



PATIENTS SATISFACTION ATTENDING AT HEMODIALYSIS UNITS

¹Shahanaz Parvin, ²Prof. Dr. Fouzia Hasin, ³Prof. Dr. Hafiza Sultana, ⁴Jhumki Rani Das, ⁵Mosharof Hossain

¹Nursing Instructor, College of Nursing, Sher -E- Bangla Nagar, Dhaka, Bangladesh.

²Professor of Biochemistry, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.

³Professor & Head, Dept. of Health Education, National Institute of Preventive of Social Medicine (NIPSOM), Dhaka, Bangladesh.

⁴Nursing Instructor, College of Nursing, Sher -E- Bangla Nagar, Dhaka, Bangladesh.

⁵Nursing Instructor, Nursing & Midwifery College, Tangail, Bangladesh.

Abstract: Background: Patient satisfaction is very important in public health issues and usually used as an indicator for measuring the degree of excellence in health care. It is very important aspect to evaluate health care outcome. **Method:** This cross-sectional study was conducted to assess the patient satisfaction attending at hemodialysis unit. The total 250 respondents were selected (aged ≥ 18 years and above) attending at National Institute of Kidney Diseases and Urology (NIKDU), Sher-E-Bangla Nagar, Dhaka-1207 and Dhaka Medical College Hospital (DMCH). The convenience sampling and PSQ-18 questionnaire were used for data collection. The study was conducted from 1st January 2019 to 31st December 2019. Data was collected by face-to-face interview through a semi- structured questionnaire. **Results:** The Mean age of the respondents were 67 ± 35 years (SD) and more than half of the respondents were male (57.6%). Average income was 25696 ± 1657 taka (SD). Majorities of the respondent's educational qualification was up to primary level (34%) and among the respondents 38% were house make. 34.0% of the respondents were uncertain regarding general satisfaction, 41.2% were uncertain in technical quality, 33.2% of the respondents were disagree regarding interpersonal manner. The patient's satisfaction regarding communication majority were disagree (30.4%), in the opinion regarding financial aspect (58.4%) were strongly disagree. Patient's opinion regarding that doctor spent time with the patients has shown (42.4%) were uncertain. Relation between socio-demographic characteristics with total mean score of satisfaction showed the significant in age ($p < 0.05$) and religion ($p < 0.05$). **Conclusion:** From the study's findings, this study has shown that the participants have lower levels of satisfaction concerning the care given in dialysis unit.

Keywords: Patient, Healthcare, Supply of Food, Hemodialysis

1. INTRODUCTION

End-stage renal disease (ESRD) is a major public health problem. Given the aging population and the increasing incidence of diabetes and hypertension, the prevalence of ESRD is projected to nearly double in the next decade. During recent decades, dialysis has proven to be a successful life-sustaining therapy, with its effectiveness judged largely by patient survival (Davison *et al.*, 2005). Chronic kidney disease is a major health problem due to the significant financial burden for the healthcare system and likewise for the patient who needs the treatment. The patient's whole life situation is turned upside down with chronic kidney disease when they are confronted with the forced change to start treatment with hemodialysis (Rojas, 2017). Numerous scientific and technical advances in hemodialysis therapy and the outcomes of patients with end stage renal disease are far from reaching the desired targets. (Bayoumi, Guindy and Ahmed, 2016). Chronic kidney disease (CKD) is a global public health problem worldwide. The worldwide prevalence of CKD has increased in various countries such as the U.S. (13.1%), Taiwan (9.8-11.9%), and Norway (10.2%), Japan

(12.9-15.1%) China (3.2-11.3%), Korea (7.2- 13.7%), Thailand (8.45-16.3%), Singapore (3.2-18.6%), and Australia (11.2%) (Muntner and Levin, 2014). The prevalence of CKD in Bangladesh is about 17.3% (Hassam *et al.*, 2018). According to latest WHO data published in 2017 kidney disease death in Bangladesh reached 15,336 or 1.95% of total death. The age adjusted death rate is 14.04 per 100,000 of population ranks Bangladesh 94 in the world (World Health Ranking, 2017). Hemodialysis is the therapy used most often among patients with end stage renal disease worldwide, slightly more than 30 people in every 100000 develop kidney failure each year (Hafez *et al.*, 2002). In a dialysis center, hemodialysis is usually done 3 times per week for about 4 hours at a time. People who choose to do hemodialysis at home may do dialysis treatment more frequently, 4-7 times per week for shorter hours each time. (National Kidney Foundation BD, 2015). Patients treated with hemodialysis experience mortality rates approaching 15–20% each year and have profoundly impaired quality of life contributed to by severe symptoms of fatigue, low appetite, pain, sleep disorders, anxiety, nausea and restless legs (Palmer *et al.*, 2014). The growing problem of ESRD is attributed to ageing of the population and the increase in the rates of diabetic nephropathy, ischemic nephropathy and other comorbid conditions (Al Qahtani and Almetrek, 2017). Infection is the second most common cause of death among HD patients and is a major cause of hospitalization. The use of tunneled central venous catheters (CVC) for dialysis vascular access contributes to this HD-related morbidity and mortality. Compared to arteriovenous fistulas, tunneled central venous cannula are associated with a 15-fold greater risk for bacteremia (Thompson *et al.*, 2017). Patients with renal failure are susceptible to infection. In the predialysis era, 60% of patients with chronic renal failure requiring hospitalization were infected and 39% died from infectious causes. It was assumed that the debility caused by the uremic state increased the risk of infection, and the reversal of uremia would reduce the risk of infection (Steve Berman, 2010-2017). In 2013, around 1 million people died because of CKD related cause. Despite of being a global concern, CKD disproportionately affects the people from developing countries. A systematic review, conducted in 2015 reported that, 109.9 million people from high-income countries had CKD (men-48.3 million, women-61.7 million) whereas the burden was 387.5 million in lower-middle income countries (men-177.4 million, women- 210.1 million) (Hasan *et al.*, 2018).

Patient satisfaction represents a key marker for the quality of health care delivery and this internationally accepted factor needs to be studied repeatedly for smooth functioning of the health care systems. A better appreciation of the factors pertaining to client satisfaction would result in implementation of custom-made programs according to the requirements of the patients, as perceived by patients and service providers. Patient is the best judge since he/she accurately assesses and his /her inputs help in the overall improvement of quality health care provision through the rectification of the system weaknesses by the concerned authorities (Ahmad, Din and Pakhtunkhwa, 2014). Patients' satisfaction is basic. Services can be regarded or disregarded by patients depending on the ratings they base on. A study done in Bangladesh showed that the unavailability of doctors and nurses, their negative attitudes and behaviors, lack of drugs, long travelling distances and the waiting times for treatment were major hindrances to the utilization of services in public hospitals (Ndambuki, 2013). Patient satisfaction is considering as an important indicator for evaluating the health care outcomes, while affects clinical performance, patient retention and medical malpractice. Furthermore it may be a very effective indicator to measure the success of health care team especially in dialysis unit when deal with chronic patient undergoing hemodialysis therapy (Bayoumi, Guindy and Ahmed, 2016).

2. JUSTIFICATION

The prevalence of end stage renal disease (ESRD) is increasing worldwide whereas patient satisfaction is very important aspect to evaluate health care outcome. (Bayoumi, Guindy and Ahmed, 2016). Patient satisfaction is significant and usually used as an indicator for measuring the degree of excellence in health care. Patient satisfaction is the patient's perception of care received compared with the care expected (Ebrahim and Issa, 2015). Patients' satisfaction measured against five dimensions consists of tangibility, reliability, responsiveness, assurance and empathy; reduction of patients' anxiety level is an important patient' safety outcomes because anxiety is the most common psychological adverse events encountered in HD patients (Dawood *et al.*, 2016). Patient's satisfaction is an important issue both for evaluation and improvement of healthcare services, user evaluations educate medical staff about their achievements as well as their failure, assisting them to be more responsive to their patients' needs. Patient's assessment, therefore, suggests guidelines for improving the attitudes of doctors and other paramedic staff in better serving the patients thereby improving the health services. Patients' satisfaction is concerned with several factors, for example, they have to be happy with doctors, treatment, medicine and clinical conditions. Likewise, satisfaction of the patients is also affected by their awareness about the health services (Bayoumi, Guindy and Ahmed, 2016). In Bangladesh, around 20 million people currently suffer from some kind of kidney disease, among

which, 800,000 require dialysis. Yet, only about 30,000 of them are able to receive dialysis due to financial constraints. There are 101 dialysis centers across Bangladesh. At least 1,000 such centers are needed to treat the large number of patients (Bayoumi, Guindy and Ahmed, 2016). According to an estimated data, there are around 1,300 to 1,500 non-functional dialysis machines at these centers (Dhaka Tribune, 2019). During dialysis they need to provide proper care. Patients' satisfaction assessment is becoming an important indicator of health care outcomes and considers as evidence for better patient satisfaction, it might be associated with better medical outcomes (Bayoumi, Guindy and Ahmed, 2016). Dissatisfied patients tend to launch complaints to the establishment or seek redress from it more often and dissuade others from seeking health care services from the system if the systems do not favor them (Ndambuki, 2013).

