



A study to assess the quality-of-life of patients undergoing haemodialysis in a selected hospital, Namakkal

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Abstract

A descriptive study was conducted to assess the QOL of patients undergoing haemodialysis in a selected hospital, Namakkal. Research approach used for this study was Quantitative research approach. Design - Non experimental descriptive research design was used in this study. A purposive sampling technique was used to select the sample size. The Study setting was Vivekananda Medical Care Hospital, Namakkal. The tool was semi structured Interview scheduling by using SF 36 questionnaire.

It consist of: Section A: Part I socio demographic variables. Part II clinical data Section B: short form survey -36 Questionnaires. The study findings shows that, there is no positive relationship between the domains of QOL except pain and emotional wellbeing by using Karl pearson correlation test. The finding of the study reveals that the H1 hypothesis was rejected at *** $p > 0.05$ level of significance. Association between overall QOL with selected demographic and clinical variables was calculated by chi square test. There is no association between quality of life of patients undergoing haemodialysis patients with their selected demographic and clinical variables. Hence H2 hypothesis was rejected. The results revealed that there was majority of CKD patients had average QOL.

Keywords: QOL - Quality of life, CKD - chronic kidney disease, HD - hemodialysis

Introduction

Kidney damage or an estimated glomerular filtration rate (eGFR) of less than 60 mL/min/1.73 m² that lasts for three months or longer, regardless of the etiology, is considered chronic kidney disease (CKD). Renal replacement therapy, such as dialysis or transplantation, is eventually required for chronic kidney disease (CKD), a condition in which kidney function gradually declines. Pathologic anomalies indicated by imaging tests or renal biopsies, anomalies in urine sediment, or elevated excretion rates of urinary albumin are all considered forms of kidney disease.

The final stage of renal disease, chronic kidney disease, has a major impact on quality of life. The purpose of the study was to evaluate the quality of life of patients receiving hemodialysis. Research indicates that individuals with chronic kidney disease (CKD) have a lower quality of life (QOL) than the general population. Additionally, poorer renal function is associated with a lower QoL, and vice versa. Quality of life (QoL) is considerably reduced in patients with advanced chronic renal disease.

An estimated 673.7 million people worldwide were predicted to have chronic kidney disease (CKD) in 2021,

which translates to an incidence of 19.9 million new cases, or 233.6 new cases per 100, 000 people. At 8, 54% of the world's population, the overall prevalence rose 92% since 1990. Type 2 diabetes and hypertension were the main causes, and as the population grew and the population aged, the burden of CKD increased.

Objectives

- To assess the quality of life among haemodialysis patients.
- To identify the relationship between different domains of quality of life among Haemodialysis patients.
- To find out the association between the quality of life with their demographic and clinical variables among haemodialysis patients.

Hypotheses

- **H₁:** There is significant relationship between the domains of quality of life among patients undergoing haemodialysis.
- **H₂:** There is significant association between the quality of life among patient undergoing hemodialysis with

their selected demographic and clinical variables.

Methodology

- **Research approach:** Quantitative research approach
- **Research design:** Non Experimental research design

Variables

- **Independent Variables:** The independent variables of the study were hemodialysis patients.
- **Dependent Variables:** The dependent variables of the study was the Quality of life.
- **Study setting:** Vivekananda Medical Care Hospital
- **Population:** The population comprised of all patients attending of hemodialysis in Vivekananda Medical Care Hospital at Namakkal at the time of the study.
- **Accessible population:** The study is comprised patients who met the inclusive criteria.
- **Target population:** The study comprised of patients who underwent haemodialysis.
- **Sample:** The sample of the study was, patients undergoing haemodialysis at Vivekananda Medical Care Hospital during the study period and those who met the inclusion criteria for selected for this study.
- **Sample Size:** The Sample selected for present study was 30 patients who are undergoing haemodialysis procedure as per the inclusion criteria.
- **Sampling Technique:** Purposive sampling techniques were adopted for the present study. The sample was selected based on the inclusion and exclusion criteria.

