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Patients' Satisfaction Regarding Renal Dialysis Services at a Specialized Public Hospital

Tania Khanam[1*], Manik Kumar Das[2], Laxmi Rani Das[3], Mahmuda Aktar Meem[4], Nipa Adhikary[2], ANM Shamsul Islam[5] Farjana Islam[6], Muhammad Kamrul Amin[7]

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ABSTRACT

A key part of judging healthcare services is how satisfied the patients are. Renal dialysis services are essential for the survival of patients with end-stage kidney disease. More than 5.4 million people are expected to be on dialysis by 2030, with the biggest increase happening in Asia. Evaluating patient satisfaction has gained significance in enhancing the quality of care. This study aimed to determine patients' satisfaction with renal dialysis services at a specialized public hospital. A cross-sectional descriptive study involving 296 patients was conducted with chronic kidney disease aged ≥18 years undergoing haemodialysis at the National Institute of Kidney Diseases and Urology, (NIKDU), Dhaka, Bangladesh from July 2023 to June 2024. Patients' satisfaction was measured using a 4-point Likert scale and analysed using SPSS. There was strict adherence to ethical rules. Respondents were an average of 46.32 years old (SD = 12.80). Most people, 76.04% of the time, were happy with renal dialysis services. Lower satisfaction was observed in the following areas: transport facilities, dressing room facilities, disinfection measures, cleanliness of the dialysis room, comfort of waiting room furniture, frequency and availability of nephrologists, and privacy. Satisfaction scores were not significantly associated with age, sex, or dialysis duration ($p > 0.05$). Patients were generally happy with the renal dialysis services, but there are still issues. Filling in these gaps and checking in on patients' happiness on a regular basis can improve the long-term experience of patients and the quality of dialysis services in public hospitals.

INTRODUCTION

Patient satisfaction assessments are increasingly prevalent in healthcare and are crucial to raising the standard of care. Studies have shown that improved patient satisfaction leads to better healthcare-related quality of life (Al Nuairi *et al.,* 2022, p. 1843). When kidney damage is observed, or the glomerular filtration rate remains below 60 ml/min/1.73 m² for 3 months or more, chronic kidney disease is diagnosed. End-stage kidney disease represents the final stage of chronic kidney disease, at which patients require kidney replacement therapy. The stages of chronic kidney disease guide the management of kidney failure; when kidney function falls below 10–15%, patients require dialysis or kidney transplantation to survive (Helmy *et al.,* 2022, p. 2).

Haemodialysis is a process that purifies and filters waste from the blood. Patients who need dialysis due to end-stage renal failure can use this method. End-stage renal disease is a condition in which the kidneys permanently lose function. It is a medical condition that requires costly and protracted treatment (Shawwat & Atiyah, 2022, p. 8615). According to government estimates, approximately 1.6 million individuals in Bangladesh have end-stage renal disease (ESRD), and 40,000 patients in Bangladesh die from kidney illnesses annually (IFC, 2021, p. 2). The population of patients undergoing dialysis is expected to exceed 5.4 million by 2030, with the largest increase in Asia (Wetmore & Collins, 2016, p. 2).

Global statistics show that between 1990 and 2016, the incidence and prevalence of chronic kidney disease increased by 89% and 87%, respectively. This, in turn, makes more patients need chronic haemodialysis (Kavalieratou *et al.,* 2021, p. 209). The prevalence of chronic kidney disease (CKD) is higher (22.48%) in Bangladesh than people worldwide, with a higher prevalence in females (25.32%) than in males (20.31%). There are 20–30 million Bangladeshis with chronic kidney disease. Approximately 78% of people who need kidney replacement therapy choose dialysis by nephrologists and 89% of them get HD globally.

Dialysis is a life-saving procedure, but its accessibility is highly dependent on available resources because it is costly and needs specific environments. Bangladesh does not have enough dialysis machines (Ripon, *et al.,* 2023, p.