So, the aim of this study was to assess the level of Patients' satisfaction attending at Hemodialysis Units. In a dialysis center, hemodialysis is usually done 3 times per week for about 4 hours at a time. People who choose to do hemodialysis at home may do dialysis treatment more frequently, 4-7 times per week for shorter hours each time. (National Kidney Foundation BD, 2015). Patients treated with hemodialysis experience mortality rates approaching 15–20% each year and have profoundly impaired quality of life contributed to by severe symptoms of fatigue, low appetite, pain, sleep disorders, anxiety, nausea and restless legs (Palmer *et al.*, 2014). Patients with renal failure are susceptible to infection. In the predialysis era, 60% of patients with chronic renal failure requiring hospitalization were infected and 39% died from infectious causes. It was assumed that the debility caused by the uremic state increased the risk of infection, and the reversal of uremia would reduce the risk of infection (Steve Berman, 2010-2017).

3. RATIONALE OF THE STUDY

The prevalence of end stage renal disease (ESRD) is increasing worldwide whereas patient satisfaction is very important aspect to evaluate health care outcome. (Bayoumi, Guindy and Ahmed, 2016). Patient satisfaction is significant and usually used as an indicator for measuring the degree of excellence in health care. Patient satisfaction is the patient's perception of care received compared with the care expected (Ebrahim and Issa, 2015). Patients' satisfaction measured against five dimensions consists of tangibility, reliability, responsiveness, assurance and empathy; reduction of patients' anxiety level is an important patient safety outcomes because anxiety is the most common psychological adverse events encountered in HD patients (Dawood *et al.*, 2016). Patient's satisfaction is an important issue both for evaluation and for improvement of healthcare services; user evaluations educate medical staff about their achievements as well as their failure, assisting them to be more responsive to their patients' needs. Patient's assessment, therefore, suggests guidelines for improving the attitudes of doctors and other paramedic staff in better serving the patients thereby improving the health services. Patients' satisfaction is concerned with several factors, for example, they have to be happy with doctors, treatment, medicine and clinical conditions. Likewise, satisfaction of the patients is also affected by their awareness about the health services (Bayoumi, Guindy and Ahmed, 2016). At least 1,000 such centers are needed to treat the large number of patients (Bayoumi, Guindy and Ahmed, 2016). According to an estimated data, there are around 1,300 to 1,500 non-functional dialysis machines at these centers (Dhaka Tribune, 2019). During dialysis, they need to provide proper care. Patients' satisfaction assessment is becoming an important indicator of health care outcomes and considers as evidence for better patient satisfaction, it might be associated with better medical outcomes (Bayoumi, Guindy and Ahmed, 2016). Dissatisfied patients tend to launch complaints to the establishment or seek redress from it more often and dissuade others from seeking health care services from the system if the systems do not favor them (Ndambuki, 2013). So, the aim of this study was to assess the level of Patients' satisfaction attending at Hemodialysis Units.

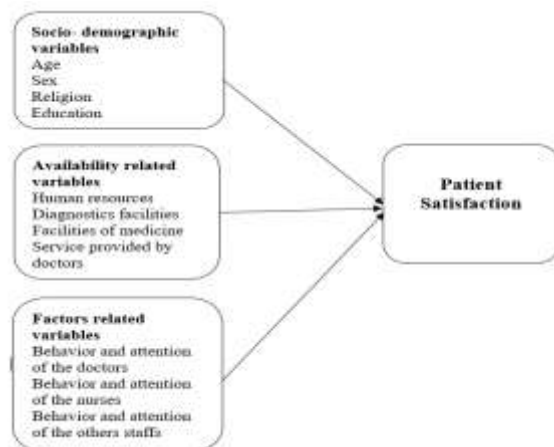
4. RESEARCH QUESTION

What is the level of patients' satisfaction attending at hemodialysis units?

5. RESEARCH OBJECTIVE

1. To find out the factors related to patients' satisfaction attending at hemodialysis units
2. To identify the availability of Health Care Service in hemodialysis units.
3. To measure the levels of hemodialysis patients' satisfaction by using PSQ18 scale.
4. To determine the socio-demographic characteristics of responded

6. CONCEPTUAL FRAMEWORK



7. OPERATIONAL DEFINITIONS

VII.I Patient's satisfaction: Patient's satisfaction has defined as the patients linking and preferences towards hospital service. It will measure by 18 questionnaires with PSQ18 scale ranging from strongly agree to strongly disagree.

Strongly agree=5, Agree=4, Uncertain=3, Disagree=2, Strongly disagree=1

VII.II Patients Attending at Hemodialysis Units: Present of the respondents at Hemodialysis Units during data collection time.

VII. III Health Care Service: Health care service “ means the furnishing of medicine, medical or surgical treatment, nursing, hospital service, dental service, optometrically service, complementary health services or any or all of the enumerated services or any other necessary service of like character, whether or not contingent upon sickness or personal injury, as well as the furnishing to any person of any and all other services and goods for the purpose of preventing, alleviating, curing or healing human illness, physical disability or injury.

VII. IV Behavior: The way in which someone conducts oneself or behaviors It the actions and mannerisms made by individuals, organisms, systems or artificial entities in conjunction with themselves or their environment, which includes the other systems or organisms around as well as the (inanimate) physical environment.

It is the computed response of the system or organism to various stimuli or inputs, whether internal or external, conscious or subconscious, overt or covert, and voluntary or involuntary

VII. V Human resources: Human resources are the people who make up the workforce of an organization, business sector, or economy.

VII. VI Facilities: Will be defined as something designed, built, installed to serve a specific function affording a convenience or service. In this study facilities will be considered for those infrastructure, equipment, transportation that facilities the emergency services.

VII. VII Diagnostic facilities: Diagnostic facilities are the supporting service of hospital. Its role to help physician in confirming diagnosis as well as measuring the progress of treatment.

VII. VIII Waiting time in the hospital: It is the period expressed in minute/hours required for individual patient between times of arrival in the hospital and to the first contact with the doctors.

8. LITERATURE REVIEW

The following are the overview of the conceptual issues on Patient's Satisfaction Attending at Hemodialysis unit'.

The Study Was Conducted On Assessment of Patients' Satisfaction with Care at Selected Governmental Dialysis Units in Addis Ababa, Ethiopia, 2018. This study aimed to assess the patients' satisfaction with care at selected dialysis unit in Addis Ababa, Ethiopia. Methods: The study was conducted in the capital city of Ethiopia, Addis Ababa at selected three government tertiary hospitals because maintenance of hemo-dialysis

