

Title: Effectiveness of Empowerment Programme on Adherence among patients undergoing Hemodialysis—A Pilot Study

Parameswari.M¹, Hema V.H²

¹Ph.D Scholar cum Professor, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute, Velappanchavadi, Chennai-77.

Email.ID: eeshmsc@gmail.com

²Research supervisor cum Principal, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute Velappanchavadi, Chennai-77

Abstract

Introduction: Global burden of chronic kidney disease (CKD) is gradually increasing and imposes great challenges in the lives of patients. Adherence to treatment schedule is very essential to have a good quality of life free of complications. Present study was undertaken to assess the effect of an empowerment programme on Adherence among patients undergoing Hemodialysis. **Methods:** A Quasi experimental two group pretest post test design was used in the study. 10 Patients undergoing hemodialysis were selected and shift wise randomization was done. Pre test was done using The End Stage Renal Disease Adherence Questionnaire. Patients in the experimental group received an empowerment programme (which included Cognitive and psychological intervention) 2sessions per week for 3 weeks and control group received routine care. Post test was done 4 weeks and 12 weeks after the intervention. **Results:** The study findings revealed that the overall level of Adherence was found to be low. There was a statistically significant difference in the post test level of Adherence between experimental and Control group. **Conclusions:** Empowerment interventions would be beneficial in improving the adherence among patients undergoing Hemodialysis.

Keywords: CKD, Adherence, Empowerment programme

1. Introduction

Chronic kidney disease (CKD) has become as one of the most prominent causes of death and suffering in the twenty-first century. The prevalence of CKD has also been rising, impacting an estimated 843.6 million people globally in 2017, in part because risk factors like obesity and diabetes mellitus have increased. The Global Burden of Disease (GBD) studies have revealed that, despite the fact that mortality has decreased in individuals with end-stage renal disease (ESKD), CKD has become a major cause of death globally¹.

CKD can adversely affect the quality of life (QOL) of patients and influence their physical and psychological health, general well-being, and social interactions. Compliance to diet, medication regimen, and fluid restrictions are utmost important for them and could contribute to improving health and well being in the patients under hemodialysis (HD)²

Patients with ESRD frequently engage in non-adherence to therapy, which has been linked to detrimental outcomes like bone demineralization, pulmonary edema, metabolic problems, and higher mortality³. Poor adherence in patients with chronic renal failure frequently results in extra tests, modifications to the treatment plan, adjustments to the amount of prescription medications, hospitalization, and ultimately an increase in medical expenses⁴. Hemodialysis compliance (HDT) reflects the extent to which an individual's behavior

conforms to their health care team's treatment recommendations⁵. Adherence to therapeutic regimens may be influenced by knowledge and perception of consequences⁶.

Patient empowerment is a dynamic process that enables people to address their own issues as well as collaborate with others to enhance their QOL through self-directed behavioural adjustments⁷. Interventions based on empowerment are usually planned for increasing patient's ability to think critically; thereby enhancing their capability to make informed decisions independently. Compliance among patients getting HDT may be improved by cognitive and behavioural therapies that support illness perception. Therefore, there is a need for a sufficient educational programme on therapeutic regimens that enables patients to decide for themselves whether or not to follow suggestions^{8,9}. Present study was undertaken with the objective to assess the effectiveness of Empowerment programme on Adherence among hemodialysis Patients.

2. Materials and Methods

Quasi experimental design with two group pretest post test control group was adopted for the study. Independent variable of the study was Empowerment programme and Adherence was the dependant variable. The study was conducted at a dialysis centre in Chennai. Ethical clearance was obtained from IEC. The sample size was 10, five patients in control and

five in experimental group, Patient's who were undergoing Hemodialysis were allocated to experimental and Control group using block randomization based on the shift. After getting an informed Consent, demographic information and Adherence was assessed using the End Stage Renal Disease Adherence Questionnaire (ESRD-AQ) which had 46 items in 5 Sections including general information, hemodialysis treatment, Medication, Dietary and fluid restrictions. Patients in the experimental group were given 6 sessions(2 weeks per week for 3 weeks) of empowerment programme which

included Cognitive and Psychological intervention. Cognitive aspect included an individual discussion with the help of an information guide in various aspects of CKD and its management. Psychological intervention included an integrative counseling using gestalt therapy and Rational Emotive Cognitive behavior therapy in order to improve the mental health of the patients. Patients in the Control group received routine treatment. Post test was conducted 4 weeks and 12 weeks after the intervention. Data was analyzed using Descriptive and Inferential statistics [11].

