



A STUDY TO IDENTIFY THE FACTORS THAT AFFECT ADHERENCE TO HAEMODIALYSIS AMONG HAEMODIALYSIS PATIENTS IN SELECTED HOSPITAL, NEW DELHI.

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ABSTRACT

Introduction: Acute and chronic kidney failure, which can lead to death if untreated for several days or weeks, is an illness that is as old as humanity itself. Dialysis is required for treatment when a patient sustains enough kidney damage and moves into the 5th or final stage of chronic kidney disease, also referred to as Chronic Renal Failure or End Stage Renal Disease. Adherence to haemodialysis (HD) treatment remains a challenging task for haemodialysis patients. Interventions to improve adherence need to identify factors influencing such behaviour among haemodialysis patients. **Aims:** The objectives of the study were to identify the factors that affect adherence to haemodialysis among the haemodialysis patients, to assess and evaluate structured teaching programme on self-care of haemodialysis patients in the terms of knowledge and practice, to find the relationship between knowledge and practice regarding self-care of haemodialysis patients, to seek the association between knowledge and practice of haemodialysis patient with selected variables. **Methods and Materials:** This was a pre-experimental one group pre-test post-test design involving 50 participants. The study was carried out in the nephrology department at Safdarjung hospital, New Delhi. Participants were recruited using a purposive sampling technique. Demographic data were collected with the use of structured interview schedules and adherence to haemodialysis was collected with the use of ESRD AQ tool. Descriptive statistics were used to describe the demographic variables and the level of adherence to haemodialysis. Inferential statistics of chi-square were used to establish factors associated with adherence to haemodialysis. The data collection to assess the knowledge and practice of haemodialysis patients was done with the help of structured knowledge interview schedule and structured 4-point Likert practice rating scale. Mean and standard deviation was used to describe the knowledge and practice of patients undergoing haemodialysis, the effectiveness of the STP was analysed using paired "t" test. Association between demographic variables with the knowledge and practice scores of patients undergoing haemodialysis was tested using the chi-square test. **Results:** Results revealed that the overall adherence to haemodialysis based on the ESRD AQ, the majority of haemodialysis patients 38 (76%) were in the low adherence category. Results showed that the educational status, occupation, monthly income of the family, frequency of dialysis sessions, mode of transportation, frequencies of education by health care workers about the importance of not missing dialysis, and perceived relative importance of haemodialysis were statistically significantly associated with adherence to haemodialysis at the 0.05 level of significance. Results revealed that the mean post-test knowledge score (19.50) was higher than the mean pre-test knowledge score (10.82). The computed "t" value (41.56) ($p < 0.05$) showed that there was a significant difference between the mean pre-test and mean post-test knowledge score. The mean post-test practice score (42.36) was higher than the mean pre-test practice score (23.70). The computed "t" value (30.81) ($p < 0.05$) showed that there was a significant difference between the mean pre-test and mean post-test practice scores. There was no significant association between the post-test knowledge score of haemodialysis patients on self-care and the selected variables except the educational status of haemodialysis patients. There was no significant association between the post-test practice score of haemodialysis patients on self-care and the selected variables except educational status and occupational status. **Conclusion:** Most of haemodialysis patients were poorly adhering to haemodialysis treatment. The haemodialysis patients were deficient in knowledge and practices regarding self-care. The study revealed that patient teaching followed by the distribution of a booklet on self-care among haemodialysis patients is beneficial.

KEYWORDS

Haemodialysis patients, adherence, knowledge, and practice.

INTRODUCTION

End-stage renal disease is a long-term chronic illness that is often treated with either dialysis or kidney transplantation. Patients with end-stage renal disease (ESRD) are faced with complicated and demanding treatment regimens that include dietary and fluid restrictions, and medication schedules. Irrespective of whether the treatment is predominantly dialysis center-based or home-based, patients need to have sufficient knowledge, skill, and ability to carry out their treatment regimen without the direct supervision of healthcare personnel. Therefore, patient education would seem to be an important component in the management of ESRD.

Dialysis is required for treatment when a patient sustains enough kidney damage and moves into the 5th or final stage of chronic kidney disease, also referred to as Chronic Renal Failure or End Stage Renal Disease. Adherence to haemodialysis (HD) treatment remains a challenging task for haemodialysis patients. Interventions to improve adherence need to identify factors influencing such behaviour among haemodialysis patients.

Patients with ESRD undergo a complex treatment regimen involving dialysis and a wide range of dietary restrictions and lifestyle changes that affect their social and psychological functioning.

Studies have reported that 33-50% of haemodialysis patients were non-compliant with fluid restriction regimens, which undermines the effectiveness of the treatment, resulting in unpredictable progression of the disease and a greater likelihood of complications. Researchers

concluded that interventions that promote fluid intake compliance in this population are essential. One of such intervention includes the provision of written material containing all the needed information, which increases awareness of the patients and promotes compliance with the treatment.

