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QUALITY OF LIFE AMONG PATIENTS ON HEMODIALYSIS

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ABSTRACT

Objective: To assess health-related quality of life and co-morbidity pattern in hemodialysis patients **Methods:** By a nonprobability purposive sampling procedure, 123 hemodialysis patients from our hemodialysis center in Jinnah Hospital Lahore 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 comorbidities 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.

KEYWORDS: Hemodialysis, Quality of life, SF-36 questionnaire.

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.

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 countries.[8]

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 Jinnah Hospital Lahore. 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.

SUBJECTS 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. 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 other local languages. 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 Jinnah Hospital Lahore, Pakistan. 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.
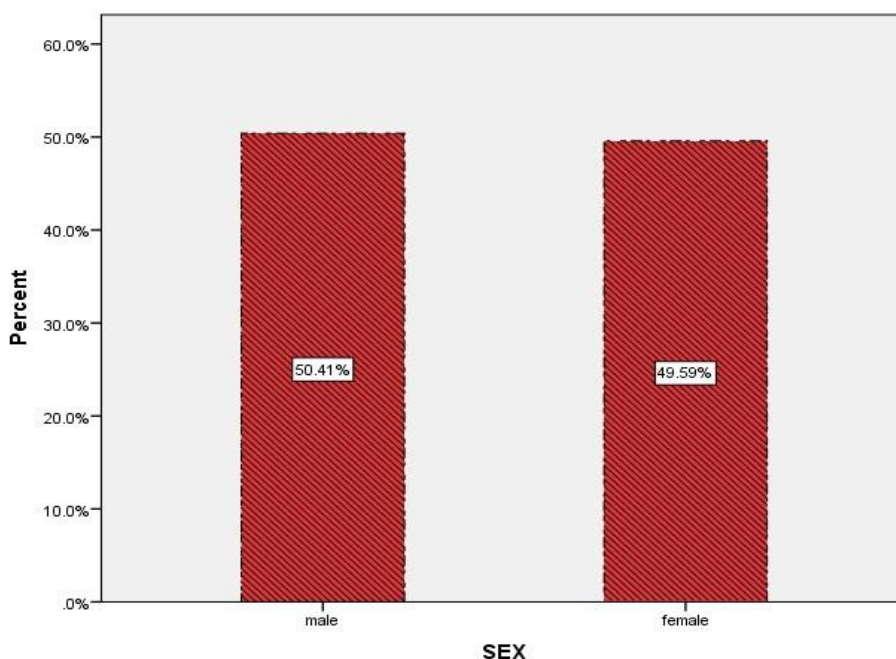

Figure No. 1: Gender distribution (n=123).

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 summarized in table 2. The hypertensive and diabetic population has lower scores than non-hypertensive and non-diabetic 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. 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%)

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

QOL° Domains	Total (N=123)	Diabetes (n=59)	Hypertension (n=104)	IHD° (n=23)	CVA° (N=3)	PVD° (N=2)	LD° N=2	Stone° 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

°QOL; 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 economic

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 population.[13]

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, and 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 center 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 comorbidities 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.