Criteria of selection of sample

The following were the criteria for selection of sample for the study

Inclusion criteria

- Patient who had completed at least 2 month of maintenance of hemodialysis procedure.
- Patient who were more than 20 years of age.
- Patient of both genders.
- Patient who were able to speak /understand Tamil or English.
- Patient who come for regular follow up.

Exclusion criteria

- Patient who are not willing to participate.
- Patients under going peritoneal dialysis.
- Patient who are critically ill.
- Patients who were unconscious.
- Patient with cancer, dementia, cognitive impairment, peritoneal dialysis.

Description of the tool

Section a: Part I -socio demographic variables

It consist of demographic variables of patient quality of life undergoing hemodialysis such as age, sex, religion, education, occupation, income, Marital status, place of residence, personal habits, food habits.

Section A: Part II -Clinical Data

It consists Clinical variables of patients quality of life undergoing hemodialysis such as Duration of illness,

Frequency of illness, Frequency of Dialysis, Duration of receiving treatment, Types of co -morbidity

Section b: short form survey -36 questionnaire

Quality of life measured by using the standardized sf -36 questionnaire. This multidimensional instrument was developed in 1992 by Ware and Sherbourne and validated in Brazil by Cicconelli et al. The questionnaire consists of 36 questions evaluating eight different health dimensions (domains) of quality of life. These dimensions are 1) physical functioning (10 items), 2) Role limitation due to physical functioning (4 items), 3) Limitation due to emotional problems (3 items), 4) Energy and fatigue (4 items), 5) Emotional wellbeing (5 items), 6) social functioning (2 items), 7) pain (2 items), 8) General health (6 items).

Ask respondents to rate their health on a 0-100 response scale ranging from "worst possible" (as bad or worse than being dead) to "best possible health" the 36 quality of life sf-36 quality of items take about 15 minutes to complete the each subjects. In this scale, the quality of life was classified under eight domains, including four items for general quality of life. The total numbers of items were thirty six.

The sf 36 scale had the following items in each domains

Physical function - 10 items (Q 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)
 Role limitation due to physical health - 4 items (Q 11, 12, 13, 14)
 Role limitation due to emotional problems - 3 items (Q 15, 16, 17)
 Energy / fatigue - 4 items (Q 18, 19, 20, 21)
 Emotional wellbeing - 5 items (Q 22, 23, 24, 25, 26)
 Social functioning - 2 items (Q 27, 28)
 Pain - 2 items (29, 30)
 General health - 6 items (31, 32, 33, 34, 35, and 36)

Scoring and interpretation

The evaluation of the result was done by attributing scores to each question: the scoring procedure for the equality of life short form (QOL-SF-36) questionnaire first transforms the raw preceded numeric value of items to a 0-100 possible ranges, with higher transformed scores always reflecting better quality of life, where 0 corresponds to the worst quality of life. Each item is put on a 0 to 100 ranges so that the lowest and highest possible scores are set at 0 to 100 respectively. Each dimension was analyzed separately. Scores represent the percentage of total possible score achieved

- **Step 1:** All questions are scored on a scale from 0 to 100, so that lowest and highest possible scores are set at 0 to 100, respectively.
- **Step 2:** Aggregate scores are compiled as a percentage of the total points possible. The scores from those questions that address each specific area of functional health status are then averaged together, for a final score within each of the 8 dimensions measured.

Step 3: Figuring Scores/ interpreting the score

| Categories of scores | Levels of quality of life |
|----------------------|---------------------------|
| 0 -33 | Poor |
| 34- 66 | Average |
| 67-100 | Good |

Validity

The content and tool was evaluated by nephrologist, urologist and medical surgical Nursing experts and statistician.

Reliability of the tool

Reliability of the tool was tested by giving short form survey-36 questionnaire to hemodialysis patients at Vivekananda medical care hospital, Tiruchengode. The reliability of the was established by using Karl's Pearson's reliability formula. Coefficients of correlation value was ($r=0.78$). So that tool was considered highly significant.

