinical variables		knowledge gain score						n	Oneway ANOVA F-test/t-test
		Inadequate		Moderate		Adequate			
		N	%	N	%	n	%		
Level of Hemoglobin in grams	Below 12.5 gms/dl	10.74	1.73	19.32	2.52	8.58	3.16	31	$\chi^2=0.79$ P=0.46(NS)
	12.6-13.5 gms/dl	10.26	2.33	18.37	2.43	8.11	3.30	19	
	13.6-17.5 gms/dl	10.90	2.73	18.00	2.00	7.10	3.45	10	
	Above 17.6 gms/dl	0.00	0.00	0.00	0.00	0.00	0.00	0	
Blood pressure in mmHg	Below 110/80 mmHg	10.60	1.90	18.40	2.91	7.80	3.55	10	$\chi^2=0.76$ P=0.52(NS)
	120/80 – 130/90 mmHg	10.70	2.04	19.23	2.42	8.53	3.09	30	
	140/80 – 150/100 mmHg	10.24	2.39	18.47	2.12	8.24	3.11	17	
	Above 160/110 mmHg	12.00	1.73	17.67	3.21	5.67	4.93	3	
Body weight in kilogram	Less than 50 kgs	10.86	2.67	19.71	1.80	8.86	2.91	7	$\chi^2=1.30$ P=0.28(NS)
	50 – 70 kgs	10.79	2.07	18.42	2.60	7.63	3.39	38	
	71 – 90 kgs	10.07	1.98	19.14	2.14	9.07	2.81	14	
	Above 90	10.00	.	22.00	.	12.00	.	1	

Clinical variables		knowledge gain score						n	Oneway ANOVA F-test/t-test
		Inadequate		Moderate		Adequate			
		N	%	N	%	n	%		
Urine output in ml/24hrs	Below 490 ml	10.75	1.26	17.75	2.50	7.00	2.16	4	$\chi^2=0.72$ P=0.54(NS)
	500 – 1000 ml	10.59	2.06	19.29	2.52	8.71	3.46	34	
	1100 – 1600 ml	10.56	2.41	18.22	2.37	7.67	3.12	18	
	Above 1700 ml	11.00	2.16	18.25	1.71	7.25	2.63	4	
Frequency of micturition	Less frequent to urinate	10.86	2.91	20.00	1.83	9.14	3.39	7	$\chi^2=2.28$ P=0.11(NS)
	More frequent to urinate	11.07	1.94	18.32	2.67	7.25	3.28	28	
	Urgent need to urinate	10.04	1.95	19.00	2.25	8.96	2.98	25	
	No urge to urinate	0.00	0.00	0.00	0.00	0.00	0.00	0	
Type of pain	No pain	0.00	0.00	0.00	0.00	0.00	0.00	0	$\chi^2=0.05$ P=0.95(NS)
	Severe pain	9.91	2.19	18.04	2.51	8.13	3.55	23	
	Sharp pain	10.72	1.95	19.04	2.32	8.32	3.13	25	
	Radiating pain	11.75	1.76	19.75	2.30	8.00	3.10	12	

NS=not significant S= Significant P> 0.05 not significant \*P≤0.05 significant

Table no 14 shows the association between knowledge gain score and Patients clinical variables. None of the variable are significant.

Statistical significance was calculated using One-way ANOVA F-test/t-test.

## **CHAPTER-V DISCUSSION**

This chapter deals with the discussion of the results of the data analysed based on the objectives of the study hypothesis of the study. The purpose of the study was designed to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward at Rajiv Gandhi Government General Hospital, Chennai-03. The selected patients of the study was 60.

The patients were interviewed and educated using planned teaching module. Two to four participants were selected every day. Pre test was conducted and the planned teaching programme was implemented on the same day for 45 minutes using power point presentation and information pamphlets. Post test was conducted by the researcher after seven days of interval regarding prevention of renal calculi.

### **5.1. MAJOR FINDINGS OF THE STUDY**

#### **5.1.1. FINDINGS BASED ON SOCIO DEMOGRAPHIC VARIABLES**

- ❖ Maximum 38.33% of the patients belong to age group of 51-60 years.
- ❖ 53% of patients were female.
- ❖ 31.66% of patients were primary school.
- ❖ 31.67% of patients were skilled agricultural workers.
- ❖ 41.67% of patients have monthly income about (5000-10,000).
- ❖ 77% of patients were joint family.

- ❖ 95% of patients were married.
- ❖ 78.33% of patients known language is Tamil.
- ❖ 86.67% of patients taking non vegetarian diet.
- ❖ 63.33% of patients are sedentary workers.

### 5.1.2. FINDINGS BASED ON OBJECTIVES

***Objective-1: To assess the pre-test level of knowledge regarding the prevention of renal calculi.***

During pre-test score of knowledge regarding prevention of renal calculi among patients admitted in medical ward. They are having maximum score in the domain Knowledge on Introduction (58.50%). they are having minimum score in the domain (Causes) (39.03%) Overall percentage of knowledge score is (42.48%)

Pre-test level of knowledge score regarding prevention of renal calculi among patients admitted in medical ward before administration of planned teaching programme should that 80.0% of the Patients are having inadequate level of knowledge score, 20,0% of the Patients are having moderate knowledge score and none of the Patients are having adequate level of knowledge score.

The results of the present study finding was also similar to the study conducted by **J.farm et al. (2017)** which aim to assess the knowledge and practice regarding renal calculi among patients and reported that majority (43.33%) of patients had low knowledge scores about the disorder and (33.33%) were having moderate knowledge. **Singh. S et al. (2018)** carried out a descriptive approach to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi. The study revealed that the pre-test knowledge mean score value was 5.65. **S Shambhavi, et al. (2014)** conducted a descriptive survey approach, to assess the knowledge of

renal calculi among patients admitted in urology ward at Madurai. The results revealed that,80% had poor knowledge, and 3% has good knowledge regarding renal calculi.

In general, it was observed that the patients are having inadequate knowledge regarding prevention of renal calculi, which suggests that there is a need for special attention on imparting knowledge on prevention of renal calculi to the patients.

***Objective -2: To assess the post-test level of knowledge regarding prevention of renal calculi.***

During post-test score of knowledge regarding prevention of the renal calculi among patients admitted in medical ward. They are having maximum score in the domain Knowledge on Marriage (80.83%) They are having minimum score in the domain Preventive measures (70.67%) Overall percentage of knowledge score is 75.85%

Post-test level of knowledge score regarding prevention of renal calculi among patients admitted in medical ward after administration of planned teaching programme. In general, none of the Patients are having inadequate level of knowledge score, 28,3% of the Patients are having moderate knowledge score and 71.7%of the Patients are having Adequate level of knowledge score.

The above findings were supported by study conducted to assess the effectiveness of planned teaching on knowledge regarding prevention of renal calculi among the general populations at Maharashtra by **Singh.S, et al.(2018)** the study findings reported that 73% had adequate knowledge and 17 % patients had inadequate knowledge. **Kevin kim et al, .(2017)** carried out a prospective, cross sectional study on compliance of the recurrent renal stone former with current practice guidelines. The study finding reveals that 70% of the

respondents were aware of the current guidelines and only 43% applied their knowledge in clinical practice.

The study findings suggest that planned teaching programme is found effective in improving knowledge of the patients. It is also evident that planned teaching programme is effective in empowering patients with adequate knowledge and helps them in prevention of renal calculi.

***Objective 3: To compare the pre-test and post test knowledge regarding prevention of renal calculi. planned teaching programme.***

***Domain wise comparison of pre and post test knowledge score of the present study is as follows:***

**Introduction** domain score, in pretest *Patients are* having 1.17 score and in posttest they are having 1.72 score, so the difference is 0.5. This difference is large and statistically significant difference.

**Causes** domain score, in pretest *Patients are* having 1.95 score and in posttest they are having 4.03 score, so the difference is 2.08. This difference is large and statistically significant difference.

**Risk factors** domain score, in pretest *Patients are* having 1.10 score and in posttest they are having 2.17 score, so the difference is 1.07. This difference is large and statistically significant difference.

**Signs and symptoms** domain score, in pretest *Patients are* having 0.53 score and in posttest they are having 0.73 score, so the difference is 0.20. This difference is large and statistically significant difference.

**Prevention** domain score, in pretest *Patients are* having 3.35 score and in posttest they are having 5.77 score, so the difference is 2.42. This difference is large and statistically significant difference.



**Management** domain score, in pretest *Patients are* having 2.52 score and in posttest they are having 4.38 score, so the difference is 8.18. This difference is large and statistically significant difference

**Overall knowledge score**, in pretest *Patients are* having 10.62 score and in posttest they are having 18.80 score, so the difference is 8.18. This difference is large and statistically significant difference. Statistical significance was calculated by using student's paired 't' test.

Pre-test Planned Teaching Programme, 80.0% of the Patients are having inadequate level of knowledge score, 20.0% of the Patients are having moderate knowledge score and none of the Patients are having Adequate level of knowledge score.

Post-test Planned Teaching Programme, none of the Patients are having inadequate level of knowledge score, 28.3% of the Patients are having moderate knowledge score and 71.7% of the Patients are having Adequate level of knowledge score.

**Shambhavi et al. (2014)** conducted a descriptive survey approach, to assess the knowledge of renal calculi among patients admitted in urology ward at Madurai. The result revealed, post test score (85.7%) is higher than pre test score (51.8%) the researcher proved that planned teaching programme is effective to improve knowledge of the patients. **J.farm et al. (2017)** in which the aim to assess the knowledge and practice regarding renal calculi among patients and reported that post test score (19.5) of patients is higher than the pretest score.. **Singh. S et al. (2018)** carried out a descriptive evaluator approach on study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi. the study reveals that there is a significant difference between pre and post test knowledge score among patients.

It is believed that planned teaching programme was effective method of improving the knowledge of patients regarding prevention of renal calculi.

Effectiveness of planned teaching programme in **Introduction** patients gained **86.00%**, **causes** patients gained **80.60%**, **risk factors** patients gained **72.33%**, **signs and symptoms** patients gained **73.00%**, **prevention** patients gained **72.13%**, **management** patients gained **73.00%** after intervention. This shows effectiveness of planned teaching programme.

The analysis revealed that there was significant difference between level of knowledge who received planned teaching programme. Hence accepting the hypothesis **H<sub>1</sub>** stated that there is significant difference between the mean pre test and post test knowledge regarding prevention of renal calculi among patients admitted in medical ward who received the planned teaching programme.

***Objective 4: To find out the association between the post-test level of knowledge regarding the prevention of renal calculi with their selected demographic variables.***

Post-test level of knowledge score of the present study is associated with demographic variables such as age, gender, high income and joint family. Statistical significance was calculated using chi square test.

**H<sub>2</sub>** There is a significant association between the post-test knowledge score and their selected demographic variables.

During post-test score of knowledge regarding prevention of the renal calculi among patients admitted in medical ward. They are having maximum score in the domain Knowledge on Marriage (80.83%) They are having minimum score in the domain Preventive measures (70.67%) Overall percentage of knowledge score is 75.85%.

