



“Assess Quality of Life of Patients Undergoing Hemodialysis among Selected Hospitals of Pune City.”

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KEYWORDS

Assess, Quality of life, Patient, Hemodialysis.

ABSTRACT:

Introduction: Hemodialysis is a treatment that filters wastes and water from blood, as the kidneys did when they were healthy. It helps control blood pressure and balance important minerals, such as potassium, sodium, and calcium, in the blood. Hemodialysis can help people feel better and live longer, but it's not a cure for kidney failure.

Objectives: To assess the quality of life of patients undergoing hemodialysis among selected hospitals of Pune city

Methods: This study utilized a qualitative evaluative research approach to evaluate the quality of life of patients undergoing hemodialysis. The research design for this study was a Simple Random sampling technique used for 132 samples. Tools consisted of 3 sections. Section I includes demographic variables and Section II includes KDQOL-36. Standardized Tools was finalized with a research guide. The pilot study was conducted on 12 samples of patients undergoing hemodialysis in Dr. D. Y Patil Hospital, Pimpri, Pune- 411018. Data collection was done from 1st October 2024 to 13th October 2024 with 132 samples of patients undergoing hemodialysis.

Results: -values corresponding to monthly income and cause of kidney disease, religion, monthly income and duration of dialysis, were small (less than 0.05), the demographic variables monthly income and cause of kidney disease were found to have significant association with the Quality of life for effects of kidney disease, physical composite and mental composite.

Conclusions: There was a significant difference observed in the quality of life of patients at different intervals, and a significant association is found with the demographic variables of the quality of life.

1. Introduction

Non-communicable diseases like renal failure are increasing in India nowadays. It adds economic burden and stress to families as well as a burden on the national health expenditure. It adversely affects patients and families' quality of life (QOL).¹

Currently, the quality of life of the elderly population is affected by the epidemiological transition of diseases due to the ageing of the population, where the burden of chronic diseases increases. Because of the above, it is necessary to analyze the quality of life of this vulnerable population and its related factors to

implement effective measures to improve the quality of life at the community level.¹

End Stage Renal Disease (ESRD) is the result of a continuous worsening of renal function over months or years. As India is facing a huge challenge due to the increasing burden of these two major risk factors, it has become a major public health problem in India. The Indian state of Kerala is currently in an epidemiological transition phase and per capita healthcare costs have increased tremendously in recent years. Data from the National Family Health Survey show that chronic diseases account for a large proportion of the state's



morbidity and the highest rates of outpatient and inpatient service utilization compared to other states in the country.

The global burden of ESRD grows at around 7% annually and is a leading cause of death especially in developing countries like India with limited resources for renal replacement therapy.²

Quality of life in hemodialysis patients is not widely explored in the Indian scenario. India has different cultural, socioeconomic, and educational diversity and based on these, the QOL differ for different people in different cultures. Hence, a study needs to be conducted in each geographical area of India to understand QOL of patients undergoing hemodialysis.²

Few studies are done in South India, one of which is by Visweswaran et al (2020), Ganesh Kumar et al (2014) on hemodialysis patients. As mentioned earlier, South Indian socioeconomic, cultural and educational background is very different from the state of Maharashtra and especially of the Pune district, thus the researcher felt the need to conduct this study.

Health-related quality of life (HRQOL) is an important outcome as well as an indicator among patients with end-stage renal disease (ESRD), patients undergoing hemodialysis or peritoneal dialysis. ESRD imposes substantial effects on the patient's quality of life (QOL) by negatively affecting their social, financial and psychological well-being. The disease also affects body image and can have an impact on a patient's overall QOL and other domains like physical, functional, social and mental status.³

HD is a complex procedure for patients that requires frequent hospital or dialysis visits, mostly 3 times a week, which means major changes in patients' usual lifestyle. 92% of patients with HD may suffer from a high symptom burden and may experience distressing symptoms such as fatigue, loss of appetite, difficulty concentrating, swelling of the legs and arms, and muscle cramps, all of which cause daily suffering and reduce their quality of life.