procedure is provided in these hospitals. Study design: facility based cross-sectional quantitative and qualitative mixed study design were employed on patients undergoing maintenance of hemo-dialysis care. The data was collected in three selected dialysis units using a census method applied for quantitative approach to determine sample size because of few members of source population and snowball sampling for qualitative method. The study carried out from May to June 2018. 115 patients treated in hemo-dialysis unit. The primary outcome was patient with hemodialysis care satisfaction with the overall care and secondary outcomes of individual aspect of hemodialysis care in patient experiences. Data was collected by structured pre tested questionnaire and in-depth interview and analyzed using SPSS. Descriptive statistics, Bivariate and multivariate logistic regression analyses was undertaken. A total of 113 participants were responding to questionnaire with response rate 98.3% from this 76(67.3%) were male. The overall satisfaction level was found to be 41.6%. Majority of the respondents (81.4%) were rated high nurses care on vascular access site and nurses advice on post dialysis results were rated very low (1.8%). The regression analysis shows that income, educational status, occupation and frequency of dialysis were predictors of the overall satisfaction score ($p < 0.05$). Strength and limitation: Applying mixed methods of quantitative data was supported by qualitative method could cross check one another. Whereas limitation of the study was in fact, studies conducted so far in Ethiopia in this topic are very limited; therefore, scarcity of literature to compare the finding in Ethiopian context was inadequate. Conclusion & Recommendation: Only 41.6% participants were satisfied with the care provided in hemo-dialysis units. This shows that the level of patient satisfaction is severely deficient and recommended to work for the achievement of optimal health care outcome then subsequently increase patient satisfaction (Wurjine and Regasa, 2018). The Effects of Comfort-Based Interventions (Back Massage and Patient and Family Education) on the Level of Comfort among Hemodialysis Patients. Providing patients with comfort is the basis of nursing care and a favorable outcome of nursing care measures. Comfort is of special importance to hemodialysis patients because they spend a large part of their lives in hemodialysis units and are constantly dealing with different physical and mental health problems. This study aimed to evaluate the effects of comfort-based interventions (back massage along with patient and family education) on the level of comfort among hemodialysis patients. As a randomized controlled trial, this study was undertaken in 2016 in the hemodialysis unit of Shaheed Chamran hospital, Ferdows, Iran. A convenience sample of forty hemodialysis patients was recruited. Patients were alternately allocated to control or intervention groups based on their hemodialysis days. The hospice comfort questionnaire was completed for all participants at the beginning and at the end of the study. This questionnaire showed that the comfort needs of patients were related to muscle cramps, headache, back pain, nausea, lack of knowledge about arteriovenous fistula care, dietary and treatment regimens, itching, rest and sleep disorders, and impaired comfort. Patients in the intervention group received massage as well as patient and family education in six consecutive hemodialysis sessions, while their counterparts in the control group solely received the routine care services of the study setting. The SPSS software (v. 18.0) was used for data analysis through running the paired- and the independent-sample t tests. The significance level was set at less than 0.05. The mean scores of comforts, it is environmental, and psych spiritual dimensions significantly increased in the intervention group ($P < 0.001$). Significant increases were also observed in the mean scores of comforts and its psych spiritual dimension in the control group ($P < 0.05$). Before the intervention, there were no significant differences between the groups respecting the mean values of comfort and its dimensions ($P > 0.05$). The mean age was 51.7 years (± 15.4); 58% have been on dialysis for > 3 years. The mean Charlson Comorbidity Index was 3.2 (± 2), and Kit/V was 1.3 (± 0.44). The mean satisfaction score was (7.41 ± 2.75) and the mean score of the impact of the dialysis on the patients' lives was 5.32 ± 2.55 . Male patients reported worse effect of dialysis on family life, social life, energy, and appetite. Longer period since the commencement of dialysis was associated with adverse effect on finances and energy. Lower level of education was associated with worse dialysis effect on stress, overall health, sexual life, hobbies, and exercise ability (Eissa *et al.*, 2010). The Relationships between Nurses' Perceptions of the Hemodialysis Unit Work Environment and Nurse Turnover, Patient Satisfaction, and Hospitalizations. Sample for nurse-level data consisted of 199 registered nurses in staff nurse roles in 56 dialysis facilities of a national dialysis company. The sample for facility-level analysis consisted of 46 dialysis facilities, and nurse-level data were aggregated for facility-level analysis. The Practice Environment Scale-Nursing Work Index (PES-NWI) was used to measure nurses' perceptions of the dialysis work environment. Nurses' intention to leave their jobs and facility-level turnover rates were the nurse outcomes examined in this study. Facility-level patient satisfaction and hospitalization rates were the patient outcomes examined. Correlation coefficients were computed to measure the relationships between study variables, and independent t-tests were performed to examine subgroup differences in work environment perceptions. Overall, nurses rated the work environment somewhat favorably. Nurses who expressed intention to leave their jobs rated the work environment more negatively

compared to nurses who intended to stay. Significant correlations were found between nurses' perceptions of the dialysis work environment, nurses' intention to leave their jobs, nurse turnover rates, and patient hospitalizations. Study findings suggest that nurses' perceptions of the dialysis work environment are important for nurse and patient outcomes in dialysis settings. Further research is needed to explore the predictive ability of the work environment for nurse and patient outcomes in hemodialysis units (Gardner *et al.*, 2007). Renal Provider Recognition of Symptoms in Patients on Maintenance Hemodialysis. The aim of this study was to assess renal provider recognition of symptoms and their severity in hemodialysis patients. The Dialysis Symptom Index, a 30-item measure of symptoms and their severity, was administered to patients during a routine hemodialysis session. Immediately after surveying patients, the renal provider who evaluated the patient completed the Dialysis Symptom Index to report, the symptoms that he or she believed were present in that patient. Sensitivity, specificity, and positive and negative predictive values of provider reports of symptoms were calculated using patient reports as the reference standard. Patient-provider agreement on the presence and severity of symptoms was assessed using the statistic. 75 patients and 18 providers completed surveys. For 27 of 30 symptoms, the sensitivity of provider responses was <50%, and provider responses for 25 symptoms were characterized by positive predictive values of <75%. Scores for 25 symptoms including those pertaining to pain, sexual dysfunction, sleep disturbance, and psychological distress were <0.20, indicating poor provider recognition of these symptoms. The level of patients' satisfaction and perception on quality of nursing services in the renal unit, Kenyatta National Hospital Nairobi, Kenya Renal failure is on the increase and patients have to identify with renal services and centers where services for renal replacement therapies are rendered. These calls for health care workers to offer services that are perceived as quality and satisfying in order to meet the biophysical and psychological needs of the patients. Study design: This was a descriptive cross-sectional study undertaken at the renal unit of Kenyatta National Hospital (KNH). Purpose: The study aimed at determining the level of satisfaction and perception of the quality of nursing services in the renal unit. Methodology: The study population included all patients who were seeking dialysis services during one-month period of data collection. The sample size was 151 following data collection. Data collection tools consisted of semi-structured questionnaires, which were administered with the aid of research assistants, as well as checklists, which were self-administered. Data analysis and results: Analysis of data was performed using the statistical package of social sciences (SPSS) version 16. Results of data analysis were presented in form of descriptive statistics which included mean, standard deviation and percentages. Regression analysis, t-test and ANOVA were conducted to determine demographic predictors of patient satisfaction with the nursing services. The results of the study revealed that patients in the renal unit were generally satisfied with the nursing services. The aggregate mean score for all patients on Likert scale was 71.2 out of 105, with a standard deviation of 16.8. Level of satisfaction was 67.8%. The findings also showed that there was no association between demographic characteristics with the levels of satisfaction with the nursing services (Ndambuki, 2013).

9. METHODOLOGY

A cross-sectional study was undertaken to assess the level of Patients' satisfaction attending at Hemodialysis Units and to find out the factors related to Patients' satisfaction. The study was conducted in National Institute of Kidney Diseases and Urology (NIKDU), Sher-E-Bangla Nagar, Dhaka-1207 and Dhaka Medical College Hospital (DMCH). The study was conducted over a period of one year starting from January 2019 to December 2019. It started with literature review, then protocol presentation followed by permission from the ethical review board of NIPSOM. After developing the questionnaire by the 3rd week of August 2019, a pretest was performed in the 4th week of August 2019. After necessary modification and correction, data collection was started from 1st week of September 2019. After data collection, compilation, processing, analysis, report writing were done. Finally printing of the thesis and submission were done. The study population was all patients who has been suffering from kidney diseases (including male and female) and attending at hemodialysis unit of National Institute of Kidney Diseases and Urology (NIKDU), Sher-E-Bangla Nagar and at Dhaka-1207 and Dhaka Medical College (DMC).

IX.I Eligible Criteria

Inclusion criteria

- Voluntary participation.
- Age $\geq$ 18 years

Exclusion criteria

- Medical instability
- Not willing to talk

- Severe ill respondents
- Psychologically ill

IX.II Study Sample Size

The following formula will be used to calculate sample size

$$n = z^2 pq / d^2$$

Here,

z = 95% confidence interval

p = 0.5 (Due to unknown of P value, P = 50%)

d = standard error (5%)

q = $1 - p$

So,

$$n = (1.96)^2 \times (0.5) \times (0.5) / (0.05)^2$$

$$= 384 \text{ (sample size)}$$

Therefore, in this study, calculated sample size was 384 (three hundred eighty-four) but within the time the sample size was determined 250. Due to the unresponsive of some respondents and the less time of data collection sample size was less than the calculated value. In this study, convenient sampling was followed for selection of study sample. It was common types of non-probability sampling method. A semi-structured questionnaire in Bangla version was used for data collection. Bangla version of the PSQ-18 questionnaire was used to assess the patient satisfaction. Data was collected by face-to-face interview using semi-structure questionnaire. Each participant was interviewed for about 30-35 minutes.