The study findings were showed that there is significant association between age, gender, monthly family income, joint family. **Ayush lohiy A. et al. (2019)** carried out a cross sectional study on population-based estimate of urinary stones from ballabgarh, northern India. The study concluded that majority of the patients were in the age group of 20 to 40 years. Thus, the study concludes that high burden of urinary stones is common in working age population in northern India at the community level.

The analysis revealed that there was significant association between the knowledge regarding prevention of renal calculi among patients with demographic variables. Hence  $H_2$  was accepted.

The present study results highlighted the effectiveness of planned teaching programme on prevention of renal calculi among medical ward patients. It is also evident that planned teaching programme is effective in empowering patients with adequate knowledge and helping them in prevention of renal calculi.

## **CHAPTER – VI SUMMARY, IMPLICATIONS, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION**

### **6.1 SUMMARY OF THE STUDY**

The study was done to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in Medical ward, Rajiv Gandhi Government General Hospital, Chennai-03.

The conceptual frame work of the study was based on the King goal attainment theory (2011). A pre experimental one group pre-test - one group post-test design was used. The independent variable was planned teaching programme, dependent variable was the knowledge of prevention of renal calculi among patients admitted in medical ward.

The study period was 4 weeks from 2.02.2019 to 4.03.2019. Totally 60 patients were selected using Convenient sampling. The data was collected using a semi structured questionnaire and planned teaching programme power point presentation and pamphlet given. The reliability of the tool was test retest method, of the data analysis and interpretation were done by using descriptive and inferential statistics.

### **6.2 MAJOR FINDINGS OF THE STUDY**

#### ***6.2.1. Based on demographic findings***

- ❖ Maximum 38.33% of the patients belong to age group of 51-60 years.
- ❖ 53% of patients were female.
- ❖ 31.66% of patients were primary school.
- ❖ 31.67% of patients were skilled agricultural workers.
- ❖ 41.67% of patients have monthly income about (5000-10,000).

- ❖ 77% of patients were joint family.
- ❖ 95% of patients were married.
- ❖ 78.33% of patients known language is Tamil.
- ❖ 86.67% of patients taking non vegetarian diet.
- ❖ 63.33% of patients are sedentary workers

### ***6.2.2 Findings Based on pre-test knowledge patients regarding prevention of renal calculi***

**In pre-test:** They are having maximum knowledge score in **introduction 58%** and **causes 39.03%** and overall percentage of knowledge score is 42.48%. 80% of the patients having inadequate level of knowledge score 20.0% of the patients are having moderate knowledge score and none of the patients are having adequate knowledge score.

### ***6.2.3 Findings based on post-test knowledge patients regarding prevention of renal calculi***

**In post test:** They are having maximum score in **introduction, causes 86%** and minimum score in the **management 73%**. overall percentage of knowledge score is 75.85%. none of the patients are having inadequate level of knowledge score, 28.3% of the patients are having moderate knowledge score and 71.7% of the patients are having adequate level of knowledge score.

### ***6.2.4 Findings based on comparison of pre-test and post-test mean knowledge score***

#### ***Knowledge regarding***

**Introduction:** In pretest patients are having 1.17 score and in post test they are having 1.72 score, so the difference is 0.56. This difference is large and statistically significant difference.

**Causes:** In pretest patients are having 1.95 score and in post test they are having 4.03 score, so the difference is 2.08. This difference is large and statistically significant difference.

**Risk factors:** In pretest patients are having 1.10 score and in post test they are having 2.17 score, so the difference is 1.07. This difference is large and statistically significant difference.

**Signs and symptoms:** In pretest patients are having 0.53 score and in post test they are having 0.73 score, so the difference is 0.2. This difference is large and statistically significant difference.

**Prevention:** In pretest patients are having 3.35 score and in post test they are having 5.77 score, so the difference is 2.42. This difference is large and statistically significant difference.

**Management:** In pre test patients are having 2.52 score and in post test they are having 4.38 score, so the difference is 1.86. This difference is large and statistically significant difference.

**Total:** In the patients are having 10.62 score and in post test they are having 18.80 score, so the difference is 6.24. This difference is large and statistically significant difference.

**Significance of difference between pretest and post test score was caclulated by using patients paried t test**

#### ***6.2.5 Findings based on association between posttest knowledge with selected demographic variables.***

The association between demographic variables and post test level of knowledge gain score. Age 30 to 40 years (16.7), Gender male (14.3), Monthly income of the family below 5000(6.45), joint family (8.98). statistical significance was calculated using chi square test.

## **SIGNIFICANT FINDINGS**

- 1) There was an inadequate (poor) overall mean knowledge score on prevention of renal calculi medical ward patients before the intervention.
- 2) There was a significant difference between the overall knowledge score regarding prevention of renal calculi medical ward patients after intervention.
- 3) There was an association between the selected demographic variables (Age, gender, monthly family income, nuclear family) and knowledge on prevention of renal calculi among patients admitted in medical ward with after intervention.

### **6.3. IMPLICATIONS**

The findings of present may be helpful for such future studies. In this context the findings of the study have valuable implication in difference areas of nursing practice, nursing administration, nursing education and nursing research.

#### **6.3.1. NURSING EDUCATION**

- ❖ The nurse educator can use the planned teaching module to teach the patients about prevention of renal calculi
- ❖ In service educational training programmes about prevention of renal calculi should be developed and provided for all nurses in medical ward.
- ❖ The nurses should be made aware of their responsibility in the prevention of renal calculi.

### **6.3.2 NURSING PRACTICE**

- ❖ This study is conducted among patients to assess the level of knowledge regarding prevention of renal calculi. The study findings can be utilize to educate the patients regarding prevention of recurrence of renal calculi.
- ❖ Ongoing Inservice education programme should be designed and implemented at medical wards to improve nurse's knowledge and practices on the basis of nurse's preventive aspects.
- ❖ A standardized clinical nursing protocol and guidelines about prevention of renal calculi could be made available in each medical ward.

### **6.3.3 NURSING ADMINISTRATION**

- ❖ Nursing administrator should provide necessary facilities and opportunities for staff nurses in empowering the patients.
- ❖ Provide adequate medical and nursing supervision, guidance and regular feedback to nurses concerning their knowledge, attitude and practice.
- ❖ Library and internet access for all medical and nursing staff should be established at hospitals settings and should contain the most recent publications related to prevention of renal calculi.
- ❖ Advanced booklets and electronic media regarding clinical protocols for prevention of renal calculi.



#### **6.3.4 NURSING RESEARCH**

- ❖ The findings can be utilized as evidence-based practice in clinical practice beneficial for staff nurses.
- ❖ A large-scale study can be done for replication to standardize the planned teaching module on prevention of renal calculi.
- ❖ There is growing need for furnishing nursing research in all the areas of prevention. The nurse researcher especially needs to enhance their quest for knowledge.

#### **6.4 RECOMMENDATIONS**

On the basis of the findings of the study, it is recommended that

- 1) A similar study can be replicated on larger sample with a control group.
- 2) A similar study can be replicated for patients with specific type of renal calculi
- 3) A comparative study can be conducted to identify the differences in knowledge and practice of behaviour among patients with renal calculi in the rural and urban settings.

#### **6.5 LIMITATIONS OF THE STUDY**

This study is limited to patients admitted in medical ward Rajiv Gandhi Government General Hospital, Chennai.

- 1) The study is limited up 4 weeks of period
- 2) Medical ward patients who are all comes under the inclusion criteria.

## **6.6 CONCLUSION**

Nurses must have holistic knowledge regarding prevention of renal calculi. Nurses play a vital role of prevention aspects. The present study had been supported by a series of other studies which confirmed that the knowledge on prevention of renal calculi. Data analysis and result was found that planned teaching programme on prevention of renal calculi was an effective method for providing adequate knowledge to the patient.

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## **CERTIFICATE OF PLAGIARISM**

This is to certify that the dissertation work titled, “**A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03**” of the candidate **Mr.THIRUPATHI.C** for the partial fulfillment of M.Sc. Nursing Programme in the branch of MEDICAL SURGICAL NURSING has been verified for plagiarism through relevant plagiarism checker. We found that the uploaded thesis file from introduction to conclusion pages and rewrite shows \_\_\_\_\_% of Plagiarism (\_\_\_\_\_% uniqueness) in this dissertation.

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## SECTION-A

### DEMOGRAPHIC VARIABLES

#### **PURPOSE**

The purpose of this questionnaire is to find out the personal history of the patients

#### **Instruction**

- Kindly select your responses to the below asked questions
- Tick the correct answer
- Your answer will be kept confidential

1. Age

- a) 30 - 40 years
- b) 41 - 50 years
- c) 51 - 60 years
- d) Above 61 years

2. Gender

- a) Male
- b) Female

3. Educational qualification

- a) Professionals
- b) Graduate or postgraduate
- c) Intermediate or post-high school diploma
- d) High school certificate
- e) Middle school certificate
- f) Primary school certificate
- g) Illiterate

4. Occupation

- a) Legislators, senior officials & managers
- b) Professionals
- c) Technicians and associate professionals.
- d) Clerks
- e) Skilled workers, shop & market scale workers
- f) Skilled agricultural & fishery worker
- g) Craft & related trade workers
- h) Plant & machine operators & assemblers
- i) Elementary occupation
- j) Unemployed

5. Monthly income of the family
  - a) Below 5,000
  - b) 5,001-10,000
  - c) 10,001-15,000
  - d) 15,001-20,000
  - e) Above 20,001
6. Type of family
  - a) Joint family
  - b) Nuclear family
7. Marital status
  - a) Married
  - b) Unmarried
  - c) Widow / Widower
  - d) Divorced
8. Languages known
  - a) Tamil
  - b) English
  - c) Both Tamil and English
  - d) Other language.
9. Diet
  - a) Vegetarian
  - b) Non-vegetarian
10. Area of residency
  - a) Rural
  - b) Urban

## **SECTION-B CLINICAL VARIABLES**

1. Level of Hemoglobin in grams
  - a) Below 12.5 gms/dl
  - b) 12.6-13.5 gms/dl
  - c) 13.6-17.5 gms/dl
  - d) Above 17.6 gms/dl
2. Blood pressure in mmHg
  - a) Below 110/80 mmHg
  - b) 120/80 – 130/90 mmHg
  - c) 140/80 – 150/100 mmHg
  - d) Above 160/110 mmHg
3. Body weight in kilogram
  - a) Less than 49 kgs
  - b) 50 – 70 kgs
  - c) 71 – 90 kgs
  - d) Above 91
4. Urine output in ml/24hrs
  - a) Below 490 ml
  - b) 500 – 1000 ml
  - c) 1100 – 1600 ml
  - d) Above 1700 ml
5. Frequency of micturition
  - a) Less frequent to urinate
  - b) More frequent to urinate
  - c) Urgent need to urinate
  - d) No urge to urinate
6. Type of pain
  - a) No pain
  - b) Severe pain
  - c) Sharp pain
  - d) Radiating pain

## SECTION-C

### SEMI STRUCTURED KNOWLEDGE QUESTIONNAIRE

#### Purpose

The purpose of this questionnaire is find out the effectiveness of structured teaching programme on prevention of renal calculi.

