

# Assessment of Knowledge and Self-Reported Practices Regarding Self-Care of Arteriovenous (AV) Fistula among Patients Undergoing Hemodialysis

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**Abstract:** Introduction: End-stage renal disease (ESRD) occurs when chronic kidney disease reaches an advanced state. Among the available treatments for ESRD, hemodialysis is the most utilized treatment. To facilitate hemodialysis, an Arteriovenous (AV) fistula is created by connecting the artery to a vein. Aim: The present study aimed to assess the knowledge and practice regarding self-care of AV fistula among patients undergoing hemodialysis. Methods: A descriptive research study was conducted among 34 patients undergoing hemodialysis in Apollo Hospital Noida by non-probability purposive sampling technique. An interview guide that consists of semi-structured items was used to collect demographic and clinical data. Structured multiple-choice items were used to assess knowledge and practice respectively. Results: The study findings revealed that the percentage for moderate knowledge was 55.88% and inadequate knowledge was 44.11%. The percentage of moderate practice was 97.06% and poor practice was 2.94%. Conclusion: The study's findings indicated that the majority of patients had sufficient expertise to take care of their AV fistulas on their own. The investigator gained knowledge from the study's findings concerning how patients receiving hemodialysis know and use self-care for AVF.

**Keywords:** hemodialysis, knowledge, self-reported practice, self-care of arteriovenous fistula

## 1. Introduction

Chronic Kidney Disease (CKD) is usually caused by a long-term disease, such as high blood pressure or diabetes that slowly damages the kidneys and reduces their function over time. Among the available treatments for CKD, hemodialysis is the most utilized treatment. There are three types of hemodialysis access: a fistula, a graft, and a catheter. An arteriovenous fistula (AVF) is a direct connection of an artery to a vein. Although AVF is the best access for dialysis, the fistula is susceptible to various complications such as blood hypo-flow, thrombosis, aneurysms, infection, hand ischemia, hand edema, and cardiac overload. Healthcare members, as well as patients, are held responsible for maintaining the patency of AV fistula (Smeltzer, 2016). AVF allows patients with CKD to get the treatment that is needed, serves as a lifeline to save their life. Patients must follow the self-care instructions given by the healthcare team members to maintain the patency. The kidneys are among the most vital organs of the human body which are essential for the homeostasis of the body's extracellular fluid. Kidney diseases can be classified as acute and chronic. Acute Kidney Injury (AKI) is a sudden episode of kidney failure or kidney damage that happens within a few hours or few days.

The complications associated with AVF can be prevented by keeping access clean and protected following a daily routine of self-care practices.

Hence, the researcher felt the need to assess the knowledge and self-reported practices on self-care of AVF among patients undergoing hemodialysis.

## 2. Objectives

The objectives of the study were:

- To assess the knowledge and self-reported practices regarding self-care of AV fistula among patients undergoing hemodialysis.
- To correlate the knowledge scores with self-reported practice scores regarding self-care of AV fistula among patients undergoing hemodialysis.

## 3. Material and Methods

A quantitative research approach with the descriptive design was adopted to assess the knowledge and practice regarding self-care of AVF among patients undergoing hemodialysis in Apollo Noida.

The study population consisted of 34 patients undergoing hemodialysis through an AVF in selected settings. Patients both men and women who were aged between 20 and 80 years, undergoing hemodialysis for a period of six months to more than one year with AVF and could understand either Hindi or English were included in the study.

Patients who were critically and mentally ill were excluded.

Volume 14 Issue 5, May 2025

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

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A non-probability purposive sampling technique was used to select the samples.

The tool used for the study was a semi-structured questionnaire to elicit demographic and clinical data.

Fifteen structured multiple-choice items were utilized to assess the knowledge and details of the patient.

Institutional ethical committee approval was obtained. After obtaining informed consent from the patients, data were collected by the researcher. It took approximately 45 minutes to collect the data from each sample.

Anonymity was maintained.

## 4. Results

**Table 1:** Frequency and Percentage Distribution of Demographic Variables of Patients Undergoing Hemodialysis, N = 34

Demographic Variables	Frequency	Percentage (%)
<b>Age in years</b>		
20 - 30	1	3.30%
40 – 50	6	18.80%
50 – 60	4	11.70%
60 – 70	11	32.30%
70 – 80	11	32.30%
<b>Gender</b>		
Male	12	35.3%
Female	22	64.7%
<b>Educational qualification</b>		
No formal education	0	0%
Primary education	2	6%
Secondary education	2	6%
Higher secondary education	2	6%
Graduate	7	20.5%
Postgraduate	6	17.6%
<b>Occupation</b>		
Employed	2	6%
Unemployed	8	24%
Self-employed	0	0%
Government	1	3%
Private	2	6%
Retired	7	20.5%
Daily wages	1	3%
<b>Family Month Income</b>		
Less than 10,000/-	0	0%
10,001 to 20,000/-	0	0%
Above 25,000/-	28	82.3%
Above 1 crore	6	17.6%
<b>Religion</b>		
Christian	2	5.88%
Hindu	32	94.11%
Muslim	0	0%
<b>Area of residence</b>		
Rural	0	0%
Urban	34	100%
Semi-urban	0	0%
<b>Type of Family</b>		
Nuclear Family	13	38.2%
Joint Family	21	61.7%

The data presented in **Table 1** shows that around 32.30% of the patients were in the age group of 60 – 70 and 70 - 80 years

and 18.80% of them were in the age group of 40 – 50 years. The majority (64.7%) of the patients were females and 6% of the patients were having primary education. Maximum (24%) of them were unemployed and 6% of the patients were working in the private sector. 82.3% of their family income is above Rs. 25,000/- and 6 of 34 were having family income more than 1 crore. Mostly all the patients (94.11%) were Hindu and all of them were residing in urban region. Majority of the patients were belonging from joint family and 38.2% of them were having nuclear family.