REFERENCES

1. Konner NG. Assessing end-stage renal disease patients' functioning and well-being: measurement approaches and implications for clinical practice. Am J Kidney Dis, 1994; 24: 321-333.
2. Clang B, Bovril N, and Cline N. Quality of life in predialysis uremic patients. Quall Life Res, 1996; 5: 109116.
3. Goal R. Quality of Life. In: The Textbook of Peritoneal Dialysis, Kluwer Academic Publishers, 1994; 679698.
4. Trbojević J, Živković M. Lyfe style in chronic renal failure patients: influence of progression of the disease and different ways of treatment. Srp Arh Cello Leek, 1997; 125: 223-227.
5. Chiang C-K, Pang Y-S, Chiang S-S, Yang C-Septal: Health-Related Quality of Life of Hemodialysis Patients in Taiwan: A Multicenter Study. Blood Purify, 2004; 22: 490-98.
6. Leurmarnkul W, Meetam P. Development of a quality of life questionarie: SF-36 (Thi version) Thai J. Pharm. Sci, 2000; 24: 92-111.
7. Diaz-Buxo JA, Lowry EG, Lew N L, Zhang Lazarus JM. Quality of life evaluation using short forum 36: comparisonin hemodialysis and peritoneal dialysis patients. Am J Kidney Dis, 2000; 35: 293-300.
8. Wu A W, Fink NE, Marsh- manse JVR, Meyer KB, Finkelstein FO, Chapman MM et, al. Hanges innquality of life during hemodialysis and peritoneal dialysis treatment : generic and disease specific measures. J Am Sock Nephrol, 2004; 15: 743-53.
9. DE Oreo PB. Hemodialysis patient - Assessed functional health status predicts continued survival, hospitalization and dialysis - attendance compliance. Am J Kidney Dis, 1997; 30: 204-12.
10. Moreno F, Uracil FJ, Perez R, Valderrabano F. Controlled study on the improvement of quality of life in elderly hemodialysis patients after correcting end-stage renal disease-related anemia with erythropoietin. Am J Kidney Dis, 1996; 27: 548-56.
11. Midgrade G. From the development to the clinical application of a questionnaire on the quality of life in dialysis, the experience of the Italian collaborative DIA-QOL (Dialysis- Quality of life) Group. Nephrol Dial Transplant, 1998; 13: 70-5.
12. Vazquez I, Valderrabano F, Joffre R, Fort J, Lopez-Gomez JM, Moreno F, et al. Psychosocial factors and quality of life in young hemodialysis patients with low comorbidity. J Nephrol, 2003; 16: 886-94.
13. Sothic BS, Parthasarathi G, Namarari MG, Gourde KC. An assessment of the quality of life in hemodialysis patients using the WHOQOL-BREF questionnaire. Indian J Nephrol, 2008; 18: 141-9.
14. Julius M, Hawthorne VM, Carpentier-Alting P, Kinsley J, Wolfe RA, Port FK. Independence in activities of daily living for end stage renal disease patients: Biomedical and demographic correlates. Am J Kidney Dis, 1989; 13: 61-9?
15. Rebelled P, Ortega F, Altar JM, Due FA, Nava cues RA, Grande JA. Is the loss of health related quality of life during renal replacement therapy lower in elderly patients than in younger patients? Nephrol Dial Transplant, 2001; 16: 1675-80.
16. Lindquist R, Carlson M, Sodden PO. Coping strategies and quality of life among patients on hemodialysis and continuous ambulatory peritoneal dialysis. Scand J Caring Sci, 1998; 12: 223-30.
17. Saran DG, Rogers WH, Taylor AR, Mahoney CA, Ware JE Jr. Gender differences in medical treatment: The case of physician-prescribed activity restriction. Sock Sci Med, 1997; 45: 711-22.
18. Gregory N. Effect of higher hemoglobin levels on health-related quality of life parameters. Nephrol Knurs J 2003; 30:75-8.

19. Kalantar-Zadeh K, Koppel JD, Block G, Humphreys MH. Association among SF36 quality of life measures and nutrition, hospitalization, and mortality in hemodialysis. J Am Sock Nephrol, 2001; 12: 2797-806.

20. Maps DL, Lopes AA, Satayathum S, et al. Health related quality of life as a predictor of mortality and hospitalization: the Dialysis Outcomes and Practice Patterns Study (DOPPS). *Kidney Int*, 2003; 64: 339-349.

21. Leaf DE, Goldfarb DS. Interpretation and review of health-related quality of life data in CKD patients receiving treatment for anemia. *Kidney Int,* 2009; 75: 15-24.

22. Hedayati SS, Finkelstein FO. Epidemiology, diagnosis, and management of depression in patients with CKD. *Am J Kidney Dis,* 2009; 54: 741-752.