



Quality of Life of Patients Undergoing Hemodialysis in Selected Hospital

Abstract:

Introduction: Chronic kidney disease is becoming major public health problem in 21th century. Chronic renal failure (CRF) is one of the serious medical disorders and is associated with increase in poor physical and mental health leading to impaired quality of life (QOL).

Objectives: To assess the quality of life and association between the selected variables of patients undergoing hemodialysis.

Methods and Materials: This descriptive study was conducted among 75 patients undergoing haemodialysis at Manipal Teaching Hospital and Western Regional Hospital, Pokhara, Nepal. Non-probability purposive sampling technique was used to collect data. The data was collected by Kidney Disease Quality of Life -36 tool by interview technique. The collected data was analyzed by using descriptive and inferential statistic.

Results: Out of the total 75 patients on haemodialysis, 47 were male and 28 were female. The mean age was 51.91yrs. Out of five domains(Physical component summary, mental component summary, symptom of disease, burden of disease and effect of disease on daily life), the highest score was on symptoms of disease 75(64.58 -83.33) and the lowest score was attained in mental health components 25(20-40) and burden of disease 25(0-25). The physical component scale scored 27(18.12 -45). Education level is found to be significantly associated with quality of life scores(Physical component summary and Mental component Summary) with P value less 0.05.

Conclusion: The study finding revealed that patients with haemodialysis have poor quality of life. The most affected domain is mental health. Patient's mental health status is severely affected because of disease and huge financial burden, and greater dependency on family members. Physical health is also affected as well, there are substantial limitation of physical activity.

Key Words: Quality of Life, Patients, Hemodialysis, Descriptive study, Nepal.

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Introduction

Chronic kidney disease is a worldwide public health problems and chronic disease that deteriorates quality of life. The kidneys are one of the vital organs of our body. Man can live with one kidney, but life becomes disastrous when both kidneys stop functioning. Proper functioning of kidneys is essential for having a good quality of life. Chronic renal failure is a silent epidemic of

21st century. Haemodialysis is the most common method used to treat advanced and permanent kidney failure. Haemodialysis imposes a variety of physical and psychosocial stressors that challenge patients and directly affect on their quality of life.¹

End stage renal disease (ESRD) is a chronic and life threatening illness. It implies that the kidneys are permanently damaged and the person can no longer survive independently

without renal replacement therapy. Individuals undergoing long-term haemodialysis have been found to be subjected to multiple physiological and psychosocial stressors and experience personal losses and lifestyle changes.²

In Nepal, the prevalence of end-stage renal disease (ESRD) is increasing. National Kidney Centre estimated that as much as 10 percent of the population, 2.6 million people are affected by some kind of kidney disease. Recent data suggests that about 3000 people suffer from kidney damage in every year.³

Most kidney patients are not diagnosed until the last stage of disease. Dialysis is lifelong treatment for CKD patient. Dialysis requires the patient to undergo treatment 2-3 times per week for 4 hours for the rest of their life. It average minimum costs 20,000 rupees per month, if there is no other complications. The transplantation in Nepal can cost up to 10-15 Lakh NRs and the cost can rise in case of any complications. The average income for a Nepalese is 26,000 rupees per year making dialysis an impossible choice for most Nepali people. Hardly 10 percent of the patients with kidney diseases can afford the cost of treatment. Chronic kidney disease is a huge burden, in terms of finance, time and quality of life. Poor people will become even poorer. Loans, consumptions of savings, etc. often cannot be recovered over the lifetime of the surviving family. Many people sell their possessions and property to pay for treatment of kidney disease and they are left with nothing.⁴

In Nepal almost every big cities have hemodialysis centres. In Pokhara, there are 3 centres till date, in these 3 centres, there are approximately 100 patients on regular hemodialysis. However, in a year, the number of new patients could be about 200-300, but most patients will not afford the treatment for long term, or may die earlier.³

The study was conducted to measure quality of life of patients with end stage renal disease on different modalities of treatment

among 30 diagnosed cases of end stage renal disease (ESRD) attending BPKIHS, Dharan, Nepal. Group 1 included 10 patients on regular maintenance hemodialysis, group 2 included 10 patients on continuous ambulatory peritoneal dialysis (CAPD) and group 3 included 10 patients on regular conservative drugs. The data was collected by using K/DOQI, 2002 tool. The study found that patients of ESRD have a poor quality of life despite being in some form of dialysis and the most affected domain of the KDQOL scale is physical health. Patients on CAPD have better quality of life than patients on maintenance hemodialysis especially in terms of mental health.⁵

Another descriptive study was conducted on quality of life of chronic renal failure patient undergoing haemodialysis in the dialysis centre of 2 hospitals of Kottayam, Kerala by using the SF 36 quality of life scoring system. The study reveals that 95% of the samples had only satisfactory quality of life.⁶

