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A Pre Experimental Study to Assess the Effectiveness of Structured Teaching Program (STP) on Knowledge and Practice Regarding Lifestyle Modification among Chronic Kidney Disease Patients in Selected Hospital, Dehradun Uttarakhand

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ABSTRACT

Background: Chronic Kidney Disease is a progressive health condition that affects millions worldwide, with lifestyle playing a crucial role in its management. Patient education is essential in promoting healthier behaviors to slow disease progression and improve quality of life. However, many Chronic Kidney Disease patients have limited knowledge and inadequate practices regarding lifestyle modification. Objectives: The present study aimed to evaluate the effectiveness of a Structured Teaching Program (STP) on improving knowledge and practice regarding lifestyle modification among Chronic Kidney Disease patients in a selected hospital at Dehradun. Methodology: A quantitative research approach with a pre-experimental one-group pre-test post-test design was used to assess the effectiveness of structured teaching program on knowledge and practice regarding lifestyle modification among Chronic Kidney Disease patients. A total of 60 Chronic Kidney Disease patients were selected through non-probability purposive sampling. A structured knowledge questionnaire and a practice assessment checklist (using likert scale) were administered before and after the implementation of the STP. The data collected were collected using a structured questionnaire divided into two section : demographic variables and a knowledge questionnaire and practice checklist. The study was conducted at SHRI MAHANT INDRESH HOSPITAL, Patelnagar, Dehradun Uttarakhand. Results: Most participants were in the age group of 41–50 years (30%), male (58.3%), and Hindu (66.6%). Educational status showed that 36.7% were graduates, and 41.7% had two children. A positive family history of kidney disease was reported by 36.7%.The mean pre- test knowledge score (8.80 ± 3.79) increased to (18.53 ± 3.99) after the intervention, with a statistically significant difference ($t = 18.972$, $p = 0.0001$). Practice scores across domains also improved (D1 = 2.46 ± 0.650 to D5 = 2.80 ± 0.403), and one-way ANOVA confirmed significance ($F = 4.418$, $p = 0.002$). Conclusion: The Structured Teaching Program significantly enhanced both knowledge ($t = 18.972$, $p < 0.001$) and practice ($F = 4.418$, $p = 0.002$) among Chronic Kidney Disease patients. This finding indicates the structured teaching program was effective in enhancing the participants knowledge and practice regarding lifestyle modification. Additionally, highlights the importance of educational interventions in improving lifestyle modification, thereby supporting better disease management and patient outcomes.

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KEYWORDS: *Chronic Kidney Disease, Lifestyle Modification, Structured Teaching Program, Patient Education, Knowledge, Practice, Pre-experimental Study, Nursing Intervention.*

INTRODUCTION

Blood is filtered by the urinary system, which then produces urine as a waste product. The kidneys, renal pelvis, bladder, ureters, and urethra are the organs that make up the urinary system. Energy is produced by the body from the nutrients it receives from diet your blood is filtered by the kidneys, two bean-shaped organs. The urinary system includes your kidneys.

Every day, your kidneys filter over 200 quarts of fluid, which is enough to fill a large bathtub. Your kidneys filter waste throughout this process, and the result is urine, or pee. The average person urinates almost two quarts per day. The remaining 198 quarts of fluid are recycled by your body. Your kidneys also aid in maintaining the proper balance of electrolytes and bodily fluids, primarily water. Sodium and potassium are examples of electrolytes, which are vital minerals.

A progressive loss of kidney function is a feature of Chronic Kidney Disease, commonly known as CHRONIC KIDNEY FAILURE. Urine is the result of your kidneys filtering waste products and extra fluid from your blood. Your body may accumulate hazardous amounts of fluid, electrolytes, and waste products if you have advanced chronic renal disease. You may have few symptoms in the early stages of chronic renal disease. You may not become aware that you have kidney disease until it has progressed.

PROBLEM STATEMENT

"A Pre Experimental study to assess the effectiveness of structured teaching program (STP) on knowledge and practice regarding lifestyle modification among Chronic Kidney Diseases patients in selected hospital, Dehradun, Uttarakhand."

OBJECTIVES

1. To assess the knowledge and practice regarding lifestyle modification among chronic kidney disease patients.
2. To administer the structured teaching program among chronic kidney disease patients.
3. To find out the effectiveness of structured teaching program among chronic kidney disease patients in pre experimental knowledge.
4. To find out the association between the level of pre-test knowledge and practice with the selected demographic variable.