IX.III Data processing and Analysis

- Collected data was checked-rechecked, edited, coded and re-coded for quality management.
- Descriptive statistics including frequency, percentage, means, medians, mode and standard deviation were done.
- For in all the tests $p < 0.05$ was considered to be statistically significant.
- IBM-SPSS 21 version was used to analysis of data.
- Inferential statistics including chi-square, t -test and one-way ANOVA test were done to explore patient satisfaction. Response to each item is given on a 5-point scale ranging from strongly agree to strongly disagree. Scale items 1 and 5 indicated their level of satisfaction by selecting responses ranging from strongly disagree=1, disagree=2, uncertain=3, agree=4 and strongly agree=5.
- Those who choose strongly disagree and disagree were considered dissatisfied while those who selected strongly agree and agree were considered satisfied and uncertain were considered as uncertain.
- During analysis sub 2 for find out of the respondent's response, divide scale of general satisfaction results of question no.28 and 42. Four for find out the respondent's response divide similarly technical quality result of question no. 27, 29, 31 and 39. Each sub scale was done by accordingly.

10. RESULTS

X.I Socio-demographic characteristics of the respondents

Distribution of the respondents by age: The table shows that majority of the respondents age were within 55 years or more (29.6%), 23.6% were within age group 45 to 55 years, 20.0% were within age group 35 to 45 years, 17.6% were within age group 25 to 35 years and the rest of the respondents (9.2%) age were ≤ 25 years. Mean age was 67 ± 35 years (SD).

Table: 1: Distribution of the respondents by age (n=250)

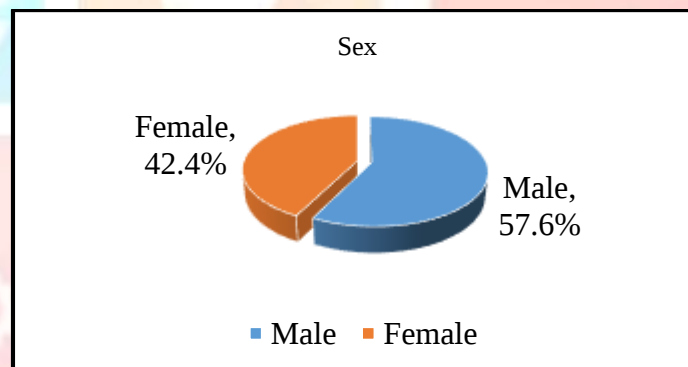
Age group (years)	Frequency (f)	Percentage (%)	Mean± SD
≤ 25	23	9.2	67±35
25-35	44	17.6	
35-45	50	20.0	
45-55	59	23.6	
≥55	74	29.6	
Total	250	100.0	

Distribution of the respondents by monthly income: The majority of the respondent's monthly family income was within Taka 2500 or more per month (51.2%), followed by 30.8% had Taka 15000 to 25000 per month, and the rest of the respondent's monthly income was Taka 5000 to 15000Taka (18.0%). Mean income was 25696±1657Taka (SD).

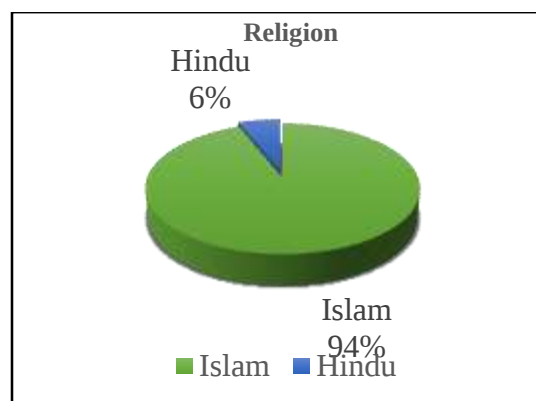
Table: 2: Distribution of the respondents by monthly income (n=250)

Monthly income (Taka)	Frequency(f)	Percentage (%)	Mean ±SD
5000-15000	45	18.0	25696±1657
15000-25000	77	30.8	
≥25000	128	51.2	
Total	250	100.0	

Distribution of the respondents by sex: More than half of the respondents were Male (57.6%) and the rest were Female (42.4%).

**Figure: 1: Distribution of the respondents by sex (250)**

Distribution of the respondents by religion: Majorities of the respondents were Muslim (94%) and the rest were Hindu (6%)

**Figure: 2: Distribution of the respondents by religion (n=250)**

Distribution of the respondents by marital status: Among the respondents 92.8% were married and the rest were unmarried (7.2%).

Table: 3: Distribution of the respondents by marital status (n=250)

Marital status	Frequency(f)	Percentage (%)
Unmarried	18	7.2
Married	232	92.8
Total	250	100.0

Distribution of the respondents by educational qualification: The figure shows that 34% of the respondents had completed primary level of education, followed by SSC 19.2%, HSC 18.8%, secondary 16.4% and rest (11.6%) of the respondent's educational qualification were bachelor and masters.

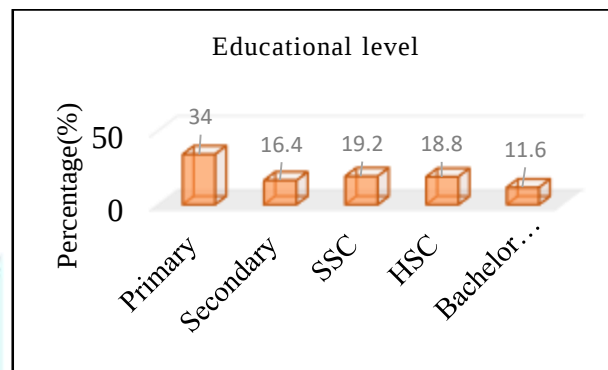


Figure: 3: Distribution of the respondents by educational qualification (n=250)

Distribution of the respondents by occupation: Among the respondents, 38% were house makers, followed by business 22.4%, service holder 15.2%, retired 12.8%, unemployed 6.4% and rest of the respondents were day laborer (5.2%).

Table: 4: Distribution of the respondents by occupation (n=250)

Occupation	Frequency(f)	Percentage (%)
Unemployed	16	6.4
Service holder	38	15.2
Business	56	22.4
Day laborer	13	5.2
House maker	95	38.0
Retired	32	12.8
Total	250	100.0

Distribution of the respondents by family types: Among the respondent's majorities were from single-family (74.4%) and the rest were from joint family (25.6%).

Table: 5: Distribution of the respondents by family types (n=250)

Family types	Frequency (f)	Percentage (%)
Single family	186	74.4
Joint family	64	25.6
Total	250	100.0

Distribution of the respondents by residence: More than half of the respondents lived in the rural area (55%), 34% lived in the urban area and the rest of the respondent's lives in the sub-urban area (11%).

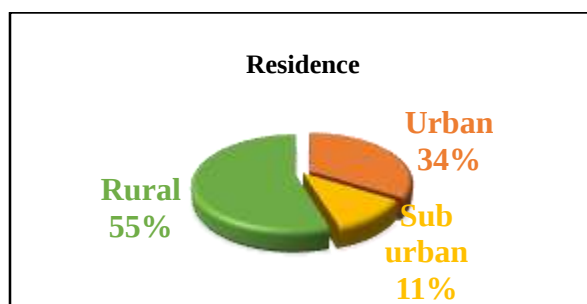


Figure 4: Distribution of the respondents by residence (n=250)

Distribution of the respondents by type of house: Majority of the respondent has lived in tin shaded (58.4%) house, followed by 33.6% who lived in building and the rest of the respondent has lived in semi-pace house (8.0%) house.