Ethical considerations

The study was approved by Institutional Ethical committee, Vivekananda Medical Care Hospital, Elayampalayam. All the responds were carefully informed about the purpose of the study and their part during the study and how privacy was guarded. Confidentiality was ensured. Consent was obtained from each participants.

Pilot study

A pilot study was conducted in Erode kalyani dialysis center. Before conducting the pilot study formal permission Were obtained from the medical superintendent and Administrative officer. Oral consent was obtained from the 6 haemodialysis patient and explained the purpose of this study. SF-36 questionnaire was used to assess the quality of life among hemodialysis patients. The duration of pilot study was one week. The result of the data were revealed that the tool was reliable and study was feasible.

Data collection procedure

The researcher obtained permission from joint managing director of Vivekananda medical care hospital, Elayampalam, to conduct the main study. The data was collected in month of June and July 2024. The patients who were diagnosed to have chronic renal failure followed by Hemodialysis procedure done for minimum 2 month. Permission were obtained to conduct this study in its dialysis unit, with ethical approval from the Research Ethics Committee at the Vivekanandha medical care hospital in Namakkal. Each day data was for collected 2-3 Patients who are undergoing hemodialysis SF-36 questionnaire was used to assess the quality of life among hemodialysis patients. The data was collected individually and it takes 15 to 30 minutes for each patients. The investigator introduced herself and developed rapport with the patients. Data was collected without causing hindrance to patients care. Confidentiality of the subject was maintained and assurance was given.

Plan for data analysis

The data obtained would be analyzed in terms of the

objective of the study using descriptive and inferential statistics

Descriptive statistics

Frequency, percentage, means and standard deviation was used to analyze the demographic data, clinical variables, and assess the levels of quality of life.

Inferential statistics

Co-Relation used to find out the Relationship between Domains of Quality of Life. Chi square test was used to find out the association between overall quality of life score and its selected demographic variables and clinical variables.

Data analysis and interpretation

Section A

Distribution of patients according to demographic and clinical variables of patients undergoing hemodialysis

Data analysis and interpretation of the demographic variables revealed that Majority of the patients had 12(40%) were in age between 51- 60 years, 16(58.3%) were Males, overwhelming most of them 25(83.3%) patients were Hindus. 7(23.3%) patients were middle school and high school level. 9 (30%) patients were Employed, 12 (40%) of patient's Monthly income between (Rs30001- 40000), 10 (30.3%) patients were widow, 17 (56.7%) patients were belongs to urban, 13 (43.3%) patients were had no bad habits, and 28 (93.3%) patients were consumed non vegetarian.

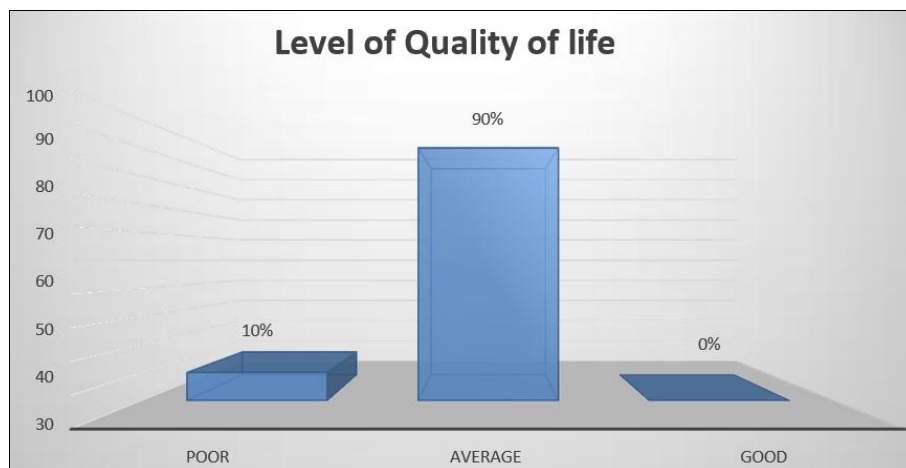
Data analysis and interpretation of the demographic variables revealed that of the 7(23.3%) patient duration of illness > 5 years, highest percentage 9(30%) patients were receiving treatment (> 24 months), majority 9(30%) patients in staying in hemodialysis unit per day 4 hours, and > 5 hours. Frequency of dialysis 17(56.7%) patients were represents three times weekly hemodialysis received, 12 (40%) patients co morbidities such as hypertension and diabetes mellitus.

