

## Research Article

## Effectiveness of structured teaching programme on knowledge and practice of home based self-care among patients undergoing haemodialysis

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### Abstract

A study was conducted to see the effectiveness of structured teaching programme on home based self-care among patients undergoing haemodialysis. **Aim:** The aim of the study was to assess the knowledge and practice of home based self-care among patients undergoing haemodialysis. **Materials and methods:** The methodology pre-experimental one group pre-test post-test design. The study was carried out on the dialysis unit of NIMS hospital, Jaipur. 30 patients were conveniently selected for the study. The data collection was done with the help of structured knowledge questionnaire and self-reported practice was observed by 4 point Likert Scale. The statistical method for the demographic variables was presented by using frequencies and percentages, Mean and standard deviation was used to describe the knowledge and practice of patients undergoing haemodialysis, effectiveness of the STP was analyzed using paired 't' test. Association between demographic variables with the knowledge and practice scores of patients undergoing haemodialysis was tested using chi-square test. **Results:** Result revealed that the mean post-test knowledge score 18.8 was higher than mean pre-test knowledge score 14.23. The computed 't' value 5.001 ( $p<0.05$ ) showed that there was significant difference between the mean pre-test and mean post-test knowledge score. The mean post-test practice score 29.53 was higher than mean pre-test practice score 16.13. The computed 't' value 7.73 ( $p<0.05$ ) showed that there was significant difference between the mean pre-test and mean post-test practice score. **Conclusion:** The study revealed that patient teaching followed by distribution of booklet on home based self-care among patients undergoing haemodialysis is beneficial.

**Keyword:** Structured teaching programme, knowledge, practice, haemodialysis, Nurses.

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### 1. Introduction

End Stage Renal Disease is an incurable chronic illness that is often can only be saved through renal replacement therapy on a permanent basis like dialysis or kidney transplantation [1].

In India, patients developing end-stage kidney failure every year are estimated to be 200,000. Although a majority of them start dialysis, approximately two-thirds of them are forced to abandon the procedure due to various constraints, and hence are condemned to death. Presently 100000-odd patients are undergoing dialysis in India, demand for dialysis in India is an increasing at a rate of 31%, and globally the rate is around 8% [2].

Patients with ESRD are provided haemodialysis, is a lifesaving process but it is not without complications and common complications are hypotension (25-55%), cramps (5-20%), nausea (5-15%), headaches (5%), chest pain (2-5 %), back pain (2-5 %), itching (5%), fever/chills (1%) and the risk of infection averages 10% in AVG, 5% in transposed fistulas and less than 2% in non-transposed fistulas.

### Need for the study

The prevalence of patients undergoing haemodialysis is increasing in India but it is observed that these individuals are not aware about home-based self-care

activities. Therefore, it is important to know the patient self-care management level [3].

Self management knowledge provides an increased chance of positive results from the procedure. Considering this, educating the ESRD patients on key aspects of self-management may help the patients who are facing the unyielding disease [4].

In the light of above facts an investigator felt the need to provide a proper education and to develop an information booklet for patients undergoing haemodialysis regarding home-based self-care and thus increase their knowledge which in turn would help them live their life with less dependence [5].

## Objectives

1. To assess the knowledge and practice of home based self-care among patients undergoing haemodialysis.
2. To develop and validate structured teaching programme and an information booklet on knowledge and practice of home based self-care among patients undergoing haemodialysis.
3. To evaluate the effectiveness of structured teaching programme on knowledge and practice of home based self-care among patients undergoing haemodialysis.
4. To find the association between pre-test knowledge score and selected demographic variables.
5. To find the association between pre-test practice score and selected demographic variables.

## Hypotheses

H01 There will be no significant difference between mean pretest knowledge score and mean post-test knowledge score after structured teaching program regarding home based self-care among patients undergoing hemodialysis

H02 There will be no significant difference between mean pretest and mean post-test practice score after structured teaching program regarding home based self-care among patients undergoing hemodialysis.

H03 There will be no significant association between the knowledge score and selected demographic variables

H04 There will be no significant association between the practice score and selected demographic variables.

## Conceptual framework

The framework of this study is based on Orem's self-care model theory.