OPERATIONAL DEFINITION:

EFFECTIVENESS: It refers to the improvement in knowledge and practice scores of Chronic Kidney Disease patients regarding lifestyle modification, as measured by the difference between pre-test and post-test scores after administration of the structured teaching program**.**

STRUCTURED TEACHING PROGRAM: It refers to a systematically designed educational intervention that delivers standardized information on chronic kidney disease including its causes, progression, management, dietary modification, lifestyle changes, and treatment options, through structured lesson plans, and assessment tool, aimed at improving knowledge, self-care behaviours and adherence to treatment among chronic kidney disease patients and their care givers.

KNOWLEDGE: It refers to the information and understanding of chronic kidney disease patients regarding lifestyle modification, which includes diet, fluid restriction, exercise, medication adherence, and avoidance of harmful habits. It is measured by the responses given to a structured knowledge questionnaire, with scores categorized as inadequate, moderate, and adequate.

PRACTICE: It is to evaluate the self-assessment and simple lifestyle changes that promote kidney health in people with chronic kidney disease.

LIFESTYLE MODIFICATION: It refers to includes changes in diet (low salt, controlled protein), regular physical activity, quitting smoking and alcohol, stress reduction, and adherence to treatment, which are taught through Structured Teaching Program and assessed using knowledge and practice scores.

CHRONIC KIDNEY DISEASE PATIENTS: It refers to the Chronic Kidney Disease patients are those individuals who are medically diagnosed with chronic kidney disease, attending the selected hospital in Dehradun, and who meet the inclusion criteria and able to understand the teaching and willing to participate.

HYPOTHESIS:

H1 - There will be a significant association between demographic variable and level of knowledge and practice regarding lifestyle modification among Chronic Kidney Disease patients in pre experimental study.

H2 - There will be a significant difference between pre-test and post-test knowledge scores of chronic kidney disease patients regarding lifestyle modification after administration of the Structured Teaching Program.

LIMITATIONS:

The study is limited to chronic kidney disease patients who got admitted in nephrotic ward. The study is limited to only 60 sample size.

DELIMITATIONS:

The study is restricted to Shri Mahant Indresh Hospital in Dehradun, Uttarakhand. The study focus

on lifestyle modification among chronic kidney disease patients.