Section B

- **Part 1:** Frequency and Percentage distribution on level of quality of life among hemodialysis patients.
- **Part 2:** Mean and Standard deviation to assess the quality of life and its domains among hemodialysis patients.

Table 1: Frequency and percentage distribution on level of quality of life among hemodialysis patients

| Level of QOL | Average score | QOL score | |
|--------------|---------------|-----------|--------------|
| | | Frequency | Percentage % |
| Poor | 0-33 | 3 | 10 |
| Average | 34-66 | 27 | 90 |
| Good | 67-100 | 0 | 0 |
| Overall | 100 | 30 | 100 |



Mean and Standard deviation to assess the quality of life and its domains among hemodialysis patients

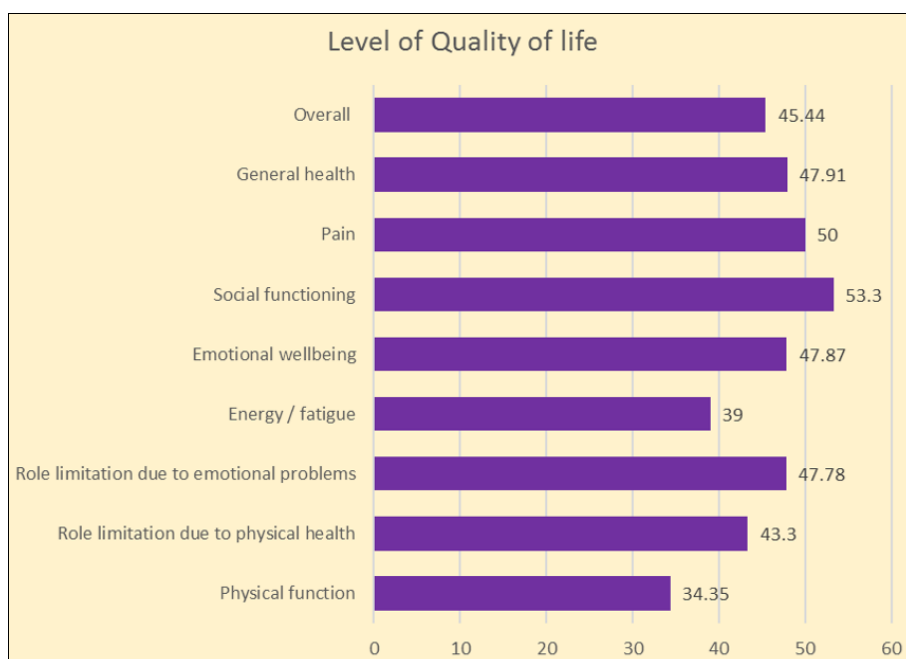


Table 2: To find out the correlation between overall quality of life and its domains among