Comparative study on QOL of patients undergoing hemodialysis is lacking in India in general and Maharashtra or Pune district in particular. Additionally, studies on clinical features of these patients and the relation of that with the QOL are also missing. QOL is assessed using different standardized tools. Each tool is planned for a specific purpose.

No single tool covers all aspects of the parameter of QOL of dialysis patients. Hence our study will focus on quality of life of patients undergoing hemodialysis using the Kidney Disease Quality of Life (KDQOL) tool.⁴

The scenario is further complicated by the presence of complications associated with HD and PD. As the survival of patients with ESRD has increased, HRQOL has become an increasingly important outcome measure in the evaluation of dialysis treatment.

2. Methods

OBJECTIVES -

1. To assess quality of life among patients undergoing hemodialysis using KDQOL.
2. To associate QOL with selected demographic variables.

HYPOTHESIS: Ho -- There is no significant difference between quality-of-life scores among patients undergoing hemodialysis at different stages. H1 -- There is a significant difference between the quality-of-life scores among patients undergoing hemodialysis at different stages.

ETHICAL ASPECTS:

The permission to conduct the study will be obtained from the Institutional Ethics Committee for carrying out the study. Assurance of confidentiality will be given to the study participants and written informed consent will be obtained from them

RESEARCH APPROACH: Quantitative research approach.

RESEARCH DESIGN: Descriptive.

VARIABLES UNDER STUDY:

Research variable: Quality of life of patients undergoing hemodialysis.

SETTING OF THE STUDY: Hemodialysis unit in the selected hospital.

TARGET POPULATION: Patients undergoing hemodialysis.

SAMPLE SIZE: 132 Samples.

SAMPLE TECHNIQUE: Simple Random sampling technique

**SAMPLING CRITERIA:**

Inclusion criteria:

- Patients undergoing hemodialysis.
- Age 18 years & above.
- Understanding Marathi, Hindi or English language.
- Willing to sign an informed consent to participate in the study.

Exclusion criteria:

- Patients with cognitive, speech, or hearing impairment.
- Patients with CKD superimposed by other complications.

TOOLS AND TECHNIQUES OF DATA COLLECTION:

In this study, consent was obtained from study participants before data collection, and then a structured questionnaire regarding demographic variables and a KDQOL questionnaire was used to assess the quality of life of patients undergoing hemodialysis, which was used as a tool.

DESCRIPTION OF THE INSTRUMENT:

The questions related to demographic variables and the standard tool questions related to quality of life.

Part I: Demographic variables such as Age, Educational Status, Religion, Marital Status, and Monthly Income.

Part-II:

Items 1-12: SF-12

Items 13-16: Burden of kidney disease (k=4)

Items 17-28: Symptoms/problems (k=12)

Items 29-36: Effects of kidney disease (k=8)

RELIABILITY:

In this study, the reliability was determined using the Test-retest method, which was calculated using Pearson's correlation coefficient formula. The reliability was 0.99.

PILOT STUDY:

A pilot study was conducted on 12 samples from Dr. D.Y. Patil Medical College, Hospital & Research Centre, Pimpri, Pune-18.

METHOD OF DATA COLLECTION:

The study was explained to the participants. Written consent was taken from the participants. Code no. to the participant was allotted. Confidentiality and safety of the participants were assured. The KDQOL questionnaire was administered to assess the quality of life, it took around 20 minutes.

3. Results**Description of samples (hemodialysis patients) based on their characteristics in terms of frequency and percentage.**

The sample distribution says that out of 132 samples, 86.4% were from the age group of 19-30 years of age from 30th day, 68.2% were male from 30th & 45th day, 100% of clients were residing in Urban from 15th, 45th & 60th day, 90.9% of them were married from 45th day, 57.1% of them were graduate from 15th day & 57.1% of them had secondary education from 60th day, 63.6% of them were self-employed from 30th day, 86.4% of them were Hindu from 30th day by religion, 69.6% of them had monthly income between Rs.20,001-30,000 from 75th day, 82.6% of them had no family history of CKD from 75th & 90th day, 22.7% of them had family history of CKD of Father & Mother from 45th day, 81.8% of them were diagnosed by CKD since 2 month from 30th day, 100% of them had no cause of kidney disease from 15th, 30th & 90th day, All the samples had 4 hours of duration for dialysis & 95.2% of them had 2 times per week of dialysis from 15th day of dialysis.