Table 1: Distribution of Demographic Variables among Patients undergoing Hemodialysis

Socio demographic variables	Experimental group		Control group	
	No.	%	No.	%
1. Age in years				
31- 50	2	40.0	1	20.0
51- 60	3	60.0	2	40.0
61 - 70	0	0.0	2	40.0
2. Gender				
a. Male	1	20.0	2	40.0
b. Female	4	80.0	3	60.0
3. Religion				
Hindu	3	60.0	5	100.0
Christian	0	0.0	0	0.0
Muslim	2	40.0	0	0.0
	0	0.0	1	20.0
	2	40.0	2	40.0
	0	0.0	1	20.0
	3	60.0	1	20.0
	0	0.0	1	20.0
	5	100.0	4	80.0
6. Family Income				
75001-99999	1	20.0	0	0.0
10001-50000	2	40.0	1	20.0
<10000	2	40.0	4	80.0
7. Marital Status				
Married	4	80.0	2	40.0
Widow/Widower	1	20.0	3	60.0
8. Type of family				
Nuclear	4	80.0	3	60.0
Joint	1	20.0	2	40.0
	1	20.0	4	80.0
	4	80.0	1	20.0
10. Duration since diagnosis				
6 – 11 months	1	20.0	2	40.0
1-5 years	3	60.0	3	60.0
5.1- 10 yrs	1	20.0	0	0.0
	1	20.0	2	40.0
	3	60.0	3	60.0
5.1- 10 yrs	1	20.0	0	0.0
12. Frequency of hemodialysis				
a. Twice a week	2	40.0	3	60.0
b. Thrice a week	3	60.0	2	40.0
14. Co morbidity				
a. Diabetes	1	20.0	0	0.0
b. Hypertension	2	40.0	2	40.0
c. Both	2	40.0	3	60.0

Table 1 describes the socio demographic characteristics of samples in both experimental and

control group. No significant difference between the group in terms of characteristics was noticed.

Table 2: Descriptive statistics for Adherence in various Domain among Hemodialysis Patients for Experimental and Control Group in Pretest

Domain of Adherence	Experimental group (n = 5)		Control group (n = 5)		Independent t test and p value
	Mean	SD	Mean	SD	
1. Hemodialysis Treatment	30.20	7.16	23.40	6.43	t = 1.581 p= 0.153 (N.S)
2. Medication	15.60	2.60	13.20	3.49	t = 1.231 p= 0.253 (N.S)
4. Fluid	28.60	2.60	22.80	6.09	t = 1.955 p= 0.086 (N.S)
5. Diet	20.20	2.68	13.20	5.76	t = 2.463 p= 0.039*
Overall Adherence	94.60	13.58	72.60	18.68	t = 2.131 p= 0.066 (N.S)

Note: * - $p < 0.05$, *** - $p < 0.001$ Level of Significant, N.S. – Not Significant
Table 2 describes the existing difference between groups during pretest for various aspects of Adherence.

Table 3: Effectiveness of Empowerment on Adherence among Hemodialysis Patients for Experimental and Control Group

Domains of Adherence Between Test	Experimental group (n = 5)		Control group (n = 5)		Independent t test and p value
	Effective Mean (SD)	Paired t test & p value	Effective Mean (SD)	Paired t test & p value	
HD treatment: Pre-test to Posttest 1	11.40 (7.13)		2.60 (7.76)		t = 1.867 p= 0.099 (N.S)
	13.00 (8.46)		2.40 (3.91)		t = 2.544 p= 0.034 *
Medication: Pre-test to Posttest 1	4.80 (5.63)	t = 1.873 p = 0.134 N.S.	2.00 (6.60)	t = 2.130 p = 0.100 (N.S)	t = 0.722 p = 0.491 (N.S)
Medication: Pre-test to Posttest 2	6.00 (3.74)		2.00 (4.00)		t = 1.633 p = 0.141 (N.S)
Fluid: Pre-test to Posttest 1	10.40 (5.60)		1.40 (8.17)		t = 2.032 p = 0.077 (N.S)
Fluid: Pre-test to Posttest 2	11.60 (3.58)		1.80 (8.47)		t = 2.384 p= 0.044 *
Diet: Pre-test to Posttest 1	6.40 (2.97)	t = 1.873 p = 0.134 N.S.	-2.20 (7.56)	t = 2.130 p = 0.100 (N.S)	t = 2.367 p = 0.045 *
Diet: Pre-test to Posttest 2	8.20 (2.59)		-1.40 (6.99)		t = 2.881 p = 0.020 *
	33.00 (14.14)		3.80 (24.23)		t = 2.327 p = 0.048 *
	38.80 (9.68)		4.80 (15.30)		t = 4.198 p= 0.003 **

Note: * - $p < 0.05$, ** - $p < 0.01$ Level of Significant, N.S – Not Significant

Table 3 depicts that there was a statistically significant difference was found in the aspects of Hemodialysis treatment,

3. Results and Discussion

Socio demographic characteristics showed 50% of the study participants belonged to the age group of 51-60 years, 70% were females, 90% of them were unemployed, 40% were widow/widower, 50% had history of Renal illness and 60% were undergoing dialysis for a period of 1-5 years. (Table 1)

Table 2 showed that pretest score of adherence was found to be low in all the aspects of Adherence namely Hemodialysis treatment, adherence to diet, fluid and Medication. There was no significant difference found in the pretest score between the control and experimental group ($t = 2.131, p = 0.066$).

