



Original Research Article

## Effectiveness of a Nurse -Led Program Regarding Self Care Management among Hemodialysis Patients

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### ABSTRACT

**Introduction:** The complexity of treatment of end-stage renal disease (ESRD) necessitates in depth patient education to enable patients to manage their condition when not under the direct supervision of medical personnel. Daily self-care includes managing an intricate treatment regimen of dietary restrictions, fluid limitations, daily exercises, proper intake of medications, and vascular access care. Research studies have revealed that hemodialysis patients have inadequate knowledge and understanding regarding their treatment regimen. A lack of understanding and knowledge can be major factors contributing to anxiety and poor adjustment. The present study aimed at bridging this knowledge gap by determining the effectiveness of a nurse led program on self care management of hemodialysis patients.

**Methods:** One group pre test post test quasi experimental design was adopted for the study. After obtaining informed consent 50 hemodialysis patients were selected by purposive sampling method. The participants were asked to fill the demographic proforma and respond to a pre-test knowledge questionnaire comprising of 28 items. The nurse led program comprised of education on self care management of hemodialysis based on a structured information booklet. Post-test was carried out after 7 days of intervention to assess the effectiveness of the program.

**Results:** 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 program. Educational status had a significant association with the knowledge of the hemodialysis patients ( $p<.05$ ).

**Conclusion:** End-stage renal disease is chronic illness which is not curable and brings along with it many serious complications and poor quality of life. Adapting to this illness requires much endurance, adjustment and support on the part of patient and their family and encouragement and education on the part of health care professionals.

**Keywords:** Nurse led program, Self care management, hemodialysis patients.

### INTRODUCTION

Man can live quite well with only one kidney, but life becomes risky when both kidneys stop functioning. Chronic renal

failure (CRF) or End Stage Renal Disease (ESRD) is a progressive irreversible deterioration in renal function in which body is unable to maintain metabolic, fluid and

electrolyte balance resulting in uremia and azotemia. <sup>[1]</sup> It is considered as a major global health problem, as it not only causes significant morbidity, but is also associated with a high mortality. In a population based study from Bhopal in Central India, Modi et al has reported that the average crude and age adjusted incidence rates of stage 5 Chronic Kidney Disease (CKD) as 151 and 232 per million population respectively. <sup>[2]</sup> A community based study conducted by Agarwal et al, from Delhi in Northern India also reports the prevalence of earlier stages of CKD as 7852 per million populations. <sup>[3]</sup>

The above statistics reveal the large masses affected with Chronic Kidney Disease (CKD). Of the three currently available modalities of treatment, Kidney transplantation is the treatment of choice for many. But the scarcity of viable organs and concurrent medical conditions places transplant surgery beyond the reach of most patients. For these reasons, dialysis is the primary method of renal replacement therapy for over 70% of patients with ESRD. <sup>[4]</sup> Dialysis is usually performed three times a week for three to four hours per treatment and it costs between 600 to 2,000 rupees per session or 5,000 to 20,000 rupees per month in India, excluding the medical and travel expenses. <sup>[5]</sup>

Though dialysis has provided a sense of hope and a sense of power to prolong life among patients with hemodialysis, the complexity and continuity of treatment has made life miserable among these patients. Hence in depth patient education with the help of health professionals would be apt to enable patients to manage their health condition.

Moreover, various researches have proved that approximately two-thirds of the information provided by the health care providers is forgotten immediately and 50% of the information that appears to be retained is recalled wrongly and it is likely

that the extent of recall of information by the patients would diminish over a period of time. <sup>[6]</sup> Thus, provision of written material containing all the needed information will help in reinforcement of verbal instruction.

Keeping this in mind the researcher felt the need to develop an information booklet and educate the subjects regarding the self care management and thus enhance their knowledge which in turn would help them to improve their quality of life and help them live their life with less dependence.

## **MATERIALS AND METHODS**

The present study aimed at determining the effectiveness of a nurse led program regarding the self care management of patients undergoing hemodialysis. An evaluative approach with one group pre test post test quasi experimental design was considered as the best method for finding the effectiveness of the nurse led program. The study was conducted in the dialysis unit at a selected hospital in Mangalore because of the availability and geographical proximity. 50 samples were selected by non-probability sampling method.