[1] Department of Public Health and Hospital Management, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka-1212, Bangladesh
[2] Department of Public Health and Health Education, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka-1212, , Bangladesh
[3] Department Public Health and Hospital Management, International University of Business Agriculture and Technology (IUBAT), Uttara, Dhaka-1230, Bangladesh
[4] Department Public Health and Reproductive Health, North East University Bangladesh, Sylhet, Bangladesh
[5] Department Public Health and Hospital Administration, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka-1212, Bangladesh
[6] Department of Epidemiology, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka-1212, Bangladesh
[7] Department of Community Medicine, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka-1212, Bangladesh
[*] Corresponding author's e-mail: taniakhanam207257@gmail.com

1). Patients with end-stage kidney disease necessitate renal dialysis services for survival. These services can help to improve the quality of life of patients with kidney failure and prolong their life expectancy. Multiple problem areas in the hemodialysis unit affect patients' satisfaction, and further improvement in the care provided through dialysis services is required (Helmy *et al.,* 2022, p. 1). The outcome of this study will provide insight into how satisfied patients are with their renal dialysis care. It will also help policymakers plan to overcome the problem by improving hemodialysis services in specialized public hospitals.

LITERATURE REVIEW

The study was designed to assess patients' satisfaction with renal dialysis services at a specialized public hospital. The study was conducted among the chronic kidney disease patients undergoing haemodialysis in the National Institute of Kidney Diseases and Urology (NIKDU), Sher-E-Bangla Nagar, Dhaka. A significant amount of research data was gathered from publications published in numerous national and international journals, reports, abstracts, and textbooks were carefully examined in order to fully understand the study's concept, obtain background information, and choose suitable methodologies. Literature review provides insights into theoretical and practical environments in which lesion my learned. It is a wonderful opportunity to study. However, so far revealed, no recent study was found on patients' satisfaction regarding renal dialysis services at a specialized public hospital in Bangladesh.

A study was conducted by Kar and Islam in 2021, describe that chronic kidney disease (CKD) is a global public health issue that is becoming more common in many nations, including Bangladesh. According to their research, every year, 200–250 individuals per million in Bangladesh get end-stage renal failure. Because of the financial load on patients, the lack of government subsidies, the scarcity and unequal distribution of qualified medical personnel, and the deficiency of appropriate referral and follow-up mechanisms, there are still difficulties in delivering sustainable and effective kidney treatment. However, because dialysis is expensive and not readily available, access to it is restricted (Kar & Islam, 2023, p. 1472).

Al Eissa *et al.* in 2010, describe that to evaluate the level of patient satisfaction with hemodialysis and the variables affecting this level of satisfaction. Dialysis patients who were male reported lower effects on energy, appetite, family life, and social life. Extended duration since the start of dialysis was linked to negative impacts on finances and energy. A lower educational attainment was linked to a worsening dialysis effect on stress, general health, sexual life, hobbies, and capacity for exercise. According to their findings, the degree of satisfaction is influenced by factors such as gender, length of dialysis, educational attainment, and the quality of care received (Al Eissa *et al.,* 2010, p. 1, 4).

Banik and Ghosh conducted a study in 2020, described that the prevalence of CKD among Bangladeshi people as determined by available data from earlier research. Their results from a meta-analysis of nine studies with 225,206 participants showed that the incidence of CKD in Bangladesh was higher than the global incidence of CKD, with an overall prevalence of 22.48% among Bangladeshi people. The frequency of chronic kidney disease (CKD) was higher and more heterogeneous in females than in males. Their research revealed that CKD strikes Bangladeshis more frequently. Therefore, the government and public health agencies need to put more effort into managing and reducing the higher risk of impairment brought on by chronic renal disease (Banik & Ghosh, 2020, p. 1).

