

A study to assess the knowledge regarding post hemodialysis home care among caregivers of chronic kidney disease patients undergoing hemodialysis in selected hospital of Shillong, Meghalaya

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Abstract

Introduction: Chronic kidney disease (CKD) is a global public health problem. A growing number of patients undergoing hemodialysis is the most common renal replacement modality for the final stage of chronic kidney disease patients. Patients receiving hemodialysis need home-based care and support from their family members.^[1] There is an important role which caregivers play in providing assistance to hemodialysis patients in carrying out daily activities, caring of vascular access, diet, fluid control, medication, and helping to cope with stress.^[2]

Objectives: To assess caregivers’ level of knowledge regarding post-hemodialysis home care of chronic kidney disease patients receiving hemodialysis and to find out the association between the knowledge of caregivers regarding post-hemodialysis home care with selected demographic variables.

Methodology: A cross-sectional study was conducted among caregivers of chronic kidney disease patients undergoing hemodialysis in the Hemodialysis Unit,

NEIGRIHMS from 25th April to 21st May 2022. A total of 105 samples were recruited using the purposive sampling technique and data was collected using a structured knowledge questionnaire. Collected data were analyzed by descriptive and inferential statistics.

Results: The findings revealed that out of 105 caregivers of hemodialysis patients 54(51.4%) had poor knowledge, 49(46.7%) had average knowledge and only 2(1.9%) had good knowledge regarding post-hemodialysis home care. The gender of the caregiver, and family monthly income showed a significant association with the knowledge of the caregiver regarding post-hemodialysis home care at 0.05 level of significance.

Conclusion: The study recommends that educational programmes using various innovative strategies regarding post hemodialysis home care for the caregivers of hemodialysis patients should be conducted to enrich their knowledge to minimize complications during the period of hemodialysis to offer a quality life to the hemodialysis patient.

Keywords: Chronic kidney disease, Hemodialysis, Caregiver, Knowledge, Post hemodialysis home care.

Introduction

Chronic kidney disease (CKD) has been recognized as a leading public health problem and a major cause of morbidity and mortality worldwide. The number of patients with chronic kidney disease is increasing globally, affecting 5-10% of the total population in the world which contribute to a high economic burden and poor quality of life. In 2017, 697.5 million cases of chronic kidney disease (all stages) were recorded worldwide, for a global prevalence of 9.1%. From 1990 to 2017, the global all-age prevalence of chronic kidney disease increased by 29.3%.^[3] The global all-age mortality rate from chronic kidney disease increased to 41.5% from 1990 to 2017^[3], making chronic kidney disease the 12th leading cause of death globally. The number of deaths attributable to chronic kidney disease in India increased from 0.59 million in 1990 to 1.18 million in 2016.^[4]

Hemodialysis is the advanced treatment modality for the final stage of chronic kidney disease patients that offers extended life expectancy, relieves symptoms, and improves the quality of life.^[1,2] Dialysis was first scientifically described by Scottish chemist Thomas Graham in 1854 and in 1943 the Dutch physician Dr Willem J Kolff invented the first hemodialysis machine.^[1,6] In India the first hemodialysis facility was established in 1961 at CMC, Vellore.

More than 90% of patients requiring long-term renal replacement therapy are on chronic hemodialysis,^[1]. But long-term hemo dialysis causes a number of complications such as poor physical function and cognitive impairment in patients who are unable to look after themselves. Thus, patients on hemodialysis need care not only from health professionals but from family

members, responsible for providing care to their dialysis patients at home including spouses, parents, brothers and sisters, and other caregivers. Majority of hemodialysis patients rely on their family members for their daily self care activities and medical treatment.^[2] There is a vital role of caregivers for hemodialysis patients including assistance in daily activities, fluid control, medications, skin care, and help to cope with stress.^[7] Giving home care to a hemodialysis patient requires a lot of learning that indicates the importance of assessing the knowledge of caregivers on home care of hemodialysis patients since they are actively involved in the caring process of such patients.