Table 6: Distribution of the respondents by type of house (n=250)

Type of house	Frequency(f)	Percentage (%)
Building	84	33.6
Semi -pace house	20	8.0
Tin shaded	146	58.4
Total	250	100.0

X.II Availability of health care facilities for hemodialysis patients

Distribution of the respondents according to availability (availability of health care provider's, availability of bed, bed sided locker) of health care facilities: More than half of the respondents (55.2%) said there were enough doctors, nurses and other staff for medical care and rest of the respondents (44.8%) said there were no doctors, nurses and other staff available for medical care. Majorities of the respondents (60.8%) replied that they did not get bed just after admission and the rest of the respondents (39.2%) replied that they got bed just after admission. Among the respondent's majority (77.6%) said there were no bed sided locker beside their bed and rest of the respondents (22.4%) replied they have bed sided locker [Table: 4.7]

Table 7: Distribution of the respondents according to availability (availability of health care provider's, availability of bed, bed sided locker) of health care facilities (n=250)

Availability of health care facilities		Frequency(f)	Percentage (%)
Availability of health care providers for medical care	No	112	44.8
	Yes	138	55.2
Total		250	100.0
Availability of bed	No	152	60.8
	Yes	98	39.2
Total		250	100.0
Bed sided locker	No	194	77.6
	Yes	56	22.4
Total		250	100.0

Distribution of the respondents according to availability (laundry service, diagnostic facilities, availability of pharmacy) of health care facilities: Majority of the respondents (67.6%) were not satisfied with laundry service and rest of the respondents (32.4%) were satisfied with laundry service. Most of the respondents (81.6%) said there were good diagnostics facilities in those hospitals and rest of the respondents (19.0%) replied that there were no available diagnostics facilities. Most of the respondents (86%) replied there is no available pharmacy to buy medicine and the rest (14%) said that there is available pharmacy to buy medicine.

Table 8: Distribution of the respondents according to availability (laundry service, diagnostic facilities, availability of pharmacy) of health care facilities (n=250)

Availability of health care facilities		Frequency(f)	Percentage (%)
Laundry service	No	169	67.6
	Yes	81	32.4
Total		250	100.0
Diagnostic facilities	No	46	19.0
	Yes	204	81.6
Total		250	100.0
Availability of pharmacy	No	215	86.0
	Yes	35	14.0
Total		250	100.0

Distribution of the respondents according to availability (availability of prescribed medicine, availability of lighting, cleanliness of bathroom, toilet and basin) of health care facilities: Most of the respondents (93.6%) replied that they did not get all prescribed medicines from the hospital and the rest of the respondents (6.3%) replied that they got all prescribed medicines from the hospital. Majority of the respondents (76.8%) said that there were available lighting in the ward and the rest of the respondents (22.2%) had opinion that there were no available lighting in the ward. Most of the respondents (80%) replied that the bathroom, toilet and basin are not clean enough and rest of the respondents (20%) said bathroom, and basin and toilet were clean [Table: 4.9]

Table 9: Distribution of the respondents according to availability (availability of prescribed medicine, availability of lighting, cleanliness of bathroom, toilet and basin) of health care facilities (n=250)

Availability of health care facilities		Frequency (f)	Percentage (%)
Availability of prescribed medicine	No	234	93.6
	Yes	16	6.3
Total		250	100.0
Availability of lighting	No	58	22.2
	Yes	192	76.8
Total		250	100.0
Cleanliness of bathroom, toilet and basin	No	200	80.0
	Yes	50	20.0
Total		250	100.0

Distribution of the respondents according to availability (supply of safe drinking water, cleanliness of hospital wards and corridors, cafeteria facilities) of health care facilities: Among the respondents, most of the respondents (97.2%) replied that there were lack of supply of safe drinking water and rest (2.8%) replied that there was adequate supply of safe drinking water. Majority of the respondents (78.4%) said hospital wards and corridors were not neat and clean and rest of the respondents (21.6%) replied that hospital ward and corridors were neat and clean. Among the respondents, most (89.6%) gave their opinion that cafeteria facility in the hospital were not good and the rest of the respondents (10.4%) said that there were available cafeteria facilities in the hospital.

Table 10: Distribution of the respondents according to availability (supply of safe drinking water, cleanliness of hospital wards and corridors, cafeteria facilities) of health care facilities (n=250)

Availability of health care facilities		Frequency (f)	Percentage (%)
Supply of safe drinking water	No	243	97.2
	Yes	7	2.8
Total		250	100.0
Cleanliness of hospital wards and corridors	No	196	78.4
	Yes	54	21.6
Total		250	100.0
Cafeteria facilities	No	224	89.6
	Yes	26	10.4
Total		250	100.0

Distribution of the respondents according to availability (supply of food, emergency care) of health care facilities: Most of the respondents (94.0%) replied that there was no available food supply in the hospital and the rest (6.0%) said that there was available food supply in the hospital. Among the respondents most of the respondents (83.6%) said that in case of emergency situation there were available E.C.G machine, oxygen meter, nebulizer machine in the hospital and rest of the respondents (16.4%) replied that there were not available E.C.G machine, oxygen meter, nebulizer machine was not available in emergency situation.

Table 11: Distribution of the respondents according to availability (supply of food, emergency care) of health care facilities (n=250)

Availability of health care facilities		Frequency (f)	Percentage (%)
Supply of food	No	235	94.0
	Yes	15	6.0
Total		250	100.0
Emergency care	No	41	16.4
	Yes	209	83.6
Total		250	100.0

XI. III Patient's satisfaction scale score

The mean score, median, SD, and range (minimum & maximum) of seven sub-scale of patient satisfaction questionnaire (PSQ-18) scale for the 250 respondents were included in this study. The mean score of General Satisfaction were $3.17 \pm .71$, followed by Technical Quality satisfaction ($2.72 \pm .46$), Interpersonal Manner ($3.41 \pm .69$), Communication ($2.62 \pm .68$), Financial aspect ($3.56 \pm .69$), Time spent with doctor ($1.69 \pm .35$) and Accessibility & Convenience ($3.30 \pm .61$). Total mean score of patient's satisfaction were 20.49 ± 2.12

Table 12: Patient's satisfaction scale score (n=250)

Sub-scale	Mean	Median	SD	Range
General Satisfaction	3.17	3.00	.71	1.50-4.50
Technical Quality	2.72	2.75	.46	1.50-4.50
Interpersonal Manner	3.41	3.50	.69	1.00-5.00
Communication	2.62	2.50	.68	1.00-4.50
Financial aspect	3.56	3.50	.69	1.50-5.00
Time spent with doctor	1.69	2.00	.35	1.00-2.00
Accessibility & Convenience	3.30	3.50	.61	1.75-5.00
Total score	20.49	20.75	2.30	12.25-27.00

Relation between socio-demographic characteristics with total mean score of satisfaction: Total mean score of the patient's satisfaction were lower in age group 55 and above (18.50 ± 2.99) years than the other age group. The significant difference of mean score of total score regarding patient's satisfaction in relation to socio-demographic characteristics were found in age group ($F=2.11$, $p=0.05$). Post-Hoc test showed no significant difference among the age group ($p>0.05$). The significant difference of mean score of total score regarding patient's satisfaction in relation to socio-demographic characteristics of the respondents were not

found in monthly income ($F=1.20$, $p=0.30$), education ($F=0.86$, $p=0.484$), occupation ($F=1.14$, $p=0.33$) and residence ($F=1.09$, $p=0.33$).

Table: 13 Relation between socio-demographic characteristics with total mean score of satisfaction (n=250)

Socio-demographic characteristics		Total mean score of satisfaction			Test statistics	
		N	Mean	SD	F	P
Age(years)	≤ 25	23	20.50	2.14	2.11	0.05
	25-35	43	20.11	2.25		
	35-45	50	20.76	2.15		
	45-55	59	20.94	2.29		
	≥55	74	18.50	2.99		
Monthly income (Taka)	5000-15000	45	20.08	2.82	1.20	0.30
	15000-25000	77	20.75	2.23		
	>25000	127	20.48	2.14		
Education	Primary	85	20.33	2.37	0.86	0.48
	Secondary	40	20.35	2.80		
	SSC	48	21.05	1.90		
	HSC	47	20.38	2.31		
	Bachelor & above	29	20.44	1.95		
Occupation	Unemployed	16	19.95	2.40	1.14	0.33
	Service holder	38	19.88	2.29		
	Business	56	20.65	2.17		
	Day labor	13	20.84	2.24		
	House wife	94	20.52	2.43		
	Retired	32	21.00	2.12		
Residence	Urban	84	20.47	2.19	1.09	0.33
	Sub urban	28	21.09	2.01		
	Rural	137	20.39	2.43		