The patient satisfaction is also a well-known measure of quality of health care and performance of services. Based on E-Palli publications, it is evident that the satisfaction is dependent on the behavior of healthcare providers, waiting time, and the general service provision. Das and Bagchi (2022) discovered that 75 percent of patients attended a tertiary hospital in Bangladesh were satisfied with the services, and the respectful conduct of providers and reduced waiting times had beneficial impacts on satisfaction. Nevertheless, the prohibitive number of wait times, overcrowding, and the lack of trained workers and physicians were recognized as some of the key obstacles (Das & Bagchi, 2022, p. 15). In Kenya in a study, the mean satisfaction scores were high with the use of telediagnosis (range of scores between 4.124.31); nevertheless, regression analysis showed that telediagnosis did not have significant effects on the level of patient satisfaction, which refers to a broader group of expectations and experiences, both infrastructural and relational in care delivery (Ndeda *et al.,* 2025, p. 65).

The literature indicates that, Bangladesh lacks the dialysis capacity to fulfill its current and future needs, and the dialysis facilities do not provide enough support to improve patient quality of life (Ripon, *et al.,* 2023, p. 1).

A study was conducted by Jabbar, *et al.* in 2023, describe that the three-tier network of healthcare facilities makes up the nation's health care delivery system. Being a third-tier specialist hospital, it has the latest equipment and specialized staff needed to offer specialized care. Their study to evaluate ESRD patients' access to a specialized hospital's medical services. Males exhibited much greater average access to healthcare services compared to their female counterparts. In the residency, rural patients had markedly inferior access to healthcare services compared to metropolitan patients. The majority of patients exhibited an average level of accessibility to healthcare services, followed by a "good" level. In order to address these issues and enhance the accessibility of end-stage renal disease patients to specialist hospital medical services, appropriate policies and program interventions are needed (Jabbar *et al.,* 2023, p. 5).

MATERIALS AND METHODS

Study Setting And Study Population

This descriptive cross-sectional study took place at the National Institute of Kidney Diseases and Urology

(NIKDU) in Dhaka, Bangladesh, from July 2023 to June 2024. The study included all CKD patients who were diagnosed and were getting hemodialysis from either an indoor or outdoor department.

Sample Size And Sampling

In this study, the researchers purposively selected the study site and conveniently enrolled 296 respondents.

Data Collection Instruments

We got the data by doing in-person interviews and looking at medical records. A checklist and a semi-structured questionnaire were used to gather data. The data collection tools were finalized with the necessary modifications and alterations based on the pre-test results. The questionnaire was given out at Sir Salimullah Medical College Mitford Hospital (SSMC) in Dhaka. Before the interview, the people who answered gave their written consent.

Data Analysis

T Patients' satisfaction was measured using a 4-point Likert scale. The Likert scale was used to determine the state of patients' satisfaction with 4 as "very satisfied", 3 as "quite satisfied", 2 as "somewhat dissatisfied" and 1 as "very dissatisfied." Scores 3 and 4 were considered "satisfied" while 1 and 2 were considered "dissatisfied." Patients' satisfaction was assessed across eight dimensions. The eight dimensions were: interpersonal relationships in healthcare, service delivery, quality of healthcare, healthcare structure, healthcare environment, healthcare management, access to healthcare, and effectiveness and continuum of healthcare. Here, patients' satisfaction is the dependent variable. Independent variables included socio-demographic and clinical attributed related data. For each sub item, the proportion of satisfied patients were computed. The average proportions of satisfied patients in each category were determined, and the average across all categories was used to obtain the overall satisfaction (Ahoui *et al.,* 2019, p.129). Data were analyzed by SPSS software (version 23.0). Distribution tables were created using same software. Descriptive statistics measured frequency, mean, and standard deviation. Inferential statistics, such as t-tests and ANOVA, were used to assess association. P-values <0.05 considered to be statistically significant.

RESULTS AND DISCUSSION

Results

The study included 296 patients receiving renal dialysis services at a specialized public hospital. The mean age of the respondents was 46.32 ± 12.80 years, with the largest proportion belonging to the 48–57 years age group. More than half of the respondents were male, almost all of whom were Muslim. More than half of the people who answered were men, and almost all of them were Muslims. More than three-fourths of the people who answered were married, and more than half lived in cities. About 32.1% had finished high school, and more than a third of the people who answered were housewives. Most of the people who answered the question had a monthly family income of less than BDT 20,000, and more than half of them lived in a joint family (Table 1).