Present study findings revealed that there was a statistically significant difference in the adherence was found between experimental and control group in both pretest and post test ($p < 0.05$). With regard to sub domains of fluid and diet there was a significant difference was found between the control and experimental group in both post test 1 and post test 2.

Present study findings are supported by the study done by Sultan *et al* (2022) Self-reported adherence to HD showed that 19.5% were not adherent to HD and a study by which revealed 83.3% were good, 14.6% had moderate, and 2% had poor in compliance to fluid and dietary restrictions and treatment adherence³.

In relevance to the effectiveness of empowerment programme in improving the adherence, the results are supported by the study done by Hala Mohamed M B, Aml Khalil I, Elizabeth B. (2017) which revealed the empowerment group had achieved significant reduction in systolic blood pressure and interdialytic weight gain at follow-up. They had also significantly lower DSI symptom prevalence and severity at 6 weeks post-program ($p < 0.001$) compared to the control group. Lastly, patients in empowerment group achieved a higher QOL score at six weeks¹⁰.

4. Conclusion

Current results are suggestive of empowerment program improving the adherence among patients who had undergone the treatment. Empowering

patients and their families will improve the patients adherence towards treatment thereby improving the Quality of Life.

5. Acknowledgement

The authors would like to thank all the patients who were undergoing Hemodialysis.

6. Conflicts of Interest

The authors report no conflicts of interest in this work.

References

1. Kovesdy CP. Epidemiology of chronic kidney disease: an update 2022. *Kidney Int Suppl* (2011). 2022 Apr;12(1):7-11. doi: 10.1016/j.kisu.2021.11.003. Epub 2022 Mar 18. PMID: 35529086; PMCID: PMC9073222.
2. Rafiee Vardanjani L, Parvin N, Mahmoodi Shan G. The effects of an individual, multistep intervention on adherence to treatment in hemodialysis patients. *Disabil Rehabil* 2016;38:768-72.
3. Sultan *et al.* Adherence to hemodialysis and medical regimens among patients with end-stage renal disease during COVID-19 pandemic: a cross-sectional study *BMC Nephrology* (2022) 23:138.
4. Anuja M, Ashok MV. Compliance to fluid and dietary restriction and treatment adherence among chronic hemodialysis patients in a tertiary care hospital, Puducherry. *Int J Health Allied Sci* 2019;9:34-8.
5. Van Dijk S, Scharloo M, Kaptein AA, Thong MSY, Boeschoten EW, *et al.* (2009) Patients' representations of their end-stage renal disease: relation with mortality. *Nephrol Dial Transplant* 24(1): 3183-3185.
6. Allen D, Wainwright M, Hutchinson T (2011) Non-compliance as illness management: Hemodialysis patients descriptions of adversarial patient-clinician interactions. *Soc Sci Med* 73(1): 129-134
7. Aujoulat I, D' Hoore W, Deccache A (2006) Patient empowerment in theory and practice: Polysemy or cacophony? *Patient Educ Couns* 66(1): 1-6.
8. Seyyedrasooli A, Parvan K, Rahmani A, Rahimi Z (2013) Effect of illness perception promoting interventions on treatment adherence in hemodialysis patients: A randomized controlled trial. *Iran J Crit Care Nurs* 6(2): 77-86.
9. Wang Lu-M, Chiou Chou P (2011) Effectiveness of interactive multimedia CD on self-care and powerlessness in hemodialysis patients. *J Nurs Res* 19(2): 102-111.
10. Hala Mohamed M B, Aml Khalil I, Elizabeth B. The Efficacy of an Empowerment Program for End-Stage Renal Disease Patients Treated with Hemodialysis. *JOJ Nurse Health Care*. 2017; 1(3): 555565. DOI: [10.19080/JOJNHC.2017.01.555565](https://doi.org/10.19080/JOJNHC.2017.01.555565).

11. Peci B, Gashi F. Examining Legal and Financial Aspects of Consumer Credit in Selected Countries of Western Balkans and Kosovo. *Croatian International Relations Review*. 2021;27(88):53-73. <https://doi.org/10.2478/CIRR-2021-0012>