#### Instructions

1. kindly select your responses to below asked questions
2. Tick the correct answer
3. Your answer will be kept confidential

1. The organ which is responsible for the formation and elimination of urine

- a) Lung
- b) Kidney
- c) Liver
- d) Don't know

2. The main function of the kidney

- a) Digestion of the food
- b) Stores waste products
- c) Remove the waste products from the body
- d) Don't know

3. The substance that form the renal calculi

- a) Vitamins
- b) Minerals
- c) Blood clot
- d) Don't know

4. Hot climate that contribute to formation of calculi

- a) Due to increase absorption of solutes during high temperature
- b) Due to excessive sweating leading to thick blood concentration
- c) Due to loss of appetite during hot season
- d) Don't know

5. Liquid foods that leads to the formation of renal calculi

- a) Coconut water
- b) Weak tea
- c) Pepsi
- d) Don't know

6. The people who are more prone to form renal calculi
- a) People with sedentary life style
  - b) Peoples who work in the direct sun almost everyday
  - c) People who work in factory
  - d) Don't know

7. During vitamin A deficiency the development of renal calculi
- a) By causing the smoothness of urinary pathway wall
  - b) By causing the roughness of the urinary pathway wall
  - c) By causing absorption of minerals from the contents of urinary pathway
  - d) Don't know

8. The disease that predispose to the formation of renal calculi
- a) Hypertension
  - b) Hepatitis
  - c) Hyperparathyroidism
  - d) Don't know

9. Infection of urinary tract leads to
- a) Obstruction of the urinary pathway
  - b) Erosion of urinary wall
  - c) Excessive secretion of urine
  - d) Don't know

10. The problem that occur if you consume foods rich in sugar
- a) Decrease the production of urine
  - b) Increase the concentration of urine
  - c) Obstruct the flow of urine
  - d) Don't know

11. The warning sign of renal calculi
- a) Sudden, sharp, severe pain in flank
  - b) Gradual, mild pain in abdomen
  - c) Severe, fluctuating pain pelvic pain
  - d) Don't know

12. The measure to be taken when you suspect calculi in the urinary pathway
- a) Take self medication
  - b) Rely on friends / relatives
  - c) Seek medical care
  - d) Don't know

13. The amount of water should be taken daily by the patient with renal calculi approximately
- a) 1000 – 2000 ml
  - b) 2001 – 3000 ml
  - c) 3001 – 4000 ml
  - d) Don't know
14. The indication for the surgery in case of renal calculi
- a) Presence of blood in the urine
  - b) Presence of pus in urine
  - c) Presence of large stone in the urinary pathway
  - d) Don't know
15. The measure to be taken to prevent renal calculi formation for the patients who are bed ridden
- a) Reducing food intake
  - b) Reducing fluid intake
  - c) Changed position frequently
  - (d) Don't know
16. The method to prevent recurrence of renal calculi
- a) Drinking little water
  - b) Drinking liberal water
  - c) Eating little food
  - d) Don't know
17. The food items that helps in the excretion of renal calculi
- a) Black pepper
  - b) ponnagani
  - c) Jaggery
  - d) Don't know
18. The need to avoid drinking alcohol for person with renal calculi
- a) Alcohol causes excessive excretion of urine
  - b) Alcohol decreases the excretion of minerals
  - c) Alcohol may deposit minerals in urinary pathway
  - d) Don't know
19. If you are a renal calculi patient you are in need to avoid animal protein
- a) Accumulation of minerals in the urinary pathway
  - b) Increase production of urine
  - c) Causes stagnation of urine
  - d) Don't know



20. The need to drink excess amount of water when you consume excess green leaf vegetables
- a) Water helps in digestion
  - b) Water helps in absorption of minerals
  - c) Water helps in the excretion of excess minerals
  - d) Don't know
21. Minerals that is rich in green leaf vegetables
- a) Calcium
  - b) Phosphate
  - c) Uric acid
  - d) Don't know
22. The vegetable to be restricted in case of renal calculi
- a) Potato
  - b) Tomato
  - c) Cabbage
  - d) don't know
23. The food item that is rich in uric acid
- a) Fish
  - b) Oats
  - c) Brinjal
  - d) Don't know
24. The food item that is rich in cystine
- a) Fish
  - b) Meat
  - c) Egg
  - d) Don't know
25. The food item that control struvite stone
- a) Pineapple juice
  - b) Apple juice
  - c) Orange uice
  - d) Don't know

## ANSWER KEYS

1. (b)	2. (c)	3. (b)	4. (b)	5. (c)
6. (b)	7. (c)	8. (c)	9. (c)	10. (a)
11.(a)	12. (c)	13. (c)	14. (c)	15. (c)
16.(b)	17.(b)	18. (c)	19. (a)	20. (c)
21. (a)	22.(b)	23. (a)	24. (b)	25. (c)

### **ARBITRARY CLASSIFICATION**

Total score	-	25
Good	-	20 - 25
Average	-	13 - 19
Poor	-	0 - 12

## பகுதி-அ

### சுயசமூக குறிப்பு

#### 1.வயது

- அ) 30-40 வருடங்கள்
- ஆ) 41-50 வருடங்கள்
- இ) 51-60 வருடங்கள்
- ஈ) 60 வருடங்களுக்கு மேல்

#### 2. நோயாளியின் பாலினம்

- அ) ஆண்
- ஆ) பெண்

#### 3.கல்வி தகுதி

- அ) தொழில் சார்ந்த படிப்பு
- ஆ) பட்டதாரி
- இ) பட்டய படிப்பு
- ஈ) மேல் நிலை கல்வி
- உ) நடு நிலை கல்வி
- ஊ) ஆரம்ப கல்வி
- எ) படிப்பறிவின்மை

#### 4.தொழில்

- அ) உயர் அதிகாரி, மேலாளர்
- ஆ) தொழில் செய்பவர்
- இ) தொழில்நுட்பவியலாளர்
- ஈ) எழுத்தர்,
- உ) கடை மற்றும் சந்தை விற்பனைதொழிலாளர்
- ஊ) விவசாயம் மற்றும் மீன் பிடி தொழில் செய்பவர்
- எ) கைவினை மற்றும் வர்த்தக தொழிலாளர்
- ஏ) இயந்திர ஆபரேட்டர்கள்
- ஐ) அடிப்படை தொழிலாளர்கள்
- ஓ) வேலையில்லாதவர்கள்

#### 5.மாத வருமானம்(ரூபாயில்)

- அ) 5,000க்கு கீழ்
- ஆ) 5000-10,000
- இ) 10,001-15,000
- ஈ) 15,001-20,000
- உ) 20,000 க்கு மேல்

#### 6.குடும்ப வகை

- அ) தனி குடும்பம்
- ஆ) கூட்டு குடும்பம்
- இ) விரிவுபட்ட குடும்பம்

#### 7.திருமண நிலை

- அ) திருமணமானவர்
- ஆ) திருமணமாகாதவர்
- இ) தனித்து வாழ்பவர்
- ஈ) விதவியர்

**8) அறிந்த மொழி**

- அ) தமிழ்
- ஆ) ஆங்கிலம்
- இ) இரண்டும்
- ஈ) வேற்று மொழி அறிந்தவர்

**9. உணவு முறைகள்**

- அ) சைவம்
- ஆ) அசைவம்

**10. குடியிருப்பு**

- அ) கிராமம்
- ஆ) நகரம்

**SECTION-B**  
**CLINICAL VARIABLES**

1. Level of Hemoglobin in grams
  - a) Below 12.5 gms/dl
  - b) 12.6-13.5 gms/dl
  - c) 13.6-17.5 gms/dl
  - d) Above 17.6 gms/dl
2. Blood pressure in mmHg
  - a) Below 110/80 mmHg
  - b) 120/80 – 130/90 mmHg
  - c) 140/80 – 150/100 mmHg
  - d) Above 160/110 mmHg
3. Body weight in kilogram
  - a) Less than 49 kgs
  - b) 50 – 70 kgs
  - c) 71 – 90 kgs
  - d) Above 91
4. Urine output in ml/24hrs
  - a) Below 490 ml
  - b) 500 – 1000 ml
  - c) 1100 – 1600 ml
  - d) Above 1700 ml
5. Frequency of micturition
  - a) Less frequent to urinate
  - b) More frequent to urinate
  - c) Urgent need to urinate
  - d) No urge to urinate
6. Type of pain
  - a) No pain
  - b) Severe pain
  - c) Sharp pain
  - d) Radiating pain

செவிலியர் கல்லூரி

சென்னை மருத்துவக் கல்லூரி, சென்னை-3

பகுதி - இ

- ✓ கீழே கொடுக்கப்பட்டுள்ள கேள்விகளுக்கான பதிலை தேர்ந்தெடுக்கவும்
- ✓ சரியான பதிலை குறியிடவும்
- ✓ உங்களின் பதில்கள் இரகசியம் காக்கப்படும்

மாதிரி எண்:

1. சிறுநீர் உற்பத்தி மற்றும் வெளியேற்றம் செய்யும் உறுப்பு  
அ) நுரையீரல்  
ஆ) சிறுநீரகம்  
இ) கல்லீரல்  
ஈ) தெரியவில்லை
2. சிறுநீரகத்தின் மிக முக்கிய பணி  
அ) உணவை செறித்தல்  
ஆ) கழிவுகளை சேகரித்தல்  
இ) கழிவுகளை உடலில் இருந்து வெளியேற்றுதல்  
ஈ) தெரியவில்லை
3. சிறுநீரக கல்லை உருவாக்கும் பொருள்  
அ) வைட்டமின்கள்  
ஆ) தாது உப்புக்கள்  
இ) இரத்தக் கட்டிகள்  
ஈ) தெரியவில்லை
4. வெயில் காலங்களில் சிறுநீரக கல் உருவாக காரணம்  
அ) அதிக வெப்பநிலையில் கரை பொருள் அதிகமாக உரிஞ்சப்படுகிறது  
ஆ) அதிகமாக வியத்தலினால் இரத்தத்தின் செறிவு அடர்த்தி அதிகமாகிறது  
இ) வெயிற்காலங்களில் பசியின்மை இல்லாமை  
ஈ) தெரியவில்லை
5. சிறுநீரக கல் உருவாவதற்கு வழிவகுக்கும் காரணிகள்  
அ) இளநீர்  
ஆ) டீ  
இ) பெப்சி/குளிர்பானங்கள்  
ஈ) தெரியவில்லை
6. சிறுநீரக கல் உருவாக அதிக வாய்ப்பு உள்ளவர்கள்  
அ) எளிதாக வேலை செய்பவர்கள்  
ஆ) எப்போதும் வெயிலில் வேலை செய்பவர்கள்  
இ) தொழிற்சாலைகளில் வேலை செய்பவர்கள்  
ஈ) தெரியவில்லை