Objectives

1. To assess the knowledge regarding post haemodialysis home care among caregivers of chronic kidney disease patients receiving haemodialysis.
2. To find out the association between the knowledge of caregivers regarding post haemodialysis home care with selected demographic variables.

Methodology

In this study, Descriptive cross sectional research design was adopted among caregivers of hemodialysis patient in a selected hospital of Shillong, Meghalaya. Total of 105 caregivers of hemodialysis patients attending the Hemodialysis Unit of NEIGRIHMS, Shillong were selected using purposive sampling technique. The study was conducted from 25th April to 21st May 2022. The research tools consisted of socio - demo graphic characteristics and structured knowledge questionnaire were validated by expert from various departments like Department of Medicine, Department of Urology. Prior to data collection, written informed consent was taken from each participant after they were explained the purpose of the study as well as given an assurance of confidentiality and anonymity of the result. Adult

participants who consented and those who were present and willing to participate were included in the study. . Each question was given one mark for a correct answer and zero for an incorrect answer. The maximum score was 28 and to interpret level of knowledge the score was distributed as good (76% -100%) i.e., those who scored 22 and above, average (51% - 75%), i.e., those who scored 15 to 21 and poor (0-50%) i.e., who scored 14 and below. The Data was analyzed by using descriptive (Percentage, Frequency) and inferential statistics (Fishers' Exact test).

Results

Section i: finding related to the socio-demographic characteristics.

- Frequency and percentage distribution of the participants according to the socio-demographic characteristics.

The data shows that, Out of 105 participants 43(41%) belongs to the age group 18-27 years, 61(58.1%) were female, 33(31.4%) were having a secondary level of education, 41(39%) were unemployed, 56(53.3%) were having a family monthly income of less than Rs 10,000, 60(57.1%) resided in a rural area, 70(66.7%) belongs to a nuclear family type, 45 (42.9%) were children of hemodialysis patients and 57 (54.3%) were married.

- Frequency and percentage distribution of patients according to type of haemodialysis access, number of haemodialysis in a week and duration of undergoing haemodialysis.

The data shows that, majority of the patients 90(85.7%) were having A.V fistula, 60(57.1%) were undergoing hemodialysis once a week and 55(52.4%) were undergoing hemodialysis for 0-1 year.

Section ii: finding related to the knowledge level of participants regarding post hemodialysis home care.

Figure 1: Bar diagram depicting the frequency and percentage distribution of knowledge level of participants on post hemodialysis home care. N=105

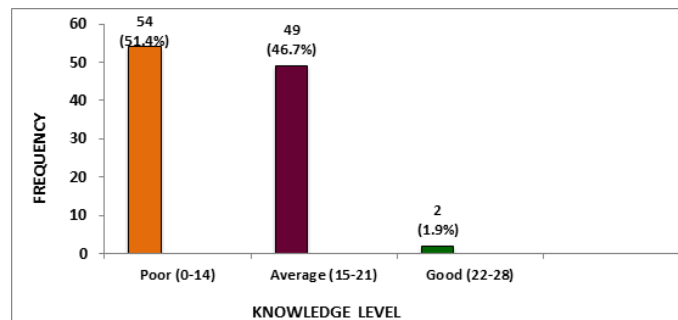


Figure 1 shows that out of 105 participants 54 (51.4%) had poor knowledge, 49 (46.7%) had average knowledge and only 2 (1.9%) had good knowledge regarding post hemodialysis home care.