A study was conducted to evaluate the quality of life of the chronic kidney disease on haemodialysis in public Brazilian hospital. Data was collected by using the SF 36 questionnaire on the 50 patients. The study reveals that the most affected domain was the role limitation due to physical health, suggesting that chronic disease with prolongs treatment has a negative influence on these domain.⁷

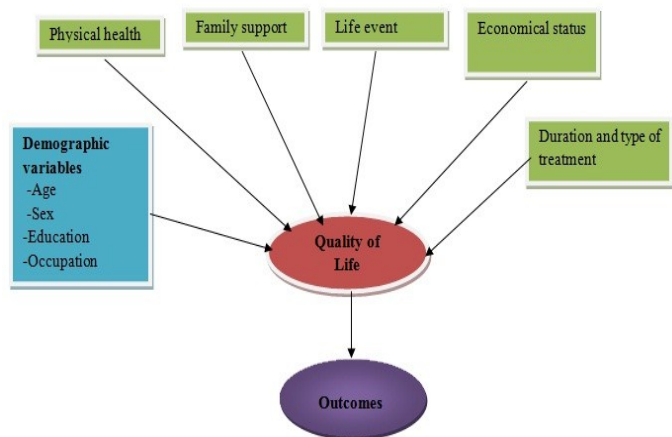
Quality of Life (QOL) has emerged as an important parameter for evaluating the quality of health care for patients with renal failure. There are very few studies about the QOL of dialysis patients in Nepal. When individuals with CRF have to undergo long-term haemodialysis, it not only affects their QOL, but also their family's QOL. Although HD therapy prolongs patients' life, often there is a significant reduction in quality of life (QOL) of patients receiving HD.

Among various nephrology centre in Nepal, Manipal Teaching Hospital and Western Regional Hospital are the main centres in

western region, Pokhara. This two hospital provide dialysis facility under government and non government scheme for chronic renal failure patients. So researcher was very curious to identify quality of life of patient in undergoing hemodialysis.

Conceptual Framework

Figure 1: Conceptual Framework based on reviewed literature



Methodology

A descriptive survey research design was adopted to assess the quality of life of patients undergoing haemodialysis at Manipal Teaching Hospital and Western Regional Hospital in Pokhara, Nepal, in the month of October-November 2015, by using Kidney Disease Quality of Life -36 tool revised in 2002. A purposive sampling technique was used and recruitment criteria included patients on maintenance Haemodialysis at least 3 month and age above 18yrs. Patients were excluded if they were critically ill and those who could not verbalize their feelings. Total 75 patients from two hospital were included in this study. Descriptive statistics i.e. percentage, frequency, median and quartile range and inferential statistics i.e. Mann-Whitney U test and Krusal Wallis H test were used for data analysis.

A multidimensional, reliable and validated instrument- Kidney Disease Quality of Life -36 tool, 2002 was used to collect data. Which incorporates kidney-disease targeted items as well as a generic core. It consist of 24 Kidney-disease targeted items that

measure Burden of Kidney Disease, Symptoms and Problems, and Effects of Kidney Disease on Daily Life. The scores of the KDQOL-36 questionnaire are transformed into 0 to 100, with higher scores reflecting better quality of life.

The KDQOL-36 instruments was translated into Nepali language as per the guidelines provided by the KDQOL working group. It was pretested to 7 sample of people with ESRD patients who meet the inclusion criteria. These people were not included in the subsequent study.

Result

Out of 75 patients, 47 were male and 28 were female. The mean age was 51.91 years, majority of the patients were age over the 40yrs (80%), Hindu (77.3%), married (85.3%), literate (65.3%). Majority of them involved in agricultural activity (48%) and had average monthly income of the family is 20,000 (42.7%)

Table 1: Clinical characteristics of patients n=75

Clinical variables	Frequency	Percentage
Co-morbid condition		
HTN	53	70.7
Diabetes	9	12
Heart disease	2	2.7
No any disease	11	14.7
Duration CKD diagnosis		
Less than 1 years	9	12.0
01-02 years	12	16.0
More than 2 years	54	72.0
Duration of dialysis treatment		
Less than 1 years	15	20.0
01-02 years	21	28.0
More than 2 years	39	52.0

Table 1 shows that the most primary causes of ESRD was HTN (70.7%), followed by diabetes, 72% patients suffered from CKD more than 2 years and 52% patients had under hemodialysis period of 2yrs and over.

The five domains (physical health, mental health, problems list, burden of disease and effect of disease on daily life) scores of the KDQOL—36 range from 0 to 100, with higher scores

reflecting better quality of life. Respondents overall score on KDQOL-36 are displayed in below.