| Correlations | | | | | | | | | | |
|---|---------|-------|-------|-------|-------|-------|-------|---------|-------|-------------------------|
| Domains of quality of life | | PF | RLPH | RLEP | E&F | EW B | SF | P | GH | Overall Quality of Life |
| Physical Functioning (PF) | R value | 1 | .170 | -.151 | .177 | -.021 | .186 | .067 | .054 | .327 |
| | P value | | .369 | .425 | .350 | .914 | .324 | .724 | .778 | .078 |
| Role Limitation Due To Physical Health | R value | .170 | 1 | -.063 | -.139 | .078 | .057 | .181 | .045 | .505** |
| | P value | .369 | | .741 | .465 | .682 | .764 | .338 | .814 | .004 |
| Role Limitation Due To Emotional Problems | R value | -.151 | -.063 | 1 | .026 | -.124 | .011 | -.166 | .192 | .386* |
| | P value | .425 | .741 | | .890 | .513 | .954 | .382 | .310 | .035 |
| Energy And Fatigue(E&F) | R value | .177 | -.139 | .026 | 1 | .025 | -.110 | -.323 | -.255 | .036 |
| | P value | .350 | .465 | .890 | | .894 | .562 | .082 | .174 | .851 |
| Emotional Wellbeing (EWB) | R value | -.021 | .078 | -.124 | .025 | 1 | .034 | -.515** | -.077 | .009 |
| | P value | .914 | .682 | .513 | .894 | | .860 | .004 | .684 | .964 |
| Social Functioning (SF) | R value | .186 | .057 | .011 | -.110 | .034 | 1 | .080 | .235 | .546** |
| | P value | .324 | .764 | .954 | .562 | .860 | | .675 | .211 | .002 |

There is no positive relationship between the domains of quality of life except pain and emotional well being by

using Karl Pearson correlation test. Hence, H1 hypothesis was rejected.

Section D

Table 3: Association for level of QOL with selected demographic variables

| Demographic Variables | Poor (f / %) | Average (f / %) | Good (f / %) | Chi-square | p-value |
|------------------------------|--------------|-----------------|--------------|---------------------|-------------------|
| 1) Age in years | | | | 2.22 (df=3) | 0.528 (NS) |
| 1.1) 21-30 years | 0 / 0 | 3 / 10 | 0 / 0 | | |
| 1.2) 31-40 years | 0 / 0 | 9 / 30 | 0 / 0 | | |
| 1.3) 41-50 years | 1 / 3.3 | 5 / 16.7 | 0 / 0 | | |
| 1.4) 51-60 years | 2 / 6.7 | 10 / 33.3 | 0 / 0 | | |
| 2) Gender | | | | 0.238 (df=1) | 0.626 (NS) |
| 2.1) Male | 2 / 6.7 | 14 / 46.7 | 0 / 0 | | |
| 2.2) Female | 1 / 3.3 | 13 / 43.3 | 0 / 0 | | |
| 3) Religion | | | | 11.92 (df=2) | 0.003 (HS) |
| 3.1) Hindu | 1 / 3.3 | 24 / 80 | 0 / 0 | | |
| 3.2) Muslim | 0 / 0 | 2 / 6.7 | 0 / 0 | | |
| 3.3) Christian | 2 / 6.7 | 1 / 3.3 | 0 / 0 | | |
| 3.4) Others | 0 / 0 | 0 / 0 | 0 / 0 | | |
| 4) Education | | | | 2.62 (df=5) | 0.758 (NS) |
| 4.1) No formal education | 1 / 3.3 | 3 / 10 | 0 / 0 | | |
| 4.2) Primary | 0 / 0 | 3 / 10 | 0 / 0 | | |
| 4.3) Middle | 1 / 3.3 | 6 / 20 | 0 / 0 | | |
| 4.4) High school | 1 / 3.3 | 6 / 20 | 0 / 0 | | |
| 4.5) Diploma | 0 / 0 | 4 / 13.3 | 0 / 0 | | |
| 4.6) Graduate & above | 0 / 0 | 5 / 16.7 | 0 / 0 | | |
| 5) Occupation | | | | 3.456 (df=3) | 0.326 (NS) |
| 5.1) Employed | 1 / 3.3 | 8 / 26.7 | 0 / 0 | | |
| 5.2) Unemployed | 0 / 0 | 7 / 23.3 | 0 / 0 | | |
| 5.3) Self-employed | 0 / 0 | 6 / 20 | 0 / 0 | | |
| 5.4) Retired | 2 / 6.7 | 6 / 20 | 0 / 0 | | |
| 6) Income | | | | 1.03 (df=3) | 0.794 (NS) |
| 6.1) 5000-10000 | 1 / 3.3 | 5 / 16.7 | 0 / 0 | | |
| 6.2) 10001-20000 | 1 / 3.3 | 6 / 20 | 0 / 0 | | |
| 6.3) 20001-30000 | 0 / 0 | 5 / 16.7 | 0 / 0 | | |
| 6.4) 30001-40000 | 1 / 3.3 | 11 / 36.7 | 0 / 0 | | |
| 7) Marital status | | | | 4.81 (df=3) | 0.186 (NS) |
| 7.1) Single | 1 / 3.3 | 2 / 6.7 | 0 / 0 | | |
| 7.2) Married | 0 / 0 | 8 / 26.7 | 0 / 0 | | |
| 7.3) Divorced | 0 / 0 | 9 / 30 | 0 / 0 | | |
| 7.4) Widowed | 2 / 6.7 | 8 / 26.7 | 0 / 0 | | |
| 8) Place of residence | | | | 2.549 (df=1) | 0.110 (NS) |
| 8.1) Rural | 0 / 0 | 13 / 43.3 | 0 / 0 | | |
| 8.2) Urban | 3 / 10 | 14 / 46.7 | 0 / 0 | | |
| 9) Personal habits | | | | 0.497 (df=3) | 0.919 (NS) |
| 9.1) Smoking | 0 / 0 | 2 / 6.7 | 0 / 0 | | |
| 9.2) Alcohol consumption | 1 / 3.3 | 6 / 20 | 0 / 0 | | |
| 9.3) Tobacco chewing | 1 / 3.3 | 7 / 23.3 | 0 / 0 | | |
| 9.4) No bad habits | 1 / 3.3 | 12 / 40 | 0 / 0 | | |
| 10) Food habits | | | | 0.238 (df=1) | 0.626 (NS) |
| 10.1) Vegetarian | 0 / 0 | 2 / 6.7 | 0 / 0 | | |
| 10.2) Non-vegetarian | 3 / 10 | 25 / 83.3 | 0 / 0 | | |