Section II

Analysis of data related to the quality of life among patients undergoing hemodialysis

Table 1: Quality of life in symptoms/problems aspect.

Time point	Poor		Average		Good	
	Fre q	%	Fre q	%	Fre q	%
15th Day	6	28.6 %	4	19.0 %	11	52.4 %
30th Day	3	13.6 %	14	63.6 %	5	22.7 %



45th Day	1	4.5%	19	86.4%	2	9.1%
60th Day	1	4.8%	18	85.7%	2	9.5%
75th Day	20	87.0%	1	4.3%	2	8.7%
90th Day	18	78.3%	2	8.7%	3	13.0%

Table 1 shows that in the 15th days group, 52.4% of them had a good quality of life in the symptoms/problems aspect. In the 30th day's group, 63.6% of the patients had an average quality of life. In 45th days group, 86.4% of the patients had the average quality of life in the symptoms/problems aspect. In 60th days group, 85.7% of the patients had an average quality of life. In the 75th day group, 87% of them had poor quality of life. In the 90th day group, 78.3% of them had poor quality of life.

Table 2: Quality of life in the effects of kidney disease aspect.

Time point	Poor		Average		Good	
	Fre q	%	Fre q	%	Fre q	%
15th Day	7	33.3%	3	14.3%	11	52.4%
30th Day	2	9.1%	14	63.6%	6	27.3%
45th Day	1	4.5%	18	81.8%	3	13.6%
60th Day	3	14.3%	16	76.2%	2	9.5%
75th Day	20	87.0%	1	4.3%	2	8.7%
90th Day	18	78.3%	1	4.3%	4	17.4%

Table 2, shows that in the 15th-day group, 52.4% of them had good quality of life in effect of CKD aspect. In the 30th-day group, 63.6% of them had the average quality of life in the effect of CKD aspect. In the 45th-day group,

81.8% of them had the average quality of life in the effect of CKD aspect. In the 60th-day group, 76.2% of them had the average quality of life in effect of CKD aspect. In the 75th-day group, 87% of the patients had poor quality of life in the effect of CKD aspect. In the 90th-day group, 78.3% of the patients had poor quality of life due to the effect of CKD aspect.

Table 3: Quality of life in Burden of kidney disease aspect.

Time point	Poor		Average		Good	
	Fre q	%	Fre q	%	Fre q	%
15th Day	21	100.0%	0	0.0%	0	0.0%
30th Day	21	95.5%	1	4.5%	0	0.0%
45th Day	14	63.6%	7	31.8%	1	4.5%
60th Day	1	4.8%	5	23.8%	15	71.4%
75th Day	1	4.3%	0	0.0%	22	95.7%
90th Day	3	13.0%	2	8.7%	18	78.3%

Table 3, shows that in the 15th day group, all the patients had poor quality of life in the burden of KD aspect. In the 30th-day group, 95.5% of them had a poor quality of life. In the 45th-day group, 63.5% of them had a poor quality of life. In 60th-day groups, 71.4% of them had a good quality of life in the burden of the KD aspect. In the 75th day groups, 95.7% of them had a good quality of life in the burden of KD aspect. In 90th-day groups, 78.3% of them had a good quality of life in the burden of the KD aspect.

Table 4: Quality of life in Physical Health Composite aspect

Time point	Poor		Average		Good	
	Fre q	%	Fre q	%	Fre q	%



15th Day	12	57.10 %	9	42.90 %	0	0.00 %
30th Day	19	86.40 %	3	13.60 %	0	0.00 %
45th Day	18	81.80 %	4	18.20 %	0	0.00 %
60th Day	0	0.00%	21	100.00 %	0	0.00 %
75th Day	6	26.10 %	17	73.90 %	0	0.00 %
90th Day	9	39.10 %	14	60.90 %	0	0.00 %

Table 4, shows that in the 15th-day group, 57.1% of the patients had poor quality of life in physical health aspect. In the 30th-day group, 86.4% of the patients had poor quality of life. In 45th days group, 81.8% of the patients had poor quality of life. In the 60th-day group, all of them had an average quality of life in physical health aspect. In the 75th-day group, 73.9% of them had an average quality of life in the physical health aspect.