MATERIALS AND METHODS

This pre-experimental study was conducted in the Department of Nephrology at Safdarjung hospital, Delhi, India, from 10/01/2022 to 30/01/2022. Written informed consent was obtained from all the participants. The study was approved by Institutional Ethical Committee (S. No. IEC/VMMC/SJH/Project/2021-11/CC-202).

Inclusion Criteria

Patients who are currently on haemodialysis, Age of 18 years or older, no communication problems and Patient who are willing to participate in the study.

Exclusion Criteria

Patients with significant visual/hearing impairment, Patients who have mental impairment, Patients who are critical ill unable to give response, Patients who show inability/unwillingness to cooperate.

The data collection techniques used for the present study were- Structured interview schedule for demographic variables, ESRD-AQ (standard tool -Used with permission from American Nephrology Nurses Association)) to assess adherence to haemodialysis treatment, Structured knowledge interview schedule and Practice rating scale that includes expressed practice rating scale.

After obtaining ethical clearance approval from the Medical Superintendent and ethical committee of Safdarjung hospital, Delhi. The final study was conducted on 50 haemodialysis patients at Safdarjung hospital, Delhi from 10/01/2022 to 30/01/2022. Convenient sampling technique was used. Purpose of the study was explained to the group, consent was taken and confidentiality of responses were assured. Pre-test was taken on day one by using structured knowledge interview schedule, ESRD-AQ and Practice rating scale. On the same day, structured teaching programme on self-care of haemodialysis patients was given and distribution of information booklet. Post-test was taken on 8th day by using structured knowledge interview, Practice rating scale.

Statistical Analysis

Chi square test was applied to know the association between adherence and selected factors, 't' test use to find out mean difference between pre-test and post-test. Chi square test was applied to know the association between knowledge and selected variables. A p-value less than 0.05 in each of the domains was considered as significant.

RESULT

Results indicates that adherence was dependent to these variables or there is association between the adherence score and selected factors like Education status, Occupation, Monthly Income of Family, Mode of Transportation, Frequencies of education by health care workers about importance of not missing dialysis, Perceived relative importance of haemodialysis and Frequency of Haemodialysis.

The mean post-test knowledge score of haemodialysis patients (19.50) was higher than the mean pre-test knowledge score (10.82) with a mean difference of (8.68), The calculated 't' value (41.56) is higher than the table 't' value (2.010) for the degree of freedom 49 and it was statistically significant at 0.05 level of significance. This shows that the structured teaching programme was effective in enhancing the knowledge of haemodialysis patient on self-care.

The mean pre-test practice score (23.70) with a mean difference of (18.66), The calculated 't' value (30.81) is higher than the table 't' value (2.010) for the degree of freedom 49 and it was statistically significant at 0.05 level of significance. This shows that the structured teaching programme was effective in enhancing the practice of haemodialysis patient on self-care.

There is a positive strong correlation ('r' value- 0.701) between post-test knowledge score and post-test practice score of haemodialysis patients which is found to be statistically significant at 0.05 level of significance. This shows that as knowledge increases it also increases practice of haemodialysis patients.

There is association found between the knowledge score and selected variable like education status of haemodialysis patients and between the practice score and selected variables like education status and occupation of haemodialysis patients.

(Table/fig 1) Frequency and Percentage Distribution of Demographic Characteristics of Haemodialysis Patients N=50

S.NO.	SAMPLE CHARACTERISTICS	FREQUENCY	PERCENTAGE
1	AGE OF SAMPLES (IN YRS.)		
1.1	18-30	8	16%
1.2	31-40	10	20%
1.3	41-50	12	24%
1.4	51-60	11	22%
1.5	>60	9	18%
2	GENDER		
2.1	Male	34	68%
2.2	Female	16	32%
2.3	Transgender	00	00%
3	MARITAL STATUS		
3.1	Married	39	78%
3.2	Unmarried	11	22%
3.3	Divorced	0	00%
3.4	Widow/widower	0	00%
4	EDUCATIONAL STATUS		
4.1	Illiterate	0	00%
4.2	Primary	9	18%
4.3	Secondary	11	22%
4.4	Sr. Secondary	16	32%
4.5	Graduation	14	28%
4.6	PG or more	0	00%

5	AREA OF HOUSING		
5.1	Rural	19	38%
5.2	Semi-Urban	4	8%
5.3	Urban	27	54%
6	DISTANCE FROM HAEMODIALYSIS CENTRE		
6.1	<10 km	6	12%
6.2	11-20 km	16	32%
6.3	21-30 km	23	46%
6.4	> 30km	5	10%
7	OCCUPATIONAL STATUS		
7.1	Govt. Employee	5	10%
7.2	PVT. Employed	7	14%
7.3	Self-employed	9	18%
7.4	Unemployed	13	26%
7.5	House maker	8	16%
7.6	Student	4	8%
7.7	Retried Person	4	8%
8	FAMILY INCOME(RS.)		
8.1	<10000	5	10%
8.2	10001-20000	20	40%
8.3	20001-30000	16	32%
8.4	30001-40000	6	12%
8.5	>40000	3	06%

