



# “Self care practices, Treatment-Seeking Behaviour and Complications among patients with End -Stage Renal Disease.”

Anita choudhary<sup>1</sup>, Hangnyei T. Konyak<sup>1</sup>, Parveen Kaur<sup>1</sup>, Riya<sup>1</sup>, Shivani Thakur<sup>1</sup>  
Suresh Kumar Bamanian<sup>2</sup>, Monika Pebma<sup>3</sup>, Smita Divyaveer<sup>3</sup>

<sup>1</sup> National Institute of Nursing Education, post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India.

<sup>2</sup> Tutor, National Institute of Nursing Education, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India.

<sup>3</sup> Associate Professor, National Institute of Nursing Education, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India.

<sup>3</sup> Department of Nephrology, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India.

**Corresponding author:** Suresh Kumar Bamanian, Tutor, National Institute of Nursing Education, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India. Email: skumarbamanian@gmail.com

Choudhary A, Konyak HT, Kaur P, Riya, Thakur S, Bamanian SK, et al. Self care practices, Treatment-Seeking Behaviour and Complications among Patients with End -Stage Renal Disease.

## Abstract

### Background

End –Stage Renal Disease (ESRD) is a progressive condition requiring lifelong renal replacement therapy such as hemodialysis. Despite technological advances, patients continue to face complications, inadequate self-care and psychological challenges, which affect their quality of life and outcomes.

**Objectives:** This study aimed to assess self-care practices, treatment-seeking behaviour, and prevalence of complications among patients with End-Stage Renal Disease (ESRD) undergoing hemodialysis.

**Materials and Methods:** A descriptive study was conducted on 70 patients undergoing hemodialysis at the Dialysis Unit of Nehru Hospital, PGIMER, Chandigarh, in April 2025. Data were collected through structured interviews using a self-care checklist, treatment-seeking behaviour schedule, complications checklist, and the ESRD Adherence Questionnaire (ESRD-AQ). Descriptive and inferential statistics were applied for analysis.

**Results:** The majority were males (82.9%), aged above 50 years (44.3%), and educated up to secondary or higher level. Adherence to prescribed treatment was high (97.1%). Self-care practices were adequate for diet and hygiene but weaker in oral hygiene and emotional management. Treatment-seeking was timely, with 64.3% consulting a

doctor the same day of symptom onset and 68.6% preferring allopathic care. Common complications included tremors (78.6%), muscle weakness (65.7%), hypertension (38.6%), anemia (41.4%), along with psychological stress and financial burden.

**Conclusion:** ESRD patients demonstrated good adherence and timely treatment-seeking but faced a high burden of clinical and psychosocial complications. Structured education, psychosocial support, and early interventions are essential to improve outcomes and quality of life.

**Keywords:** ESRD, Hemodialysis, Self-care, Treatment-seeking behaviour, Complications

## Introduction

Chronic kidney disease (CKD) is a major global public health concern, characterized by progressive and irreversible loss of kidney function. When kidney function declines below 15 ml/min/1.73 m<sup>2</sup>, it is classified as End-Stage Renal Disease (ESRD), requiring renal replacement therapy such as dialysis or transplantation.<sup>1</sup> The burden of ESRD is steadily increasing worldwide, largely due to lifestyle-related conditions such as diabetes mellitus and hypertension, which contribute to nearly 75% of cases. In India, the prevalence of CKD is approximately 17.2%, with a significant proportion progressing to ESRD, leading to higher morbidity and mortality, along with considerable economic strain and psychosocial challenges for patients and their families.<sup>2</sup> Hemodialysis is the most commonly used treatment modality for ESRD in India. It is a life-sustaining process that removes metabolic waste and excess fluid through extracorporeal circulation. While dialysis prolongs survival, it does not cure the disease, and patients remain vulnerable to complications such as anemia, hypertension, electrolyte disturbances, vascular access infections, and musculoskeletal symptoms. Additionally, psychosocial challenges including depression, stress, and financial strain are frequently reported. Research indicates that adherence to prescribed treatment and effective self-care behaviours are essential for improving outcomes in ESRD patients.<sup>3</sup>

Self-care practices—including dietary management, fluid restriction, personal hygiene, fistula or catheter care, and lifestyle modifications—play a crucial role in reducing complications and enhancing quality of life.<sup>4</sup> Equally important is treatment-seeking behaviour, reflecting how promptly and appropriately patients consult healthcare providers when symptoms arise. Delays in seeking care or reliance on self-medication can worsen health outcomes. Considering these challenges and the limited data from Indian tertiary care centers, the present study was undertaken to assess self-care practices, treatment-seeking behaviour, and prevalence of complications among ESRD patients undergoing hemodialysis at PGIMER, Chandigarh. Findings from this study will help identify gaps and guide interventions to improve patient care and overall well-being.<sup>5</sup>

## MATERIALS AND METHODS

This is a descriptive study conducted at the Department of Nephrology at the dialysis unit, Nehru Hospital, PGIMER, Chandigarh. A pilot study on 10% of the sample was conducted to refine tools and procedures. We enrolled 07 adult patients on hemodialysis for this pilot study. However, due to limited number of eligible participants during data collection period, a total of 70 patients were included.

Ethical approval was obtained from the Institutional Ethics Committee, PGIMER, Chandigarh. Institutional Ethics Committee approval was obtained prior to enrollment and informed consent was also obtained from all participants. The study was conducted as per the principles for medical research by declaration of ICMR guidelines 2017. The study adhered on confidentiality, anonymity, and voluntary participation of the participants.

Participants were approached individually before or after their dialysis sessions, ensuring privacy and minimal disruption to treatment. Written informed consent was obtained, and each interview lasted 35–40 minutes. All interviews were conducted between 8:00 AM to 5:00 PM, aligned with the dialysis unit's operational hours.