7. சிறுநீரக பாதையில் நோய் தொற்று ஏற்பட்டால் அவை என்ன விளைவிக்கும்
- சிறுநீரக பாதையில் அடைப்பு ஏற்படுதல்
  - சிறுநீரக பாதை சுவரில் அரிப்பு ஏற்படுதல்
  - அதிக அளவு சிறுநீர் சுரத்தல், வெளியேற்றுதல், உருவாதல்
  - தெரியவில்லை
8. வைட்டமின் A சத்து குறைவால் சிறுநீரக கல் உருவாதற்கு காரணம்
- மென்மையான சிறுநீர் பாதை சுவரை உருவாக்குதல்
  - கடினத்தன்மையான சிறுநீரக பாதை சுவரை உருவாக்குதல்
  - சிறுநீரகப் பாதையில் உள்ள தாது உப்புக்களை உள்ளீர்ப்பதால்
  - தெரியவில்லை
9. கீழ்க்கண்ட நோய்களில் ஒன்று சிறுநீரக கல் உருவாக முன் காரணமாக உள்ளது
- உயர் இரத்த அழுத்தம்
  - மஞ்சல் காமாலை
  - தேராய்டு அதிகமாக சுரத்தல்
  - தெரியவில்லை
10. சர்க்கரை நிறைந்த உணவுகளை நீங்கள் உட்கொண்டால் ஏற்படும் பிரச்சனைகள்
- சிறுநீர் உற்பத்தி குறைதல்
  - சிறுநீரின் அடர்த்தி அதிகரிக்கிறது
  - சிறுநீர் ஒட்டத்தை தடுத்தல்
  - தெரியவில்லை
11. சிறுநீரக கல் உருவாவதலின் அபாய அறிகுறி
- வலி திடீரென, கூர்மையான, கடுமையான பக்கவாட்டில் ஏற்படுதல்
  - படிப்படியான, லேசான வயிற்று வலி ஏற்படுதல்
  - கடுமையான, ஏற்ற இறக்கத்துடன் இடுப்பு வலி ஏற்படுதல்
  - தெரியவில்லை
12. சிறுநீரக கல்லை அறுவை சிகிச்சை செய்ய வேண்டியதற்கான அறிகுறி
- சிறுநீரில் இரத்தம் கலந்து வெளியேறுதல்
  - சிறுநீரில் சீழ் இருத்தல்
  - சிறுநீரக கல் சிறுநீர் பாதையில் இருத்தல்
  - தெரியவில்லை
13. சிறுநீரக கல் உள்ள நோயாளி தினமும் எடுத்துக்கொள்ள வேண்டிய தண்ணீரின் அளவு
- 1-2 லிட்டர்
  - 2-3 லிட்டர்
  - 3-4 லிட்டர்
  - தெரியவில்லை

14. படுக்கை நோயாளிகளுக்கு சிறுநீரக கல் உருவாவதை தடுப்பதற்கான வழிமுறை

- அ) குறைவாக நீர் எடுத்துக்கொல்லுதல்
- ஆ) குறைவாக உணவு எடுத்துக்கொல்லுதல்
- இ) அடிக்கடி நிலையை மாற்றியது
- ஈ) தெரியவில்லை

15. சிறுநீரக கல் நோயாளி என்றால் தவிர்க் வேண்டிய அசைவ புறத்தின் அவசியம் ஏனென்றால்

- அ) சிறுநீரக பாதையில் தாது உப்புகள் தங்குதல்
- ஆ) சிறுநீர் உற்பத்தியினை அதிகரித்தல்
- இ) சிறுநீர் தேங்குவதற்கு காரணமாக இருக்கிறது
- ஈ) தெரியவில்லை

16. சிறுநீரக கல் வெளியேறுவதற்கு உதவும் பொருள்

- அ) மிளகு
- ஆ) வெல்லம்
- இ) பொன்னாங்கண்ணீர்
- ஈ) தெரியவில்லை

17. கால்சியம் கல் இருப்பதை கண்டறிந்தால் தவிர்க்க வேண்டிய காய்கறிகள்

- அ) உருளைக் கிழங்கு
- ஆ) தக்காளி
- இ) முட்டைக்கோஸ்
- ஈ) தெரியவில்லை

18. கல் கட்டுபடுத்தும் உணவுப்பொருள்

- அ) அண்ணாச்சிப்பழச்சாறு
- ஆ) ஆப்பிள்பழச்சாறு
- இ) ஆரஞ்சுப்பழச்சாறு
- ஈ) தெரியவில்லை

19. நீங்கள் சிறுநீரக பாதையில் சிறுநீரக கல் இருப்பதாக உணர்ந்தால் முதலில் செய்ய வேண்டியவை

- அ) தானக மருந்து எடுத்துக்கொள்ளுதல்
- ஆ) குடும்பத்தாரிடம் தெரிவித்தல்
- இ) மருத்துவரை அணுகுதல்
- ஈ) தெரியவில்லை

20. சிறுநீரக கல் உள்ள நபர்கள் மது குடிபழக்கத்தை தவிர்க்க வேண்டியதின் அவசியம்

- அ) மது அருந்துவதால் சிறுநீர் அதிகமாக வெளியெற காரணமாகிறது
- ஆ) மது அருந்துவதால் தாது உப்புகள் வெளியேருவதை குறைக்கிறது
- இ) மது அருந்துவதால் சிறுநீர் பாதையில் தாது உப்புகள் தங்க வைக்கிறது
- ஈ) தெரியவில்லை



21. சிறுநீரக கல் மீண்டும் ஏற்படிவதை தடுக்கும் முறை

- அ) சிறிதளவு தண்ணீர் குடித்தல்
- ஆ) தாராளமான அளவு தண்ணீர் குடித்தல்
- இ) சிறிதளவு உணவு உட்கொள்ளுதல்
- ஈ) தெரியவில்லை

22. பச்சை கீரைவகைகளை உண்ணும் போது அதிக அளவு தண்ணீர் குடிக்க வேண்டியதற்க்காண காரணம்

- அ) தண்ணீர் செரிமானத்திற்கு உதவுகிறது
- ஆ) தது உப்புக்கள் அதிகமாக உறிஞ்ச உதவுகிறது
- இ) தது உப்புக்கள் அதிகமாக வெளியேற தண்ணீர் உதவுகிறது
- ஈ) தெரியவில்லை

23. கீரை வகைகளில் காணப்படும் தாது உப்புகள்

- அ) கால்சியம்
- ஆ) பாஸ்பேட்
- இ) யூரிக் அமிலம்
- ஈ) தெரியவில்லை

24. யூரிக் அமிலம் நிறைந்த உணவு பொருள்

- அ) மீன்
- ஆ) கோதுமை
- இ) கத்தரிக்காய்
- ஈ) தெரியவில்லை

25. சிஸ்டின் நிறைந்த உணவு பொருள்

- அ) முட்டை
- ஆ) இறைச்சி
- இ) மீன்
- ஈ) தெரியவில்லை

வினாக்களுக்கான விடைகள்:

1	ஆ	2	இ	3	ஆ	4	ஆ	5	இ
6	ஆ	7	இ	8	ஆ	9	இ	10	இ
11	அ	12	இ	13	இ	14	இ	15	அ
16	இ	17	ஆ	18	இ	19	இ	20	இ
21	ஆ	22	இ	23	அ	24	அ	25	ஆ

மொத்தம் - 25

- ✓ மிக நன்று : 20-25
- ✓ நன்று : 13 - 19
- ✓ சராசரி : 0-12

INFORMED CONSENT FORM

Title of the study : “A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL CHENNAI-03.”

Sample no :

Name of the participant :

Name of the principle instigator : Thirupathi C

Whether the participant’s consent was asked; yes/no

[ If the answer to the above question is yes, write the following phrase:

You agree with the manner to participate in the study].

Name and signature of/ thumb impression of the participant/ parent/guardian.

Name \_\_\_\_\_ signature \_\_\_\_\_

Date \_\_\_\_\_

Name and signature of the investigator or his representative obtaining consent:

Name \_\_\_\_\_ signature \_\_\_\_\_

Date \_\_\_\_\_ -

## INFORMATION TO PARTICIPANTS

Title : “A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL CHENNAI-03.”

Investigator : THIRUPATHI C

Name of the Participant :

Date :

Age/sex

You are invited to take part in this study. The information in this document is meant to help you decide whether or not to take part. Please feel free to ask if you have any queries or concerns.

You are being asked to Cooperate in this study being conducted in selected Institute of mental health hospital at Chennai.

### **What is the Purpose of the Research (explain briefly)**

This research is conducted to evaluate & to assess the effectiveness of constraint induced movement therapy to increase the motor activity of the affected upper limb among stroke patients admitted in stroke ward at Rajiv Gandhi Government General Hospital Chennai-03.”

We have obtained permission from the Institutional Ethics Committee.

### **Study Procedures**

- Study will be conducted after approval of ethics committee
- A written formal permission will be obtained from authorities of Rajiv Gandhi Government General Hospital at Chennai to conduct study.
- The purpose of study will be explained to the participants.
- The investigator will obtain informed consent.

### **Possible benefits to other people**

The result of the research may provide benefits and also empathetic care to them by investigator.

### **Confidentiality of the information obtained from you**

You have the right to confidentiality regarding the privacy of your personal details. The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

### **How will your decision not to participate in the study affect you?**

Your decisions not to participate in this research study will not affect your activity of daily living, medical care or your relationship with investigator or the institution.

### **Can you decide to stop participating in the study once you start?**

The participation in this research is purely voluntary and you have the right to withdraw from this study at any time during course of the study without giving any reasons.

Your Privacy in the research will be maintained throughout study. In the event of any publications or presentation resulting from the research, no personally identifiable information will be shared.

Signature of Investigator

Signature of Participants

Date

Date

### சுய ஒப்புதல் படிவம்

ஆராய்ச்சி தலைப்பு : திட்டமிட்ட நலக்கல்வி மூலம் சிறுநீரக கல் தடுப்பு முறைகள் பற்றி கற்றுத்தந்த கல்வியின் அறிவுத்திறன் மேம்பாடு குறித்த ஆய்வு

ஆய்வாளர் பெயர் : செ. திருப்பதி

பங்கேற்பாளர் பெயர் :

தேதி :

வயது/பாலினம் :

- ஆய்வாளர் மேற்கொள்ளும் ஆராய்ச்சியில் பங்கேற்க யாருடைய கட்டாயமுமின்றி முழுமனதுடனும் சுயநினைவுடனும் சம்மதிக்கிறேன்.
- ஆய்வாளர் மேற்கொள்ள போகும் பரிசோதனைகளை மிக தெளிவாக விளக்கிக்கூறினார்.
- எனக்கு விருப்பமில்லாத பட்சத்தில் ஆராய்ச்சியிலிருந்து எந்நேரமும் விலகலாம் என்பதையும் ஆய்வாளர் மூலம் அறிந்து கொண்டேன்.
- இந்த ஆராய்ச்சி ஒப்புதல் கடிதத்தில் உள்ள விவரங்களை நன்கு புரிந்து கொண்டேன். எனது உரிமைகள் மற்றும் கடமைகள் ஆராய்ச்சியாளர் மூலம் விளக்கப்பட்டது.
- நான் ஆராய்ச்சியாளருடன் ஒத்துழைக்க சம்மதிக்கிறேன். எனக்கு ஏதேனும் உடல்நலக்குறைவு ஏற்பட்டால் ஆராய்ச்சியாளரிடம் தெரிவிப்பேன்.
- நான் வேறு எந்த ஆராய்ச்சிலும் தற்சமயம் இடம்பெறவில்லை என்பதை தெரிவித்துக்கொள்கிறேன்.
- இந்த ஆராய்ச்சியின் தகவல்களை வெளியிட சம்மதிக்கிறேன். அப்படி வெளியிடும்போது என் அடையாளம் வெளிவராது என்பதை அறிவேன்.
- எனக்கு இந்த ஒப்புதல் கடிதத்தின் நகல் கொடுக்கப்பட்டது.

