

To Assess Health-Related Quality of Life and Co-Morbidity Pattern in Hemodialysis Patients

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ABSTRACT

Objective: To assess health-related quality of life and co-morbidity pattern in hemodialysis patients

Study Design: Observational / cross sectional study.

Place and Duration of Study: This study was carried out in the Department of Nephrology Department, Nishtar Medical Hospital, Multan from February 2015 to January 2016.

Materials and Methods: By a non probability purposive sampling procedure, 123 hemodialysis patients from our hemodialysis center in Nishtar Hospital Multan(Pakistan) were interviewed by resident doctor according to the SF-36 Scales. The means and standard deviations for each of eight scales were calculated, each domain ranges from 0-100, the highest scores indicating better quality of life. Comorbidities like DM, Hypertension ,ischemic heart disease lung disease etc were also recorded.

Results: The scores of the eight scales in the hemodialysis patients were 49.92 ± 30.90 , 38.82 ± 41.39 , 46.73 ± 26.54 , 40.52 ± 21.65 , 43.98 ± 21.82 , 49.43 ± 27.76 , 49.85 ± 40.59 and 59.93 ± 17.36 . Co-morbidities pattern were hypertension in 104(84.6%),DM 59(48%),ischemic heart disease 23(18.7%) and other co morbidities were less common. The scores of most of the scale in the patients with co morbidities were lower as compared to patients without co morbidities. Data obtained was entered by a doctor in SPSS version 20 and was analyzed to compute descriptive statistics of the numerical variables while frequencies and their percentages for categorical variables of the study.

Conclusion: The results of our study indicate that quality of life was poor among patients on hemodialysis particularly those having co-morbidities. Hypertension and diabetes were major co-morbidities in our study. Quality of life score was lower in female patients than that of male patients. Proper management of co-morbidities can improve quality of life of these patients which will decrease disease morbidity and mortality. This will also provide psychological and financial relief to the suffering families and also be cost effective for hospital authorities in terms of availability of space.

Key Words: Hemodialysis, Quality of life, SF-36 questionnaire,

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INTRODUCTION

Prolonged survival and related clinical outcomes, the functioning and well-being which define end-stage renal disease population is an important component of the effective medical therapy. Current developments in history of medical sciences such as “Chronic dialysis, peritoneal dialysis and kidney transplantation” are major achievement in practice of Nephrology and they have contributed to improve life expectancy in such patients.

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In today's medical services Patients' functional status, improved physical and mental performance and increased level of Satisfaction of these services beside expenditures involved in medical care defines quality of medical care in any society.¹

The hospital staff should clearly realize importance of these factors and to individualize and support the patients.²

It is difficult to define quality of life as it is related with different dimensions like physical health, mental health, satisfaction, interpersonal relationships, socioeconomic & residential status for their survival beyond expectations.³

Patients having chronic ailments like ESRD in which disease cure is not a real objective of the treating physician, where functioning and well being of the patient is ultimate goal of medical therapy. In patients with chronic kidney disease quality of life can not only be generalized with increased rate of survival but also implies the importance of quality of survival in suffering patients.^{3,4}

Patients on hemodialysis who undergo dialysis sessions at regular basis generally exhibit poor quality of life, particularly in developing countries.⁵

The SF36, an established and a well-recognized, scoring system to ascertain quality of life which has 8 different independent domains with two summary component being used all over the world and has already been validated. It contains both disease specific and general components which reflect the patient's perceptions and viewpoints. The eight domains of this instrument includes physical function , role emotional, role physical emotional wellbeing, vitality, body pain, general health and social function . The score ranges from 0- 100 of every domain.⁶

The higher score shows better quality of each component which is target of dialysis treatment in our routine practice. A change of five in each domain is practically and clinically important and impact medical care.^{4,7} The years of quality survival and QOL of patients with chronic non-communicable diseases like ESRD is still rising in developing countries⁸.

Most of the data on this topic comes from developed western countries where patients have quality healthcare facilities and no financial limitations whereas in developing countries there is scarcity of the data on this hot issue. This study was done at Nisthar Hospital Multan which is a major tertiary care health facility in Southern Punjab providing medical care to more than 40 million population of this area. The present study describes the quality of life scores measured in patients undergoing hemodialysis at our hospital and their comorbidities pattern by using the SF 36-item questionnaire.