## 2. Methodology

- Research approach- A quantitative research approach was used for this study.
- Research design-In this study a pre-experimental, one group pre-test, post-test research design was used to evaluate the effectiveness of structured teaching programme on knowledge and practice of home based self-care among patients undergoing haemodialysis.
- Independent variable- structured teaching programme on home based self- care
- Dependent variable- Knowledge and practice on home based self-care
- Setting- The study was conducted in NIMS hospitals, Jaipur.
- Sample size- The sample size for the study was 30 patients undergoing haemodialysis from NIMS hospital.
- Sampling technique- the sampling technique for this study was convenience sampling.
- Statistical method for the demographic variables was presented by using frequencies and percentages, Mean and standard deviation was used to describe the knowledge and practice of patients undergoing haemodialysis, effectiveness of the STP was analyzed using paired 't' test. Association between demographic variables with the knowledge and practice scores of patients undergoing haemodialysis was tested using chi-square test

## Tool

The tool was divided into three sections-

### Section A- Demographic Variables

**Section B-** Structured knowledge questionnaire regarding home based self-care undergoing haemodialysis

**Section C-** 4 point Likert Scale was developed on practice of home based self-care undergoing haemodialysis

## Content validity and reliability

Tool was validated by 9 experts from medical surgical nursing. The Reliability of the knowledge questionnaire was tested by split half method. The reliability of knowledge score obtained by Karl Pearson's formula and found reliable ( $r=.743$ ). 4 point Likert Scale on practice of home based self-care was tested by test-retest method. The reliability of 4 point Likert Scale was tested by colbarch alpha value and found reliable ( $\alpha = .726$ )

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Where N= number of item

Cbar= average covariance between item pair

Vbar= average variance

## Ethical consideration

Ethical approval was obtained from the institutional Ethical committee of the University and formal approval for data collection was obtained from the NIMS hospital authority. Written and oral consent of patients was obtained.

## Data collection process

Pre-test was conducted then STP was administered followed by distribution of information booklet to the patients. Then post-test was conducted after 7 days.

## 3. Results

### Findings related to frequency and percentage distribution of socio demographic variables

Table No 1: Frequency and percentage distribution of socio demographic variables

SN	Demographic Variables	Frequency	%
1			
	Age		
	21-30years	8	27
	31-40years	9	30
	41-50years	8	27
	50years above	5	17
2			
	sex		
	Male	16	53
	Female	14	47
3			
	Level of education		
	Illiterate	10	33
	Primary	8	27
	Secondary	4	13
	Se.secondary	4	13
	Graduation and above	4	13
4			
	Occupation		
	Govt.job	1	3
	Private job	4	13
	Farmer/Labour	11	37
	Unemployed/Housewife	14	47
5			
	Family Monthly Income		
	<5000Rs	12	40
	5000-10000	11	37
	10000-20000	2	7
	20000	5	17
6			
	Area of citizenship		
	urban	3	10
	rural	27	90
7			
	Duration of illness		
	0-6 month	11	37
	1-2 yr	10	33
	2-5yr	6	20
	>5yr	3	10
8			
	Co-morbid factors		
	Hypertension	8	27
	Diabetes	5	17
	Others	17	57

SN	Demographic variables	Frequency	%
9			
	Periods of haemodialysis		
	0-6 months	11	37
	1-2yr	10	33
	2-5yr	6	20
	>5yr	3	10
10			
	Frequency of haemodialysis		
	2 times/week	14	47
	3 times/week	15	50
	>3times/week.	1	3

### Findings related to comparative distribution of respondents according to knowledge level in pre and post-test assessment

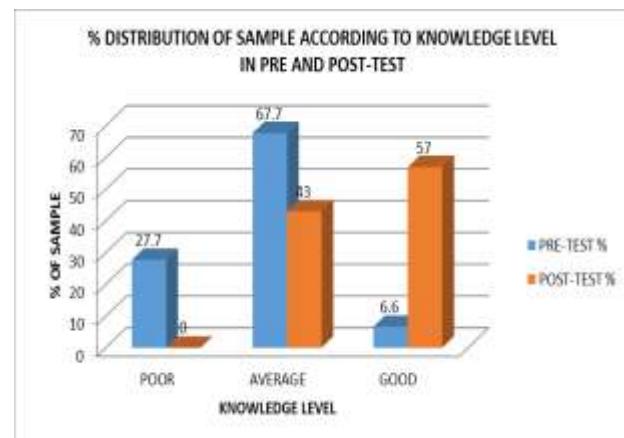


Fig No 1: distribution of respondents according to Knowledge level in pre and post-test assessment

