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RESEARCH ARTICLE

A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING POST DIALYSIS HOME CARE AMONG CAREGIVERS OF CHRONIC RENAL PATIENTS UNDERGOING HEMODIALYSIS AT SELECTED HOSPITAL OF DISTT. UNA. HIMACHAL PRADESH

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Abstract

Chronic kidney disease (CKD) is the 16th leading cause of years of life lost worldwide. Appropriate screening, diagnosis and management by primary care clinicians are necessary to prevent adverse CKD-associated outcomes, including cardiovascular disease, end stage kidney disease and death. Chronic kidney disease has become a major cause of global morbidity and mortality in developing countries. The burden of Chronic kidney disease in India cannot be assessed accurately. The approximate prevalence of Chronic Kidney disease is 800 per million population and incidence of end stage renal disease is 150-200 per million population. Chronic Kidney Disease is a progressive, irreversible deterioration in renal function in which the body's ability to maintain metabolic and fluid and electrolyte balance fails resulting in retention of urea and nitrogenous waste in the blood. There are mainly 5 stages of renal failure. The end stage of chronic renal failure must require the long term treatment including dialysis or kidney transplantation. Dialysis makes it possible to continue living with end-stage kidney disease for many years or even decades. Dialysis is a process of purification of blood used to remove fluid and uremic waste products from the body when kidneys cannot do so. Approximately 1.5 litres of blood are filtered by a healthy person's kidneys each day. People whose kidneys either do not work properly can't remove waste products from body. A dialysis machine removes a small amount of a patient's blood through a man-made membrane called dialyzer, or artificial kidney to clean out toxins that the kidneys can no longer remove. The filtered blood is then returned to the body. **"**A quasi experimental study to assess the effectiveness of structural teaching programme on knowledge regarding post-dialysis home care among caregivers of chronic renal patients undergoing hemodialysis at selected hospital of distt. Una." The research design selected for the study was pre-experimental research design. Data was collected from 50 samples using convenient sampling technique. Tool was used to collect the data from samples. It consists of 2 sections. Section-A consists of patient's and caregiver's demographic variables and Section-B consists of structured questionnaire and was analysed by

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applying descriptive and inferential statistics. A finding reveals that the out of 50 samples 36% of samples were in the age group of 45-60 years, 54% were male, 36% had got education up-to 12th,56% were unemployed, 62% had income less than 10,000 per month, 96% had rural area as place of residence, 56% had nuclear family, 74% had no family history, 68% were married, 80% had belong to Hindu religion, 66% had health care professionals as source of information regarding post dialysis home care. In pre-test mean knowledge score was 11.18+ 3.706 which was 37.27% of total mean knowledge score percentage. In post-test mean knowledge score 17.98+ 3.727 which was 59.94% of total mean score. The difference in pre-test and post-test mean score was 22.67. Hence it concluded that the structured teaching programme was effective. Paired‘t’ test was calculated to analyse the difference between the pre-test and post-test knowledge scores, shows highly significant difference between pre-test and post-test. Hence the stated null hypothesis was rejected. There was only two significant association found between the knowledge regarding post dialysis home care among caregivers of chronic renal failure patients undergoing haemodialysis i.e. Gender and occupation. There was no other significant association between post-test knowledge scores with selected demographic variables such as age, education, income, place of residence, type of family, family history, marital status, religion, source of information. Thus null hypothesis was accepted.

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Introduction:-

“It is not how much you do, but how much love you put in the doing”

(Mother Teresa)

In the developed and developing countries, with advance in life expectancy and changes in lifestyle, chronic diseases such as diabetes mellitus, cardiac diseases and end stage renal diseases are increasing steadily. The most common and serious health problems are Acute and Chronic renal failure. Chronic kidney disease (CKD) is the 16th leading cause of years of life lost worldwide. Appropriate screening, diagnosis and management by primary care clinicians are necessary to prevent adverse CKD-associated outcomes, including cardiovascular disease, end stage kidney disease and death.

CKD, with its high prevalence, morbidity and mortality, is an important public health problem. With <3% of landmass, India hosts 17% of the Earth’s population. Large numbers of patients below the poverty line, low gross domestic product, and low monetary allocations for health care have led to suboptimal outcomes. Moreover, CKD and other non – communicable diseases have often been ignored in the face of persistent challenges from and competition for resources for communicable diseases and high infant and maternal mortality.**1**

The prevalence rate of CKD is found about 13-15.04% with stage 1,2 and 3 as 6.62%, 5.40% and 3.02% respectively. The true burden ESKD in India is not known, with few dedicated centres for care, lack of universal access to RRT, and absence of a registry. Even today, over 90% of patients requiring RRT in India die because of inability to afford care, and even in those who do start RRT, 60% stop for financial reasons. Among patients who undergo kidney transplantation, unexpected complications have the potential to impose serious financial hardships.**1**

Chronic Renal Failure is a progressive irreversible deterioration in renal function in which the body’s power to maintain metabolic, fluid and electrolyte balance fails, resulting in uremia which contribute the patient to depend up on hemodialysis for the maintenance of the internal milieu and to avoid uremia. In early stage of renal damage, symptoms may be reduced through hemodialysis, control of fluid intake and regulation of diet, and use of medication, as renal function worsen, these treatments become insufficient (S.K. Agarwal et al., 2009).