ஆய்வாளர் கையொப்பம்

பங்கேற்பாளர் கையொப்பம்

தேதி

தேதி

## ஆராய்ச்சி தகவல் தாள்

ஆராய்ச்சி தலைப்பு : திட்டமிட்ட நலக்கல்வி மூலம் சிறுநீரக கல் தடுப்பு முறைகள் பற்றி கற்றுத்தந்த கல்வியின் அறிவுத்திறன் மேம்பாடு குறித்த ஆய்வு

ஆய்வாளர் பெயர் : செ. திருப்பதி  
பங்கேற்பாளர் பெயர் :  
தேதி :  
வயது /பால் :

- ஆய்வாளர் மேற்கொள்ளும் ஆராய்ச்சியில் பங்கேற்க யாருடைய கட்டாயமுமின்றி முழுமனதுடன் சம்மதிக்கிறேன்.
- இதில் பங்கேற்பதன் நோக்கம்-இந்த ஆராய்ச்சியின் தகவல்களை தெரிந்து கொள்வதற்காகவும், அதனை பயன்படுத்துவதற்காக மட்டும் தான்.
- ✓ இந்த ஆராய்ச்சியின் நோக்கம் திட்டமிட்ட நலக் கல்வி மூலம் சிறுநீரக கல் தடுப்பு முறைகள் பற்றி கற்றுத்தந்த கல்வியின் அறிவுத்திறன் மேம்பாடு குறித்து ஆராய்வதாகும்.

ஆராய்ச்சி மேற்கொள்ளும் முறை : இந்த ஆராய்ச்சியில் திட்டமிட்ட நலக் கல்வி மூலம் சிறுநீரக கல் தடுப்பு முறைகள் பற்றி கற்றுத்தந்த கல்வியின் அறிவுத்திறன் மேம்பாடு குறித்து ஆராய்வதாகும்.

இதனால் ஆய்வாளருக்கான பயன் : இந்த ஆய்வுக்கு பின் திட்டமிட்ட நலக் கல்வி மூலம் சிறுநீரக கல் தடுப்பு முறைகள் பற்றி கற்றுத் தந்த கல்வியின் அறிவுத் திறன் மேம்பாடு குறித்து அறியலாம்.

இதனால் பங்கேற்பாளருக்கான பயன் : இந்த ஆய்வு திட்டமிட்ட நலக் கல்வி மூலம் சிறுநீரக கல் தடுப்பு முறைகள் பற்றி கற்றுத்தந்த கல்வியின் அறிவு திறன் மேம்பாடு குறித்து அறியலாம்.

- ❖ ஆராய்ச்சியில் பங்கேற்கவில்லை என்றாலும், உங்களின் சராசரி வாழ்க்கை முறையில் எந்த வித மாற்றமும் ஏற்படாது என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியில் பங்கேற்க விருப்பம் இல்லை என்றால் உங்களின் முழுமனதுடன் நீங்கள் இந்த ஆராய்ச்சியில் இருந்து விலகி கொள்ளலாம் என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியில் உங்களின் தகவல்களை பாதுகாப்பாக வைத்துக்கொள்கிறேன் என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியின் தகவல்களை வெளியிடும் போது, உங்களை பற்றிய அடையாளங்கள் வெளிவராது என்பதை உறுதி கூறுகிறேன்.

ஆய்வாளர் கையொப்பம்  
தேதி

பங்கேற்பாளர் கையொப்பம்  
தேதி

**COLLEGE OF NURSING  
MADRAS MEDICAL COLLEGE, CHENNAI-03**

**PLANNED TEACHING PROGRAM  
ON  
PREVENTION OF RENAL CALCULI**



TOPIC : PREVENTION OF RENAL CALCULI

GROUP : MEDICAL WARD PATIENTS

PLACE OF TEACHING : RAJIV GANDHI GOVT. GENERAL HOSPITAL

DURATION : 45 MINUTES

METHOD OF TEACHING : LECTURE CUM DISCUSSION

MEDIUM OF TEACHING : ENGLISH

TEACHING AIDS : POWERPOINT AND PAMPHLET

RESEARCH GUIDE : MRS.V.K.R. PERIYAR SELVI M.Sc. (N)., READER  
MEDICAL SURGICAL NURSING, COLLEGE OF NURSING,  
MADRAS MEDICAL COLLEGE, CHENNAI-03.

NAME OF THE INVESTIGATOR : C.THIRUPATHI, M.Sc. (N) II YEAR  
MEDICAL SURGICAL NURSING ,COLLEGE OF NURSING,  
MADRAS MEDICAL COLLEGE, CHENNAI-03.

**CENTRAL OBJECTIVE:**

At the end of the class the patients will be able to acquire knowledge and understanding regarding prevention of the renal calculi

**CONTRIBUTORY OBJECTIVE**

At the end of the class, patients will be able to

- 1.define renal calculi
- 2.mention the causes of renal calculi
- 3.explain the types of renal calculi
- 4.list out the signs and symptoms of renal calculi
- 5.describe about the diagnostic measures of the renal calculi
- 6.explain about the prevention of renal calculi

S.NO	TIME	SPECIFIC OBJECTIVES	CONTENT	STUDENT TEACHER ACTIVITY	AV AIDS	LEARNERS ACTIVITY	EVALUATION
1.	1min	Introduction to the topic	<p><b>I.INTRODUCTION</b></p> <p>Urinary system is one of the important systems which has the role of excreting waste material from the body. This function may be impaired by many reasons. Important one among them is the presence of calculi in the urinary system, which is referred to as renal calculi.</p>	Explaining	Power point	Listening	
2.	3min	define renal calculi	<p><b>RENAL CALCULI</b></p> <p>Urinary stone is a hard stone like substance which is formed by deposition of certain chemical substances in the structures involved in formation and excretion of urine these chemical substances are mainly calcium, uric acid and phosphorus. These are also known as minerals.</p>	explaining	Power point	Listening	What is mean by renal calculi?
3.	4min	mention the causes of renal calculi	<p><b>CAUSES OF RENAL CALCULI</b></p> <p>a) Fluid intake If we do not drink adequate water, urine becomes thick with minerals deposition of these minerals in urine may lead to formation of stones,</p> <p>b) food habits If we eat food stuff which are rich in uric</p>	Explaining	Power point	listening	What are the causes of renal calculi?

			<p>acid or magnesium or cysteine without drinking adequate water, it will cause formation of urinary stones. Other habits include alcohol, chewing betel leaves, smoking.</p> <p>c) climate During hot weather, we sweat profusely and pass less urine leads to formation of stone.</p> <p>d) occupation People who are work in the direct sun for a long time have more chance of getting urinary stone.</p> <p>e) vitamin A if the wall of our urinary pathway is smooth, these minerals cannot get deposited easily on it. In our daily food is lacking in vitamin A, the smooth wall of the urinary pathway becomes rough, the minerals get deposited on it and cause calculi formation.</p> <p>f) hyperparathyroidism The excess amount of calcium gets deposited in the urinary pathway and helps in the formation of renal calculi.</p> <p>g) Infection of the urinary tract when there is an obstruction in the pathway of urine flow, the micro-organisms can grow in the stagnated urine causing infections. Such infections may lead to the formation of renal calculi.</p> <p>h) Prolonged illness and restricted movement If the condition continues for a long period of time, gradually the calcium stones are formed in our</p>				
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4.	2min	explain the types of renal calculi	<p>urinary pathway.</p> <p>i) Drugs Certain drugs which we take to relieve stomach pain like antacid also cause urinary calcium (stone).</p> <p>j) Congenital malformations and stasis Any defect by birth or stasis due to stricture (narrowing) or prostatic enlargement, may predispose to the formation renal calculi.</p> <p>k) Hereditary Renal calculi are found to occur among blood relatives. But the chances of recurrence of renal calculi is more in males than females.</p> <p><b>Types of renal calculi</b></p> <ul style="list-style-type: none"> <li>✓ calcium stones</li> <li>✓ oxalate stones</li> <li>✓ phosphorus stones. Other types are uric acid which are common for the people who consume red meat and also in patients with gout such as cysteine, xanthine and struvite stones</li> </ul>	explaining	Power point	listening	What are the types of renal calculi?
5.	4min	List out the signs and symptoms of renal calculi	<p><b>Signs and symptoms of renal calculi</b></p> <p>a) Sometimes there may be no symptom i.e. silent type.</p> <p>b) Sharp, severe pain</p> <p>c) Fever, chills, shivering and vomiting</p>	Explaining	Power point	listening	What are the signs and symptoms of renal calculi?

6.	3min	describe about the diagnostic measures of the renal calculi	<p>d) Pain in the flanks even on mild touch  e) Frequent loose stools  f) Feeling of vomiting or vomiting  g) Decreased amount of urine  h) Difficulty in passing urine  i) Presence of blood in the urine  j) Feeling of fullness in the urinary bladder  k) Increased frequency of urination  l) Cold moist skin  m) Guarding and rigidity of the back and abdominal muscles during severe attack of pain</p> <p><b>DIAGNOSTIC EVALUATION</b></p> <ul style="list-style-type: none"> <li>✓ History collection</li> <li>✓ Physical examination</li> <li>✓ Blood tests</li> <li>✓ Urine analysis.</li> <li>✓ blood tests,</li> <li>✓ special X – rays</li> <li>✓ USG</li> <li>✓ CT scan</li> </ul>	Explaining	Power point	Listening	What are the diagnostic measures of the renal calculi?
7.	20min	explain about the prevention of renal calculi	<p><b>Prevention of renal calculi</b></p> <p>There are many things that we need to consider to prevent the recurrence of urinary stone. which we should do and some which we should not do for the prevention of renal calculi.</p> <p><b>DO'S</b></p> <ul style="list-style-type: none"> <li>• <b><i>Increase the fluid intake</i></b></li> </ul> <p>At least 3 – 4 liters of water per day (15 – 16 glass of water, 1 glass =200 ml water). Plain water,</p>	explaining	Power point	Listening	How will prevent the renal calculi?