Figure 2: Bar diagram depicting the frequency and percentage distribution of participants according to correct responses on the knowledge domain. N=105

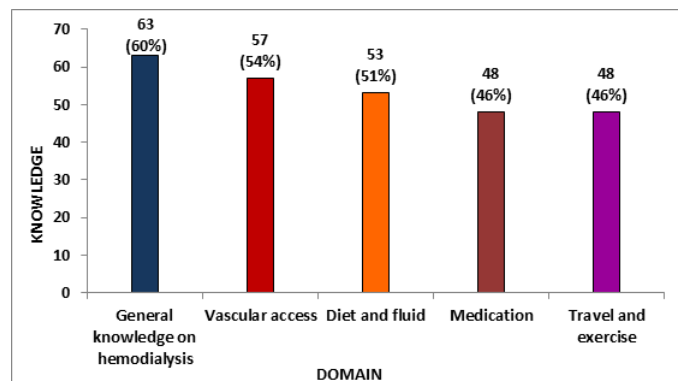


Figure 2 shows that out of 105 participants 63 (60%) responded correctly on general knowledge on hemodialysis, 57(54%) responded correctly on vascular access, 53 (51%) responded correctly on diet and fluid restriction, 48 (46%) responded correctly on medication and similarly 48 (46%) responded correctly on travel and exercise for patients receiving hemodialysis.

- Findings related to item wise frequency and percentage distribution of knowledge score on different domain of general knowledge on haemodialysis, vascular

access, diet and fluid, medications and travel and exercise for the haemodialysis patients.

The data shows that, Out of 105 participants only 31(29.5%) participants responded correctly that the hemodialysis procedure removes poisonous products from the body, only 25(23.8%) responded correctly that swelling over the fistula/graft can be reduced by propping the arm on pillows and keeping the elbow straight , only 27(25.7%) responded correctly that to avoid infection, blood clot and other problems with vascular access hand washing should be done always with soap and water before and after touching the

vascular access, only 28(26.7%)responded correctly that potassium rich food is fruits, 34(32.4%) responded correctly that Patient on hemodialysis can consume half cup milk in a day, only 38(36.2%) responded correctly that iron and folic acid tablet is given to hemodialysis patient to prevent anemia, 44(41.9%) responded correctly that the best time for doing exercise for hemodialysis patients is any time with comfortable temperature.

Section iii: finding related to the association between knowledge regarding post hemodialysis home care and selected socio-demographic variables.

Table 1: Association between the knowledge regarding post hemodialysis home care and selected socio-demographic variables.

0	Knowledge level			Fisher’s exact calculated value (p-Value)
	Poor	Average	Good	
	(0-14)	(15- 21)	(22- 28)	
Age (in years)				0.521
18- 27	19 (18.1%)	23 (21.9%)	1 (1.0%)	
28- 37	12 (11.4%)	12 (11.4%)	0	
≥ 38	23 (21.9%)	14 (13.3%)	1 (1.0%)	
Gender				0.016*
Male	29 (27.6%)	14 (13.3%)	1 (1.0%)	
Female	25 (23.8%)	35 (33.3%)	1 (1.0%)	
Educational qualification				0.415
Primary education	13 (12.4%)	6 (5.7%)	0	
Secondary and higher secondary education	29 (27.6%)	28 (26.7%)	1 (1.0%)	
Collegiate and professional education	12 (11.4%)	15 (14.3%)	1 (1.0%)	
Family monthly income (in rupees)				0.002*
≤10,000	34 (32.4%)	22 (21.0%)	0	
10,001- 20,000	17 (16.2%)	12 (11.4%)	1 (1.0%)	
≥21,000	3 (2.9%)	15 (14.3%)	1 (1.0%)	
Relationship with the patient				0.244
Spouse	15 (14.3%)	9 (8.6%)	1 (1.0%)	
Children	25 (23.8%)	20 (19.0%)	0	

Siblings and others (Niece and grandchild)	14 (13.3%)	20 (19.0%)	1 (1.0%)	
Number of hemodialysis				
Once a week	30 (28.6%)	29 (27.6%)	1 (1.0%)	0.96
Twice a week	23 (21.3%)	20 (19.0%)	1 (1.0%)	
Thrice a week	1 (1.0%)	0	0	
Duration of undergoing hemodialysis (in year)				
0-1	34 (32.4%)	21 (20.0%)	0	0.075
>1- 2	11 (10.5%)	13 (12.4%)	1 (1.0%)	
>2	9 (8.6%)	15 (14.3%)	1 (1.0%)	

***Significant at 0.05 level of significance**

The data presented in the above table shows that computed Fisher’s Exact p values reveal the finding of an association between the participants’ selected socio-demographic characteristics with knowledge on post hemodialysis home care. A significant association was found between gender and family monthly income of participants with knowledge on post hemodialysis home care at 0.05 level of significance.