Data were collected using a structured interview schedule consisting of four sections: sociodemographic and clinical profile, self-care practices (52-item checklist), treatment-seeking behaviour (closed-ended questions), and complications (standardized checklist). The ESRD Adherence Questionnaire was also used to assess dialysis, medication, fluid, and diet adherence. Clinical and lab investigations were recorded which includes uric acid, creatinine, sodium, potassium, calcium, chloride, hemoglobin, albumin, protein total, AST, ALT, ALP were done prior to hemodialysis.

Data were coded and analyzed using SPSS version 20. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were applied to summarize findings. Quantitative data was expressed in mean  $\pm$  standard deviation or median with interquartile range and depends on the normality of distribution. Results were presented in tables, charts, and graphs for clarity and effective dissemination.

## Results

Sociodemographic profile of the study participants (N = 70) revealed a mean age of  $49.34 \pm 16.03$  years (range: 19–84), with the majority (44.3%) aged above 50 years. Most participants were male (82.9%) and married (90.0%). Educational status varied, with 24.3% each for secondary education and middle, graduates 17.1% and only 11.4% were illiterate. Occupationally, 64.3% were unemployed. Socioeconomic classification using BG Prasad's 2024 scale showed that 51.4% were from the upper middle class (₹4,549–9,097), the mean per capita monthly income was  $₹9,099 \pm ₹1,471$  (range: ₹1,200–₹9,098). Regarding family structure, 55.7% had more than four family members and 44.3% had fewer than four, with the mean number of family members being  $4.9 \pm 1.47$  (range: 2–11) and median family size being 5. Participants were mainly from Punjab (25.7%) followed by Chandigarh (24.3%)

**TABLE 1. SELFCARE BEHAVIOUR SCALE (TORRES, CORRAL AND CORRAL, 2021) N=70**

Variables	f(%)				
	Never (1)	Almost never (2)	Occasionally (3)	Almost always (4)	Always (5)
1. Physical activity	3 (4.3)	4 (5.7)	15 (21.4)	20 (28.6)	<b>28(40.0)</b>
2. Eat healthy food	1 (1.4)	3 (4.3)	1 (1.4)	28 (40.0)	<b>37(52.9)</b>
3. Alternate position	0 (0.00)	1 (1.4)	8 (11.4)	<b>35 (50.0)</b>	26(37.1)
4. Frequently examine body	1 (1.4)	1(1.4)	9 (12.9)	<b>34 (48.6)</b>	25(35.7)
5. Moderate use of salt	0 (0.00)	1 (1.4)	2 (2.9)	20 (28.6)	<b>47(67.1)</b>
6. Enough sleep	0 (0.00)	1 (1.4)	8 (11.4)	<b>34 (48.6)</b>	27(38.6)
7. Changes eating habits	0 (0.00)	0 (0.00)	5 (7.1)	<b>42 (60.0)</b>	23(52.9)
8. Changes bad habits	0 (0.00)	0 (0.00)	4 (5.7)	<b>37 (52.9)</b>	29(41.4)
9. Periodic medical checkups	0 (0.00)	0 (0.00)	2 (2.9)	14 (20.0)	<b>54(77.1)</b>
10. Information about medicine	8 (11.4)	9 (12.9)	7 (10.0)	22 (31.4)	<b>24(34.3)</b>



11. Self- medication	<b>29 (41.4)</b>	3 (4.3)	6 (8.6)	8 (11.4)	24(34.3)
12. Changes habits to maintain weight	1 (1.4)	0 (0.00)	10 (14.3)	<b>35 (50.0)</b>	24(34.3)
13. Maintain personal hygiene	0 (0.00)	4 (5.7)	3 (4.3)	21 (30.0)	<b>42(60.0)</b>
14. Brush teeth 3 times	<b>20 (28.6)</b>	19 (27.1)	17 (24.3)	7 (10.0)	7 (10.0)
15. Daily bath	0 (0.00)	0 (0.00)	5 (7.1)	20 (28.6)	<b>45(64.3)</b>
16. Keep nails short and clean	0 (0.00)	0 (0.00)	5 (7.1)	22 (31.4)	<b>43(61.4)</b>
17. Rest regain health and energy	0 (0.00)	0 (0.00)	3 (4.3)	31 (44.3)	<b>36(51.4)</b>
18. Consume 3 times meals	0 (0.00)	3 (4.3)	5 (7.1)	19 (27.1)	<b>43(61.4)</b>
19. Eat balanced diet	0 (0.00)	1 (1.4)	1 (1.4)	18 (25.7)	<b>50(71.4)</b>
20. Avoid consuming foods	0 (0.00)	5 (7.1)	8 (11.4)	21 (30.0)	<b>36(51.4)</b>
21. Worry a lot about patient feel	2 (2.9)	4 (5.7)	25 (35.7)	<b>32 (45.7)</b>	7 (10.0)
22. Spend time about thinking emotions	2 (2.9)	6 (8.6)	<b>28 (40.0)</b>	<b>28 (40.0)</b>	6 (8.6)
23. Thinks about feeling	2 (2.9)	7 (10.0)	22 (31.4)	<b>32 (45.7)</b>	7 (10.0)
24. Emotions and mood worth paying attention	1 (1.4)	2 (2.9)	21 (30.0)	<b>39 (55.7)</b>	7 (10.0)
25. Good mood	0 (0.00)	0 (0.00)	4 (5.7)	30 (42.9)	<b>36(51.4)</b>
26. Think about pleasures in life	1 (1.4)	0 (0.00)	12 (17.1)	<b>40 (57.1)</b>	17(24.3)
27. Feeling about optimistic vision	0 (0.00)	1 (1.4)	10 (14.3)	<b>40 (57.1)</b>	19(27.1)
28. Activities to rest from daily worries	0 (0.00)	3 (4.3)	15 (21.4)	<b>29 (41.4)</b>	23(52.9)
29. Take time do things I like	0 (0.00)	2 (2.9)	6 (8.6)	<b>32 (45.7)</b>	30(42.9)
30. Maintain balance between body, emotions and mind	0 (0.00)	2 (2.9)	11 (15.7)	<b>43 (61.4)</b>	14(20.0)
31. Participate in activities help me to be better person	0 (0.00)	0 (0.00)	6 (8.6)	<b>35 (50.0)</b>	29(41.4)
32. Do activities that generate well-being	0 (0.00)	0 (0.00)	12 (17.1)	<b>30 (42.9)</b>	28(40.0)
33. Get to know myself better every day	0 (0.00)	0 (0.00)	5 (7.1)	<b>42 (60.0)</b>	23(32.9)
34. Do things that give me pleasure	0 (0.00)	1 (1.4)	6 (8.6)	<b>38 (54.3)</b>	25(35.7)
35. Enjoy maintaining healthy relationship with other	0 (0.00)	0 (0.00)	2 (2.9)	27 (38.6)	<b>41(58.6)</b>
36. Every day peace with myself	0 (0.00)	0 (0.00)	8 (11.4)	<b>33 (47.1)</b>	29(41.4)
37. After work try reward myself with pleasant activity	0 (0.00)	8 (11.4)	15 (21.4)	<b>33 (47.1)</b>	14(20.0)
38. Perceive I am stressed think other thing	1 (1.4)	1 (1.4)	20 (28.6)	<b>32 (45.7)</b>	16(22.9)
39. Feel bad think pleasant thing	1 (1.4)	2 (2.9)	13 (18.6)	<b>28(40.0)</b>	26(37.1)