Relation between socio-demographic characteristics with total mean score of satisfaction: The significant difference of mean score of total score regarding patient's satisfaction in relation to socio-demographic characteristics were found in religion of the respondents ($t=-1.826$, $p=0.05$). No significant difference of mean score of total score of patient's satisfaction in relation to socio-demographic characteristics were found in sex of the respondents ($t=.459$, $p=0.64$), marital status ($t=0.13$, $p=0.89$) and family types ($t=0.65$, $p=0.51$)

Table: 14: Relation between socio-demographic characteristics with total mean score of satisfaction (n=250)

Socio-demographic characteristics		Total mean score of satisfaction			Test statistics	
		N	Mean	SD	t-test	P
Sex	Male	144	20.55	2.27	0.459	0.64
	Female	105	20.41	2.37		
Religion	Islam	234	20.43	2.32	-1.826	0.05
	Hindu	15	21.55	1.88		
Marital status	Unmarried	18	20.56	2.75	0.136	0.89
	Married	231	20.49	2.28		
Family types	Single family	185	20.55	2.28	0.650	0.51
	Join family	64	20.33	2.40		

X. III Distribution of the respondents by their opinion regarding general satisfaction

Regarding general satisfaction, 34% of the respondents were uncertain, 30.8% were Strongly agreed, 12.8% were Strongly disagreed, 12% were agreed and the rest were disagreed

Table 15: Distribution of the respondents by their opinion regarding general satisfaction (n=250)

General satisfaction	Frequency(f)	Percentage (%)
Strongly disagree	26	10.4
Disagree	85	34.0
Uncertain	30	12.0
Agree	77	30.8
Strongly agree	250	100.0
Total		

Distribution of the respondents by their opinion regarding technical quality of the hospital: Among the respondents 41.2% were uncertain, 24.4% were disagreed, 18% were strongly disagreed, 8.8% were strongly agreed and the rest were agreed (7.6%) regarding technical quality.

Table 16: Distribution of the respondents by their opinion regarding technical quality of the hospital (n=250)

Technical quality	Frequency (f)	Percentage (%)
Strongly disagree	45	18.0
Disagree	61	24.4
Uncertain	103	41.2
Agree	19	7.6
Strongly agree	22	8.8
Total	250	100.0

Distribution of the respondents by their opinion regarding interpersonal manner at hemodialysis unit:

Regarding opinion about interpersonal manner, 33.8% were agreed, 32.2% were disagreed, 16% were uncertain, 11.2% were strongly disagreed and 6.8% were strongly agreed [Table: 4.17]

Table 17: Distribution of the respondents by their opinion regarding interpersonal manner at hemodialysis unit (n=250)

Interpersonal manner	Frequency (f)	Percentage (%)
Strongly disagree	28	11.2
Disagree	83	33.2
Uncertain	40	16.0
Agree	82	32.8
Strongly agree	17	6.8
Total	250	100.0

Distribution of the respondents by their opinion regarding communication: Majority of the respondents 30.4% were disagreed, 30.3% were agreed, uncertain were 14.8%, strongly agreed were 14.8% and 5.6% were strongly disagreed regarding opinion about communication [Table: 4.18]

Table 18: Distribution of the respondents by their opinion regarding Communication (n=250)

Communication	Frequency (f)	Percentage (%)
Strongly disagree	14	5.6
Disagree	76	30.4
Uncertain	47	18.8
Agree	76	30.3
Strongly agree	37	14.8
Total	250	100.0

Distribution of the respondents by their opinion regarding financial aspect during medical care: More than half of the respondents 58.4% were strongly disagreed, 23.2% were agreed, 8.8% were strongly agreed, 5.6% were disagreed and the rest were uncertain (4%) regarding financial aspect.

Table 19: Distribution of the respondents by their opinion regarding financial aspect during medical care (n=250)

Financial aspect's	Frequency (f)	Percentage (%)
Strongly disagree	146	58.4
Disagree	14	5.6
Uncertain	10	4.0
Agree	58	23.2
Strongly agree	22	8.8
Total	250	100.0

Distribution of the respondents by their opinion regarding time that doctors spent with patients: Opinion regarding time spent with doctors, majority of the respondents were uncertain 42.4%, 35.2% were disagreed, 12.8% were strongly disagreed, agreed were 5.6% and 4% were strongly agreed [Table: 4.20].

Table 20: Distribution of the respondents by their opinion regarding time that doctors spent with patients (n=250)

Time spent with doctors	Frequency (f)	Percentage (%)
Strongly disagree	32	12.8
Disagree	88	35.2
Uncertain	106	42.4
Agree	14	5.6
Strongly agree	10	4.0
Total	250	100.0

Distribution of the respondents by their opinion regarding accessibility and conveniences facilities of the hospital: Among the respondents 22.8% were uncertain, 22.5% were strongly agreed, 20.8% were disagreed, 19.2% were strongly disagreed and the rest were agreed 14.4% regarding accessibility and conveniences.

Table 21: Distribution of the respondents by their opinion regarding accessibility and conveniences facilities of the hospital (n=250)

Accessibility and conveniences	Frequency (f)	Percentage (%)
Strongly disagree	48	19.2
Disagree	52	20.8
Uncertain	57	22.8
Agree	36	14.4
Strongly agree	57	22.5
Total	250	100.0

General satisfaction of the patients related to availability of health care facilities: The table shows that there was statistically significant relation between general satisfaction and availability of health care facilities ($p < 0.05$) [Table: 4.22].

Table: 22 General satisfaction of the patients related to availability of health care facilities (n=250)

Availability of health care facilities		General satisfaction, n (%)					Statistics
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Availability of Bed	No	16(50.0)	11(42.3)	13(35.3)	12(40.0)	48(62.3)	$\chi^2 = 2.30$
	Yes	16(50.0)	15(57.7)	55(64.7)	18(60.0)	29(37.7)	$p = 0.02$
Availability of Pharmacy	No	26(81.3)	23(88.5)	80(94.1)	24(80.0)	62(80.5)	$\chi^2 = 8.20$
	Yes	6(18.8)	3(11.5)	5(5.9)	6(20.0)	15(19.5)	$p = 0.05$
Facilities of fans & ventilation	No	4(12.5)	4(15.4)	14(16.5)	5(16.7)	21(27.3)	$\chi^2 = 4.93$
	Yes	28(87.5)	22(84.6)	71(83.5)	25(83.3)	56(72.7)	$p = 0.001$
Cleanliness of bathroom, toilet & basin	No	28(87.5)	23(88.5)	70(82.4)	23(76.7)	56(72.7)	$\chi^2 = 5.33$
	Yes	4(12.5)	3(11.5)	15(17.6)	7(23.3)	21(27.3)	$p = 0.03$

Relation between technical quality and availability of health care facilities: Relation between technical quality and availability of health care facilities shows that there was significant relation between technical quality and availability of the Bed and supply of enough food and safe water supply ($p < 0.05$). Emergency care shows no significant level ($p > 0.05$) [Table: 4.23]

Table: 23 Relation between technical quality and availability of health care facilities (n=250)

Availability of health care facilities		Technical quality, n (%)					Statistics
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Availability of Bed	No	24(53.3)	26(42.6)	36(35.0)	7(36.8)	5(22.7)	$\chi^2 = 7.40$
	Yes	21(46.7)	35(57.4)	67(65.0)	12(63.2)	17(77.3)	$p = 0.001$
Safe drinking water	No	44(97.8)	60(98.4)	98(95.1)	19(100)	22(100)	$\chi^2 = 3.13$
	Yes	1(2.2)	1(1.6)	5(4.9)	4(7.0)	6(8.0)	$p = 0.03$
Supply of food	No	44(97.8)	58(95.1)	96(93.2)	17(89.5)	20(90.9)	$\chi^2 = 2.44$
	Yes	1(2.2)	3(4.9)	7(6.8)	2(10.5)	2(9.1)	$p = 0.05$
Emergency care is excellent	No	6(13.3)	14(23.0)	12(11.7)	4(21.1)	5(22.7)	$\chi^2 = 4.85$
	Yes	39(86.7)	47(77.0)	91(88.3)	15(78.9)	17(77.3)	$p = 0.30$

Relation between interpersonal manner and availability of health care facilities: The table shows that there was significant relation between the interpersonal manner and the health care facilities ($p < 0.05$)

Table: 24 Relation between interpersonal manner and availability of health care facilities (n=250)