(Table/fig 2) Frequency and Percentage Distribution of Disease and Therapy Related Characteristics of Haemodialysis Patients N=50

S.NO.	SAMPLE CHARACTERISTICS	FREQUENCY	PERCENTAGE
9.	DURATION OF ILLNESS		
9.1	0- 6 months	4	8%
9.2	6 months-1 yr.	10	20%
9.3	1 -2 years	12	24%
9.4	2 - 5 years	13	26%
9.5	> 5 years	11	22%
10	CO-MORBIDITY		
10.1	Diabetes Mellitus	11	22%
10.2	Hypertension	24	48%
10.3	Respiratory Problem	0	00%
10.4	Multi- Co-Morbidity	15	30%
11	DURATION OF HAEMODIALYSIS		
11.1	1- 6 months	14	28%
11.2	6 months-1 yr.	15	30%
11.3	1 -2 years	11	22%
11.4	2 - 5 years	7	14%
11.5	> 5 years	3	6%
12	FREQUENCY OF SESSION		
12.1	Once in a Week	0	00%
12.2	Twice in a Week	27	54%
12.3	Thrice in a Week	23	46%
12.4	Once in Two Week	0	00%
13	MODE OF TRANSPORTATION		
13.1	Personal vehicle	15	30%
13.2	Bus	22	44%
13.3	Taxi	13	26%
14.	PERSON ACCOMPANIES TO DIALYSIS CENTRE		
14.1	Self	11	22%
14.2	Parent	4	8%
14.3	Spouse	16	32%
14.4	Child	19	38%
15.	FREQUENCIES OF EDUCATION GIVEN BY HEALTH CARE WORKERS ABOUT IMPORTANCE OF NOT MISSING DIALYSIS		
15.1	One month ago	8	16%
15.2	More than one month	17	34%
15.3	At the time of first haemodialysis	24	48%
15.4	Never	1	2%
16.	PERCEIVED IMPORTANCE OF HAEMODIALYSIS.		
16.1	High Important	2	4%
16.2	Very Important	11	22%
16.3	Moderate Important	23	46%
16.4	A little important	14	28%

(Table/fig 3) Chi-Square Value Showing Association Between Adherence Score with Demographic Factors of Haemodialysis Patients N =50

S.N.	Selected Factors	Adherence score			df	Chi Square Calculated Value	Chi square Table Value	Significance
		Good	Moderate	Low				
1.	Age of haemodialysis Patients (In Years).							
1.1	18-30	1	2	5	8	4.56	15.51	Non Significant
1.2	31-40	2	2	6				
1.3	41-50	1	1	10				
1.4	51-60	1	1	9				
1.5	>60	1	0	8				
2.	Gender of Haemodialysis Patients.							
2.1	Male	4	2	28	2	3.88	5.99	Non Significant
2.2	Female	2	4	10				
3.	Marital Status of Haemodialysis patients							
3.1	Married	4	4	31	2	1.18	5.99	Non Significant
3.2	Un Married	2	2	7				
4.	Education status of Haemodialysis patients.							
4.1	Primary	0	0	9	6	26.04	12.59	Significant
4.2	Secondary	0	1	10				
4.3	Senior Secondary	0	1	15				
4.4	Graduate	6	4	4				
5.	Area of Housing							
5.1	Urban	3	2	14	4	2.37	9.49	Non Significant
5.2	Semi-Urban	1	1	2				
5.3	Rural	2	3	22				
6	Distance from Dialysis centre							
6.1	< 10 KM	0	1	5	6	3.16	12.59	Non Significant
6.2	11-20 KM	2	2	12				
6.3	21-30 KM	4	3	16				
6.4	>30 KM	0	0	5				
7	Occupation of Haemodialysis patients							
7.1	Govt.-Employee	4	0	1	10	30.89	21.02	Significant
7.2	Private-Employee	0	0	7				
7.3	Self Employed	1	1	7				
7.4	Un-Employed	0	3	10				
7.5	House-maker	0	1	7				
7.6	Student	1	1	2				
7.7	Retired-person	0	0	4				
8	Monthly Income of Family (in Rupees)							
8.1	<10,000	0	1	4	8	24.67	15.51	Significant
8.2	10,001-20,000	0	2	18				
8.3	20,001-30,000	1	1	14				
8.4	30,001-40,000	3	1	2				
8.5	>40,000	2	1	0				