**Table 2**

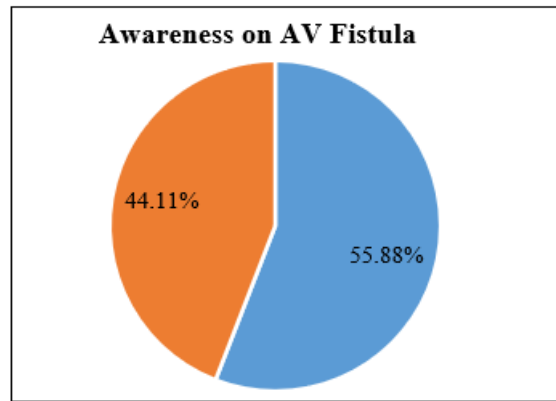
Variables	Frequency	Percentage
<b>Age at diagnosis of (in years): -</b>		
20-30	1	2.94%
30-40	3	8.82%
40-50	4	11.76%
50-60	10	29.41%
60-70	13	38.24%
70-80	2	5.88%
80-90	0	0.00%
90-100	1	2.94%
<b>Presence of co-mo. disease: -</b>		
Diabetes mellitus	12	35.29%
Hypertension	32	94.12%
Cardiac disease	8	23.53%
Vasculitis	No	0.00%
<b>Duration of undergoing haemodialysis: -</b>		
6 months-1 year	2	5.88%
More than 1 year	32	94.12%
<b>Frequency of receiving haemodialysis: -</b>		
3 times per week	20	58.82%
2 times per week	14	41.18%
1 time per week	0	0.00%
<b>Location of AV fistula: -</b>		
Wrist	1	2.94%
Forearm	23	67.65%
Elbow	16	47.06%
<b>History of the failure fistula: -</b>		
Yes (Poor practice)	1	2.94%
No (Moderate practice)	33	97.06%
<b>Aware of Care of AV fistula: -</b>		
Yes (Moderate knowledge)	19	55.88%
No (Inadequate knowledge)	15	44.12%

Table 2 shows that most (94.12%) of the patients were diagnosed with CKD and with co-morbidities of hypertension. 35.29% of them had diabetes mellitus. The majority (94.12%) of the patients were undergoing hemodialysis for more than one year and (58.82%) of the patients were receiving hemodialysis three times a week. Most (67.65%) of the patients had AV fistula on the forearm. Ninety-seven percent of the patients had intact AV fistula and 2.94% of the patients had reports of one-time failure of AV fistula. Around 55.88% of the patients reported that they were aware of the care of AV fistula, as they received information from the healthcare professionals.

## 5. Assessment of Knowledge

The knowledge was assessed using a knowledge questionnaire on self-care of AV fistula consisting of 7 questions. 55.88% of them (19 of 34) has moderate

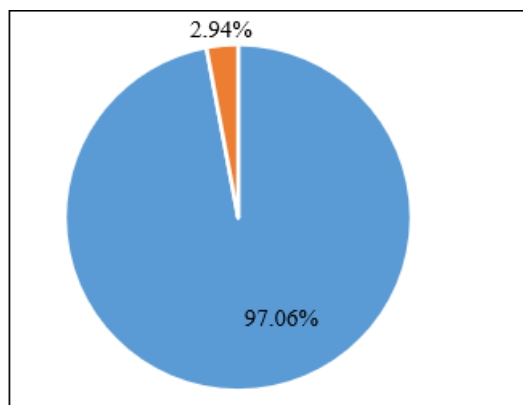
knowledge on AV fistula care and rest 44.11% were having inadequate knowledge of it.



**Table 3: Self-care of AV Fistula undergoing Hemodialysis**

S.NO.	Knowledge parameters	Number of patients practicing	
		Moderately	Poorly
1.	Keep the fistula area clean by washing the area with antibacterial soap daily and before each treatment.	34	0
2.	Report any pain, swelling or redness of the fistula area to your doctor immediately.	34	0
3.	Maintain proper blood flow through the fistula – be sure not to put extra pressure on the area.	34	0
4.	Avoid tight clothing, heavy jewellery & heavy lifting	33	1
5.	Avoid Sleeping on the area	34	0
6.	Check for the thrill	34	0
7.	Check the blood flow through the fistula area by placing the fingers over the area.	34	0
8.	No IV Prick, IV Cannulations on the Fistula area.	34	0

Practice check of fistula: -		
Moderate practice	33	97.06%
Poor practice	1	2.94%



The above mentioned table displays all the different parameters which were delivered to the patients getting AV fistula care as a training for their self-awareness and better quality of care. A total of 34 patients have been asked to fill the questionnaire regarding their history of failure fistula and only 1 (2.94%) patient has been observed to perform poorly in one of the parameters. Rest 33 (97.06%) have been performing quite moderately regarding their self-care of fistula.

## 6. Conclusion

The study findings showed that most of the patients had adequate knowledge on their self-care of AV fistula. The study findings gave an insight to the investigator about the knowledge and practice regarding self-care of AVF among

patients undergoing hemodialysis. Three times a week hemodialysis was being given to most of the patients, who had been getting it for longer than a year.

But because there were still some who were unaware about their AV care that they have been provided with, there is a need to enhance health literacy using various innovative strategies to enrich the knowledge and practice regarding self-care of AVF among patients undergoing hemodialysis.

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