Availability of health care facilities		Interpersonal manner, n (%)					Statistics
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Bed sided locker	No	26(92.9)	67(80.7)	30(75.0)	62(75.6)	9(52.9)	$\chi^2 = 10.50$
	Yes	2(7.1)	16(19.3)	10(25.0)	20(24.4)	9(47.1)	$p = 0.03$
Facilities of fans and ventilation	No	4(14.3)	17(20.5)	14(35.0)	12(14.6)	1(5.9)	$\chi^2 = 10.00$
	Yes	24(85.7)	66(79.5)	26(65.0)	70(85.4)	10(94.1)	$p = 0.04$
supply of safe water	No	26(92.9)	79(95.2)	40(100.0)	81(98.8)	17(100)	$\chi^2 = 5.57$
	Yes	2(7.1)	4(4.8)	2(4.0)	1(1.2)	4(2.0)	$p = 0.02$
Cafeteria facilities	No	27(96.4)	73(88.0)	29(72.5)	79(96.3)	16(94.1)	$\chi^2 = 18.56$
	Yes	1(3.6)	10(12.0)	11(27.5)	3(3.7)	1(5.9)	$p = 0.001$

Relation between communication and availability of health care facilities: No significant ($p > 0.05$) relation were between communication and availability of health care facilities. The significant level shows in between communication and availability of the pharmacy ($p < 0.05$).

Table: 25 Relation between communication and availability of health care facilities (n=250)

Availability of health care facilities		Communication, n (%)					Statistics
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Available doctors & nurses	No	6(42.9)	37(48.7)	20(42.6)	32(42.1)	17(45.9)	$\chi^2 = 0.82$ $p = 0.93$
	Yes	8(57.1)	39(51)	27(57.4)	44(57.9)	20(54.1)	
Diagnostic facilities	No	3(21.4)	19(25.0)	11(23.4)	10(13.2)	2(5.4)	$\chi^2 = 11.22$ $p = 0.18$
	Yes	11(78.6)	56(73.7)	36(76.6)	66(86.8)	35(94.6)	
Laundry service	No	9(64.3)	50(65.8)	35(74.5)	50(65.8)	25(67.6)	$\chi^2 = 1.31$ $p = 0.860$
	Yes	5(35.7)	26(34.2)	12(25.5)	26(34.2)	12(32.4)	
Available pharmacy	No	14(100)	71(93.4)	44(93.6)	57(75.0)	29(78.4)	$\chi^2 = 17.44$ $p = 0.002$
	Yes	2(4.0)	5(6.6)	3(6.4)	19(25.0)	8(21.6)	

Relation between financial aspect and availability of health care facilities: The significant relation showed in availability of prescribed medicine, cafeteria facility and food supply ($p < 0.05$). Emergency care showed no significant relation ($p > 0.05$).

Table: 26 Relation between financial aspect and availability of health care facilities (n=250)

Availability of health care facilities		Financial Aspect, n (%)					Statistics
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Get all prescribed medicine	No	21(95.5)	12(85.7)	10(100.0)	53(91.4)	138(94.5)	$\chi^2 = 4.19$ $p = 0.03$
	Yes	1(4.5)	2(14.3)	2(3.0)	5(8.6)	7(4.8)	
Cafeteria facilities	No	19(86.4)	14(100.0)	10(100.0)	53(91.4)	128(87.7)	$\chi^2 = 3.81$ $p = 0.05$
	Yes	3(13.6)	4(7.0)	6(8.0)	5(8.6)	18(12.3)	
Supply of Food	No	19(86.4)	13(92.9)	10(100.0)	54(93.1)	139(95.2)	$\chi^2 = 3.40$ $p = 0.04$
	Yes	3(13.6)	1(7.1)	6(3.0)	4(6.9)	7(4.8)	
Emergency Care	No	4(18.2)	4(28.6)	1(10.0)	12(20.7)	20(13.7)	$\chi^2 = 3.41$ $p = 0.49$
	Yes	18(81.8)	10(71.4)	9(90.0)	46(79.3)	126(86.3)	

Relation between times spent with doctors and availability of health care facilities: There were significant relation between times spent with doctors and availability of health care facilities ($p < 0.05$).

Table: 27 Relation between time spent with doctors and availability of health care facilities (n=250)

Availability of health care facilities		Time spent with doctors, n (%)					Statistics
		Strongly disagree	Disagree	uncertain	agree	strongly agree	
Available pharmacy	No	27(84.4)	76(86.4)	93(87.7)	10(71.4)	9(90.0)	$\chi^2 = 2.94$ $p = 0.05$
	Yes	5(15.6)	12(13.6)	13(12.3)	4(28.6)	1(10.0)	
Available prescribed medicine	No	25(78.1)	85(96.6)	100(94.3)	14(100.0)	10(100)	$\chi^2 = 19.79$ $p = 0.01$
	Yes	7(21.9)	2(2.3)	6(5.7)	4(3.0)	2(6.0)	
Available bed	No	22(68.8)	70(86.4)	3(6.0)	4(5.0)	6(9.0)	$\chi^2 = 19.79$ $p = 0.01$
	Yes	10(31.3)	12(13.6)	106(100.0)	14(100.0)	10(100)	

Relation between accessibility & convenience and availability of health care facilities: There were significant relationship between availability of the bed and accessibility & convenience ($p < 0.05$). Diagnostic facilities and availability of the prescribe medicine showed no significant relation with accessibility & convenience ($p > 0.05$).

Table: 28 Relation between accessibility & convenience and availability of health care facilities (n=250)

Availability of health care facilities		Accessibility & convenience, n (%)					Statistics
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	
Available bed	No	25(52.1)	25(48.1)	18(31.6)	15(41.7)	15(26.3)	$\chi^2=10.51$ p=0.03
	Yes	23(47.9)	27(51.9)	39(68.4)	21(58.3)	42(73.7)	
Diagnostic facilities	No	15(31.3)	11(21.2)	7(12.3)	7(19.4)	5(8.8)	$\chi^2=13.84$ p=0.08
	Yes	33(68.8)	41(78.8)	50(87.7)	29(80.6)	51(89.5)	
Available prescribed medicine	No	43(89.6)	47(90.4)	55(96.5)	35(97.2)	54(94.7)	$\chi^2=7.13$ p=0.52
	Yes	5(10.4)	4(7.7)	2(3.5)	1(2.8)	3(5.3)	

11. DISCUSSION

A cross-sectional study was carried out for assessing patient's satisfaction attending at hemodialysis units. A semi-structured patient satisfaction questionnaire-18 (PSQ-18) were used for data collection. Two fifty hemodialysis patients were selected purposively. The study was conducted in National Institute of Kidney Diseases and Urology (NIKDU), Sher-E-Bangla Nagar, Dhaka-1207 and Dhaka Medical College Hospital (DMCH). The respondent's age were 18 years and more. Proper pretest was done prior to data collection. Ethical clearance was obtained from IRB. The finding of the study showed that majority of the respondents age were within 55 years or more (29.6%), 23.6% were within age group 45 to 55 years, 20.0% were within age group 35 to 45 years, 17.6% were within age group 25 to 35 years and the rest of the respondents (9.2%) age were ≤ 25 years. Mean age 67 ± 35 years (SD). Another study showed that 27.4% were within the age group 18-29 years, 30.1% were within the age group 14-34 years, 16.8% were within the age group 40-49 years, 23.9% were within the age group >50 years (Wurjine and Regasa, 2018). The majority (51.2%) of the respondent's monthly family income was within Taka 2500 or more per month, followed by 30.8% had Taka 15000 to 25000 per month, and the rest of the respondent's monthly income was Taka 5000 to 15000 Taka (18.0%). Mean income per month was 25696 ± 1657 Taka (SD). More than half of the respondents were Male (57.6%) and the rest were Female (42.4%). Another study showed that 59.5% were male and 40.5% were female (Bayoumi, Guindy and Ahmed, 2016). Majorities of the respondents were Muslim (94%) and the rest were Hindu (6%). Among the respondents, 92.8% were married and the rest were unmarried (7.2%). Emergency care shows no significant level ($p > 0.05$). The study showed that there was significant relation between the interpersonal manner and the health care facilities ($p < 0.05$). Another study also showed the significant level between the interpersonal manner and the health care facilities ($p < 0.05$) (Plantinga *et al.*, 2004). No significant ($p > 0.05$) difference was between communication and availability of health care facilities. The significant level shows in between communication and availability of the pharmacy ($p < 0.05$). The significant level showed in availability of prescribe medicine, cafeteria facility and food supply ($p < 0.05$). Emergency care shows no significant level ($p > 0.05$). Relation between times spent with doctors and availability of health care facilities shows the significant level ($p < 0.05$). The relation between availability of the bed and accessibility & convenience showed the significant level ($p < 0.05$), diagnostic facilities and availability of the prescribe medicine shows no significant level ($p > 0.05$). The another study showed there were no significant level in diagnostic facilities and availability of the prescribe medicine ($p > 0.05$) (Wurjine and Regasa, 2018). It is not similar in contrast to present study finding which is may be done to economic and geographical variations.