Figure 1 shows that in pre-test 8(27.7%) of patients had poor level of knowledge followed by 20(67.7%) had average knowledge and very few 2(6.6%) had good knowledge. In post-test 13(43%) of subjects had average knowledge and 17(57%) had good knowledge, whereas no one had poor knowledge.

### Findings related to comparative distribution of respondents according to practice level in pre and post-test assessment

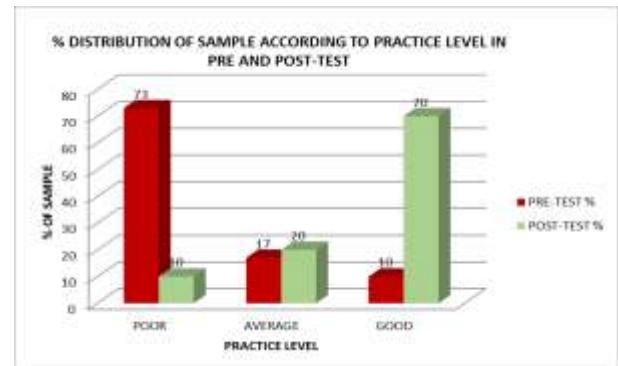


Fig No 2: Distribution of respondents according to practice level in pre and post-test assessment

Figure 2 shows that in pre-test most of the sample 22(73%) had poor practice followed by 5(17%) had average practice and very few 3(10%) had good practice. Whereas in post-test majority 21(70%) of patient had good practice, followed by 6 (20%) of patient had average practice, only few 3(10%) had poor practice.

#### **Findings related to effectiveness of STP on knowledge and practice on home based self-care among patients undergoing haemodialysis**

Table No 2: Statistical difference of pre-test and post – test knowledge score

N=30					
Knowledge assessment	Mean	S.d.	D.f.	Paired 't' test	P - value
Pre-test	14.23.	4.22	29	5.001	.000025
Post-test	18.8	3.10			

The table 2 reveals that the obtained difference between mean pre and mean post-test knowledge score was found to be statistically significant at( $p<0.05$ ) level Hence null hypothesis  $H_01$  was rejected and alternative hypothesis was accepted.

#### **Findings related to effectiveness of STP on knowledge and practice on home based self-care among patients undergoing haemodialysis**

Table No 3: Statistical difference of pre-test and post – test practice score

N=30					
Practice assessment	Mean	S.d.	D.f.	Paired 't' test	P - value
Pre-test	16.23.	8.11	29	7.73	.00001
Post-test	29.53	9.39			

The table 3 reveals that the obtained difference between mean pre and mean post-test practice score was found to be statistically significant at ( $p<0.05$ ) level. Hence null hypothesis  $H_02$  was rejected and alternative hypothesis was accepted.

#### **Association between pre-test knowledge score and selected demographic data**

The finding reveals that there was significant association between pre-test knowledge score and frequency of haemodialysis, as the calculated p value (.04) was less than established “p” value (0.05). Hence  $H_03$  was rejected and alternative hypothesis was accepted.

Whereas there was no other significant association between pre-test knowledge score and selected demographic variables. Hence  $H_03$  was accepted and alternative hypothesis was rejected.

#### **Association between pre-test practice score and selected demographic data**

The finding reveals that there was no significant association between pre-test practice score and selected demographic variables Hence  $H_04$  was accepted and alternative hypothesis was rejected.

#### **4. Discussion**

In the pre-test level of knowledge, out of 30 subjects, 8(27.7%) had poor knowledge, followed by 20(67.7%) subjects had average knowledge and only few 2(6.6%) subjects had good knowledge on home based self-care of haemodialysis. In post-test none of the sample had poor knowledge followed by 13(43%) had average and remaining 17(57%) had good knowledge.