* $p < 0.05$ significant, ** $p < 0.01$ & *** $p < 0.001$ highly significant, $p > 0.5$ not significant Association between overall quality of life with selected demographic variables was calculated by using chi square test. There is no significant Association between overall quality of life

among hemodialysis patients with selected demographic variables such as age, gender, religion, Education, occupation, income, Marital status, place of residence, personal habits and food habits. Hence H2 hypothesis ($p > 0.05$) was rejected.

Table 4: Association for level of QOL with clinical variables

| Clinical Variables | Poor (f / %) | Average (f / %) | Good (f / %) | Chi-square | p-value |
|--|--------------|-----------------|--------------|---------------------|-------------------|
| 1) Duration of illness | | | | 2.328 (df=4) | 0.676 (NS) |
| 1.1) < 6 months | 1 / 3.3 | 5 / 16.7 | 0 / 0 | | |
| 1.2) 6 - 1 year | 0 / 0 | 6 / 20 | 0 / 0 | | |
| 1.3) 1 - 3 years | 1 / 3.3 | 4 / 13.3 | 0 / 0 | | |
| 1.4) 3 - 5 years | 0 / 0 | 6 / 20 | 0 / 0 | | |
| 1.5) > 5 years | 1 / 3.3 | 6 / 20 | 0 / 0 | | |
| 2) Duration of receiving treatment | | | | 2.32 (df=4) | 0.676 (NS) |
| 2.1) 3 - 6 months | 1 / 3.3 | 6 / 20 | 0 / 0 | | |
| 2.2) 7 - 9 months | 0 / 0 | 3 / 10 | 0 / 0 | | |
| 2.3) 10 - 12 months | 1 / 3.3 | 4 / 13.3 | 0 / 0 | | |
| 2.4) 13 - 24 months | 1 / 3.3 | 5 / 16.7 | 0 / 0 | | |
| 2.5) > 24 months | 0 / 0 | 9 / 30 | 0 / 0 | | |
| 3) Staying in hemodialysis unit per day | | | | 7.77 (df=3) | 0.051 (NS) |
| 3.1) 2 hours | 0 / 0 | 6 / 20 | 0 / 0 | | |
| 3.2) 4 hours | 0 / 0 | 9 / 30 | 0 / 0 | | |
| 3.3) 5 hours | 0 / 0 | 6 / 20 | 0 / 0 | | |
| 3.4) > 5 hours | 0 / 0 | 6 / 20 | 0 / 0 | | |
| 4) Frequency of dialysis | | | | 2.55 (df=1) | 0.110 (NS) |
| 4.1) Two times weekly | 0 / 0 | 13 / 43.3 | 0 / 0 | | |
| 4.2) Three times weekly | 0 / 0 | 14 / 46.7 | 0 / 0 | | |
| 5) Type of co-morbidities condition | | | | 2.59 (df=4) | 0.628 (NS) |
| 5.1) Hypertension | 0 / 0 | 1 / 3.3 | 0 / 0 | | |
| 5.2) Diabetes mellitus | 1 / 3.3 | 4 / 13.3 | 0 / 0 | | |
| 5.3) Hypertension and DM | 2 / 6.7 | 10 / 33.3 | 0 / 0 | | |
| 5.4) Acute kidney failure | 0 / 0 | 8 / 26.7 | 0 / 0 | | |
| 5.5) Others | 0 / 0 | 4 / 13.3 | 0 / 0 | | |