Table 1: Distribution of socio-demographic characteristics of the respondents (n=296)

Socio-demographic characteristics	Frequency (f)	Percentage (%)
Age group (Years)		
18-27	35	11.8
28-37	45	15.2
38-47	76	25.7
48-57	82	27.7
≥58	58	19.6
Mean ± standard deviation	46.32 ± 12.80	
Sex		
Male	176	59.5
Female	120	40.5
Religion status		
Muslim	279	94.3
Non- Muslim	17	5.7
Marital status		
Unmarried	25	8.4
Married	239	80.7
Divorced	7	2.4
Widow/Widower	25	8.4

Place of residence		
Urban	205	69.3
Rural	91	30.7
Educational qualification		
Illiterate	20	6.8
Primary	47	15.9
Secondary	95	32.1
Higher Secondary	73	24.7
Graduate and above	61	20.6
Occupational status		
Housewife	108	36.5
Farmer	13	4.4
Businessman	38	12.8
Day laborer	16	5.4
Service holder	36	12.2
Student	12	4.1
Unemployed	54	18.2
Retired	6	2.0
Others	13	4.4
Monthly family income (BDT)		
<20000	227	76.7
20000-30000	53	17.9
>30000	16	5.4
Mean ± standard deviation	19844.59±6709.68	
Family types		
Nuclear	135	45.6
Joint	161	54.4

In terms of clinical attributes, nearly half of the respondents had been undergoing dialysis for less than two years, and the vast majority received dialysis twice per week. Hypertension was the most common comorbidity, followed by diabetes mellitus. Almost all of the respondents were hypertensive, and the majority of respondents preferred arteriovenous fistula (Table 2).

Table 2: Distribution of clinical attributes of the respondents (n=296)

Clinical attributes	History	Frequency (f)	Percentage (%)
Duration of dialysis	**<2 years**	**135**	45.6
	2-5 years	96	32.4
	>5 years	65	22.0
Number of weekly dialysis session	2 per week	224	75.7
	3 per week	72	24.3
Comorbidity history*	Diabetes	129	43.6
	Hypertension	269	90.9
	Coronary Heart Disease	97	32.8
	Cerebrovascular Disease	10	3.4
	Other diseases	15	5.1
Vascular access	Arteriovenous fistula	233	78.7
	Central venous catheter	57	19.3
	Femoral catheter	6	2.0

** Multiple response*

Assessment of satisfaction across service components showed generally favourable responses. High levels of satisfaction were reported for the temperature of the dialysis room, the nursing staff's care, the nephrologist's care, the excess water removed during dialysis, and the duration of service at the dialysis centre. However, comparatively lower satisfaction was observed regarding disinfection measures, noise in the dialysis room, privacy, room cleanliness, transport facilities, dressing room facilities, waiting room furniture, and availability of nephrologists in centres (Table 3).

Table 3: Distribution of the respondents on interpersonal relations in healthcare, service delivery, quality of service, healthcare structure, healthcare environment, healthcare management, access to healthcare and effectiveness and continuum of healthcare (n=296)