Table 2: Median and quartile range of five dimensions of KDQOL-36 n=75

Summary score	Median	Quartile Range (25-75%)
SF-12 Physical composite score	27.50	18.12-45
SF-12 Mental composite Score	25	20-40
Symptoms/Problem list	75	64.58-83.33
Burden of kidney disease	25	0-25
Effect of kidney disease on daily life	53.12	43.75-68.75

Higher scores indicate better physical and mental functioning. Domains score range from 0 to 100.

A Table 2 shows that the highest score was attained in symptoms of disease domain i.e. 75 (64.58 -83.33). Physical component scale 27 (18.12 -45) revealed limitation of physical activity. The lowest score was attained in mental health components 25 (20-40) and burden of disease 25 (0-25), indicating that because of disease burden and greater dependency, patient's mental health status is severely affected. It also indicates that kidney disease interferes patient's daily life, causes frustration, and makes them feel like a burden.

Univariate association between dimension of QOL and selected demographic and dialysis characteristics are shown in table of the 3-7.

Table 3: Association between selected respondents characteristics and physical component summary n=75

Characteristic	Categories	Median of PCS (Quartile 25-75%)	p-value	Remarks
Age	18-40yrs	NA	0.067*	NS
	>40yrs			
Education	Illiterate	23.75 (14.37-25.62)	0.03**	S
	Primary	30.57 (18.12-33.75)		
	Secondary	42.61 (27.5-53.9)		
	Higher	33.50 (13.12-58.28)		

Table 3 contd...

Characteristic	Categories	Median of PCS (Quartile 25-75%)	p-value	Remarks
Occupation	Business	22.81 (15-50.31)	0.919**	NS
	Service	25.93 (21.87-29.06)		
	Agriculture	31.73 (17.03-42.81)		
Duration of dialysis	Less than 1 years	30.62 (15-33.12)	0.893**	NS
	1-2 years	24.37 (16.87-45)		
	More than 2 years	27.50 (18.12-48.12)		

** Krusal Wallies, * Mann-Witney NS-Not Significant, S-Significant

Table 4: Association between selected respondents characteristic and Mental component summary n- 75

Characteristic	Categories	Median (IQR) of PCS	p-value	Remarks
Age	18-40yrs	30 (20-75)	0.308*	NS
	>40yrs	25 (20-40)		
Education	Illiterate	27.50 (20-31.250)	0.005**	S
	Primary	25 (15-55)		
	Secondary	35 (20-67.5)		
	Higher	25 (17.50-66.250)		
Occupation	Business	25 (21.25-33.75)	0.899**	NS
	Service	25 (17.5-37.5)		
	Agriculture	27.5 (20-60)		
	Student	30 (20-46)		
Duration of dialysis treatment	Less than 1 years	30 (25-80)	0.487**	NS
	1-2 years	25 (17.5-35)		
	More than 2yrs	30 (20-40)		

** Krusal Wallies, * Mann-Witney, NS-Not Significant, S-Significant

Table 5: Association between selected respondents characteristic and symptom/problem list n=75

Characteristic	Categories	Median (IQR) of PCS	p-value	Remarks
Age	18-40yrs	79.16 (70.83-85.41)	0.182*	NS
	>40yrs	73.95 (63.02-82.81)		

Table 5 contd...

Characteristic	Categories	Median (IQR) of PCS	p-value	Remarks
Education	Illiterate	70.83 (61.97-77.60)	0.140**	NS
	Primary	70.83 (58.33-85.41)		
	Secondary	79.16 (72.39-85.41)		
	Higher	79.16 (69.79-85.41)		
Occupation	Business	73.93 (54.68-80.72)	0.621**	NS
	Service	69.79 (65.10-83.33)		
	Agriculture	73.95 (64.58-83.33)		
	Student	77.08 (64.58-87.50)		
Duration of dialysis treatment	Less than 1 yrs	79.16 (68.75-87.50)	0.187**	NS
	1-2 yrs	70.83 (65.65-84.37)		
	More than 2yrs	75 (56.25-81.25)		

** Krusal Wallies, * Mann-Witney, NS-Not Significant, S-Significant

Table 6: Association between selected respondents characteristic and Burden of disease n=75

Characteristic	Categories	Median (IQR) of PCS	p-value	Remarks
Age	18-40yrs	25 (5.25-25)	0.376*	NS
	>40yrs	25 (0.0-25)		
Education	Illiterate	25 (0.0-25)	0.189**	NS
	Primary	25 (0.0-25)		
	Secondary	25 (10.93-25)		
	Higher	3.12 (0.0-20.31)		
Occupation	Business	18.75 (0-25)	0.078**	NS
	Service	3.12 (0.0-23.43)		
	Agriculture	25 (6.25-25)		
	Student	25 (6.25-25)		
Duration of dialysis	Less than 1 yrs	25 (12.5-25)	0.311**	NS
	1-2 yrs	25 (0.0-25)		
	More than 2 yrs	25 (0.0-25)		