			<p>coconut water, barley water, sherbet, weak tea, fruit juice can be taken to dilute the urine. Diluted urine prevents the concentration of the solids in it and thus prevents the stone formation.</p> <p>A heavy manual worker in a hot humid climate should drink more fluids than a sedentary office worker in a cooler climate, to compensate for the fluid loss through perspiration.</p> <ol style="list-style-type: none"> <li>1. Remember clear water is better than artificial sweetened drinks e.g. Pepsi, cola etc.</li> <li>2. Increase the intake of fruit juice, because fruit juice help in the breakingdown of the stone into small pieces and thus gets excreted easily with the urine</li> <li>3. Eat plenty of fruits and raw vegetables, which are rich in fiber. The fiber causes break down of the minerals and facilitates its elimination from the blood.</li> <li>4. Add more tamarind in your food it helps in the excretion of urinary stone.</li> <li>5. Seek prompt and proper treatment for any type of discomfort in excretion of urine. For example, burning sensation and pain while passing urine.</li> <li>6. For the patients who are bed ridden position should be changed frequently and body and private parts should be cleaned thoroughly several times a day.</li> </ol> <p><b>DON'TS</b> Avoid excessive consumption of strong tea and coffee because the mineral oxalate is present in more quantity in it.</p>				
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		<p>1. Cut down the animal protein (e.g. Milk, Egg, Meat, etc). Because proteins will increase the amount of calcium, oxalate, minerals in our blood and excess minerals will get accumulated in the 2.urinary pathway and cause formation of urinary stone.</p> <p>Do not include more than one of the following items in your daily meals.</p> <ul style="list-style-type: none"> <li>o Egg – 1</li> <li>o Meat – One portion ( 25 grams)</li> <li>o Fish – One portion ( 25 grams)</li> <li>o Milk – 200 ml</li> <li>o Cheese – 20 grams</li> </ul> <p>1.Avoid too much of refined food e.g. white sugar.</p> <p>2.Cut down sugar in the drinks because white sugar increases the concentration of the urine.</p> <p>3.Avoid sweets, chocolates, soft drinks, tinned fruits, sweet cakes, and biscuits as these contains high amount of white sugar.</p> <p>4.Avoid drinking alcohol because alcohol increases the excretion of the uric acid, calcium and phosphate in urine which may get deposited and form renal calculi</p> <p>5.Avoid eating pan (betel leaves) with lime because it increases the calcium consumption and calcium amount in the body. Lime contains high amount of calcium.</p> <p>6.Avoid adding extra salt to your food because salt increases the calcium absorption from the blood and there by increases the chance of development of urinary stone.</p> <p>7.Avoid smoking. If not possible try to reduce the</p>				
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		<p>number of cigarettes and increase the interval between two smokes, because it increases the elimination of more minerals.</p> <p>8. Avoid spending more time under direct sun. If unavoidable and you sweat more, drink plenty of water (10 – 15 glass of water daily). Use sun shade like hats while working under the direct sun.</p> <p>9. Avoid stressful situations do relaxation, yoga, meditation, etc.</p> <p><b>Foods to be restricted</b></p> <p><b>i) FOR PATIENTS WHO HAVE CALCIUM STONES</b></p> <p>The patients with calcium stones should restrict the intake of calcium.</p> <p>The following are some of the food stuffs rich in calcium, increase the amount of water intake if you are taking these foods.</p> <p>a) <b>VEGETABLES:</b> Green leafy vegetables (beans, spinach, carrot leaves, agathy, pumpkin leaves), potatoes, cauliflower, soya beans. The spinach is having more amount of calcium than oxalate and phosphorus.</p> <p>b) <b>CEREALS:</b> Ragi is one of the richest source of calcium.</p> <p>c) <b>FRUITS:</b> Dried fruits (grapes), nuts, peanuts. The citrus fruits like lime and lemon are richest source of calcium.</p> <p>d) <b>FOODE CONTAINING FLOURS:</b> Bread. Oat meal.</p> <p>e) <b>BEVERAGES:</b> Tea, Cocoa, Pepsi, Cola, Bear, Milkshakes, Ice creams, Milk and milk products</p>				
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		<p>(butter, ghee, cheese, milk powder etc.)</p> <p>f) FISH: Small fishes with bones and dried fishes.</p> <p>g) OTHERS: Ragi, excess salt, cake, pickle, cheese, egg yolk.</p> <p>h) VITAMIN D RICH FOODS: Fish liver oil (cod liver oil, shark liver oil), fatty fish, egg (hen).</p> <p>i) CHEWING BETAL LEAVES</p> <p>J) HARD WATER (water which does not make lather)</p> <p><b>ii) FOR PATIENTS WHO HAVE URIC ACID STONES</b></p> <p>The patients having uric acid stones should restrict the foods rich in uric acid.</p> <p>The following are some of the foods rich in uric acid, you have to drink extra amount of water if you consume the following foods.</p> <p>a) VEGETABLES: Beans (dried, baked, green), Fenugreek leaves.</p> <p>b) CEREALS: Bengal gram, black gram, green gram, horse gram, lentils whole, peas dry, red gram.</p> <p>c) NUTS: Groundnut, mustard seed.</p> <p>d) OTHERS: Sweet breads is one of the commonest source of uric acid.</p> <p>e) ALL TYPES OF MEAT</p> <p>f) ALL TYPES OF FISH</p> <p><b>iii) FOR PATIENTS WHO HAVE PHOSPHATE STONES</b></p> <p>Patients who diagnosed to have phosphate stone should restrict the intake of excess amount of</p>				
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		<p>phosphorus. The following are some foods rich in phosphorus, you have to drink extra amount of water if you consume the following foods.</p> <p>a) VEGETABLES: Green leafy vegetables (carrot leaves, amaranth, agathi), Carrot, Potato, Cauliflower, beans.</p> <p>b) FRUITS: Banana, Custard apple.</p> <p>c) Whole cereals: Maize, Oat meal, Little millet, Wheat flour&gt;</p> <p>d) PULSES: Beans, Lentils, Peas, Bengal gram dhal, Soya bean.</p> <p>e) NUTS AND OIL SEEDS</p> <p>f) FISH: Small</p> <p>g) MEAT: Beef, Liver.</p> <p>h) EGG: Hen</p> <p>i) MILK AND MILK PRODUCTS</p> <p>j) FOODS CONTAINING FLOURS: Sweet breads.</p> <p><i>iv) FOR PATIENTS WHO HAVE OXALATE STONES</i></p> <p>Patients who diagnosed to have oxalate stone should restrict the intake of excess amount of oxalate. The following are some foods phosphorus. You have to drink extra amount of water if you consume the following foods.</p> <p>a) VEGETABLES: Spinach, tomato</p> <p>b) FRUITS: strawberries</p> <p>c) BEVERAGES: Cocoa, Tea, Chocolates</p> <p>d) NUTS: Cashew nuts, groundnuts</p> <p>e) MEAT: Beef</p>				
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## **SUMMARY**

Till now we have discussed about the meaning of renal calculi, Causes of renal calculi, Signs and symptoms, Diagnostic tests, Management and indications for surgery, Measures to prevention of the renal calculi.

## **CONCLUSION**

We have discussed about renal calculi and its management and how few changes in our daily food practice can help in prevention of renal calculi.

## **RECAPTULIZATION:**

1. What is mean by renal calculi?
2. What are the causes of renal calculi?
3. What are the types of renal calculi?
4. What are the signs and symptoms renal calculi?
5. What are the diagnostic measures of renal calculi?
6. How will prevent the renal calculi?

தலைப்பு : சிறுநீரக கல் உருவாகுதலை தடுப்பதற்கான நலக்கல்வி

குழு : பொது மருத்துவப் பகுதியில் அனுமதிக்கப்பட்ட நோயாளிகள்.

இடம் : ராஜீவ் காந்தி அரசு பொது மருத்துவமனை

நேரம் : 45 நிமிடம்

கற்பிப்பவர் : செவிலியர் முதுகலை பட்டப்படிப்பு, இரண்டாம் வருட மாணவன்

கற்பிக்கும் முறை : சொற்பொழிவு மற்றும் கருத்து பகிர்வு முறை

கற்பிக்கும் மொழி : தமிழ்

ஒலி ஒளி சாதனங்கள் : கையேடு, மடிக்கணினி

## பொது நோக்கம் :

இந்த திட்டமிட்ட நலக்கல்வியின் இறுதியில் நோயாளிகளுக்கு சிறுநீரக கல் உருவாவதை தடுக்கும் முறை பற்றிய புரிதல் மற்றும் அறிவு திறன் மேம்படும்.

## துணை நோக்கம்:

- ✓ சிறுநீரக கல் வரையறு
- ✓ சிறுநீரக கல் உருவாவதற்கான காரணங்களை குறிப்பிடுக
- ✓ சிறுநீரக கல் வகைகளை பற்றி விளக்குக
- ✓ சிறுநீரக கல்லின் அறிகுறிகளை பட்டியலிடுக
- ✓ சிறுநீரக கல் உருவாக்கம் மற்றும் கண்டறியும் முறைகளை பற்றி விவரி.
- ✓ சிறுநீரக கல் தடுக்கும் முறைகளை பற்றி விளக்குக

வ.எண்	கால அளவு	சிறப்பு குறிக்கோள்	பொருளடக்கம்	ஆய்வாளர் செயல்பாடு	கற்பவர்களின் செயல்பாடு	ஒலி ஒளி காட்சி சாதனங்கள்	மதிப்பீடு
	3 நிமிடங்கள்		<p>(முன்னுரை: உடலில் இருந்து கழிவுப்பொருட்களை வெளியேற்றும் பங்கைக் கொண்டிருக்கும் முக்கியமான அமைப்புகளில் சிறுநீர் அமைப்பு ஒன்றாகும் இந்த செயல்பாடு பல காரணங்களால் பலவீனமடையக்கூடும் அவற்றில் முக்கியமான ஒன்று சிறுநீரக அமைப்பில் சிறுநீரக கல் இருப்பது, இது சிறுநீரக கல் என குறிப்பிடப்படுகிறது.</p>	விளக்குதல்	கவனித்தல்	மடிக்கணிணி	
1	2 நிமிடங்கள்	சிறுநீரக கல் வரையறு	<p>வரையறை சிறுநீரக கல் என்பது பொருள் போன்ற கடினமான கல் ஆகும், இது சிறுநீரக வேதியியல் பொருட்களின் உருவாக்கம்மற்றும் வெளியேற்றத்தில் ஈடுபடும் கட்டமைப்புகளில் சில</p>	விளக்குதல்	கவனித்தல்	மடிக்கணிணி	

வ.எண்	கால அளவு	சிறப்பு குறிக்கோள்	பொருளடக்கம்	ஆய்வாளர் செயல்பாடு	கற்பவர்களின் செயல்பாடு	ஒலி ஒளி காட்சி சாதனங்கள்	மதிப்பீடு
2	5 நிமிடங்கள்	சிறுநீரக கல் உருவாவதற்கான காரணங்களை குறிப்பிடுக	<p>வேதியியல் பொருட்களின் படிவு மூலம் உருவாகிறது. இது உருவாவதில் பங்குவகிக்கும் முக்கியமாக தாதுக்கள்கால்சியம், யூரிக் அமிலம் மற்றும் பாஸ்பரஸ் ஆகும்.</p> <p><b>சிறுநீரக கல் உருவாவதின் காரணங்கள்</b></p> <p>அ) தண்ணீர் உட்கொள்ளமை நாம் போதுமான அளவு தண்ணீர் குடிக்கவில்லை என்றால், இந்த தாதுக்கள் சிறுநீரில் தேங்குவதன் மூலம் சிறுநீர் தடிமனாகிறது, கற்கள் உருவாக வழிவகுக்கும்,</p> <p>ஆ) உணவுப் பழக்கவழக்கங்கள் யூரிக் அமிலம் அல்லது மெக்னீசியம் அல்லது சிஸ்டைன் நிறைந்த உணவுப் பொருட்களை நாம்</p>	விளக்குதல்	கவனித்தல்	மடிக்கணிணி	