40. Think positive thought feel bad	0 (0.00)	3 (4.3)	6 (8.6)	<b>38 (54.3)</b>	23(32.9)
41. Aware my feeling in different situations	0 (0.00)	3 (4.3)	6 (8.6)	<b>45 (64.3)</b>	16(22.9)
42. Know well how I fell	0 (0.00)	0 (0.00)	1 (1.4)	<b>40 (57.1)</b>	29(41.4)
43. Keep mind relaxed and calm, do activities help feel better	0 (0.00)	0 (0.00)	3 (4.3)	<b>37 (52.9)</b>	30(42.9)
44. Experiences satisfaction after meditating	1 (1.4)	1 (1.4)	8 (11.4)	24 (34.3)	<b>36(51.4)</b>
45. Turn meditation find inner peace and strength	1 (1.4)	2 (2.9)	11 (15.7)	<b>32 (45.7)</b>	24(34.3)
46. Practices spiritual activities find harmony with world	0 (0.00)	1 (1.4)	13 (18.6)	<b>30 (42.9)</b>	26(37.1)
47. Feel connected being greater than myself	0 (0.00)	1 (1.4)	13 (18.6)	27 (38.6)	<b>29(41.4)</b>
48. Spiritual practices maintain health	0 (0.00)	1 (1.4)	12 (17.1)	28 (40.0)	<b>29(41.4)</b>
49. Relationship with god help me love other	0 (0.00)	0 (0.00)	15 (21.4)	25 (35.7)	<b>30(42.9)</b>
50. Learned to forgive other people	0 (0.00)	1 (1.4)	6 (8.6)	28 (40.0)	<b>35(50.0)</b>
51. Learned to forgive himself	0 (0.00)	0 (0.00)	8 (11.4)	<b>32 (45.7)</b>	30(42.9)
52. Seek comfort through spiritual means	0 (0.00)	0 (0.00)	5 (7.1)	16 (22.9)	<b>49(70.0)</b>

**Table 1.** Reveals Health-Promoting Behaviors of Study Participants (N = 70) The analysis of health-promoting behaviors among the participants revealed varying frequencies across different lifestyle practices. A significant portion of participants reported engaging in regular physical activity, with 40.0% stating they always do so, while 2.9% reported never engaging in it. Similarly, 54.3% always consumed healthy food, whereas only 1.4% never did. Adequate water intake was observed frequently, with 52.9% of participants always drinking enough water. Sufficient sleep was reported always by 42.9%, while 10.0% claimed they never got enough sleep. Hand hygiene was regularly maintained, with 60.0% always practicing it. Concerning weight maintenance, 64.3% always tried to manage their weight, and 62.9% always engaged in brushing teeth regularly. Rest and recovery were also well-practiced, with 61.4% always taking rest when needed. Mental health-related behaviors showed mixed adherence. While 45.7% always avoided negative thoughts, only 38.6% always felt they enjoyed meaningful life activities. A considerable proportion, 61.4%, reported always feeling at peace with themselves. However, worrying a lot was frequently experienced, with 32.9% reporting they always did so, suggesting stress prevalence. On the cognitive side, 50.0% always reflected on their past for learning purposes, and 61.4% always considered what truly makes them happy. Social support was robust among the group, with 58.6% always having someone to confide in during problems. Altogether, the table illustrates that while most participants consistently adopted health-promoting behaviors like eating well, maintaining hygiene, and engaging in positive mental habits, certain areas such as worry management and emotional regulation need targeted interventions.