A demographic proforma comprising of eleven items namely age, gender, religion educational status, occupation, family income, family history of kidney failure, duration of diagnosis of kidney failure, frequency of hemodialysis, length of time on hemodialysis and source of information about management of kidney failure was used for the study. Subjects were also requested to respond to a knowledge questionnaire comprising of 28 items on various aspects of self care management related to End-stage renal disease. The areas included were concept of renal failure, diet, fluid and weight management, skin care, exercise, activity and sleep, care of vascular access, medication, follow-up, lifestyle changes and prevention of complications.

The knowledge scores were graded arbitrarily as follows:

- **Very good ----- Score greater than 20**
- **Good -----15-20**
- **Average -----11-14**
- **Poor -----Score less than 10**

An information booklet was prepared by the investigators based on the review of literature and expert opinion. The content was made clear and comprehensive keeping in view of patient's capacity to comprehend the information. The areas covered were:

- a) Concept of renal failure
- b) Diet
- c) Fluid and weight management
- d) Skin care
- e) Exercise, Activity and Sleep
- f) Care of vascular access
- g) Medication and follow-up
- h) Lifestyle changes
- i) Prevention of complications

The tools were validated by 7 experts from the field of medicine (Nephro-urology), Nursing experts and dietician. It took 40 minutes for the respondents to answer the knowledge questionnaire. Reliability of the knowledge questionnaire was established by Cronbachs alpha which was 0.83, which indicates that the tool is reliable. Pilot study was conducted from 16<sup>th</sup> -23<sup>rd</sup> of Oct 2014.

#### **Data Collection Process**

Permission was taken from the Nephrologists and Medical Superintendent, Justice K.S Hegde Charitable Hospital, Mangalore. Informed consent was taken from the participants of the study. The data collection for the main study started on 16/11/2014 to 16/12/2014. On the first day pre-test was conducted using structured knowledge questionnaire. On the same day the information booklet on home care management was given as an intervention to the subjects. On the 8<sup>th</sup> day, post-test was conducted for the same subjects by administering the same structured

knowledge questionnaire to determine the effectiveness of the information booklet.

## **RESULTS**

The data was analyzed using descriptive and inferential statistics. The findings were categorized under the following headings:

### **Section 1- Sample characteristics in frequency and percentage**

Highest percentage of subjects 28 (56%) were within the age group of 30- 40 years and were males 46 (92%), 35 (70%) belonged to Hindu religion and 17(34%) had completed their pre- university level of education. Majority of the subjects 28 (56%) were self employed and 34 (68%) had family income of Rs 5000 – 10,000/month. 48 (96%) did not have a family history of kidney failure. It was found that all the samples 50 (100%) were having hemodialysis twice a week, 36 (72%) were diagnosed to have kidney failure for less than 1 year and highest percentage 24 (48%) were initiated on hemodialysis since 2 – 4 months. The study findings also indicated that 27 (54%) of participants received information regarding management of kidney failure from doctors, nurses and dialysis technicians and other sources.

### **Section 2: Knowledge level of hemodialysis patients on self care management.**

Most of the subjects 38 (76%) had average level of knowledge regarding kidney disease.

48 (96%) were having very good knowledge regarding the diet, 3 (6%) were aware about exercises and only 1 (2%) was aware about the fluid intake in the pre test .In the post test, majority of the samples 49 (98%) were having very good knowledge regarding diet, fluid weight gain and 19 (38%) were aware about the exercises.

### Section 3: Effectiveness of the nurse led program on self care management.

TABLE- 1 Pre-test and Post-test Knowledge scores of hemodialysis patients

Variable	Mean $\pm$ SD	t value	p value
Pretest knowledge scores	12.06 $\pm$ 3.17	27.08	<.001
Post test knowledge scores	23.94 $\pm$ 6.26		

$$t_{cal}=27.08 > t_{tab}=2.021, p < .001$$

Table-1 above shows a significant difference in the mean knowledge scores before and after the intervention. Thus the nurse led program was effective at 5% level of significance.

### Section 4: Association between the pre-test knowledge scores and selected demographic variables.

The present study findings revealed a significant association only between the pre-test knowledge score and the educational status ( $p < 0.05$ ).

