



## STUDY THE EFFECTIVENESS OF A PLANNED TEACHING ON DIET AND FLUID INTAKE TO PREVENT SELECTED COMPLICATIONS IN PATIENTS ON MAINTENANCE – HAEMODIALYSIS AT SELECTED HOSPITAL, KOLKATA

**Debarchana Mandal**

Senior Lecturer, West Bengal Govt. College of Nursing, S.S.K.M Hospital Campus, Kolkata.

**Sonali Ganguly\***

Principal, B. M. Birla College of Nursing, Kolkata. \*Corresponding Author

### ABSTRACT

A pre-experimental study was conducted to find out the effect of a planned teaching on diet and fluid intake to prevent selected complications among patients on maintenance haemodialysis at selected hospitals, Kolkata with the objectives to identify and analysis complications related to improper diet and fluid intake, to determine knowledge level of haemodialysis patient and also to find out the effect of the planned teaching programme. The conceptual framework of the study was based on Irwin Rosenstock's Health Belief Model. One group pre-test post-test research design was adopted. Non-probability convenience sampling technique was used to select 30 haemodialysis patients. Patient case study proforma, a semi-structured interview schedule and a structured knowledge interview schedule were used to collect the data. The study findings showed that the mean post test knowledge score (26.83) was higher than the mean pre-test knowledge score (16.66) with a mean difference of 10.17 which was found statistically significant as evident from 't' value of 22.6 [ $t(29) = 3.4$ ] at 0.001 level of significance indicating the effectiveness of the planned teaching. This study has several implications in nursing education, administration, practice and research. The study was concluded with the recommendation for conducting with larger sample for better generalization of study findings.

**KEYWORDS :** Effectiveness, Chronic renal failure patient, Maintenance haemodialysis, Planned teaching program, knowledge, selected complications.

### INTRODUCTION:

Kidney failure is a growing problem and incidence of chronic kidney failure is increasing worldwide, creating a major health problem. The increasing number of both acute and chronic renal failure has created increased demand for adequate treatment facilities. As a result, successful treatment of End-Stage Renal Disease (ESRD) patients by haemodialysis requires cooperation of patient in maintaining a strict diet, restricting fluid and taking medications regularly. It has been reported that between 20 to 78% of the haemodialysed patients are noncompliant to their diet and fluid therapy because of the alteration in their long-standing personal habits and life style. The most frequent measure of compliance are interdialytic weight gain (IWG), serum potassium level, blood urea nitrogen and serum phosphate level. Non-adherence to diet and fluid restrictions in these cases can result in serious complications like hyperkalemia and fluid overload.

Study conducted by **Baraz H, Parvardeh S, Mohammadi E & Broumand B (2010)** on dietary and fluid compliance: an educational intervention for patients having haemodialysis, findings showed compliance in terms of biochemical parameters and interdialytic weight gain was observed in 63.5% and 76.2% of patients in the oral and video teaching groups respectively. Statistically significant correlations were observed between demographic variables (age, educational level and occupation) and dietary and fluid compliances ( $P < 0.001$ ) [1].

Study conducted by **Safdar N, Baakza H, Kumar H, S.A. J. Naqvi (2010)** on non-compliance to diet and fluid restrictions among haemodialysis patients. Serial measurement of serum potassium and interdialytic weight gain (IWG) were carried out with 50 haemodialysis patients at the Kidney Centre over a period of one month. Patients with an IWG  $> 1.5$  Kg and/or serum K  $> 5.5$  m Eq/L were defined as non-compliant. Thirty-two patients (64%) were non-compliant in either diet or fluid. In 13 of these cases, both serum K and IWG were elevated [2].

Nursing, being a total care process takes into account its responsibility to prepare patients and their relatives about diet and fluid intake and the possible complications regarding this in order to prevent those complications to maintain their optimal health within their limitations imposed by the illness. A structured multidisciplinary team program or health education in the form of a structured instruction is beneficial for them to prevent and manage complications regarding diet and fluid intake in the home situations and thus will help in improving the quality of life.

So, the investigator intended to do this study as the need for adequate information about diet and fluid intake to prevent complications was of

great importance as it is the nursing responsibility to prevent the potential complications, unnecessary expenditure and other consequences affecting their health.

### Problem statement

Study the effectiveness of a planned teaching on diet and fluid intake to prevent selected complications in patients on maintenance – haemodialysis at selected hospital, Kolkata.

### Objectives

1. To identify the common complications among patients on maintenance haemodialysis.
2. To analyse those complications that can be prevented with prescribed diet and fluid intake based on literature and evaluation by experts.
3. To develop and validate the planned teaching on diet and fluid intake to prevent selected complications.
4. To determine the knowledge level of patients regarding diet and fluid intake to prevent selected complications.
5. To evaluate the effect of planned teaching on knowledge regarding diet and fluid intake to prevent selected complications in terms of change in knowledge score.
6. To find out the association between the knowledge score and selected demographic variables.

### Assumptions

- Haemodialysis patients have some knowledge regarding possible complications of improper diet and fluid intake.
- The planned teaching may improve the knowledge level of haemodialysis patients regarding diet and fluid therapy to prevent complications.

### Variables:

**Independent variable-** Planned teaching on diet and fluid intake to prevent selected complications.

**Dependent variable-** Knowledge level of patients on maintenance haemodialysis.

### Delimitations:

- Patients who-
- are diagnosed to have stage 5 chronic renal failure only.
  - are willing to participate and available during data collection period.