Table 5: Quality of life in Mental Health Composite aspect

Time point	Poor		Average		Good	
	Fre q	%	Fre q	%	Fre q	%
15th Day	5	23.8 %	16	76.2%	0	0.0 %
30th Day	0	0.0%	22	100.0 %	0	0.0 %
45th Day	1	4.5%	21	95.5%	0	0.0 %
60th Day	0	0.0%	21	100.0 %	0	0.0 %
75th Day	2	8.7%	21	91.3%	0	0.0 %
90th Day	4	17.4 %	19	82.6%	0	0.0 %

Table 5, shows that in the 15th-day group, 76.2% of them had an average quality of life in the mental health aspect. In the 30th-day group, all of them had an average quality

of life in the mental health aspect. In the 45th-day group, 95.5% of them had an average quality of life in the mental health aspect. In the 60th-day group, all of them had an average quality of life in the mental health aspect. In the 75th-day group, 91.3% of them had an average quality of life in the mental health aspect. In the 90th-day group, 82.6% of them had an average quality of life in the mental health aspect.

Fisher's exact test for the association of Quality of life for symptoms/problems with demographic variables indicates that p-values corresponding to monthly income and cause of kidney disease are small (less than 0.05), the demographic variables monthly income and cause of kidney disease were found to have a significant association with the Quality of life for symptoms/problems.

4. Discussion

A cross-sectional study was conducted with the aim to evaluate the quality of life (QOL) of hemodialysis patients. The WHOQOL-BREF questionnaire was used to assess the quality of life. Hemodialysis patients who had completed three months of maintenance hemodialysis (n = 75) were enrolled into the study. In the study the quality of life of hemodialysis patients was found to be significantly impaired (P < 0.05) in comparison to healthy individuals of the general population, particularly with respect to the physical, psychological, and social relationship domains. In comparison to the quality of life of renal transplant patients, the quality of life of hemodialysis patients was significantly (P < 0.05) lower in all the four WHOQOL-BREF domains. Only in the environmental dimension was found that the quality of life of hemodialysis patients was significantly lower than that of the asthma patients. Female hemodialysis patients showed significantly (P < 0.05) lower quality of life than did male patients in the psychological and environmental dimensions of WHOQOL-BREF. The result showed that the positive association was seen between higher education and the psychological functioning and the environmental dimensions of WHOQOL-BREF. This study concluded that the quality of life of hemodialysis patients was found to be considerably impaired when compared to that of healthy individuals of the general population as well as of renal transplant patients⁵.



Mrs. Manisha Rahul Padekar et al. conducted study to assess quality of life of caregiver of patients undergoing hemodialysis among selected hospitals. This study used a quantitative and descriptive research approach. The focus is on the Quality of Life of caregivers of patients undergoing hemodialysis. The research involved caregivers from selected hospitals, with a random sample of 120 first-degree relatives aged 18 to 65. Consent was obtained, and a structured questionnaire with a caregiver burden scale was used to assess quality of life, featuring demographic questions and response options like never, rarely, sometimes, and always. The tool showed high reliability. Data was collected and analysed using inferential and differential statistics. The result showed that the data analysis related to Quality of life of caregivers of patients undergoing hemodialysis showed that the 36.7% (44) of the caregivers of patients undergoing hemodialysis had little or no burden, 30% (36) of them had mild burden, 29.2% (35) of them had moderate burden and 4.2% (5) of them had severe burden and none of the demographic variables were found to have a significant association with the quality of life among caregivers of patients undergoing hemodialysis. The conclusion drawn from the findings of the study is that, caregivers of hemodialysis patients often experience reduced quality of life due to significant responsibilities, influenced by dialysis type and medication costs.⁶

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