**TABLE 2. ASSESSMENT OF TREATMENT SEEKING BEHAVIOUR OF PATIENTS WITH ESRD UNDERGOING HEMODIALYSIS**  
**N=70**

<b>Variables</b>	<b>f (%)</b>
<b>1. Remedies taken prior hemodialysis</b>	
a. Self medication	2 (2.9)
b. Home remedies	1 (1.4)
c. Hospital	<b>64 (91.4)</b>
d. Others	3 (4.3)
<b>2. Consulted doctor for the symptoms arose</b>	
a. Same day	<b>45 (64.3)</b>
b. Next day	14 (20.0)
c. After 3 to 7 days	3 (4.3)
d. After 7 days	8 (11.4)
<b>3. Consulted doctor for the symptoms arose</b>	
e. Same day	<b>45 (64.3)</b>
f. Next day	14 (20.0)
g. After 3 to 7 days	3 (4.3)
h. After 7 days	8 (11.4)
<b>4. Attempted to treat with self medication</b>	
a. Yes	3 (4.3)
b. No	<b>67 (95.7)</b>
<b>5. Preferred health care facilities for first time kidney problem</b>	
a. Health care centre cc(Dispensary)	
b. Private Clinic	<b>30 (42.9)</b>
c. Govt. multi level hospital	26 (37.1)
d. Any other	8 (11.4)
	6 (8.6)
<b>6. Adhere to treatment after diagnosis</b>	<b>68 (97.1)</b>
a. Yes	2 (2.9)
b. No	
<b>7. Seek treatment from</b>	
a. Ayurveda	13 (18.6)
b. Homeopathy	8 (11.4)
c. Home remedies	1 (1.4)
d. Allopathy	<b>48 (68.6)</b>
<b>8. Benefits from the above treatment</b>	
a. Yes	8 (11.4)
b. No	<b>62 (88.6)</b>
<b>9. Satisfaction on behaviour of health care providers</b>	
a. Fully satisfied	
b. Partial satisfied	<b>65 (92.9)</b>
	5 (7.1)
<b>10. Stress about illness and treatment for past 3 months</b>	
a. Mild stress	<b>36 (51.4)</b>
b. Moderate stress	25 (35.7)
c. Severe stress	4 (5.7)
d. No	5 (7.1)
<b>11. Over Thinking before getting treatment</b>	
a. Much	6 (8.6)
b. Very much	13 (18.6)
c. Somewhat	19 (27.1)
d. Low	<b>28 (40.0)</b>
e. Very low	4 (5.7)
<b>12. Knowledge before getting treatment</b>	
a. Very much	4 (5.7)
b. Much	9 (12.9)

c. Low	15(21.4)
d. No	<b>42 (60.0)</b>
<b>13. Get knowledge regarding treatment</b>	
a. Mass Media	6 (8.6)
b. Books	4 (5.7)
c. Doctors	<b>43 (61.4)</b>
d. Nurses	15 (21.4)
e. Others	2 (2.9)
<b>14. Dependent on family members</b>	
a. Fully dependent	<b>34 (48.6)</b>
b. Partial dependent	16 (22.9)
c. Independent	20 (28.6)
<b>15. `Afford expenses needed for treatment</b>	
a. Yes	20 (28.6)
b. No	<b>26 (37.1)</b>
c. Sometimes	24 (34.3)
<b>16. Financing of treatment of patient</b>	
a. Self	<b>33 (47.1)</b>
b. Re-Imbursement	1 (1.4)
c. Insurance	9 (12.9)
d. Ayushman Bharat	18 (25.7)
e. Other	9 (12.9)
<b>17. Distance of haemodialysis unit from home</b>	
a. <50km	<b>45 (64.3)</b>
b. 50-250km	20 (28.6)
c. 251-500km	2 (2.8)
d. 501-2000km	3 (4.3)
<div> <b>Mean±SD</b>  <b>114.87±212.14</b>  <b>Range:1.0-1200</b> </div>	
<b>18. Usual transportation taken to reach hemodialysis unit</b>	
a. Bus	10 (14.3)
b. Taxi	15 (21.4)
c. Auto	12 (17.1)
d. Personal transportation	<b>24 (34.3)</b>
e. Others	9 (12.9)
<b>19. Usual transportation taken to reach hemodialysis unit</b>	
a. Bus	10 (14.3)
b. Taxi	15 (21.4)
c. Auto	12 (17.1)
d. Personal transportation	<b>24 (34.3)</b>
e. Others	9 (12.9)
<b>20. Cost to visit hemodialysis unit</b>	
a. Rs <100	<b>19 (27.1)</b>
b. Rs101-300	14 (20)
c. Rs301-500	8 (11.4)
d. Rs501-2000	16 (22.9)
e. Rs>2000	13 (18.6)
<div> <b>Mean±SD</b>  <b>1089.71±1349.66,</b>  <b>Range: 20-5000</b> </div>	
<b>21. Taking hemodialysis treatment on time</b>	
a. Yes	<b>69 (98.6)</b>
b. No	1 (1.4)
<b>22. Reason for not taking hemodialysis treatment on time</b>	
a. I had other thing to do	1 (1.4)
b. Others	<b>69 (98.6)</b>
<b>23. Alternative and complementary therapy</b>	
a. Yoga	10 (14.3)
b. Physiotherapy	1 (1.4)
c. Meditation	24 (34.3)
d. Physiotherapy and yoga	3 (4.3)



e. No	<b>32 (45.7)</b>
<b>24. Alternative and complementary therapy</b>	
a. Yoga	10 (14.3)
b. Physiotherapy	1 (1.4)
c. Meditation	24 (34.3)
d. Physiotherapy and yoga	3 (4.3)
e. No	<b>32 (45.7)</b>
<b>25. Suggested for renal transplant</b>	
a. Yes	<b>46 (65.7)</b>
b. No	24 (34.3)
<b>26. Suggested for renal transplant</b>	
a. Yes	<b>46 (65.7)</b>
b. No	24 (34.3)

**Table 2.** The table depicts that most patients, 91.4% received hospital treatment before-dialysis; 64.3% consulted a doctor same day. 95.7% avoided self-medication. 42.9% preferred health centers initially; 97.1% followed post-diagnosis treatment. 68.6% chose allopathy, while 88.6% found no benefit. Satisfaction with treatment or health care was 92.9%, mild stress was reported by 51.4% of participants. 40% had low overthinking; 60% lacked prior knowledge; 61.4% were informed by doctors about treatment. 48.6% were fully dependent on family members, 37.1% couldn't afford treatment by self while 47.1% were self-funded. 64.3% lived within 50 km; 34.3% used personal transport; 27.1% spent <₹100/visit. 98.6% followed dialysis on time. 95.7% didn't use alternative therapy and 65.7% were advised for renal transplant.