12. RECOMMENDATIONS

- The authority should focus on maintenance of the cleanliness of bathroom, toilet and basin of the HD unit to improve patient's satisfaction.
- Availability of bed, facilities of fans & ventilation, cafeteria facility, availability of bed sided locker of this HD unit should be ensured or strengthened.
- Availability of food, supply of safe water of the HD unit should be ensured.
- Availability of prescribed medicine and pharmacy of this HD unit should be ensured.
- Further nationwide study about patient's satisfaction attending at hemodialysis unit in a selected medical college hospital should be conducted with a view to get national level information, which will help to draw an actual picture of patient's satisfaction and will help on planning for appropriate interventions.

13. CONCLUSION

Patient's satisfaction was assessed in the dialysis unit of specialized hospital, where the service has been provided. There is lower level of satisfaction about the caregiver in HD unit. The level of satisfaction is affected by religion, age, availability of bed, facilities of fans & ventilation, cleanliness of bathroom, toilet and basin, availability of prescribed medicine, cafeteria facility, availability of food, supply of safe water, and availability of bed sided locker. On the other hand, the level of patient's satisfaction has been shown in associated with monthly income, education, occupation, residence, marital status and family types. The level of patient's satisfaction also showed in emergency care, availability of health care provider and diagnostic facilities.

REFERENCES

- Al Qahtani, A. S. and Almetrek, M. A. (2017) 'Knowledge, Attitudes and Practice of Nurses in Renal Dialysis Units regarding Infection Control in Abha City, Saudi Arabia, 2015', *The Egyptian Journal of Hospital Medicine*, 66, pp. 103–114. doi: 10.12816/0034640.
- Ahmad, I., Din, S. and Pakhtunkhwa, K. (2014) 'Patients Satisfaction from the Health Care Services Patients ' Satisfaction From The Health Care Services', (June), pp. 5–8.
- Bayoumi, M., Guindy, H. A. El and Ahmed, A. (2016) 'Patients ' Satisfaction with Care at Dialysis Unit', *International Journal of Nursing Science*, 6(5), pp. 117–122. doi: 10.5923/j.nursing.20160605.02.
- Dawood, R. A. *et al.* (2016) 'Effect of Implementing a Protocol of Nursing Care on Hemodialysis Patients ' Safety Outcomes', 5(5), pp. 31–43. doi: 10.9790/1959-0505073143.
- Davison, S. N. *et al.* (2005) 'The Impact of Chronic Pain on Depression , Sleep , and the Desire to Withdraw from Dialysis in Hemodialysis Patients', 30(5), pp. 465–473. doi: 10.1016/j.jpainsymman.2005.05.013.
- Dhaka Tribune, 2019. *Kidney dialysis*. [Online] Available at: <https://www.dhakatribune.com/feature/health-wellness/2017/10/26/kidney-dialysis-tk-800> [Accessed 14 December 2019].
- Ebrahim, S. M. and Issa, S. S. (2015) 'Satisfaction with Nursing Care among Patients Attending Oncology Center in Basra City, Iraq', 4, pp. 241–248. doi: 10.17265/2162-5298/2015.05.004.
- Eissa, M. Al *et al.* (2010) 'Factors Affecting Hemodialysis Patients ' Satisfaction with Their Dialysis Therapy', 2010. doi: 10.4061/2010/342901.
- Fadem, S. Z. *et al.* (2011) 'Satisfaction with Renal Replacement Therapy and Education : The American Association of Kidney Patients Survey', pp. 605–612. doi: 10.2215/CJN.06970810.
- Gardner, J. K. *et al.* (2007) 'Perceptions of the Hemodialysis Unit Work Environment and Nurse Turnover , Patient Satisfaction , and', 34(3), pp. 271–282.
- Goff, S. L. *et al.* (2015) 'Article Advance Care Planning : A Qualitative Study of Dialysis Patients and Families', 10. doi: 10.2215/CJN.07490714.
- Hasan, M. *et al.* (2018) 'Prevalence of chronic kidney disease in South Asia: a systematic review', *BMC Nephrology*. BMC Nephrology, 19(1), pp. 1–12. doi: 10.1186/s12882-018-1072-5.
- Muntner, P. and Levin, A. (2014) 'Epidemiology of Chronic Kidney Disease', *Chronic Renal Disease*, 1(December), pp. 57–68. doi: 10.1016/b978-0-12-411602-3.00006-8.
- Ndambuki, J. (2013) 'The level of patients' satisfaction and perception on quality of nursing services in the Renal unit, Kenyatta National Hospital Nairobi, Kenya', *Open Journal of Nursing*, 03(02), pp. 186–194. doi: 10.4236/ojn.2013.32025.
- Palmer, S. C. *et al.* (2014) 'Patient satisfaction with in-centre haemodialysis care : an international survey', pp. 1–9. doi: 10.1136/bmjopen-2014-005020.
- Plantinga, L. C., Fink, N. E., Harrington-levey, R., *et al.* (2004) 'Association of Social Support with Outcomes in Incident Dialysis Patients', (June 1998), pp. 1480–1488. doi: 10.2215/CJN.01240210.
- Sanabria-arenas, M. *et al.* (2017) 'Validation of an instrument for measuring satisfaction of patients undergoing hemodialysis'. BMC Health Services Research, pp. 1–13. doi: 10.1186/s12913-017-2251-y.
- Shnishil, A. T. and Sc, M. (2013) 'Assessment of Patients ' Satisfaction toward Nursing Care at Hemodialysis units', 26(1), pp. 1–9.
- Rojas, J. N. (2017) 'Hemodialysis Patient Care in Renal Dialysis Unit among Selected Hospitals in the Sultanate of Oman', *IOSR Journal of Nursing and Health Science*, 06(02), pp. 01–08. doi: 10.9790/1959-0602080108.
- Sanabria-arenas, M. *et al.* (2017) 'Validation of an instrument for measuring satisfaction of patients undergoing hemodialysis'. BMC Health Services Research, pp. 1–13. doi: 10.1186/s12913-017-2251-y.

- Shnishil, A. T. and Sc, M. (2013) 'Assessment of Patients ' Satisfaction toward Nursing Care at Hemodialysis units', 26(1), pp. 1–9.
- Thompson, S. *et al.* (2017) 'Catheter-related blood stream infections in hemodialysis patients: a prospective cohort study', *BMC Nephrology*. BMC Nephrology, 18(1), pp. 1–8. doi: 10.1186/s12882-017-0773-5.
- Ndambuki, J. (2013) 'The level of patients' satisfaction and perception on quality of nursing services in the Renal unit, Kenyatta National Hospital Nairobi, Kenya', *Open Journal of Nursing*, 03(02), pp. 186–194. doi: 10.4236/ojn.2013.32025.
- Plantinga, L. C., Fink, N. E., Sadler, J. H., *et al.* (2004) 'Frequency of Patient – Physician Contact and Patient Outcomes in Hemodialysis Care', (5), pp. 210–218. doi: 10.1097/01.ASN.0000106101.48237.9D.
- Weisbord, S. D. *et al.* (2006) 'Renal Provider Recognition of Symptoms in Patients on Maintenance Hemodialysis', (February), pp. 960–967. doi: 10.2215/CJN.00990207.
- Winterbottom, A. E. *et al.* (2016) 'Prospective Non-Randomized Comparison Study', 36(May 2015), pp. 374–381.
- Wurjine, T. H. and Regasa, S. K. (2018) 'Assessment of Patients ' Satisfaction with Care at Selected Governmental Dialysis Units in Addis Ababa , Ethiopia , 2018', 7(6), pp. 202–209. doi: 10.11648/j.ajns.20180706.11.