Dimension	Attributes	Dissatisfied		Satisfied	
		(f)	%	(f)	%
Interpersonal relations in healthcare	Nephrologist mood	46	15.5	250	84.5
	Hygiene measures	134	45.3	162	54.7
	Support and care	38	12.8	258	87.2
	Staff friendliness	29	9.8	267	90.2
Service delivery	Dialysis center opening hours	48	16.2	248	83.8
	Noise in dialysis room	111	37.5	185	62.5
	Snack	21	34.4	40	65.6
Quality of service	Care provided by the nephrologist	47	15.9	249	84.1
	Nephrologist information	67	22.6	229	77.4
	Dialysis technique	26	8.8	270	91.2
	Removing excess water	22	7.4	274	92.6
	Other health issues	29	9.8	267	90.2
	Privacy	122	41.2	174	58.8
Healthcare structure	Dialysis room space	98	33.1	198	66.9
	Lighting in patient rooms	18	6.1	278	93.9
	Rooms temperature	19	6.4	277	93.6
	Rooms cleanliness	131	44.3	165	55.7
Healthcare environment	Equipment facilitating movement and handling	72	24.3	224	75.7
	Transport	137	46.3	159	53.7
	Dialysis bed or chair	71	24.0	225	76.0
	Access and quality of dressing room	136	45.9	160	54.1
Healthcare management	Comfort waiting room furniture	128	43.2	168	56.8
	Healthcare coordination	46	15.5	250	84.5
	Dialysis center responsiveness	47	15.9	249	84.1
	Information on dialysis	42	14.2	254	85.8
	Quantity of fluid intake in between dialysis sessions	114	38.5	182	61.5
Access to healthcare	Nephrologist accessibility	125	42.2	171	57.8
	Frequency of nephrologist visit	128	43.2	168	56.8
	Dialysis center accessibility through phone call	54	23.2	179	76.8
	Dialysis center responsiveness in the event of emergency	88	29.7	208	70.3
	Dialysis center accessibility	100	33.8	196	66.2
	Access to patient's file	42	14.2	254	85.8
	Overall quality of healthcare	88	29.7	208	70.3

Effectiveness and continuum of healthcare	Accuracy of nephrologist information	40	13.5	256	86.5
	Better healthcare measures	44	14.9	252	85.1
	Dialysis center recommendation	30	10.1	266	89.9

The majority of respondents (87.2%) were satisfied with the effectiveness and continuum of the healthcare dimension, but more than one-third (36.7%) were dissatisfied with the healthcare environment dimension (Table 4).

Table 4: Distribution of the respondents according to dimensions of satisfaction on renal dialysis services (n=296)

Dimensions of satisfaction regarding renal dialysis services	**Response**	
	Dissatisfied	**Satisfied**
	(%)	(%)
Interpersonal relationship in healthcare	20.8	79.2
Service delivery	29.4	70.6
Quality of healthcare	17.6	82.4
Healthcare structure	22.5	77.5
Healthcare environment	36.7	63.3
Healthcare management	21.0	79.0
Access to healthcare	30.9	69.1
Effectiveness and continuum of healthcare	12.8	87.2

The overall average proportion of satisfied patients was 76.04%, and the proportion of dissatisfied patients was 23.96% (Figure 1).

One-way ANOVA showed that the length of time on dialysis was not statistically linked to any satisfaction dimension, such as interpersonal relationships, quality of healthcare, healthcare structure, healthcare environment, healthcare management, access to healthcare, or effectiveness of care ($p > 0.05$), (Table 5).

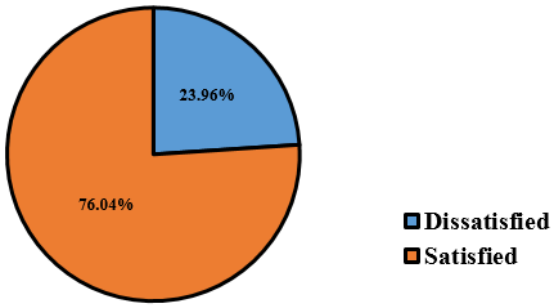

Figure 1: Distribution of the respondents according to overall average proportion of satisfaction (n = 296)

Table 5: Association between mean score of each dimension of satisfaction regarding renal dialysis services and duration of dialysis of the respondents

Dimensions of satisfaction regarding renal dialysis services	**Duration of dialysis**	**Satisfaction mean (±SD) score**		**Test statistics**
		(f)	**Mean (±SD)**	**One way ANOVA Test (p-value)**
Interpersonal relationship in healthcare	< 2 years	135	11.87 (±1.35)	F= 0.214(0.808)
	2 – 5 years	96	11.77 (±1.40)	
	> 5 years	65	11.89 (±1.31)	
Quality of healthcare	< 2 years	135	17.52 (±1.81)	F=1.285 (0.278)
	2 – 5 years	96	17.69 (±1.98)	
	> 5 years	65	17.97 (±1.81)	