**TABLE 3. ASSESSMENT OF COMPLICATIONS DUE TO HEMODIALYSIS N=70**

<b>Variables</b>	<b>f(%)</b>			
<b>1 Cardiovascular system</b>	<b>Always(4)</b>	<b>Often(3)</b>	<b>Sometimes(2)</b>	<b>Never(1)</b>
a. Chest pain	1 (1.4)	4(5.7)	23 (32.9)	<b>42 (60)</b>
b. Hypertension on dialysis	4 (5.7)	19(27.1)	<b>39 (55.7)</b>	8(11.4)
c. Myocardial system	(2.9)	2(2.9)	30(42.9)	<b>36(51.4)</b>
d. Stroke	0(0.00)	0(0.00)	3(4.3)	<b>67(95.7)</b>
e. Thrombosis	0(0.00)	0(0.00)	1(1.4)	<b>69(98.6)</b>
	0(0.00)	0(0.00)	9(12.9)	<b>61(87.1)</b>
<b>2. Musculoskeletal system</b>				
a. Muscle pain	3 (4.3)	11(15.7)	<b>32(45.7)</b>	24(34.3)
b. Muscle weakness	2(2.9)	17(24.3)	<b>46(65.7)</b>	5(7.1)
c. Muscle cramps	2(2.9)	6(8.6)	27(38.6)	<b>35(50.0)</b>
d. Bones and joints pain	2(2.9)	8(11.4)	29(41.4)	<b>31(44.3)</b>
<b>3. Nervous system</b>				
a. Tremors	4(5.7)	3(4.3)	8(11.4)	<b>55(78.6)</b>
b. Fainting	2(2.9)	6(8.6)	23(32.9)	<b>39(55.7)</b>
c. Attacks of weakness, dizziness or fatigue	1(1.4)	18(25.7)	<b>37(52.9)</b>	14(20.0)
	1(1.4)	11(15.7)	<b>39(55.7)</b>	19(27.1)
d. Loss of strength	3(4.3)	7(10.0)	16(22.9)	<b>44(62.9)</b>
e. Numbness of the hands and feet	3(4.3)	16(22.9)	<b>27(38.6)</b>	24(34.3)
f. Sleep disturbances	0(0.00)	5(7.1)	<b>39(55.7)</b>	26(37.1)
g. Headache	1(1.4)	1(1.4)	8(11.4)	<b>60(85.7)</b>
f. Pulmonary embolism				
<b>4. Respiratory system</b>				
a. Dyspnoea	1(1.4)	8(11.4)	21(30.0)	<b>40(57.1)</b>
b. Pleural effusion	1(1.4)	3(4.3)	8(11.4)	<b>58(82.9)</b>
c. Pulmonary embolism	0(0.00)	1(1.4)	7(10.0)	<b>62(88.6)</b>
<b>5. Gastrointestinal system</b>				
a. Nausea or upset stomach	1(1.4)	1(1.4)	32(45.7)	<b>36(51.4)</b>
b. Nausea during dialysis	3(4.3)	3(4.3)	<b>33(47.1)</b>	31(44.3)
c. Vomit during dialysis	2(2.9)	1(1.4)	26(37.1)	<b>41(58.6)</b>
	1(1.4)	11(15.7)	<b>30(42.9)</b>	28(40.0)



d. Loss of appetite e. Deranged liver	1(1.4)	1(1.4)	4(5.7)	<b>64(91.4)</b>
<b>6. Dermatological system</b>				
a. Dry skin	11(15.7)	18(25.7)	<b>24(34.3)</b>	17(24.3)
b. Skin pruritus	4(5.7)	5(7.1)	<b>31(44.3)</b>	30(42.9)
c. Skin infections	3(4.3)	5(7.1)	4(5.7)	<b>58(82.9)</b>
<b>7. Haematological system</b>				
a. Anaemia	5(7.1)	19(27.1)	<b>29(41.4)</b>	17(24.3)
b. Hyperkalemia	1(1.4)	3(4.3)	<b>37(52.9)</b>	29(41.4)
<b>8. Psychological</b>				
a. Anxiety and stress related to illness	0(0.00)	7(10.0)	<b>38(54.3)</b>	25(35.7)
b. Depression	1(1.4)	0(0.00)	12(17.1)	<b>57(81.4)</b>
c. Low self- esteem	0(0.00)	2(2.9)	19(27.1)	<b>49(70.0)</b>

**Table 3.** The data in the table presents the frequency of various symptoms experienced by patients undergoing dialysis, categorized by different body systems. This table depicts that **Muscle weakness (92.85%)** and **Hypertension on dialysis (88.57%)** were the most common prevalence of complications followed by **Attacks of weakness, dizziness or fatigue (80%)** among the participants.

\* The least common prevalence of complications were Stroke (**1.4%**) and Myocardial infarction (**4.3%**).