(Table/fig 4) Chi-Square Value Showing Association Between Adherence Score with Selected Disease and Therapy-Related Factors of Haemodialysis Patients N =50

S.N.	Selected Factors	Adherence score			df	Chi Square Calculated Value	Chi square Table Value	Significance
		Good	Moderate	Low				
9	Duration Of Illness							
9.1	0 to 6 months	1	0	3	8	5.35	15.51	Non Significant
9.2	6 months-1Yr.	1	1	8				
9.2	1-2 Years	0	1	11				
9.3	2-5 Years	2	3	8				
9.4	> 5Years	2	1	8				
10	Comorbidity							
10.1	Hypertension	2	4	18	4	4.08	9.49	Non Significant
10.2	Diabetes mellitus	3	1	7				
10.3	Multi-Comorbidity	1	1	13				
11	Duration Of Haemodialysis							
11.1	1-6 months	4	1	9	8	11.35	15.61	Non Significant
11.2	6 months-1 Year	0	1	14				
11.3	1-2 Years	1	3	7				
11.4	2-5 Years	1	0	6				
11.5	> 5Years	0	0	3				
12	Frequency Of Haemodialysis							
12.1	Twice a week	1	1	24	2	7.90	5.99	Significant
12.2	Thrice a week	5	5	14				
13	Mode of Transportation							
13.1	Personal Vehicle	6	4	6	4	20.72	9.49	Significant
13.2	Bus	0	1	20				
13.3	Taxi	0	1	12				
14	Who Accompanies to dialysis Centre?							

14.1	Self	3	1	8	6	5.49	12.59	Non Significant
14.2	Parent	0	1	2				
14.3	Spouse	1	3	12				
14.4	Child	1	2	16				
15	Frequencies of education by health care workers about importance of not missing dialysis							
15.1	Last week	2	2	0	6	23.60	12.59	Significant
15.2	one month	3	2	4				
15.3	> one month	1	1	15				
15.4	At the time of 1st Dialysis	0	1	19				
16	The perceived relative importance of haemodialysis							
16.1	highly Important	4	0	0	6	27.16	12.59	Significant
16.2	Very Important	4	3	4				
16.3	Moderately Important	1	3	19				
16.4	A Little Important	0	0	14				

(Table/fig 5) Table Showing Factors Associated and Not Associated with Haemodialysis Adherence

Factors that are Associated with Adherence to Haemodialysis	Factors that are Not Associated with Adherence to Haemodialysis
- Educational status of Haemodialysis patients - Occupation of Haemodialysis patients - Monthly Income of Family - Frequency of dialysis sessions - Mode of transportation - Frequencies of education by health care workers about the importance of not Missing dialysis - Perceived relative importance of Haemodialysis	- Age - Gender - Marital Status - Area of Housing - Distance from the Haemodialysis centre - Duration Of Illness - Duration Of Haemodialysis - Comorbidity - Person Accompanies to dialysis Centre.

DISCUSSION

The research findings of the present study come in agreement with a study conducted by Singh R et al (2016). The finding of this study revealed that after administration of the Self-Instructional Module (SIM), the mean post-test (25.15) of haemodialysis patients was higher than their mean pre-test knowledge score (14.40) with a mean difference of 10.75. “t” value of 31.46 for df (59) was found to be statically significant at 0.001 level of significance.

The research findings of the present study come in agreement with another study conducted by Neena PJ et al. (2021). The finding of study revealed that after administration of Information Booklet, the mean post-test knowledge score (25.80) of the experimental group was higher than their mean pre-test knowledge score (14.30). “t” valve 29.2 for df (29) was found to be statistically significant.

The present found that 78% of haemodialysis patients had poor practice and 22% had average practice and none of them good and excellent practice on self-care of haemodialysis patients. The research findings of the present study come in agreement with a study conducted by Roy J et al. (2017). The result indicates 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.

The research findings of the present study come in agreement with a study conducted by Ms. Thomas Sany (2015). 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.

The research findings of the present study come in agreement with a study conducted by Thomas L, et al. (2015). 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 haemodialysis patients.

The research findings of the present study come in agreement with

another study conducted by Bhosale TS et al. (2019). The mean knowledge of subjects during the pre-test was 39.48%, whereas it had risen up to 82.50% during the post-test as effectiveness of STP. Thus, it can be inferred that structured teaching programme were found to be effective in enhancing the knowledge of renal failure patients.

Limitations

Although the study has reached its aims, there are some unavoidable limitations

- The present study was limited to small sample of 50 haemodialysis patients
- Conclusion of the study cannot be generalized to a larger population.
- Short period of time for data collection.
- The study was limited only to haemodialysis patients of selected hospital of Delhi.

CONCLUSION

The haemodialysis patients were deficient in knowledge and practices regarding self-care. The study revealed that patient teaching followed by the distribution of a booklet on self-care among haemodialysis patients is beneficial.

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