Healthcare structure	< 2 years	135	12.09 (±1.74)	F= 0.013 (0.987)
	2 – 5 years	96	12.08 (±1.48)	
	> 5 years	65	12.12 (±1.50)	
Healthcare environment	< 2 years	135	13.22 (±1.56)	F=1.780 (0.170)
	2 – 5 years	96	13.58 (±1.70)	
	> 5 years	65	13.58 (±1.71)	
Healthcare management	< 2 years	135	11.80 (±1.46)	F=0.56 (0.574)
	2 – 5 years	96	11.94 (±1.81)	
	> 5 years	65	11.66 (±1.74)	
Access to healthcare	< 2 years	73	19.89 (±1.85)	F=1.386 (0.252)
	2 – 5 years	96	19.71 (±2.11)	
	> 5 years	64	19.33 (±2.02)	
Effectiveness and continuum of healthcare	< 2 years	135	9.20 (±1.18)	F=0.874 (0.419)
	2 – 5 years	96	9.01 (±1.13)	
	> 5 years	65	9.20 (±1.15)	

Discussion

This study shows that most patients on kidney treatment at a big public hospital felt fairly good about their experience. What stood out was how well they rated the medical attention, interactions with workers, and the way treatments worked overall. Earlier findings back this up - skill level, behavior of caregivers, plus how reliably things ran mattered a lot when judging care during dialysis sessions (Weisbord *et al.,* 2007, p. 960; Cleary & McNeil, 1988, p. 25).

Ethiopia, then across to SaudiArabia, much the same thing showed nephrologist care, dialysis techniques, and staff friendliness, where beneficial patient experiences were relation with patient and health workers relationship and perceived technical sufficiency in health economics (Ayele *et al.,* 2020, p. 6). Belief grew not through hightech gear, yet from noticing small wins add up week after week. Once people felt their care would last, their whole sense of what lay ahead tilted differently. Staying on track mattered most when facing lifelong health challenges (Finkelstein *et al.,* 2012, p. 720).

Still, folks walked away frowning despite solid health outcomes. Privacy felt shaky, rooms looked grimy, getting there took effort, and seats offered little comfort. In poorer countries, dialysis clinics wrestle with broken systems - tight budgets strangle basic needs. Good treatment happens, yes, yet surroundings chip away at pride (Gerogianni & Babatsikou, 2014, p. 2). Dignity slips when walls echo neglect.

A few folks struggled just to reach specialist care - nephrologists sometimes never showed up in their lives at all. Busy clinics, stretched teams, particularly where services are publicly funded, made timely appointments tough to land. That delay tends to leave patients feeling unheard (Tannor *et al.,* 2017, p. 6). Fixing those weak spots might just shift how care feels for those who need it.

Not seeing a statistically significant correlation between dialysis duration and patient satisfaction hints that present service quality weighs heavier than time spent in treatment. This finding aligns with research suggesting that satisfaction is forceful and influenced by continuous care experiences rather than mere cumulative exposure (Kutner *et al.,* 1986, p. 400).

CONCLUSION

The study concludes that patients receiving renal dialysis services at the specialised public hospital were generally satisfied, particularly with the quality of care and professional behaviour of healthcare providers. The study revealed that near about half of the respondents were dissatisfied about disinfection measures taken during the dialysis procedure, comfort of the furniture in the waiting room, maintaining privacy, cleanliness in the dialysis room, dressing room facilities and wheelchair facilities in the dialysis center. Focusing on these services and improving them can lead to better service quality. In this study, the overall average proportion of satisfied hemodialysis patients was 76.04%. Although there were limitations in the study, the findings can help authorities in taking necessary steps to formulate future policies and to improve the quality of renal dialysis services at a specialized public hospital.

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