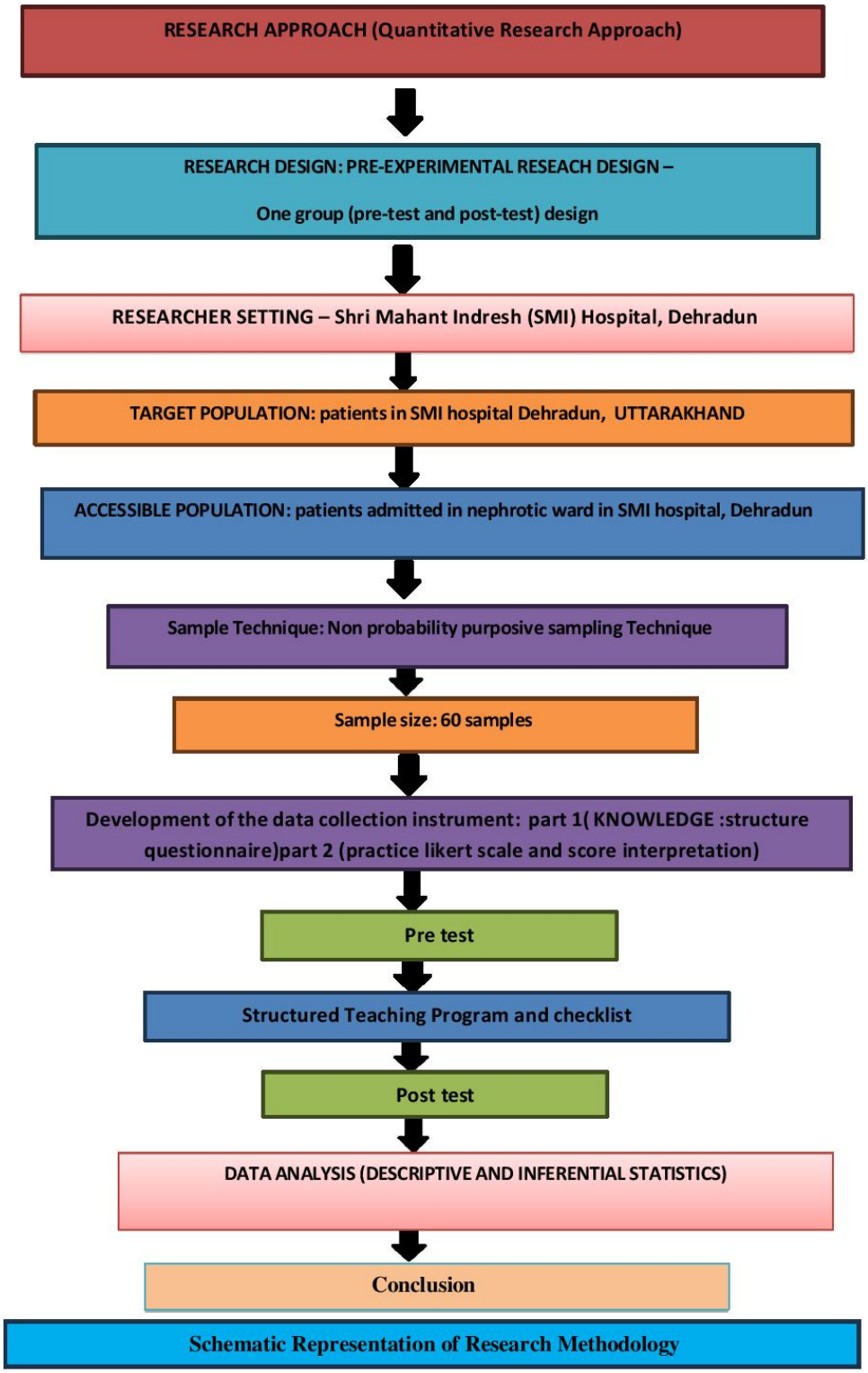
RESEARCH APPROACH

The selection of research approach is the basic procedure for the conduct of the research enquiry. Research approach helps the researcher to know what data to collect and how to analyse it. It also suggests the possible conclusions to be draw from the data.

Therefore, in the view of nature of problem and accomplishes the objectives of the study a quantitative approach was considered appropriate for the present study.

RESEARCH DESIGN

The research design refers to the researcher's overall plan for obtaining answered to the question and spell out strategies that researcher adopted to develop information that is accurate, objective and interpretable. Pre-experimental designs, in which one group pre-test and same group with post-test design is used for the study.



Schematic Representation of Research Methodology

VARIABLES:

INDEPENDENT VARIABLE: Structured teaching program regarding lifestyle modification among chronic kidney disease patients in Shri Mahant Indresh hospital, Dehradun, Uttarakhand.

DEPENDENT VARIABLE: Knowledge and practice regarding lifestyle modification among chronic kidney disease patients.

EXTRANEOUS VARIABLE: Socio demographic Variable: age of the patients, gender, religion, family income, education, marietal status, number of children, family type, habit, occupation, any history of kidney patients in your family, have you been diagnosed with medica condition.

SETTING OF THE STUDY:

The study was conducted at Shri Mahant Indiresh Hospital (SMI Hospital), Dehradun, Uttarakhand**.** It serves a large and diverse population from Dehradun and surrounding areas, offering specialized and comprehensive healthcare services. The study was conducted in shri mahant indresh multispecialty hospital after getting permission from the principal of sgrr college of nursing, nursing superintendent and medical superintendent of smi hospital, patelnagar Dehradun. It is a multi-specialty hospital with 1500 beds catering its service to the hilly regions of Himalayas, Uttarakhand and neighbouring states.

POPULATION

The target population included patients diagnosed with Chronic Kidney Disease who were attending or admitted to the selected hospital.

SAMPLE

The sample of the study consisted of patients diagnosed with Chronic Kidney Disease who were admitted to or attending the Nephrology Department of Shri Mahant Indiresh Hospital, Dehradun.

These participants were selected based on their eligibility and willingness to participate in the study. The sample included above 20 years of patients who could understand the teaching material and respond to the assessment tools.

SAMPLE SIZE

The sample size for the study was 60 Chronic Kidney Disease patients. This number was chosen based on:

- Feasibility of data collection within the study duration
- Availability of eligible Chronic Kidney Disease patients in the selected setting

Sampling Technique

The purposive sampling technique was used for selecting the sample. This method was appropriate because:

- It allowed selection of participants who met specific inclusion criteria.
- It was cost-effective and time-efficient.
- It enabled the researcher to intentionally select individuals who were diagnosed with Chronic Kidney Disease and were available and willing to participate during the data collection period.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

Participants were selected based on the following inclusion criteria:

- Patients diagnosed with Chronic Kidney Disease (any stage).
- Age 20 years and above.
- Patients who were conscious, oriented, and able to participate in the teaching session.