### Section 5: Utility of the information booklet

The utility of the information booklet perceived by the hemodialysis patients revealed that the information booklet was easy to follow and the language used was easy to understand. Some participants suggested adding illustrations in the information booklet.

From the findings of the present study, it is very well clear that a handy, well illustrated information booklet will help the patients and caregivers understand better about the illness and treatment.

## DISCUSSION

Present study shows that most of the subjects 38 (76%) had an average level of knowledge regarding kidney disease. Similar findings were found in a study conducted in America by Finkelstein, F.O., et.al. [7] to measure the 'perceived knowledge of the therapeutic options for end stage renal disease in 676 CKD patients who had been receiving nephrology care for about five years. The findings of the study revealed

that 35% reported having very limited or no knowledge. It is surprising to note from the above findings that, though patients had primary level of education they had decreased level of knowledge regarding management of chronic kidney disease.

In the present study majority of the samples 48 (96%) were having very good knowledge regarding the diet, 3 (6%) were aware about exercises and only 1 (2%) was aware about the fluid intake in the pre test. In the post test, majority of the samples 49 (98%) were having very good knowledge regarding diet, fluid weight gain and 19 (38%) were aware about the exercises.

Similar to the findings of this study, a study conducted by Sane S et.al in Mumbai, to evaluate the effectiveness of patient education program among 18 Advanced renal failure patients revealed significant gain in the knowledge scores in the area of diet, medication, exercise, lifestyle and stress management. [8]

Both the above studies and several other reviews have showed an improvement in the knowledge after using the information booklet which shows the necessity of such information material rather than simple verbal education on various aspects of self care among hemodialysis patients. Educational status had a significant impact on the knowledge scores of patients on dialysis in the present study. However a study conducted in Finland revealed age, employment status, dialysis modality and duration of dialysis were positively correlated with knowledge expectations. [9]

## CONCLUSION

Chronic kidney disease is a global threat for developing countries like India because renal replacement therapies are expensive and lifelong. It is a chronic illness which is not curable and brings along with it many serious complications and poor quality of life. The complications can be reduced

and the quality of life can be improved if the patient adheres to the therapeutic regimen which includes total compliance to prescribed diet, fluids, exercise, rest, care of vascular access, medications, periodical health check-up and lifestyle changes on a daily basis. Adaptation to these changes is possible through proper education and nurses being the primary caregivers are obliged to do so.

#### REFERENCES

1. Mani KM. Prevention of chronic renal failure at the community level. *Kidney International* 2003; 63:586-9.
2. Modi GK, Jha V. The incidence of end-stage renal disease in India: A population based study ESRD incidence in India. *Kidney International* 2006 Dec; 70(2):2131- 33.
3. Agarwal SK, Dash SC, Mohammad I , Sreebhusan R, Singh R , Pandey RM. Prevalence of chronic renal failure in adults in Delhi, India. *Nephrology Dialysis Transplantation* 2005 Apr; 20(8):1638- 42.
4. Thomas D, Joseph J, Francis B, Mohanta GP. Effect of patient counseling on quality of life of hemodialysis patients in India. *Pharmacy Practice* 2009 Jul-Sep; 7(3):181- 4.
5. Sosa- Guerrero S, Gomez NJ. Dealing with end stage renal disease. *American Journal of Nursing* 1997 Oct; 97(10):44. *Nephrology Nursing Journal* 2006 Jul – Aug; 33(4):385- 8.
6. Devins GM , Hollomby DJ, Barre PE , Mandin H, Taub K , Paul LC , et al. Long-term knowledge retention following predialysis psycho educational intervention. *Nephron* 2000; 86:129-34.
7. Finkelstein FO, Story K, Firanek C, Barre P, Takano T , Soroka S, et al. Perceived knowledge among patients cared for by nephrologists about chronic kidney disease and end-stage renal disease therapies. *Kidney International* 2008 Nov; 74(9):1178-84.
8. Sane S,Almeida N,Shah HA,Almeida A. Implementation and Assessment of a patient education programme for Adult Advanced Renal Failure patients. *Indian Journal of Nephrology* 2002;12:173-74
9. Rantanen M,et al.Knowledge expectations of patients on dialysis treatment. *Nephrology Nursing Journal* 2008 May-Jun; 35(3):249-55.

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