A similar study done in Kanchipuram to assess the knowledge on dietary management of chronic renal failure patients undergoing haemodialysis by Mr. K. Srinivassan (2014). The study findings revealed that 20(66.66%) had moderately adequate knowledge, 6(20%) had highly adequate knowledge and 4(13.33%) had inadequate knowledge about dietary management for chronic renal failure.<sup>[6]</sup>

In the case of pre-test level of practice majority of sample 22(73%) had poor practice, followed by 5(17%) had average practice and remaining 3(10%) had good practice, in post-test level of practice majority 21(70%) had good practice followed by only few 6(20%) had average practice and 3(10%) had poor practice on home based self-care of haemodialysis  
No relevant study was found.

The comparison of pre-test and post-test knowledge and practice on home based self-care among patients undergoing haemodialysis reveals that the mean post-test knowledge score (18.8 ) was higher than mean pre-test knowledge score (14.23) and the mean post-test practice score (29.53) was higher than mean pre-test practice score (16.13) respectively the computed paired t value for knowledge was 5.001 ( $p< 0.05$ ) and for practice 7.73 ( $p< 0.05$ ) showed that there was significant difference between the mean pre-test and mean post-test knowledge and practice score as well. Hence, the hypothesis  $H_{01}$  and  $H_{02}$  stating that there is no significant difference in pre-test and post-test knowledge and practice score among patients undergoing haemodialysis was rejected. And alternative hypothesis was accepted. This indicates that the Structured Teaching Programme was effective as there was a significant gain in knowledge and practice score.

These findings were found to be similar to those of (Lincemon Thomas1 et al. 2015), conducted a study to determine the effectiveness of a nurse led programme regarding the self-care management of patients undergoing haemodialysis. The study findings revealed a significant difference in the knowledge scores after the intervention ( $t$  cal=27.087,  $p<.05$ ) attributing to the effectiveness of the nurse led programme. Educational

status had a significant association with the knowledge of the haemodialysis patients ( $p < .05$ ) [5].

The analysis was done to find the association between pre-test level of knowledge score and selected demographic variables. The chi square association revealed that there was no significant association between pre-test knowledge score regarding home based self-care and selected demographic variables such as age, sex, level of education, occupation, family monthly income, area of citizenship, duration of illness, co-morbid factor, periods of haemodialysis, except frequency of haemodialysis which only shows significant association.

No relevant study was found.

The chi square analysis was done to find out association between pre-test practice of patients undergoing haemodialysis and the selected demographic variables. There was no significant association found between pre-test practice score when compared to patients age, sex, level of education, occupation, family monthly income, area of citizenship, duration of illness, co-morbid factor, and periods of haemodialysis and frequency of haemodialysis.

In my study there was no association between pre-test practice of patients undergoing haemodialysis and the selected demographic variables

**Ms. Sany Thomas 2015**, conducted a similar study to determine the level of self-reported practices regarding home care management among patients undergoing haemodialysis using a practice rating scale and to find association between levels of self-reported practices regarding home care management among patients undergoing haemodialysis and selected demographic variables. The finding of the study revealed that majority of the patients 58% had good practice in home care management. In the area of sleep, rest and activity only 28% of patients had mostly safe practice, majority of them 96% had mostly safe practice in the area of care of fistula, only 20% of the patients had mostly safe practice in maintenance of diet, more than half 52% of the patients had mostly safe practice in the area of fluid maintenance [3].

In this study there was association between levels of self-reported practices regarding home care management among patients undergoing haemodialysis and selected demographic variables

## Recommendations

According to the findings of the present study, further research should be carried out

- A similar study with higher sample size involving more demographic variables ( $>100$ ) to validate and generalize the findings.
- An exploratory study on quality of life among patients undergoing haemodialysis with and without self-efficacy should be conducted.

- Longitudinal study to estimate and quantify impact of various self-care strategies to alleviate complications in patients undergoing haemodialysis.

## Conclusion

The result from this study reveals that the knowledge and practice of home based self-care among patients undergoing haemodialysis is inadequate. The study shows that structured teaching programme is one of the effective methods in increasing the knowledge and improving practice regarding home based self-care among patients undergoing haemodialysis. Thereby reducing the complication of haemodialysis.

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