வ.எண்	கால அளவு	சிறப்பு குறிக்கோள்	பொருளடக்கம்	ஆய்வாளர் செயல்பாடு	கற்பவர்களின் செயல்பாடு	ஒலி ஒளி காட்சி சாதனங்கள்	மதிப்பீடு
			<p>போதுமான அளவு தண்ணீரைக் குடிக்காமல் சாப்பிட்டால், அது சிறுநீர் கற்களை உருவாக்கும். ஆல்கஹால், வெற்றிலை இலைகளை மெல்லுதல், புகைத்தல் போன்ற பிற பழக்கங்கள் அடங்கும்</p> <p><b>இ) காலநிலை</b> வெப்பமான காலநிலையில் நம் உடலிலிருந்து அதிகப்படியான வியர்வை வெளியேறுவதாலும் மற்றும் குறைந்த அளவில் சிறுநீர் கழிப்பதாலும் சிறுநீரக கல் உருவாகும் வாய்ப்பு அதிகம்.</p> <p><b>ஈ) தொழில் முறைகள்</b> நீண்ட நேரம் நேரடியாக சூரிய ஒளியில் வேலை செய்பவர்களுக்கு சிறுநீரககல் உருவாகும் வாய்ப்பு அதிகம்.</p> <p><b>உ) வைட்டமின் ஏ</b></p>	விளக்குதல்	கவனித்தல்	மடிக்கணிணி	

		<p>சிறுநீரக உறுப்புகளின் பாதை மென்மையாக இருப்பதனால் தாதுக்கள் படியாமல் தடுக்கும், நாம் வைட்டமின் ஏ உணவில் போதுமான அளவு சேர்த்து கொள்ளவில்லை என்றால் சிறுநீர் பாதை கடினமாகி, தாதுக்கள் படிந்து சிறுநீர் கல் உருவாகிறது.</p> <p><b>ஊ) ஹைப்போ பாரா தைராய்டிசம்</b></p> <p>நம் எலும்புகள் கால்சியத்தால் ஆனவை. அதிக அளவு எலும்பில் உள்ள கால்சியம் இரத்தத்தில் உட்கிரக்கிக்கப்பட்டு அந்த இரத்தம் சிறுநீரகத்திற்கு சுத்திகரிப்பதற்காக செல்லும். அந்த இரத்தத்தில் உள்ள கால்சியம் சிறுநீரகத்தில் படிவதால் சிறுநீரக கல் உருவாகிறது.</p> <p><b>எ) சிறுநீர் குழாயில் ஏற்படும் நோய் தொற்று</b></p> <p>சிறு நுண்ணுயிரிகளால் பல நோய்கள் உருவாகிறது. இந்த நுண்ணுயிரிகள் இரத்தத்தின் வழியாக சிறுநீர் பாதைக்கு செல்லலாம், மேலும் இத்தகைய நுண்ணுயிரிகள் சுற்றுப்புர</p>	விளக்குதல்	கவனித்தல்	மடிக்கணினி
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		<p>சூழ்நிலைகளிலிருந்தும் சிறுநீர் பாதை வழியாக உள்நுழையலாம். இந்த நுண்ணுயரிகளின் இனப்பெருக்கத்தால் சிறுநீர் வெளியற்று பாதையில் ஏற்படும் அடைப்பால் சிறுநீரகக் கல் உருவாகிறது.</p> <p><b>ஏ) நீண்ட காலம்படுக்கையாக இருக்கும் நோயாளிகளுக்கு கல்சியம் சிறுநீரக கல் உருவாகும் வாய்ப்பு உள்ளது.</b></p> <p><b>ஐ) மருந்துகள்</b></p> <p>சில மருந்துகள் குறிப்பாக வலி நீக்கி மருந்துகள் மற்றும் ஆன்டசிட் மருந்துகள் சிறுநீர் கல் உருவாக காரணமாகிறது.</p> <p><b>ஓ) சிறுநீரக பாதையில் மற்றும் உறுப்புகளில் பிரவியிலே ஏற்படும் குறைப்பாடுகள் சிறுநீரக பாதையில் கல் உருவாக காரணமாகிறது.</b></p> <p><b>ஔ) பரம்பரை</b></p> <p>இரத்த உறவினர்களுக்கு சிறுநீரக கல் பாதிப்பு இருந்தால் அது அடுத்த தலை முறையினருக்கு சிறுநீரக கல் உருவாக வாய்ப்பு அதிகம். சிறுநீரக கல் உருவாகும் வாய்ப்பு ஆண்களை விட பெண்களுக்கு அதிகம்.</p>	விளக்குதல்	கவனித்தல்	மடிக்கணினி	
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3.	2 நிமிடங்கள்	சிறுநீரக கல் வகைகளை பற்றி விளக்குக	<b>சிறுநீரக கல் வகைகள்:</b> <ul style="list-style-type: none"> <li>✓ கால்சியம் கல்</li> <li>✓ பாஸ்பரஸ் கல்</li> <li>✓ ஆக்ஸலேட் கல்</li> <li>✓ யூரிக் ஆசிட் கல்</li> </ul>				
4	5 நிமிடங்கள்	சிறுநீரக கல்லின் அறிகுறிகளை பட்டியலிடுக	<b>அறிகுறிகள்:</b> <ul style="list-style-type: none"> <li>✓ கூர்மையான, கடுமையான பரவுதல் போன்ற வலி பக்கவாட்டில் ஏற்படுதல்</li> <li>✓ மெதுவாக தொடுதல் கூட அதிக வலியை ஏற்படுத்தும்</li> <li>✓ வாந்தி வருதல் போன்ற உணர்வு மற்றும் வாந்தி</li> <li>✓ காய்ச்சல், குளிர், உடல் நடுக்கம் இந்த அறிகுறிகள் சிறுநீர் பாதையில் நோய்க்கிருமிகளின் வளர்ச்சியை உருவாக்குகிறது</li> </ul> <b>சிறுநீரக பிரச்சனைகள்:</b> <ul style="list-style-type: none"> <li>✓ குறைவான அளவு சிறுநீர் வெளியேறுதல்</li> <li>✓ சிறுநீர் கழிப்பதில் சிரமம் ஏற்படுதல்</li> <li>✓ இரத்தம் கலந்த சிறுநீர் கழித்தல்</li> </ul>	விளக்குதல்	கவனித்தல்	மடிக்கணினி	

5.	5 நிமிடங்கள்	சிறுநீரக கல் உருவாக்கம் மற்றும் கண்டறியும் முறைகளை பற்றி விவரி.	<ul style="list-style-type: none"> <li>✓ அடிக்கடி சிறுநீர் கழித்தல்</li> <li>✓ அடிக்கடி வயிற்றுப்போக்கு ஏற்படுதல்</li> </ul> <p><b>கீழ்க்கண்ட சோதனைகள் மூலம் சிறுநீரக கல் இருப்பதை உருதி செய்யலாம்:</b></p> <ul style="list-style-type: none"> <li>✓ இரத்த பரிசோதனைகள்</li> <li>✓ சிறுநீர் பரிசோதனைகள்</li> <li>✓ எக்ஸ்ரே</li> <li>✓ அல்ட்ராசவுண்ட் டெஸ்ட்</li> <li>✓ சி.டி. ஸ்கேன்</li> </ul>	விளக்குதல்	கவனித்தல்	மடிக்கணினி	
6.	15 நிமிடங்கள்	சிறுநீரக கல் தடுக்கும் முறைகளை பற்றி விளக்குக	<p><b>சிறுநீரக கல்லை குணப்படுத்தும் முறைகள் செய்ய கூடியவை:</b></p> <ul style="list-style-type: none"> <li>✓ அதிக அளவு குடிநீர் அருந்த வேண்டும் (3 லிட்டர்)</li> <li>✓ அதிக அளவு பழச்சாறு, நார்சத்து நிறைந்த பச்சை காய்கறிகளை தினமும் உணவில் சேர்த்து கொள்ள வேண்டும்.</li> <li>✓ வாழைத்தண்டு சாறு உணவில் வாரம் ஒருமுறை சேர்த்து கொள்ள</li> </ul>				