### Methodology:

**Research approach** – Pre-experimental research approach.

**Research design-** One group pre test- post test research design.

K<sub>1</sub> X K<sub>2</sub>

K<sub>1</sub>- Pre test knowledge level of haemodialysis patients on diet and fluid intake to prevent selected complications on day 1.

X- Introduction of the planned teaching on diet and fluid intake to prevent selected complications on day 1.

K<sub>2</sub>- Post test knowledge level of haemodialysis patients on diet and fluid intake to prevent selected complications on day 8.

**Population** - All chronic renal failure patients on maintenance – haemodialysis.

**Sample** - Chronic renal failure patients on maintenance – haemodialysis attending selected hospital, Kolkata.

**Sample size**- 30 Chronic renal failure patient on maintenance – haemodialysis.

**Sampling technique** – Non probability convenience sampling technique.

**MATERIAL AND METHODS**

A pre-experimental, one group pre-test post-test research design was adopted and by non-probability convenience sampling technique 30 haemodialysis patients were selected. In phase-I, by patient case study on 20 chronic renal failure patients on maintenance haemodialysis, extensive literature review and evaluation by experts, selected complications due to improper diet and fluid intake were listed like fluid overload and breathing difficulty, hyperkalemia and hypokalemia, dehydration, uremia, hypertension, wasting syndrome, protein energy malnutrition and anaemia. In phase II, the planned teaching was developed and validated by 9 experts. Reliability of structured knowledge interview schedule was calculated by split half method followed by Spearman Brown prophecy formula in which the value of 'r' was .802. A semi-structured interview schedule (Tool-1) to collect demographic data and a structured knowledge interview schedule (Tool-2) was developed to assess knowledge level of haemodialysis patient. Informed consent from the participants and formal permissions from the concerned Head of participating institutions were taken. The purpose of the study was explained to each participant. Each participant took 25-30 minutes on an average to answer. Separate code number was used for each participant to maintain the anonymity and privacy.

**Data analysis and interpretation:**

Data related with demographic characteristics, major study findings shows that 53.33% participants were in the age group of 41-60 years, 66.66% were male, 93.33% were married, 83.33% were Hindu, 33.33% had educational qualification below Madhyamik level. Data also showed that by occupation, 36.66% participants were employed, 53.33% had monthly family income less than Rs. 10,000 and regarding source of haemodialysis expenses, 53.33% participants were financially dependent on their family only. Regarding disease variables, majority (33.33%) of participants were suffering from chronic renal failure for a duration of 1 -2 years, 36.33% were on maintenance haemodialysis for less than 1 year, 73.33% had knowledge about restriction, 33.33% did not know about family history of renal failure, 66.66% participants underwent 3 times HD per week and 53.33% had history of one time hospital admission due to the complications of their disease condition.

Study findings also showed that in the pre-test, knowledge level of haemodialysis patients ranges between 6 – 30 and in post-test, it ranges between 11 – 34. In pre-test, majority of participants (64.82%) had poor knowledge and in post-test, majority (46.63%) had good knowledge level and maximum (93%) knowledge gained by the participants was in the area of kidney and the disease of CRF.

**Table 1 Mean, median and standard deviation of pre-test and post-test knowledge score of haemodialysis patient.**

n = 30

Knowledge score	Mean	Median	Standard deviation
Pre test	16.66	16.57	9.2
Post test	26.83	27.5	9.5

Data presented in table 1 shows that the mean post-test knowledge score (26.83) was higher than the mean pre-test knowledge score (16.66) with the median of 27.5 and 16.57 respectively. The table also

depicts that the standard deviation of pre-test score was 9.2, in post-test it was 9.5 which indicates that there was more homogeneity in the post-test knowledge score.

H<sub>0</sub>-There is no significant difference between the mean pre-test and post-test knowledge score of haemodialysis patients after exposure to the planned teaching as measured by structured knowledge interview schedule at 0.05 level of significance.

H<sub>1</sub>- The mean post-test knowledge score of the haemodialysis patients regarding diet and fluid intake to prevent selected complications is significantly higher than the mean pre-test knowledge score after exposure to the planned teaching as evident from the structured knowledge interview schedule at 0.05 level of significance.

**Table 2 Mean, median, mean difference, standard deviation, SE<sub>D</sub>, and 't' value of pre-test and post- test knowledge score of haemodialysis patient.**

n = 30

Knowledge score	Mean	Median	Mean difference	SD	SED	t value
Pre test	16.66	16.57	10.17	9.2	0.3	22.6 ***
Post test	26.83	27.5		9.5		

't' df (29)=3.4 , p<0.001

Data presented in table 2 shows that the mean post-test knowledge score (26.83) was higher than the mean pre-test knowledge score (16.66) with a mean difference of 10.17 which was found statistically significant as evident from 't' value of 22.6 [t (29)= 3.4] at 0.001 level of significance. This indicates that the mean difference between pre-test and post-test knowledge score is a true difference and not by chance. Hence null hypothesis (H<sub>0</sub>) was rejected and research hypothesis (H<sub>1</sub>) was accepted. Thus it can be concluded that the planned teaching was effective in enhancing knowledge level of haemodialysis patient.

**CONCLUSION**

On the basis of the data analyzed, it can be concluded that the planned teaching was effective in enhancing the knowledge level of haemodialysis patient and no significant association was found between knowledge score and selected demographic variables. This study has several implications in nursing education, practice, administration and research. The study was concluded with recommendations for conducting on larger samples with control group for better generalization of the findings and a follow up study to assess the effectiveness of the planned teaching in terms of treatment compliance.

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