Hemodialysis was introduced in India in 1962, transplantation was introduced in 1971 and peritoneal dialysis (PD) was introduced in 1991. Dialysis is required when patient sustain enough kidney damage and moves into the 5th or

final stage of Chronic Kidney Disease, also referred as Chronic Renal Failure or End Stage Renal Disease. Hemodialysis is the treatment procedure that is done to assist the failing kidney. In case of renal insufficiency hemodialysis is done to remove waste and toxic products from the blood in which crystalline substances will pass through a semipermeable membrane. In 1884 Dr.William Koff had first developed Hemodialysis and father of dialysis is considered as Dr. William Koff.

Hemodialysis takes place at least 3 times in a week, each session continuing between 3 and 6 hrs depending on the condition of the patient and their compliance with dietary restrictions. A few patients of residual renal failure function can be managed successfully with twice weekly dialysis, but this is not a satisfactory for majority of patients.

In renal failure, the patient's capability of excretion of fluid load is absent or reduced. Fluid balance is absent or reduced. Fluid balance is maintained by removal of fluid on dialysis along with restriction of sodium and water. Disobedience with any can lead to volume overload., which presents in the same way as heart failure, with peripheral and pulmonary edema. Fluid overload can cause hypertension in renal patients. Fluid depletion is less common but may cause by over vigorous removal of fluid during dialysis or by intervening diarrhea or vomiting. It usually presents with symptomatic hypotension and with nausea and weakness.

Diagnosis of renal failure and its need is usually enormous to the patient and his or her family. At the beginning, many of the patients feel positive about the dialysis as it makes them the patients feel positive about the dialysis, feel better and keeps them alive, but there is often great uncertainty about whether it is substantial. The disease and its treatment affect every point of the life of patient. The need for proper education and preparation of the patient and the family at all stages of chronic renal failure and potentially heading toward last stage failure cannot be neglected. Teaching must be provided in short sessions and time provided for clarification and repetition. Time should be provided to the patient and family to ask queries and gain information.

Home care management involves the complete care activities that are tailored to the individual patient when at home. According to the 2010 Global burden of disease study. Chronic Kidney Disease was in 27th rank in the list of causes of mortality worldwide in 1990, but rose to 18th in 2010. In worldwide through Renal Replacement Therapy over 2 million people are being kept alive. Majority of whom are treated in only five countries (US, Germany, Japan, Brazil and Italy) that comprise only 12% of world population only 20% of them were treated 100 developing countries that make up over 50% of world population (The National Kidney Foundation,2015)

Caregiver is a word refer to unpaid relatives or friends of disabled individual who help that individual in his or her activities of daily living. Giving home care to a dialysis patient also needs a plenty of learning. Almost 70% of patients and 80% of caregivers are extremely interested in learning more about how kidney disease affects the patient's daily activities. Caregivers needs are often ignored and under-prioritized in the medical treatment of Chronic Kidney Disease.

Hence, it was necessary to conduct this study for creating awareness regarding the home management of dialysis among the caregivers of hemodialysis subjects to improve their knowledge.

Need For The Study:

One of the global public health problems affecting 5-10% of world population in general is Chronic Kidney Disease (CKD). Chronic Kidney Diseases are evolving as a most important health threat. The people suffering from kidney diseases finally require an expensive and life-long Renal Replacement Therapy. Patients who suffer with Chronic Kidney Disease have to be taken care at home for a longer time before Kidney Transplantation and they depend on intermittent dialysis and drugs to maintain optimum health (Mukesh et al., 2015).

Almost 2.5 lakh people pass away of kidney failure in India every year. It is the third largest assassin after malignancy and heart disease (Tamilnadu Kidney Research Foundation, 2016)**4**.

One of the first technological innovations in medicine is dialysis. It is the only treatment yet allows a patient with end stage kidney failure to live long, healthy and productive lives. At present, about 2.4 million people are alive on dialysis worldwide.