MATERIALS AND METHODS

All the subjects were explained and informed consent was taken. The questionnaire KDQOL-SF36 was used and patients on maintenance hemodialysis for more than three months were interviewed by a resident doctor according to the questionnaire. Validity of interview was done re interviewing by the head of Department having postfellowship eight years experience in double blind way then he/she was allowed to interview the all patients. We included patients on dialysis aged more than 18 years who had to undergo regularly hemodialysis with frequency of 2 – 3 times per week for more than 3 months duration who were able to understand local language urdu, Punjabi or saraiki. Patients were excluded if they had any history of malignancies confirmed from their medical records, multiple organ system dysfunction assessed clinically on history and record, those having difficulty in hearing and those who had undergone any major surgery in previous three months.

All the subjects (123) were enrolled from Department of Nephrology Nisthar Hospital Multan. Strict adherence to the inclusion and exclusion criteria was

ensured to maintain quality control procedure. After registration, interviewing doctor asked relevant questions to document socio demographic distribution and clinical variables of the study were obtained directly from patients or from their medical records. The variables specifically, co morbidities like hypertension, diabetes, ischemic heart disease ,lung diseases, peripheral vascular disease, renal stone disease, duration on hemodialysis, Hemoglobin, serum albumin and calcium and phosphate were recorded in the study.

Data obtained was entered by a doctor in SPSS version 20 and was analyzed to compute descriptive statistics of the numerical variables while frequencies and their percentages for categorical variables of the study. Cross-tabulation was done to see the impact of categorical variables and independent sample t test for numerical variable

RESULTS

A total of 123 patients participated in the study among them 61 were male and 62 were females. Their mean age was 50.2 ± 14.7 .

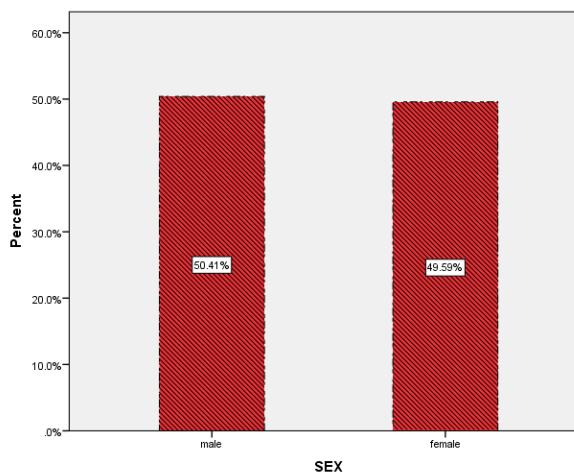


Figure No. 1: Gender distribution (n=123)

Table No. 1: Pattern of co-morbidities of hemodialysis. (n=123)

Variable	Yes	No
Diabetes	59(48%)	64 (52%)
Hypertension	104(84.6%)	19(15.4%)
Ischemic Heart disease	23(18.7%)	100(81.3%)
Nephrolithiasis	5(4.1%)	118(95.9%)
Peripheral vascular disease	2(1.6%)	121(98.4%)
Lung disease	2(1.6%)	121(98.4%)
Cerebrovascular accident	3(2.4%)	120(97.6%)

Co morbidities pattern of study population is given in table one. Co-morbidities pattern were hypertension in 104(84.6%),DM 59(48%),ischemic heart disease

23(18.7%) and other co morbidities were less common. Quality of life scores of total population and patients with comorbidities are summarised in table 2 .The hypertensive and diabetic population has lower scores than non hypertensive and nondiabetic patients. The female patients reported lower QOL scores in all domains except role emotional.

Other demographic and laboratory parameters have shown that frequency of dialysis were twice in 56(45.5%) and thrice in 67(54.5%) per week. Mean duration of dialysis was 31.20±39.52 months, mean dry weight 58.14±13.76 kg, mean hemoglobin was 9.47±1.87g/dl, serum albumin 3.86±0.77 g/dl, serum

creatinine 9.54±3.32 mg/dl, Blood urea nitrogen 60.43±19.45 mg/dl, serum calcium 8.41±0.96 mg/dl, and serum Po4 was 7.81±5.73 mg/dl .Phosphorus and hemoglobin was poorly managed in our patients.

We applied the multiple linear stepwise regression model of Physical Component Summary to know the various factors affecting the quality of life the four variables of age, sex, hemoglobin, and diabetes mellitus were variables having significant impact ($P<0.01$), while in that of Mental Component Summary, the two variables of age and hemoglobin were significant predictors of quality of life ($P<0.01$).