* $p < 0.05$ significant, ** $p < 0.01$ & *** $p < 0.001$ Highly significant.

Association between overall quality of life with selected clinical variables was calculated by chi square test. There is no significant Association between overall quality of life among hemodialysis patients with selected clinical variables such as Duration of illness, Duration of receiving treatment, staying in hemodialysis unit per day, Frequency of dialysis & Type of co - morbidities condition. Hence rejected H2 hypothesis ($p > 0.05$).

Conclusion

The Mean and standard deviation scores of overall quality of life at baseline was 45.44 ± 7.94 . The study concludes that participants had average level of quality of life.

Nursing implication

The present study has got implication in the of Nursing service, Nursing Education, Nursing administration, and Nursing research. The nurse as a health care provider should be able to make significant contribution to improve the quality of life among hemodialysis patients.

Nursing education

- Using standardized measures, nursing students must be able to evaluate the quality of life of hemodialysis patients.
- In order to educate nursing professionals, nursing education institutions should actively participate in workshops, in-service education programs, and educational programming.
- A nurse should have up-to-date information on the quality of life of patients receiving hemodialysis. the study's 63 findings for the benefit of the patients.
- The nursing curriculum needs to cover quality of life

care for the elderly.

Nursing service

- According to the study, health care professionals' QOL evaluations are crucial for enhancing quality of life.
- Practicing nurses must also be taught to customize interventions to enhance quality of life (QOL), as it is a key predictor of hospitalization and mortality.

The dialysis unit's practicing nurse will receive training on how to use proven tools to evaluate the quality of life of hemodialysis patients.

To understand the significance of quality of life for hemodialysis patients, health professionals can undertake health education programs in a variety of settings.

Nursing research

- The purpose of the nurse research stand is to create and validate novel approaches and their practical implications for nursing research. It is possible to incorporate evidence-based practice.
- A nurse should carry out additional research on the quality of life of patients receiving hemodialysis. The use of research usage to nursing practice.

Nursing administration

- As part of routine treatment, nursing administration can create a plan for evaluating hemodialysis patients' quality of life.
- In order to improve the quality of life for hemodialysis patients, the nurse administrator must encourage and start the health professionals in planning, carrying out, and taking part in various educational programs.

- To enhance the quality of life for hemodialysis patients, the nurse administrator should work with a multidisciplinary team to develop policies, procedures, guidelines, and a system of care.
- A program for continuing nursing education can be set up to record quality of life. It is necessary to regularly assess the efficacy of everyday tasks.

Conflict of Interest

Not available.

Financial Support

Not available.

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