**TABLE 4. END STAGE RENAL DISEASE ADHERENCE QUESTIONNAIRE (ESRD-AQ)**

N=70

Variables	f(%)
<b>General information</b>	
<b>1</b> Begin or restart your hemodialysis treatment	<b>25</b>
a. <6	<b>(35.7)</b>
b. 6 – 12	14 (20)
c. 13 – 24	6 (8.6)
d. >24	<b>25 (35.7)</b>
<div> <b>Mean±SD: 2022.5±3.517</b>  <b>Range:2008-2025</b> </div>	
<b>2</b> Ever had chronic peritoneal dialysis treatment	
a. No	<b>70(100.0)</b>
<b>3</b> Had a kidney transplant	
a. Yes	9(12.9)
b. No	<b>61(87.1)</b>
<b>4</b> Transportation used for going to dialysis center	
a. Personal transportation	<b>26(37.1)</b>
b. Bus	12(17.1)
c. Taxi	16(22.9)
d. Medical transportation van	5(7.1)
e. Other (specify)	11(15.7)
<b>5</b> Accompanies you to the dialysis center	
a. Myself	4(5.7)
b. Parent	10(14.3)
c. Spouse	<b>29(41.4)</b>
d. Child	18(25.7)
e. Other(Specify)	9(12.9)
<b>Hemodialysis Treatment</b>	
<b>6</b> Days a week do you receive hemodialysis treatment	
a. 2 days or less	34(48.6)
b. 3 days	<b>35(50.0)</b>
c. 4 days	1(1.4)

7 Are treated for each hemodialysis a. 3 hours b. 3 hours and 30 minutes c. 3 hours and 45 minutes d. 4 hours	1(1.4) 1(1.4) 4(5.7) <b>64(91.4)</b>
8 dialysis schedule convenient a. yes b. No, because I have to come to the dialysis center too early c. No because of my work schedule	<b>68(97.1)</b> 1(1.4) 1(1.4)
9 last time a medical professional talked about the importance dialysis treatment a. this week b. last week c. one month ago d. more than a month ago e. when I first began dialysis treatment f. never g. other (specify	6(8.5) 3(4.3) 2(2.9) 5(7.1) <b>51(72.9)</b> 1(1.4) 2(2.9)
10 Importance of staying entire dialysis a. every dialysis treatment b. every week c. every 2to 3 month d. every 4to 6month e. when I have abnormal blood or other test result	<b>55(78.6)</b> 8(11.4) 3(4.3) 1(1.4) 3(4.3)
11 important think it is to follow dialysis schedule a. highly important b. very important	<b>56(80.0)</b> 14(20.0)
12. It is important to follow dialysis schedule a. because I fully understand that my kidney condition requires dialysis as schedule b. because following the dialysis schedule is important to keep my body healthy	<b>59(84.3)</b> 11(15.7)
13 difficulty had staying for entire dialysis treatment a. No difficulty b. a little difficulty c. moderate difficulty d. a lot of difficulty e. extreme difficulty	<b>50(71.4)</b> 13(18.6) 4(5.7) 1(1.4) 2(2.9)
14 Last month many dialysis treatment missed completely a None b Missed one dialysis treatment c Missed four or more dialysis treatment	<b>68(97.1)</b> 1(1.4) 1(1.4)
15 Main reason missed dialysis treatment a. Not applicable b. I had other things to do c. Forgot	<b>68(97.1)</b> 1(1.4) 1(1.4)
16 Didn't want to go to the dialysis center a. Because dialysis treatment makes me anxious b. Because I was physically uncomfortable c. Because I was emotionally depressed	1(1.4) 2(2.9) 1(1.4) <b>66(94.3)</b>

d. Other(specify)	
17 Many times have shortened dialysis time a. Not applicable: I have not shortened my dialysis time b. Twice c. Three times d. Other (Specify frequency)	<b>66(94.3)</b> 2(2.9) 1(1.4) 1(1.4)
18 Dialysis treatment was shortened the average number of minutes a. Not applicable: I have not shortened my dialysis time b. Less than 10 minutes or 10 minutes c. 21 to 30 minutes d. More than 31 minutes	<b>67(95.3)</b> 1(1.4) 1(1.4) 1(1.4)
19 The main reason have shortened dialysis treatment a. Not applicable: I have not shortened my dialysis time b. Cramping c. Bathroom use d. Restlessness	<b>66(94.3)</b> 2(2.9) 1(1.4) 1(1.4)
<b>Medication</b> 20. Last time a medical professional spoke about medicines a. This week b. Last week c. One month ago d. More than a month ago e. When I first began dialysis treatment f. Never	10(14.3) 6(8.6) 3(4.3) 5(7.1) <b>45(64.3)</b> 1(1.4)
21 Medical professional talk about importance of taking medicines a. Every dialysis treatment b. Every week c. Every month d. Every 2 to 3 months e. Every 4 to 6 months f. When I have abnormal blood or other (for example, blood pressure) test results g. Irregularly h. Other (Specify)	14(20.0) 4(5.7) 1(1.4) 1(1.4) 1(1.4) 3(4.3) 1(1.4) <b>45(64.3)</b>
22 Thinks important to take medicines as schedule a. Highly important b. Very important	<b>58(82.9)</b> 12(17.1)
23 It is important to take medicine as schedule a. Because I fully understand that my kidney condition requires to take medicines as scheduled b. Because taking medicines is important to keep my body healthy	<b>62(88.6)</b> 8(11.4)
24 Difficulty with taking medicines a. No b. Yes	<b>70(100.0)</b> 0
25 Difficulty have taking prescribed medicines a. No difficulty b. A little difficulty	<b>68(97.1)</b> 1(1.4)