In India, dialysis is kept for the very rich, or to those lucky enough to be fit for full medical reimbursement. Everyone else faces crippling long term payment and moving down into deep poverty. It is approximated that about 200,000 new patients develop End Stage Renal Failure every year in India. Although around two-thirds of the starters to withdraw and be condemned to death. Most of these patients are young, in the best part of existence in their lives – family income producer or mistress of the house. Losing them has overwhelming impact not only on the families but brings down the productivity of entire society and cut downs the national income.

As the size of the middle class, and people with "disposable incomes" has grown up, the number of people seeking – on staying on – dialysis is rising. Dialysis centers, till recently the guard of large cities, are opening frequently even in small cities, thus bringing the treatment close to patient's homes. It is estimated that currently in India at about 100,000 patients are on dialysis

In India, particularly in Delhi and Chennai the prevalence rate of Chronic Renal Failure combined with other conditions shows that Hypertension 32.5%, Obesity 17.8% and Diabetes Mellitus 19% in2010 - 2011.Caregivers consume an ample amount of time interacting with their care receiver, while providing care in a wide sphere of activities. The role of caregivers has changed over the years. There is an urgent need for additional services to assist them in shouldering the burden of care which can be given through counselling, education, social and psychological support. It is very important to provide education and intervention in hospitals and community regarding post dialysis home care to both dialysis patient and caregivers. (Navneet et al, 2014)

A systematic review was conducted to determine the effectiveness of interventions anticipated at providing support to caregivers of people with Chronic Renal Disease. Three studies were recognizing that evaluated an intervention for caregivers of Chronic Renal Disease patients. All three only assessed the effectiveness of educational material on caregiver's knowledge. Two, calculated information provided to caregivers of dialysis patients with the help of a pre-test and post-test study design. The other study used participatory action research methods to progress and evaluate an information handbook for transplant patients and their caregivers Studies found that the supplies of information improved caregiver's knowledge that may lead to make better outcomes of patients (Gouri A Gulavani et al., 2020) At home, the patient's relatives should have sufficient information about the patient care and the prevention of hemodialysis complications. However, the study showed that these caregivers usually lack the information and skills related to patient care; they have no social support as well. With disease progression, patients become more disabled and caregivers are confronted with more complex caring needs. One of these needs is the information about home care of these patients (Hudson et al., 2008; Mollaoglu et al., 2013).

Hence, the researcher intended to undertake the present study to assess the effectiveness of Structured Teaching Programme on knowledge regarding post dialysis home care among caregivers of Chronic Renal Failure patients undergoing hemodialysis.

Research Methodology:-

Research Approach :

A quasi experimental research approach was considered to be appropriate for the present study used to assess the effectiveness of structured teaching programme on knowledge regarding post dialysis home care among caregivers of chronic renal patients undergoing haemodialysis at selected hospital of UNA (H.P).

Research Design:

Research design provides an outline of how the research will be carried out and the methods that will be used.one group pre- test post- test quasi-experimental research design was used to accomplish the stated objectives.

Research Variable:

Independent and dependent variables: In present study research variables was knowledge among caregivers and factors which could influence the effectiveness of structured teaching programme.

Independent variable:

Planned teaching programme for improving knowledge of the renal patient regarding fistula care and diet management.

Dependent variable:
Knowledge of the renal patient regarding fistula care and diet management.

Demographic variables:
Age, gender, family income, occupation.

Research Setting:
The research study was conducted in: Regional Hospital UNA (H.P)

Sample Size:
Sample of the present study was 50 caregivers of Renal patients on dialysis at regional hospital UNA (H.P).

Sampling Technique:
Sampling is the process of selecting representative units from an entire population of a study. It is a process of selecting a portion of population. The process of sampling makes it possible to accept a generalization to the intended population on the basis of careful observation of the variables within the relatively small portion of the population. Non probability convenient sampling technique was employed in present study to select the sample.

Criteria For Selection Of Sample
Inclusion Criteria
1. Renal patients on dialysis who were willing to participate in the study
2. Patients who are available during the time of the data collection.

Exclusion Criteria:
1. Patients who are not willing
2. Patients are not available during at the of data collection

Development And Description Of The Tool
As the study was concerned with effectiveness of structured teaching program on knowledge regarding post-dialysis home care among caregivers ofchronic renal failure patients undergoing hemodialysis. So, structured knowledge questionnaire was used to assess the knowledge ofcaregivers ofchronic renal failurepatientsundergoing hemodialysis.

Selection And Development Of Tool
The tool was formulated after an extensive review of literature and discussion with the experts and guides.
The tool consists of two sections:

Section –A:
Socio-demographic variables:
It consists of various demographic variables of patient to obtain personal information from chronic renal failure patients such as age, gender, education, occupation, marital status, type of hemodialysis access, duration of undergoing dialysis,numberof hemodialysis per week, restriction of food and fluid, presence of other chronic diseases.