Discussion

The following discussion focuses upon the findings related to the stated objectives of the study.

The discussion is presented in the following sequence.

(a) Caregivers’ knowledge regarding post hemodialysis home care.

(b) Association between knowledge of the caregivers regarding post hemodialysis home care with selected socio-demographic variables.

(a) Caregivers’ knowledge regarding post hemodialysis home care.

The present study conducted revealed that with respect to the knowledge of caregivers on post hemodialysis home care, a majority of the participants that is 54 (51.4%) participants had poor knowledge, 49 (46.7%) had average knowledge and only 2 (1.9%) had good knowledge. The findings are consistent with the similar study conducted by Navneet et al., (2014) which showed that no one

possessed excellent knowledge, only 19% had good knowledge, 50% had average knowledge, 29% had poor knowledge and 2% of the caregivers’ knowledge was deemed very poor regarding post dialysis home care. The findings showed that caregivers of hemodialysis patients had deficit knowledge regarding post dialysis home care. A similar study was conducted by Pooja et al. (2021) in Shimla on knowledge among caregivers regarding home care of patients undergoing hemodialysis. The study result was nearly similar to the present study which revealed a lack of knowledge among caregivers of hemodialysis patients regarding post hemodialysis home care. The study concluded that 80% had moderately adequate knowledge, 13.3% had adequate knowledge and 6.7% had inadequate knowledge among caregivers regarding home care of the patient undergoing hemodialysis.

Nearly 50% of the participants were not able to answer correctly regarding diet and fluid restriction for chronic kidney disease patients receiving hemodialysis. Poor knowledge of caregivers regarding diet and fluid restriction for chronic kidney disease patients undergoing hemodialysis was due to the lack of awareness among the caregivers. The finding of the present study are supported by a study conducted by Nisha et al. (2021) which showed that 87% caregivers had inadequate knowledge,

13% had moderately adequate knowledge and none of them had adequate knowledge in pre-test score regarding nutrition of hemodialysis patients. More than 50% of the caregivers were not able to answer correctly about medications, travel and exercise for the chronic kidney disease patients receiving hemodialysis. One possible explanation for such findings can be attributed to the failure of the health care workers to educate the caregivers of patients receiving post hemodialysis home care about medications, travel and performance of exercise by the patient receiving hemodialysis. The finding of the present study and other similar studies showed deficit knowledge regarding post hemodialysis home care among caregivers of chronic kidney disease patients undergoing hemodialysis.

(b) Association between knowledge of the caregivers regarding post hemodialysis home care with selected socio-demographic variables.

One of the objective of the present study is to find the association between knowledge of the caregivers regarding post hemodialysis home care with selected socio-demographic variables to determine the variables influencing the knowledge of caregivers regarding post hemodialysis home care. The present study found a significant association between the knowledge level of caregivers with gender and family monthly income. Hence, gender and family monthly income has a significant impact on the knowledge of caregivers regarding post hemo dialysis home care. This finding is inconsistent with the study conducted by Ramaya J (2016) who had found a significant association between educational qualification and the knowledge level of caregivers regarding post hemodialysis home care. The findings of another study conducted by Lydia et al. (2016) documented the duration of undergoing hemodialysis by the patients was found to have

significant association with the knowledge level of caregivers regarding home care management of hemodialysis patients. The findings of present study is contrary to the findings of the study conducted by Pooja et al. (2021) who documented that there is an association between age and the knowledge of caregivers regarding post hemodialysis home care. The finding of the present study and other similar studies mentioned above, highlight the fact that the different socio-demographic variables of caregivers have an impact on the level of knowledge of caregivers regarding post hemodialysis home care.