c. A lot of difficulty	1(1.4)
26 Often have missed prescribed medicines a. None of the time: I did not miss my medicines b. About half of the time	<b>69(98.6)</b> 1(1.4)
27 Reason not taking medicine a. Not applicable: I did not miss medicines b. Forgot to take medicines	<b>69(98.6)</b> 1(1.4)
28 Kind of side effect to the medications a. Loss of appetite b. Nausea/vomiting/diarrhea/constipation c. Stomach pain d. Other (Specify symptoms)	2(2.9) 3(4.3) 1(1.4) <b>64(91.4)</b>
<b>Fluid</b> 29 Medical professional spoke about fluid restrictions a. This week b. Last week c. One month ago d. More than a month ago e. When I began dialysis treatment f. Never g. Other (Specify)	5(7.1) 10(14.3) 1(1.4) 1(1.4) <b>51(72.9)</b> 1(1.4) 1(1.4)
30 Medical professional talk about importance of fluid restrictions a. Every dialysis treatment b. Every week c. Every month d. Every 4 to 6 months e. When I have abnormal blood or other (for example, blood pressure) test results f. Rarely g. Never h. Other (Specify)	8(11.4) 5(7.1) 2(2.9) 1(1.4) 2(2.9) 2(2.9) 1(1.4) <b>49(70.0)</b>
31 Often have followed the fluid restriction a. All of the time b. Most of the time c. Very seldom d. None of the time	<b>48(68.6)</b> 20(28.6) 1(1.4) 1(1.4)
32 Important think limit fluid intake a. Highly important b. Very important	<b>52(74.3)</b> 18(25.7)
33 It is important to limit fluid intake a. Because I fully understand that my kidney condition requires limiting fluid intake b. Because limiting fluid intake is important to keep my body healthy	<b>58(82.9)</b> 12(17.1)
34 Difficulty with limiting fluid intake a. No b. Yes	<b>54(77.1)</b> 16(22.9)



35 Difficulty have fluid restrictions recommendation	
a. No difficulty b. A little difficulty c. Moderate difficulty d. A lot of difficulty	<b>53(78.6)</b> 13(18.6) 3(4.3) 1(1.4)
36 Type of Difficulty have fluid restriction recommendations	
a. No difficulty b. I was unable to control fluid intake c. Other	<b>55(78.6)</b> 10(14.3) 5(7.1)
37 Times have weighed yourself at home	
a. More than 3 times b. 3 times c. Twice d. Once e. None of the time f. Other	5(7.1) 10(14.3) 9(12.9) 10(14.3) <b>19(27.1)</b> 17(24.3)
38 Important think to weight yourself daily	
a. Highly important b. Very important c. Moderately important d. Not important	<b>47(67.1)</b> 17(24.3) 2(2.9) 4(5.7)
<b>Diet</b>	
39 Medical professional talked about diet	
a. This week b. Last week c. More than a month ago d. When I first began dialysis treatment e. Never f. Other (Specify)	7(10.0) 6(8.6) 5(7.1) <b>46(65.7)</b> 2(2.9) 4(5.7)
40 Medical professional talk about importance of proper diet	
a. Every dialysis treatment b. Every week c. Every month d. Every 2-to-3-month e. Every 4-to-6-month f. When I have abnormal blood or other (for example, blood pressure) test results g. Never h. Other (Specify)	7(10.0) 6(8.6) 3(4.3) 2(2.9) 3(4.3) 3(4.3) 2(2.9) <b>44(62.9)</b>
41 Importance types of food eat each day	
a. Highly important b. Very important	<b>53(76.7)</b> 17(24.3)
42 Importance diet daily	
a. Because I fully understand that my kidney condition requires to watch my diet b. Because watching my diet is important to keep my body healthy	<b>57(81.4)</b> 13(18.6)
43 Difficulty dietary recommendations	
a. No b. Yes	<b>67(95.7)</b> 3(4.3)
44 Difficulty had followed dietary recommendations	
a. No difficulty	<b>66(94.3)</b>

b. A little difficulty	4(5.7)
45 Difficulty have kept dietary recommendations	<b>66(94.3)</b>
a. Not applicable: No difficulty	2(2.9)
b. I was not willing to control what I want to eat	1(1.4)
c. I was unable to avoid certain un-recommended food	1(1.4)
d. Other (Specify)	
46 Many time have followed the diet recommendations	<b>49(70.0)</b>
a. All of the time	19(27.1)
b. Most of the time	1(1.4)
c. Very seldom	1(1.4)
d. None of the time	

**Table 4.** The table depict information regarding the onset of hemodialysis, 35.7% of patients had started treatment within the last six months or more than two years ago, reflecting a diverse treatment timeline. Notably, none of the participants had undergone peritoneal dialysis, and 87.1% had never had a kidney transplant. In terms of transportation, 37.1% used personal transport, while taxis and buses were also common. Most patients were accompanied by a spouse (41.4%) or a child (25.7%), indicating family involvement in care. A majority (98.6%) received hemodialysis treatment either twice or thrice weekly, with 91.4% undergoing sessions for 4 hours. The dialysis schedule was convenient for 97.1% of patients. Most patients (72.9%) reported being educated about dialysis at the beginning of treatment, and 78.6% were reminded of its importance during every session. Importantly, 80% rated adherence to the dialysis schedule as "highly important." While 71.4% reported no difficulty staying through full dialysis sessions, 2.9% experienced extreme difficulty. Encouragingly, 97.1% never missed a session, and forgetfulness or competing commitments were rare causes for missing or shortening dialysis time. Regarding medication adherence, all participants (100%) reported no difficulty in taking prescribed medications, and 98.6% never missed doses. Understanding the importance of medication was high, with 82.9% rating it as "highly important." In terms of fluid restriction, 68.6% adhered to it consistently, and 74.3% acknowledged its critical role. Although 22.9% reported difficulty limiting fluid intake, 78.6% expressed no difficulty following related recommendations. On dietary adherence, 70% followed recommendations consistently. Most had been educated about diet when dialysis began (65.7%), and 76.7% considered daily food. Choices to be highly important. However, minor challenges in avoiding certain foods were noted in a small portion of the sample (4.3%). Weight monitoring was less consistently practiced, with only 7.1% checking weight more than three times weekly. Still, 67.1% saw regular weight monitoring as highly important.