Table No. 2: Quality of life score with co-morbidity pattern. (n = 123)

QOL ^o Domains	Total (N=123)	Diabetes (n=59)	Hypertension (n=104)	IHD ^o (n=23)	CVA ^o (N=3)	PVD ^o (N=2)	LD ^o N=2	Stone ^o N=5
Physical Function	49.92± 30.90	48.69± 28.52	49.13± 30.82	36.30± 27.18	40.00± 35.00	17.50± 10.60	47.50± 31.82	58.00± 46.44
Role-Physical	38.82± 41.39	30.52± 38.58	34.86± 39.63	29.35± 38.17	00.00± 00.00	12.50± 17.67	00.00± 00.00	45.00± 54.19
Body Pain	46.73± 26.54	43.80± 24.38	44.68± 26.17	49.87± 27.57	51.00± 44.84	100.00± 00.00	58.00± 22.62	35.40± 8.76
General Health	40.52± 21.65	37.66± 21.60	39.43± 21.93	32.91± 21.70	18.33± 17.55	56.00± 29.69	26.00± 15.55	53.80± 28.50
Vitality	43.98± 21.82	40.17± 22.76	42.79± 21.70	32.39± 22.04	15.00± 15.00	40.00± 14.14	45.00± 7.07	50.00± 25.45
Social Function	49.43± 27.76	50.88± 24.43	50.76± 27.81	52.19± 28.87	70.83± 19.09	87.50± 9.50	31.25± 8.83	17.50± 28.77
Role emotional	49.85± 40.59	48.00± 39.78	47.73± 39.63	28.94± 35.2	44.44± 50.91	50.00± 70.71	50.00± 70.71	26.66± 43.46
Mental Health	59.93± 17.36	57.76± 18.91	58.58± 17.47	51.30± 18.67	46.67± 33.30	80.00± 5.65	50.00± 2.82	65.60± 21.09

^oQOL;quality of life, IHD; ischemic heart disease, PVD; peripheral vascular disease, LD;Lung disease, Stone;Renal stone disease

DISCUSSION

To measure dialysis adequacy, quality of life of CKD patients is a primary indicator for dialysis units. Mortality in patients on dialysis is influenced with health related quality of life. The SF36, an established and a well-recognized, scoring system to ascertain quality of life which has 8 different independent domains with two summary component being used all over the world and has already been validated. The main objective of the nephrologists is to enhance functional capabilities of dialysis patients so that they are more satisfied and can enjoy their living.

The results of our study have demonstrated that physical and mental health is affected in dialysis patients particularly those having co-morbidities like diabetes, hypertension, IHD etc. This leads to increase disease morbidity and exerts extra pressure on healthcare facilities in terms of occupying beds and more investments in health sector as well as by suffering the families. This increase in disease morbidity is not only restricted to the patient but also affects the life of their families in terms of

psychological, social and economical stress. Moreover this disease hits main workforce of the society (in their middle ages) so it has great impact on national economy as well due to the disabilities and family income also suffers as they are more dependent on therapy to sustain their survival. Same findings have been reported in different studies done in different population subsets comparing their decreased functional well being with that of general population^{9,10}. We did not compare this with our healthy control subjects because it has already been proved by many studies.

Chronic diseases such as Diabetes, PVD, hypertension etc have already been reported to have an influence on the quality of life of the patients. Although the spectrum of different co-morbidities differ from disease to disease as has been noticed in our study. Previous studies have already documented diabetes being a co-morbid disease of chronic kidney disease which results in very poor quality of life of these patients, these findings are in compliance with our study results^{11,12}.

In our study, overall quality of life score was poor in patients with peripheral vascular disease, ischemic heart

disease and cerebrovascular accident as it has been reported in other reports^{13,14}. Quality of life may be significantly compromised with increasing number of co-morbidities among targeted population¹³.

In all domains quality of life was poor in female populations as compared with male patients which constitute 52 % of our total population of Pakistan. Although the root cause of this gender specific difference has not been defined clearly, however all the females had some degree of depression due to aesthetic appearance issues and economic dependency on their family members in our study. Similar results have been observed in many different studies reporting lower quality of life score in female patients than that of male patients.^{15, 16, 17, 22}

Anemia and hypoalbuminemia were very common in our study, again both these are associated with poor quality of life, this association with poor quality of life has been established in other studies as well.^{18,19,20,21} These findings emphasize the importance of early intervention for correction of these parameters, so that their negative effect on quality of life may be minimized.

The major limitations of the current study were that it is single centre study and questionnaires were not self administered, due to language barrier it was interviewed as our major dialysis population education status were illiterate.

CONCLUSION

The results of our study indicate that quality of life was poor among patients on hemodialysis particularly those having co-morbidities. Hypertension and diabetes were major co-morbidities in our study. Quality of life score was lower in female patients than that of male patients. Proper management of co-morbidities can improve quality of life of these patients which will decrease disease morbidity and mortality. This will also provide psychological and financial relief to the suffering families and also be cost effective for hospital authorities in terms of availability of space.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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