Conclusion

Caring for a patient at home who undergoes hemodialysis is constantly accompanied by challenges and concerns regarding effective care for the patient. Knowledge regarding post-hemodialysis home care among caregivers is very important in controlling hemodialysis-related complications and reducing mortality among end-stage kidney diseases undergoing hemodialysis. The study findings showed that most of the caregivers of hemodialysis patients had poor knowledge regarding post-hemodialysis home care. Despite undergoing hemodialysis for one or more than one-year caregivers had a lack of knowledge on hemodialysis. It has been observed that despite the majority of the patients having A.V fistula the caregivers were unaware of the prevention of infection and reducing swelling over the fistula arm. There is a need to impart health education among caregivers and the patients as well using various innovative strategies to enrich their knowledge on caring of vascular access for patients undergoing hemodialysis. During the researcher's field experience, it was observed that most of the caregivers were unaware of the dietary management of hemodialysis patients. Hence, to improve the knowledge of the caregivers, the hospital needs to

include more educational programmes regarding post-hemodialysis home care for the caregivers of hemodialysis patients to minimize complications during the period of hemodialysis to offer a quality life to the hemodialysis patient.

Ethical clearance: Taken from the Institute Ethics Committee (IEC) (Human Studies), Neigrihms, Shillong, Meghalaya (NEIGR/ IEC/M14/N16/2021)

References

1. Kaur N, Kaur M, Choudhary R. An exploratory Study to assess the knowledge regarding post dialysis home care among caregivers of haemodialysis patients attending selected hospital of Mohali. *Asian Journal of Nursing Education and Research*. 2015;5(1):45.
2. Eirini G, Georgia G. Caregivers of patients on haemodialysis. *Caregiving and home care*. 2018 Feb 14;14:75.
3. Bikbov B, Purcell CA, Levey AS, Smith M, Abdoli A, Abebe M, Adebayo OM, Afarideh M, Agarwal SK, Agudelo-Botero M, Ahmadian E. Global, regional, and national burden of chronic kidney disease, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The lancet*. 2020 Feb 29;395(10225):709-33.
4. Bharati J, Jha V. Global dialysis perspective: India. *Kidney360*. 2020 Oct 29;1(10):1143.
5. Khan S, Ahmad I. Impact of haemodialysis on the wellbeing of chronic kidney diseases patients: a pre-post analysis. *Middle East Current Psychiatry*. 2020 Dec; 27 (1):1-5.
6. Ramya J. A study to assess the Effectiveness of Structured Teaching Programme on Knowledge regarding Post Dialysis Home Care among Caregivers of Chronic Renal Failure patients undergoing Haemo dialysis at KG Hospital, Coimbatore (Doctoral dissertation, KG College of Nursing, Coimbatore).
7. Mehmood Y, Ali I, Ashraf U. Haemodialysis:: acute intradialytic complications found on maintenance haemo dialysis in patients at a public hospital Lahore. *The Professional Medical Journal*. 2019 Jan 10;26(01):45-50.
8. Smeltzer SC, Bare BG. Brunner & Suddarth, *Tratado de Enfermagem médico-cirúrgica*. In Brunner & Suddarth, *Tratado de Enfermagem médico-cirúrgica* 2005 (pp. 1133-1133).
9. Puri S, Pareek S. Educational intervention on knowledge and attitude regarding post dialysis home care among caregivers of haemo dialysis patients: An institutional study. *Journal of Applied Sciences and Clinical Practice*. 2021 Sep 1; 2 (3): 69.
10. Bhosale TS, Kakade SV, Zagade TB. A study to assess effectiveness of structured teaching programme on knowledge regarding home care management of haemo dialysis subjects–A statistical approach.
11. Butts JB, Rich KL. *Philosophies and theories for advanced nursing practice*. Jones & Bartlett Learning; 2021 Aug 16.
12. Suresh S. *Nursing research and statistics*. Elsevier Health Sciences; 2018 Jun 9.