## Discussion

A total of 70 patients participated in the study, with the majority being male (82.9%) and above 50 years of age (44.3%), reflecting demographic patterns observed in Indian ESRD populations.<sup>6</sup> More than half belonged to the upper-middle class according to the BG Prasad scale, yet 64.3% were unemployed, underscoring the disabling and financially draining nature of ESRD. Similar to previous studies, these findings highlight how chronic kidney disease leads to socioeconomic vulnerability despite relatively stable backgrounds.<sup>7</sup>

Self-care practices showed encouraging trends in hygiene and dietary adherence, though oral and psychological self-care remained inadequate. While 70% maintained basic hygiene and diet, only 10% reported optimal oral care, and over half experienced stress and emotional fatigue. Treatment-seeking behaviour was largely appropriate, with high rates of physician consultation (64.3% on the same day of symptoms) and adherence to treatment schedules (97.1%).

However, financial constraints (37.1% unable to afford treatment regularly) and dependence on caregivers (48.6%) posed major challenges.

Clinical complications were widespread, with fatigue, dizziness (80%), tremors (78.6%), anemia (41.4%), hypertension (38.6%), and biochemical imbalances being common. Dermatological, gastrointestinal, and cardiovascular symptoms further added to the disease burden. Psychological issues were equally concerning, with 54.3% reporting anxiety and 70% low self-esteem, echoing earlier findings of depression and emotional distress among dialysis patients.<sup>8</sup>

Despite these challenges, treatment adherence was notably high: 94.3% never shortened dialysis sessions, and 98.6% consistently took prescribed medications, motivated by health awareness. Laboratory findings confirmed ESRD-associated abnormalities, including elevated creatinine, anemia, and electrolyte imbalances. Overall, the study highlights strong treatment adherence but persistent complications, psychological stress, and financial hardships. A multidisciplinary approach—integrating medical, psychological, and social support—is essential to improve the quality of life for patients undergoing chronic hemodialysis.

## Conclusion

Patients with ESRD undergoing hemodialysis at PGIMER demonstrated commendable adherence and timely treatment-seeking but faced frequent complications and gaps in oral and psychological self-care. Nursing interventions must address these deficits through structured education and counselling, while policy measures should strengthen financial support and integrated care.

## Acknowledgments

The authors thank the patients who participated and the dialysis staff of Nehru Hospital, PGIMER, for their cooperation.

## Conflicts of interest

None declared.

## Funding

No external funding received.

## REFERENCES

1. Sheikh, V., Barati, M., Khazaei, S., & Jormand, H. (2022). Factors related to treatment adherence behaviors among old-age hemodialysis patients in Hamadan, Iran: The application of the extended theory of planned behavior during Covid-19 pandemic. *BMC Nephrology*, 23, 58. <https://doi.org/10.1186/s12882-022-02694-x>

x

2. Ortiz, A. & Asociación Información Enfermedades Renales Genéticas (AIRG-E), European Kidney Patients' Federation (EKPF), Federación Nacional de Asociaciones para la Lucha Contra las Enfermedades del Riñón (ALCER), Fundación Renal Íñigo Álvarez de Toledo (FRIAT), Red de Investigación Renal (REDINREN), Resultados en Salud 2040 (RICORS2040), Sociedad Española de Nefrología (SENEFRO) Council, Sociedad Española de Trasplante (SET) Council, Organización Nacional de Trasplantes (ONT). (2022). RICORS2040: The need for collaborative research in chronic kidney disease. *Clinical Kidney Journal*, 15(3), 372–387. <https://doi.org/10.1093/ckj/sfab170>
3. Xu, F., Zhuang, B., Wang, Z., Wu, H., Hui, X., Peng, H., Bian, X., & Ye, H. (2023). Knowledge, attitude, and practice of patients receiving maintenance hemodialysis regarding hemodialysis and its complications: A single-center, cross-sectional study in Nanjing. *BMC Nephrology*, 24, 275. <https://doi.org/10.1186/s12882-023-03320-0>
4. Roudsary, D. M., Nia, H. S., & Najm, Z. S. (2022). Assessment of Self-Care in Hemodialysis Clients Admitted in Al-imam Al-Sadiq Educational Hospital/ Babylon-Iraq. *International Journal of Health Sciences*, 6401–6419. <https://doi.org/10.53730/ijhs.v6nS5.10129>
5. Gupta, S., Virk, A., Mittal, A., & Agarwal, B. K. (2020). Patterns and determinants of healthcare-seeking behavior among hypertensive patients in a rural population of north India: A mixed-method study. *Journal of Family Medicine and Primary Care*, 9(6), 2830–2836. [https://doi.org/10.4103/jfmpc.jfmpc\\_200\\_20](https://doi.org/10.4103/jfmpc.jfmpc_200_20)
6. Garcia-Garcia, G., & Jha, V. (2015). Chronic kidney disease (CKD) in disadvantaged populations. *Clinical Kidney Journal*, 8(1), 3–6. <https://doi.org/10.1093/ckj/sfu124>
7. Bansal et al (2020): Assessment of symptoms interval in musculoskeletal neoplasms Why is Management of Musculoskeletal Neoplasms Critically Delayed? -A Teaching Hospital Based Investigation into Symptom Interval in Musculoskeletal Neoplasms. (2025). *ResearchGate*. <https://doi.org/10.36295/ASRO.2020.2323116>
8. Sharma et al-2018-Heat and Mass Transfer. (2025). *ResearchGate*. <https://doi.org/10.1007/s00231-018-2429-9>