			<p>வேண்டும்.</p> <ul style="list-style-type: none"> <li>✓ சூடான நீருடன் எலுமிச்சை சாற்றை சேர்த்து அருந்தினால் சிறுநீரக கல் வராமல் தடுக்க முடியும்</li> <li>✓ உணவு பழக்க வழக்கங்களை மாற்றுவதன் மூலம் மேலும் சிறுநீர் கல் உருவாதலை தடுக்கலாம்.</li> <li>✓ சிறுநீர் கழிப்பதில் தொந்தரவு ஏற்பட்டால் மருத்துவரை அணுக வேண்டும்.</li> <li>✓ நோயாளிகளின் படுக்கை நிலையை இரண்டு மணி நேரத்திற்கு ஒரு முறை மாற்றவேண்டும்.</li> </ul> <p><b>செய்யக் கூடாதவை</b></p> <ul style="list-style-type: none"> <li>✓ மாமிச உணவு அதிக அளவு உண்பதை தவிர்க்க வேண்டும்</li> <li>✓ குளிர்ந்த உணவு பொருட்கள் உட்கொள்வதை தவிர்க்கவும்</li> <li>✓ குளிர்பானங்கள், இனிப்பு, சாக்லேட், இனிப்பூரொட்டி, கேக்குகள்</li> </ul>	விளக்குதல்	கவனித்தல்	மடிக்கணினி	
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			<p>ஆகியவற்றை உண்ணுவதை தவிர்க்க வேண்டியும்</p> <ul style="list-style-type: none"> <li>✓ குளிர் பானங்கள் குடிப்பதை தவிர்க்க வேண்டும்</li> <li>✓ சிறுநீரக கல் அறுவை சிகிச்சையின் மூலம் சிறுதுகள்களாக உடைத்து அவற்றை சிறுநீர் மூலம் வெளியேற்றல்</li> <li>✓ சிறுநீரக கல்லை முழுவதுமாக அகற்றுதல்</li> <li>✓ குடிபழக்கம் மற்றும் புகைப்பிடித்தல்</li> <li>✓ உணவில் உப்பு கூடுதலாக சேர்த்து கொள்ளுதல்</li> <li>✓ சூரிய ஒளியில் மிக அதிக நேரம் வேலை செய்தல்</li> <li>✓ அதிக அளவு கோவம், விரக்தி, கவலை ஏற்படுத்தும் காரணிகளை தவிர்க்க வேண்டும்</li> </ul> <p><b>தவிர்க்க வேண்டிய உணவு வகைகள்:</b> <b>கால்சியம் கல் உள்ள நோயாளிகள்</b> <b>செய்ய வேண்டியவை:</b></p> <ul style="list-style-type: none"> <li>✓ கால்சியம் நிறைந்த உணவு</li> </ul>	விளக்குதல்	கவனித்தல்		
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			<p>பொருட்களை உண்ணும்போது அதிக அளவு தண்ணீர் அருந்த வேண்டும்</p> <p>✓ பச்சை இலை காய்கறிகளை அதிக அளவில் உணவில் சேர்த்து கொள்ள வேண்டும்</p> <p>✓ ( பாலைக்கீரை, அகத்தி கீரை, கேரட் இலைகள், சோயாபீன்ஸ்)</p> <p>✓ தானியங்கள்: கேழ்வரகு,</p> <p>✓ பழங்கள்: உலர் பழங்கள்( திராட்சை), வேர்க்கடலை சிட்ரஸ் பழவகைகள்</p> <p>✓ பானங்கள்: டீ, காஃபி, பால் சார்ந்த உணவு பொருட்கள்</p> <p>✓ மாவு சத்து நிறைந்த உணவு வகைகள்:</p> <p>✓ இறைச்சி வகைகள் ( மாட்டு இறைச்சி, ஆட்டு இறைச்சி)</p> <p>✓ மற்றவை: வெல்லம், அதிக அளவு உப்பு, ஊறுகாய், வெண்ணை</p> <p>✓ வைட்டமின் டி நிறைந்த உணவு வகைகள்:</p>				
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			<ul style="list-style-type: none"> <li>✓ மீன் எண்ணெய்</li> <li>✓ வெற்றிலை பாக்கு போடுதல்.</li> </ul> <p><b>யூரிக் அமிலம் கல் கொண்ட நோயாளிகள் தவிர்க்க வேண்டிய உணவு வகைகள்:</b></p> <ul style="list-style-type: none"> <li>✓ வெந்தய கீரை உளுந்து பயிறு</li> <li>✓ கொண்டை கடலை</li> <li>✓ எள்ளு</li> <li>✓ உளுந்து பயிறு</li> <li>✓ இறைச்சி வகைகள்:</li> <li>✓ ஆட்டு இறைச்சி</li> <li>மாட்டு இறைச்சி</li> </ul> <p><b>பாஸ்பரஸ் கல் கொண்ட நோயாளிகள் தவிர்க்க வேண்டிய உணவு வகைகள்:</b></p> <ul style="list-style-type: none"> <li>✓ கேரட் இலைகள்</li> <li>✓ அகத்திக்கீரை</li> <li>✓ காளிஃபிளவர்</li> <li>✓ பீன்ஸ், பட்டானி, சோயாபின்ஸ்</li> <li>✓ வாழைப்பழம்</li> <li>✓ மக்காச்சோளம்</li> <li>✓ ஓட்ஸ்</li> <li>✓ கோதுமை மாவு</li> </ul>				
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			<ul style="list-style-type: none"><li>✓ மீன் மற்றும் இறைச்சி வகைகள் (கோழி, ஆடு)</li><li>✓ பால் மற்றும் பால் சார்ந்த பொருட்கள்</li><li>✓ மாவுசத்து நிறைந்த உணவு பொருட்கள்</li></ul> <p><b>ஆக்ஸலேட் கல் கொண்ட நோயாளிகள் தவிர்க்க வேண்டிய உணவு வகைகள்:</b></p> <ul style="list-style-type: none"><li>✓ கீரை வகைகள், தக்காளி</li><li>✓ குளிர் பானங்கள் (பெப்சி, கோலா)</li><li>✓ முந்திரி பருப்பு, நிலக்கடலை</li><li>✓ இறைச்சி வகைகள் (கோழி, ஆடு)</li></ul>				
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**INSTITUTIONAL ETHICS COMMITTEE  
MADRAS MEDICAL COLLEGE, CHENNAI 600 003**

EC Reg.No.ECR/270/Inst./TN/2013  
Telephone No.044 25305301  
Fax: 011 25363970

**CERTIFICATE OF APPROVAL**

To  
Thirupathi C,  
M.Sc. Nursing I Year,  
College of Nursing,  
Madras Medical College,  
Chennai 600 003.

Dear Thirupathi C,

The Institutional Ethics Committee has considered your request and approved your study titled **"A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI - 03."** - **NO.39072018.**

The following members of Ethics Committee were present in the meeting hold on **24.07.2018** conducted at Madras Medical College, Chennai 3

- |  |                      |
|--|----------------------|
| 1. Prof.P.V.Jayashankar  | :Chairperson         |
| 2. Prof.R.Jayanthi,MD.,FRCP(Glasg) Dean,MMC,Ch-3                       | : Deputy Chairperson |
| 3. Prof.Sudha Seshayyan,MD., Vice Principal,MMC,Ch-3                   | : Member Secretary   |
| 4. Prof.N.Gopalakrishnan,MD,Director,Inst.of Nephrology,MMC,Ch         | : Member             |
| 5. Prof.S.Mayilvahanan,MD,Director,Inst. of Int.Med,MMC, Ch-3          | : Member             |
| 6. Prof.A.Pandiya Raj,Director, Inst. of Gen.Surgery,MMC               | : Member             |
| 7. Prof.Shanthy Gunasingh, Director, Inst.of Social Obstetrics,KGH     | : Member             |
| 8. Prof.Remma Chandramohan,Prof.of Paediatrics,ICH,Chennai             | : Member             |
| 9. Prof. Susila, Director, Inst. of Pharmacology,MMC,Ch-3              | : Member             |
| 10.Prof.K.Ramadevi,MD., Director, Inst. of Bio-Chemistry,MMC,Ch-3      | : Member             |
| 11.Prof.Bharathi Vidya Jayanthi,Director, Inst. of Pathology,MMC,Ch-3: | Member               |
| 12.Thiru S.Govindasamy, BA.,BL,High Court,Chennai                      | : Lawyer             |
| 13.Tmt.Arnold Saulina, MA.,MSW.,                                       | :Social Scientist    |
| 14.Thiru K.Ranjith, Ch- 91   | : Lay Person         |

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary - Ethics Committee

**CERTIFICATE OF CONTENT VALIDITY**

This is to certify that the tool constructed by **Thirupathi.C M.Sc., (Nursing)** II year, College of Nursing, Madras Medical College which is to be used in his study titled, **“A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIVGANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03”** has been validated by the undersigned. The suggestions and modifications given by me will be incorporated by the investigator in concern with their respective guide. Then he can proceed to do the research.

  
**PRINCIPAL**  
**MADHA COLLEGE OF NURSING**  
**MADHA NAGAR, KUNDRATHUR,**  
**CHENNAI - 600 069**  
**PHONE : 24780736**

Name: DR. B. TAMILARASI  
Designation: PRINCIPAL  
College: MADHA COLLEGE OF NURSING, CHENNAI - 69.

Place:

Date:



## CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool constructed by **Thirupathi.C M.Sc.**, (Nursing) II year, College of Nursing, Madras Medical College which is to be used in his study titled, "A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIVGANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03" has been validated by the undersigned. The suggestions and modifications given by me will be incorporated by the investigator in concern with their respective guide. Then he can proceed to do the research.

*M. Sathak*

Signature with seal

PRINCIPAL  
MOHAMED SATHAK  
A.J. COLLEGE OF NURSING  
34, Rajiv Gandhi Road, (OMR)  
IT Highway, Siruseri, Chennai-603 103.

Name: *Dr. Prof. R. RANA SAMBASIVAN, MSc (N), Ph.D.,*

Designation: *PRINCIPAL*

College: *MOHAMED SATHAK A.J. COLLEGE OF NURSING*

Place:

Date:



From

Thirupathi . C,  
M. Sc (N) I year student,  
College of Nursing,  
Madras Medical College,  
Chennai-03.

To

Director,  
Institute of Internal Medicine,  
Rajiv Gandhi Government General Hospital,  
Chennai-03.

Through,

The Principal, College of Nursing, Madras Medical College, Chennai-03

Respected Sir,

Sub: College of Nursing, Madras Medical College, Chennai-M.Sc(N) I year  
Dissertation-Permission to conduct study -reg.

I request you to kindly permit me to conduct study on **“A study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in Medical Ward at Rajiv Gandhi Government General Hospital, Chennai-03”**.

Thanking you

Place: Chennai-03

Date : 26-04-2018

*D. J. S.*  
*26/4/18*  
Subject Coordinator.

*S. J. S.*  
DIRECTOR AND PROFESSOR  
Institute of Internal Medicine  
Madras Medical College,  
Govt. General Hospital,  
Madras-600 003

Yours faithfully,

*C. Thirupathi*  
[C-THIRUPATHI]

## REQUISITION LETTER

From

28.01.2019

Thirupathi.C,  
M.Sc. (N) II year Student,  
College of Nursing,  
Madras Medical College,  
Chennai-03

Chennai-03.

To

Director,  
Institute of Internal Medicine,  
Rajiv Gandhi Government General Hospital,  
Chennai-03.

Through

The Principal,  
College of Nursing,  
Madras Medical College,  
Chennai-03.

Respected Madam/Sir,

**Sub: College of Nursing -Madras Medical College, Chennai-03-M.Sc(N) II Year Student- Dissertation - Requesting permission to conduct research in Medical Ward, RGGGH, Chennai-03 -Regarding,**

-----X-----

I, Thirupathi.C, M.Sc Nursing II year student has to conduct the research study for the partial fulfillment of M.Sc (N) programme. My topic is "A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF RENAL CALCULI AMONG PATIENTS ADMITTED IN MEDICAL WARD, RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03". The data collection period is from 02.02.2019 to 04.03.2019 from 8 am to 4 pm. I assure that I will not disturb the routine activities of the patients and Medical ward.

With due respect, I request your good self to kindly permit me to conduct this study in Medical ward, Rajiv Gandhi Government General Hospital, Chennai-03.

Thanking you,


Yours faithfully

C.Thirupathi  
28/1/2019  
(THIRUPATHI.C)

  
Signature of HOD  
(Research)

*Forwarded*  
*Abhinav*  
*01/02/19*

PRINCIPAL  
COLLEGE OF NURSING  
MADRAS MEDICAL COLLEGE  
CHENNAI - 600 003.

*permitted*  
  
DIRECTOR AND PROFESSOR  
Institute of Internal Medicine,  
Madras Medical College,  
Govt. General Hospital,  
Madras-600 003

## CERTIFICATE FOR ENGLISH EDITING

This is to certify that the dissertation work topic titled, "A study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward, Rajiv Gandhi Government General Hospital, Chennai-03" done by Thirupathi. C, M.Sc. (N) II year student, College of Nursing, Madras Medical College, Chennai-03 has been edited and validated for English language appropriateness.

Place:

Date:



Signature:

Name:

**DR. J. EBENEZER**  
Headmaster

Designation:

Voorhees Higher Secondary Sch  
Vellore - 632 001

Place:

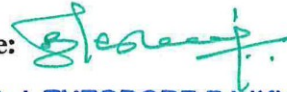


## CERTIFICATE FOR TAMIL EDITING

This is to certify that the dissertation work topic titled, "A study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of renal calculi among patients admitted in medical ward, Rajiv Gandhi Government General Hospital, Chennai-03.", done by Thirupathi. C, M.Sc. (N) II year student, College of Nursing, Madras Medical College, Chennai-03 has been edited and validated for Tamil language appropriateness.

Place: Vellore .

Date: 28.6.19

Signature:   
Name: **A.J. THEODORE RAJKUMAR**  
Asst. Professor & H.O.D.  
Department of Tamil,  
Designation: Voorhees College-Vellore  
Place:

