

# A Study to Assess the Effectiveness of Computer Assisted Teaching Programme on Knowledge Regarding Renal Diet Among Chronic Renal Failure Patients Undergoing Hemodialysis in Selected Hospital at Bilaspur, Chhattisgarh

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**Abstract:** The investigator felt that lack of knowledge against renal diet was barrier to chronic renal failure patients undergoing hemodialysis, this influenced to take up this study “A study to assess the effectiveness of computer assisted teaching programme on knowledge regarding renal diet among chronic renal failure patients undergoing hemodialysis in selected hospital at Bilaspur, (C.G)”.

**Keywords:** Chronic Renal Failure, Computer Assisted Teaching Programme, Hemodialysis, Renal Diet.

## 1. Introduction

“Bones can break, glands can loaf, muscles can atrophy, and even brain can go to rest without immediate danger to survival; but if kidneys fail: Neither bones, glands, muscle nor brain could carry on”.

This statement emphasizes the importance of kidney in our life. Proper functioning of kidney was essential to maintain health, because it filters blood, and excretes waste products and maintains homeostasis of body (Mantik, Sharon, Lewis, et al 2011).

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 upon 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 is the most common modality followed by transplantation. India is estimated to have about 1, 20,000

patients on hemodialysis. Hemodialysis is an alternative way of treatment in chronic renal failure patients. Through hemodialysis gives more chance of living to the patients. (Bare Brenda et al. 2004) Hemodialysis is a therapy that filters waste removes extra fluids and electrolytes. In hemodialysis, blood is removed from the body and filtered through a man-made membrane called a dialyzer, or artificial kidney and then the filtered blood is returned to the body. For people who are being treated with dialysis, the ability of the kidney to get rid of waste products and body fluids is compromised, consequently.

The dialysis patient needs to be consumed right amount of energy, protein, fluids, vitamins and minerals. The kidneys of people on dialysis are unable to cope with excess fluid and other metabolic wastes. Individual using dialysis often consumes inadequate quantities of macro and micro nutrients. It is vital that the nutrient content of food consumed by these people is carefully balanced. Malnutrition is common in people being treated with dialysis and close to 40% suffers from varying degrees of protein energy malnutrition. It is important for people who are on dialysis to access nutritional counseling so they understand the importance of different foods and the types of nutrients they need to add to their diet and the food which they should restrict. 5 Studies have shown that effectiveness of the structured teaching programme on management of chronic kidney disease. Post-test was conducted after a week. It revealed that the teaching programme was effective in improving the knowledge and attitude after the teaching programme.

### A. Need for the Study

The investigator came across many chronic renal failure patients undergoing hemodialysis during his clinical experience in dialysis unit. She noticed that, the hemodialysis patient's

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knowledge and practices of dietary regulations were very poor, even though they were on hemodialysis for more than 1 year. Many patients did not follow dietary regime, as they thought, that only hemodialysis is sufficient to prolong their life. Few had poor food intake with marked reduction of fat and muscle tone, which was due to poor economical condition. The investigator felt that, patient's compliance is the key factor in dietary management of chronic renal failure while on hemodialysis. Thus, in view of the importance of patient's knowledge of dietary regulations, exercise, dialysis, and kidney transplantation and to reduce the burden on the society, thus the investigator has proposed to investigate this topic.

### B. Statement of the Problem

A study to assess the effectiveness of computer assisted teaching programme on knowledge regarding renal diet among chronic renal failure patients undergoing hemodialysis in selected hospital at Bilaspur, (C.G.).

### C. Objectives

- 1) To assess the pre test and post test level of knowledge regarding renal diet among chronic renal failure patients undergoing hemodialysis in selected hospital at Bilaspur (C.G.).
- 2) To assess the effectiveness of computer assisted teaching programme on knowledge regarding renal diet among chronic renal failure patients undergoing hemodialysis in selected hospital at Bilaspur (C.G.).
- 3) To find out the association between the pretest with their selected socio demographic variables.

### D. Hypothesis

At 0.05 level of significance:

- $H_1$  - There will be significant difference between pretest & post test level of knowledge scores regarding renal diet among chronic renal failure patients undergoing haemodialysis in selected hospital at Bilaspur (C.G.).
- $H_2$  - There will be significant association between pretest with their selected socio demographic variables.

## 2. Methodology

The research approach used for this study was Quantitative research approach. Pre experimental design. (i.e.) one group pre test and post test design was used to evaluate the effectiveness of computer assisted teaching programme on knowledge regarding renal diet among chronic renal failure patients undergoing hemodialysis in selected hospital at Bilaspur (C.G.). Convenient Sampling (non-probability) technique was used for the selection of patients. The counts of 60 samples were

selected for the study. The tools consist of two sections:

*Section A:* Socio-demographic profile of chronic renal failure patients.

*Section B:* Self structured questionnaire to assess knowledge of chronic renal failure patients towards renal diet.

- Content on renal diet among chronic renal failure patients undergoing hemodialysis.

The tool was validated by experts. Pilot study is conducted among 10 samples to measure in CIMS Hospital, Bilaspur (C.G.) in order to establish the reliability. The split half method was used to test the reliability of the tool and co-relation was found by using Karl-Pearson's correlation of co-efficient formula. The reliability of the structured knowledge questionnaire r value was found to be 0.90 with r' value 0.94. So, tool was found to be highly reliable for data collection.

Main study was conducted in the dialysis unit of District Hospital, Bilaspur (C.G.) & Sunshine Hospital, Bilaspur, (C.G.). The data was analyzed using descriptive statistics such as frequency, mean, percentage and standard deviation and inferential statistics chi-square, 'Z' test.

## 3. Analysis

Socio-demographic profile of chronic renal failure patients consists of various variables of patient such as age, gender, education, area of residence, occupation, marital status, monthly income, type of hemodialysis access, duration of illness, any family history of chronic renal failure, any associated illness, previous knowledge on renal diet, source of knowledge, bio physiological parameters.

Table 1 shows that knowledge score between pre test and post test in which 39 [65%] shows average knowledge, 21 [35%] shows poor knowledge in pre test and 42 [70%] shows good knowledge, 18 [30%] shows average knowledge in post test. Hence  $H_1$  was accepted.

- The assessment of area wise analysis of knowledge regarding renal diet in pre-test and post-test knowledge mean scores were in general information on chronic renal disease & hemodialysis 65.20% and 91.66 %, nutrition 72.50 % and 86.5 % and renal diet 40.29 % and 75.35 %.
- The total knowledge score was 694 out of 1440 i.e. mean 11.56, mean score percentage 48.19 and coefficient of variance 14.47 with standard deviation of 3.70 in pre test and in post test the knowledge score was 1148 out of 1440 i.e. mean 19.13, mean score percentage 53.138 and coefficient of variance 8.31. The above result signifies that there has been a consistent increase in post test when compared to pre test.
- Revealed that improving the knowledge as calculated

Table 1  
Criteria wise analysis related to knowledge score between pre test and post test by frequency, percentage

S.No.	Score	Pre Test		Post Test	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
1	Poor	21	35%	0	0%
2	Average	39	65%	18	30%
3	Good	0	0%	42	70%
Total		60	100	60	100

'Z' value (23.97) which is highly significant at 0.05. The data signifies that the computer assisted teaching programme was very much effective.

In relation to association between knowledge score and socio demographic variables there is a significant association between selected socio-demographic variables such as area of residence ( $t = 5.98, p < 0.05$ ), any associated illness ( $t = 5.99, p < 0.05$ ) at the degree of freedom (2) and duration of illness ( $t = 12.6, p < 0.05$ ), if yes than disease condition ( $t = 12.6, p < 0.001$ ) at the degree of freedom (6) were found to be statistically significant. Hence ( $H_2$ ) is accepted and inferred as there is significant association between selected socio-demographic variables (area of residence, any associated illness, if yes than disease condition, duration of illness) with pre-test knowledge score of chronic renal failure patients undergoing hemodialysis.

#### A. Limitations

- The present study was limited to only one pre-test, one post-test and one administration of computer assisted teaching programme.
- The study did not attempt to measure the practice and attitude of chronic renal failure patients undergoing hemodialysis towards renal diet.
- The size of the sample was only 60 subjects; hence it is difficult to make broad organization.
- The time span of the study was short.
- A structured knowledge questionnaire was developed as no standardized tool was available.

#### 4. Conclusion

The findings of the study revealed that out of 60 samples 39 [65%] shows average knowledge, 21 [35%] shows poor knowledge in pre test and 42 [70%] shows good knowledge, 18 [30%] shows average knowledge in post test regarding renal diet among chronic renal failure patients undergoing hemodialysis.

#### A. Recommendations

- A similar study can be undertaken in different settings.
- A similar study can be done among patients undergoing peritoneal dialysis.
- A comparative study can be done to compare the nutritional status among patients undergoing peritoneal and hemodialysis.
- A similar study is carried out by using different teaching strategies.

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