Exclusion Criteria

Participants were excluded based on the following conditions:

- Critically ill or terminally ill patients who were unfit to attend the teaching session.
- Patients with cognitive impairment, psychiatric illness, or communication barriers.
- Patients unwilling to participate or not available during the full duration of the study.

DATA COLLECTION INSTRUMENT-

Method for data collection includes development of tool, testing of validity, reliability and data collection procedure. The tools comprises the following parts:

PART I: demographic data sheet.

PART II: structured knowledge questionnaire.

ART III: practice assessment checklist Likert scale.

CONTENT VALIDITY

The content validity of tool is obtained from medical experts. The content validity of the tool and structured teaching are given to experts along with objectives.

They are experts from the field of Nursing, preventive medicine and experts from nephrology. The experts were permitted to give their opinions and suggestions regarding 'adequacy' and 'appropriateness' of the study. After obtaining suggestions from the experts, necessary modifications are made in the tool and in structured teaching program.

RELIABILITY OF THE TOOL:

The reliability of the assessment tool was evaluated using data collected from Chronic Kidney Disease patients in Shri Mahant Indresh Hospital, Dehradun. To establish reliability, the test- retest method was

employed, which involves administering the same tool to the same group of participants at two different points in time. The reliability was quantified using Karl Pearson's correlation coefficient. The computed correlation coefficient was r=0.99, indicating an exceptionally high level of consistency between the two sets of measurements. This high correlation demonstrates that the knowledge and practice assessment tools used in the study are highly reliable, ensuring that the tool consistently measures what it is intended to across different instances.

Reliability Test on knowledge (pre experimental group)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.902	.908	2

ETHICAL CONSIDERATION

The study was conducted after obtaining approval from the Institutional Ethical Committee (IEC) of Shri Mahant Indiresh (SMI) Hospital, Dehradun, and necessary permission from the hospital authorities. Written informed consent was obtained from all participants after explaining the purpose, procedure, and voluntary nature of the study. Participants were assured of confidentiality, anonymity, and the freedom to withdraw at any stage without any consequences. Data collection was done respectfully, ensuring privacy and dignity of each participant. The researcher adhered to all ethical principles including autonomy, beneficence, non-maleficence, and justice during the course of the study.

Table 2. Distribution of frequency and percentage of selected Socio- demographic variable of the subjects with chronic kidney disease patients.

N=60

S. NO	SOCIO DEMOGRAPHIC VARIABLE	FREQUENCY (F)	PERCENTAGE %
1.	**AGE**		
	20-30 YEARS	10	16.7%
	31-40 YEARS	15	25%
	41-50 YEARS	18	30%
	ABOVE 51 YEARS	17	28.3%
2.	**GENDER**		
	MALE	35	58.3%
	FEMALE	25	41.7%
3.	**RELIGION**		
	HINDU	40	66.6%
	MUSLIM	10	16.7%
	CHRISTIANS	6	10%
	OTHERS	4	6.7%
4.	**FAMILY INCOME MONTHLY**		
	20000-30000	25	41.7%
	31001-40000	20	33.3%
	41001-50000	10	16.7%
	51001&ABOVE	5	8.3%
5.	**EDUCATION**		
	GRADUATE	22	36.7%
	POST GRADUATE	20	33.3%
	PHD	8	13.3%
	M.PHIL	10	16.7%

6.	**NUMBER OF CHILDREN**		
	NO CHILD	8	13.3%
	ONE	12	20%
	TWO	25	41.7%
	THREE OR MORE THAN 3	15	25%
7.	**MARIETAL STATUS**		
	SINGLE	3	5.0%
	MARIETAL STATUS	42	70.0%
	UNMARRIED	10	16.7%
	WIDOW	5	8.3%
8.	**FAMILY TYPE**		
	JOINT	20	33.3%
	NUCLEAR	30	50%
	EXTENDED	10	16.7%
9.	**HABIT**		
	SMOKING	10	16.7%
	TOBACCO CHEWING	8	13.3%
	ALCOHOL CONSUMPTION	6	10%
	NO HABIT	36	60%
10.	**OCCUPATION**		
	BUISNESSMAN	10	16.7%
	GOVERNMENT	18	30%
	PRIVATE LABOUR	22	36.7%
	UNEMPLOYED	10	16.7%
11.	**ANY HISTORY OF KIDNEY DISEASE IN YOUR FAMILY?**		
	YES	22	36.7%
	NO	38	63.3%
12.	**HAVE YOU BEEN DIAGNOSED WITH MEDICAL CONDITION?**		
	DIABETES MELLITUS	20	33.3%
	HYPERTENSION	22	36.7%

	CIRRHOSIS OF LIVER	10	16.7%
	ANY OTHER (DRUG OVERDOSE)	8	13.3%

Frequency and percentage of the sample according to the level of knowledge in both pre –test and post-test.