** Krusal Wallies, * Mann-Witney, NS-Not Significant, S-Significant

Table 7: Association between selected respondents characteristic and effect of disease on daily life n=75

Characteristic	Categories	Median (IQR) of PCS	p-value	Remarks
Age	18-40yrs	59.37 (50-75)	0.078*	NS
	>40yrs	53.12 (41.40-68.75)		
Education	Illiterate	50 (40.62)	0.344**	NS
	Primary	53.12 (43.75-65.62)		
	Secondary	59.37 (49.21-72.62)		
	Higher	62.50 (42.18-94.53)		
Occupation	Business	53.12 (42.18-73.43)	0.965**	NS
	Service	51.56 (31.25-72.65)		
	Agriculture	53.12 (43.75-68.75)		
	Student	50 (43.75-65.62)		
Duration of dialysis treatment	Less than 1 years	56.25 (46.87-68.75)	0.219**	NS
	1-2 years	56.25 (45.31-73.43)		
	More than 2 years	50 (40.62-62.50)		

** Krusal Wallies, * Mann-Witney NS-Not Significant, S-Significant

Table no 3-7 denotes that there is only demographic characteristics such as educational status is found to be significantly associated with quality of life scores (PCS and MCS) with P value less 0.05, but there was no relation between quality of life scores(burden of kidney diseases, symptom list and effect of kidney disease on daily life) with independent variable.

Discussion

Majority of the respondents in this study were male (62.7%). It may shows that the incidence of CRF is higher in male than female and male patient of ESRD seek renal replacement therapy. This may still reveals the gender disparity in our society in terms of seeking the health care. In this study the mean age of patients was 51.92 yrs which is similar to mean age

of 55.75 years old in India.⁶ This obviously shows the lack of care of primary disease leading to CKD, lack of screening for CKD patients in early stages to adopt preventable measures in our country.

Nepal is agricultural country, most of respondents in this study were farmers(48%) and only 4 of them attained higher education. This could be reason for lack of awareness to adopt preventive measures for ESRD. This study also shows the most primary leading causes of ESRD was HTN (70.7%) whereas in previous study in from Nepal diabetes mellitus was most common cause of chronic renal failure(36.67%) and 45%.^{3,8}

Present study assessed all the five domains of KDQOL-36 (Mental component, physical component, symptom/ problem list. burden of disease and effect of disease on daily life) in the study subjects. Mental health and burden of disease domain got same lowest score. It reflects mental health of haemodialysis patients is severely affected. In contrast to previous study in Nepal physical health was most severely affected.^{3,6} This might be huge financial and disease burden, greater degree of dependence felt by patients on HD and mental health is severely disrupted.

In this study significant association was found only between QOL dimension (mental health and physical health) with educational status. But there is no association between QOL dimension (Symptom, burden and effect of disease) with age, occupation, education and duration of dialysis treatment. This could be possible reason that those educated patients have better knowledge regarding disease condition and its management. In contrast the finding of found that shorter duration of HD was associated with lower PCS.⁹

Conclusion

CKD is an emergent public health concern of Nepal. Study reveals that the quality of life of patients with dialysis is poor.

HTN was the commonest cause of CKD followed by diabetic nephropathy. The most affected domain of the Kidney Disease Quality Of Life (KDQOL) scale is mental health and burden of kidney disease followed by physical health. Educational status is significantly associated with two domain of QOL (mental and physical health) but no association with other three domain.

Recommendations

- A similar study can be conducted to compare the quality of life among patient undergoing haemodialysis and peritoneal dialysis.
- Similar study can be organized to compare quality of life of patient with kidney transplantation and haemodialysis.
- Study can be done to compare quality of life of patients with chronic kidney disease and general population.

Acknowledgement

We would like to acknowledge deep sense of gratitude to chairmen of research ethical committee Manipal Teaching Hospital Pokhara, Nepal for kind permission to conduct the study. We also express sincere gratitude to hospital director of Western Regional Hospital for kind permission to conduct the study. We also sincere thank our colleagues Ms Rita Adhikari and Ms Sanu Thapa for their help and support during data collection. We also special thanks to Dr Brijesh for help in statistical support for data analysis.

Ethical Clearance

Ethical permission was obtained from Ethical Research Committee of Manipal College of Medical Science and written permission was obtained from hospital Director of Western Regional Hospital, Pokhara. A verbal informed consent was obtained from all the subjects prior to data collection by explaining the purpose of the study.

Funding

There was no any economical support from other organizations.

All expenditure was bearded by researchers themselves.

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