Section-B:
Part : I Self Structured Knowledge Questionnaire
Self-structured questionnaire was used to assess the knowledge of post dialysis homecare among the caregivers of chronic renal failure patients undergoing hemodialysis. It consists of 30 multiple choice questions including general information on chronic renal failure and hemodialysis,care of vascular access,nutrition, care of chronic renal failure with hypertension, travel and exercise.

Part:II Structured Teaching Programme
It consists of systematically design teaching programme regarding the post dialysis home care of chronic renal patients.

Content Validity Of Tool

Content validity is the degree to which an instrument has an appropriate sample of items for the construct being adequately covers the construct domain. The tool was submitted to seven experts of different fields of nursing. Experts were requested to judge the items of tools for clarity, relevance, appropriateness, relatedness and meaningfulness for the purpose of the study and give their opinion and suggestion on the content, its coverage, organization. There were almost 100% agreements of the items in the questionnaires. However, there were few suggestions to modify some of the questions and they were incorporated in the final draft.

Ethical Consideration

Study was conducted after the approval of ethical and research committee.

1. Taking informed consent from the participants.
2. Avoiding errors in data collection.
3. All the study participants were informed about the purpose of the study, their part during the study and how the confidentiality of the study findings was maintained.
4. Obtain the permission from competent authority of a particular healthcare facility.
5. Doing justice to participants in analyzing data.
6. Maintaining confidentiality of the information and anonymity of subjects.

Reliability

Reliability is the degree of consistency and accuracy with which an instrument measures for attribute for which it is designed to measures the attribute for which it is designed to measure. Reliability of the tool was computed by applying **Karl Pearson's Correlation Coefficient formula.** The reliability of criterion measure for knowledge assessment tool was 0.92. The tool was found to be reliable and feasible for conducting the study as the range of reliability is from 0.6 to 1.0.

Method Of Data Collection:-

A written permission obtained from the ethical committee to conduct the study in the dialysis department at REGIONAL HOSPITAL, UNA.

The researcher met the subjects and explained about the purpose of the research and assured confidentiality and anonymity and consent was obtained from the subjects. 50 samples were selected using non probability convenient sampling technique. The researcher adopted quasi experimental one group pre-test post-test research design. The demographic variables were collected by using structured interview questionnaire.

1. **Pre-test:**During pre-test the caregiver's knowledge of post dialysis home care was measured by multiple choice questions, which had 30 questions. Then, the subject received structured teaching-program regarding post dialysis home care for 30 minutes.
2. **Implementation of Structured teaching programme -**The planned teaching programme was implemented to caregivers on the same day of pre –test.
3. **Post-test:** On 7^{th} day post-test done by researcher as like pre-test to assess the effectiveness of structured teaching program on knowledge regarding post dialysis home care among caregivers of chronic renal failure patients undergoing hemodialysis.

Plan For Data Analysis

Data was analyzed on the basis of objectives and hypothesis by using descriptive study or inferential statistics.

1. Descriptive statistics were used to analyze the frequency and percentage of demographic data and mean and standard deviation of level of knowledge regarding post dialysis home care.
2. Inferential statistics were used to determine comparison between pre-test or post-test knowledge scores and association between post-test knowledge scores with demographic variables.
3. Paired t-test was used to compare the pre-test and post-test knowledge scores of caregivers.
4. Chi-square test was used to associate the caregivers level of knowledge with the selected demographic variables.

Results:-

A finding reveals that the out of 50 samples 36% of samples were in the age group of 45-60 years, 54% were male, 36% had got education up-to 12th,56% were unemployed, 62% had income less than 10,000 per month, 96% had

rural area as place of residence, 56% had nuclear family, 74% had no family history, 68% were married, 80% had belong to Hindu religion, 66% had health care professionals as source of information regarding post dialysis home care.

In pre-test mean knowledge score was 11.18+ 3.706 which was 37.27% of total mean knowledge score percentage. In post-test mean knowledge score 17.98+ 3.727 which was 59.94% of total mean score. The difference in pre-test and post-test mean score was 22.67. Hence it concluded that the structured teaching programme was effective. It helped the caregivers to improve their knowledge regarding post dialysis home care of chronic renal failure patients undergoing haemodialysis.

Paired 't' test was calculated to analyse the difference between the pre-test and post-test knowledge scores, shows highly significant difference between pre-test and post-test. Hence the stated null hypothesis was rejected.

There was only two significant association found between the knowledge regarding post dialysis home care among caregivers of chronic renal failure patients undergoing haemodialysis i.e. Gender and occupation. There was no other significant association between post-test knowledge scores with selected demographic variables such as age, education, income, place of residence, type of family, family history, marital status, religion, and source of information.

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