N=60

Level of knowledge	PRE-TEST		POST-TEST	
	Number of sample (F)	Percentage (%)	Number of sample (F)	Percentage (%)
INADEQUATE KNOWKLEDGE (0-10)	21	35%	0	0%
MODERATE KNOWLEDGE (11-20)	24	40%	24	40%
ADEQUATE KNOWLEDGE (21-30)	15	25%	36	60%

Frequency and percentage of the sample according to level of practice in both pre test and post test.

Level of practice	Pre test		Post test	
	Number of sample (F)	Percentage (%)	Number of sample (F)	Percentage (%)
Poor practice (15-25)	21	35%	0	0%
Moderate practice(26-35)	24	40%	20	33.3%
Good practice(36-45)	15	25%	40	66.7%

DISCUSSION

HYPOTHESIS:

H1- There will be a significant association between demographic variable and level of knowledge and practice regarding lifestyle modification among Chronic Kidney Disease patients.

RESULT: This hypothesis is accepted.

H2- There will be a significant difference between the pre-test and post-test knowledge scores of Chronic Kidney Disease patients regarding lifestyle modification after administration of the Structured Teaching Program.

RESULT: This hypothesis is accepted.

CONCLUSION:

The study concluded that the Structured Teaching Program (STP) was effective in enhancing both knowledge and practice regarding lifestyle modification among Chronic Kidney Disease patients. The findings revealed that most participants had inadequate knowledge and poor lifestyle practices in the pre-test, which significantly improved after the intervention. This emphasizes the importance of structured, nurse-led education in chronic disease management. While no significant associations were found between most demographic variables and knowledge or practice levels, age showed a mild association with knowledge improvement. Overall, the study confirms that targeted educational strategies can positively influence patient behavior, promote adherence to lifestyle modifications, and ultimately contribute to better disease outcomes and quality of life for Chronic Kidney Disease patients.

SUMMARY OF THE STUDY:

The study was pre-experimental in nature. Convenient sampling technique was used and sample size is 60 at SMI HOSPITAL, DEHRADUN.

The conceptual framework of the study was based on the Health Promotion Model. A structured knowledge and practice questionnaire was developed by the investigator after reviewing relevant literature and validated by subject experts.

In this study, data collection instruments were:

- Socio-demographic data sheet
- Structured knowledge questionnaire
- Practice checklist

The content validity of the tools was established by expert validation. A pilot study was conducted to test reliability. After obtaining administrative and ethical permissions, pre-test data were collected, the Structured Teaching Program was administered, and then post-test data were collected using the same tools. The data were analyzed using descriptive and inferential statistics. The effectiveness of the STP was tested using the paired t-test, and Chi- square test was

used to find the association between post-test scores and selected demographic variables. The level of significance was set at 0.05.

MAJOR FINDINGS OF THE STUDY

- Maximum sample with 30% belonged to the age group of 41–50 years.
- Majority of the participants (58.3%) were males.
- Maximum sample of participants were from hindu religion (66.6%).
- Highest percentage (36.7%) were graduates .
- Majority of the sample (66.6%) followed the Hindu religion.
- Most of the participants from nuclear family had 50%.
- 70% of participants were married.
- Highest percentage (41.7%) had monthly family income between ₹20,000–₹30,000.
- Majority had no family history(63.3%)
- Majority had hypertension(36.7%),followed closely related by diabetes mellitus(33.3%).
- Majority (60%) had no habit of smoking, alcohol, or tobacco consumption.

LIMITATIONS OF THE STUDY

The study was limited to only 60 Chronic Kidney Disease patients.

Conducted in a single selected hospital in Dehradun, limiting generalizability. The study period was short and lasted only one month.

Limited to patients who were available and willing to participate during the study period. Self-reported data may be influenced by recall bias or social desirability bias.

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