

ASSESSING THE QUALITY OF LIFE IN CHRONIC KIDNEY DISEASE IN A TERTIARY CARE HOSPITAL

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Received: 16 May 2023, Revised and Accepted: 22 July 2023

ABSTRACT

Objective: The aim of the study is to assess the quality of life (QOL) in chronic kidney disease (CKD). Primary Objective: The primary objective of the study is to assess the QOL using the kidney disease QOL-short form™ questionnaire in CKD. Secondary Objective: The secondary objective of the study is to assess the functional status of CKD patients.

Methods: A prospective, observational study was conducted for 6 months in a tertiary care hospital in South India. Of 201 patients enrolled in the study, 137 were males and 64 were females, aged 18 years or older, diagnosed with 3–5 and 5D stages of CKD were included in the study. Patient data were collected from the patient's medical records and QOL was assessed by the kidney disease quality of life-short form (KDQOL-SF) questionnaire. QOL rating % criteria was determined by Karnofsky performance status scale. The p=0.05 was considered significant.

Results: The present study has assessed all the domains of KDQOL in the study subjects. The result indicated that health-related QOL (HRQOL) is poor in patients in stage 5 and HD. Hence, QOL was found to be low for most dimensions in stages of CKD. No statistically significant difference was found among the patients in various stages of CKD.

Conclusion: The HRQOL of the patients was done using KDQOL-SF 36 (includes a 36-item health survey) and the study indicates that HRQOL declines with advanced stages of CKD (HRQOL is poor in patients who are on dialysis).

Keywords: Chronic kidney disease, Health-related quality of life, Quality of life, Karnofsky performance status scale.

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INTRODUCTION

Chronic kidney disease (CKD) is defined as kidney damage with a glomerular filtration rate <60 mL/min/1.73 m² for 3 months or more, irrespective of the cause [1]. It is the progressive loss of kidney function that requires either dialysis or transplantation [2].

Over the past few decades, health-care systems have started to increasingly notice the quality of life (QOL) due to the conceptual changes in health and disease [3].

The World Health Organization defines QOL as “a broader concept which is intricately affected by the person's physical health, level of independency, psychological state, social relationships, and other environmental factors” [4]. The health-related QOL (HROQL) is significantly affected in patients with CKD, irrespective of the stage of CKD [5].

The HRQOL is influenced by physical, psychological, and social domains. Each domain compasses various measures that assess the perception of symptoms, disability, and ability to function from the patient's perspective. HRQOL usually declines as the disease progresses, as they are prioritized mainly toward physical function [4].

The QOL in CKD is estimated using the kidney disease QOL (KDQOL)-short form™ questionnaire, a specific tool for assessment of the QOL in CKD patients, which includes two general and specific scales. The general QOL scale is inclusive of two subscales – emotional conditions and physical conditions. The physical subscale contains four areas general health, physical function, physical pain, and playing physical role. The emotional subscale comprises three areas playing emotional

role, social function, and mental health. This questionnaire will hence be a multidimensional and valid tool that addresses all areas of the SF-36 questionnaire [5].

Another parameter to assess the QOL is the Karnofsky performance status scale which is a widely used tool for assessment of functional impairment in CKD patients. It is used to compare the efficacy of different therapies and to assess the prognosis in the patients. The Karnofsky performance score (KPS) describes the functional status of patients using a comprehensive 11-point scale corresponding to percentage values ranging from 100% (means no evidence of disease and no symptoms) to 0% (death) [6].

Aims

The aim of the study is to estimate the QOL in CKD patients.

METHODS

This was a prospective observational study conducted in a 750-bed multispeciality hospital (Vijaya group of hospitals) located at Vadapalani, Chennai, for the period of 6 months (April–September 2019). The study was approved (Ref No: EC/LTR/2019/049(C)) by the Institutional Ethics Committee of the Vijaya group of hospitals. Patients were included in the study based on the inclusion and exclusion criteria after getting the patient consent and the required data were collected in a specially designed data entry form.

Study population

Outpatients of the nephrology department diagnosed with stage 3–5 and 5D CKD.

Study population size

Two hundred and one CKD patients were included in this study based on inclusion and exclusion criteria after getting the patient consent and the required data were collected in a specially designed data entry form.

Patient selection*Inclusion criteria*

- Gender: Both male and female
- Subjects who are diagnosed with 3, 4, 5, and 5D stages of CKD.

Exclusion criteria

- Renal transplant recipients
- Pregnant and lactating women
- Patients who are not interested participate in the study.

Data analysis

The collected data were analyzed; the QOL was determined by questioning the patient. The functional status of the patients is rated based on the Karnofsky performance status scale.

Statistical analysis

All the data collected were tabulated and analyzed statistically using Microsoft Excel and statistical software SPSS version 17.0. The * $p < 0.05$ was considered to be significant.

RESULTS

A total number of 201 patients were randomly selected in the study from the outpatient nephrology department based on the inclusion and exclusion criteria and the HRQOL was measured in the study population using KDQOL-SF.

Table 1 represents the QOL in the study population calculated according to the domains in KDQOL-SF

Karnofsky performance status scale

Among 201 patients, the overall functional status of the patients is calculated using a performance scale as shown in Table 2 and Fig. 1.

A statistically significant difference was not found in the performance score among different stages of CKD patients.

DISCUSSION

KDQOL-SF was used to assess the QOL and was found low for most dimensions in stages of CKD. No statistically significant difference was found among the patients in various stages of CKD.

The present study has assessed all the domains of KDQOL in the study subjects. Among the stages of CKD, physical functioning was found to be low in stages 3 and 4 patients with mean \pm standard deviation (SD) of 37.70 ± 21.54 and 37.28 ± 21.85 , respectively. The role of limitation and work status was found to be lowered in HD patients with mean \pm SD of 22.72 ± 41.97 and 49.35 ± 50.15 , respectively. The general health, social function, and energy/fatigue were found low in stage 5 with mean \pm SD of 38.04 ± 16.84 , 47.5 ± 25.52 and 49.05 ± 24.26 , respectively.

The quality of social interaction shows lower values for stage 5 as 63.33 ± 23.53 . The social support, emotional well-being, role limited due to emotional health, and the burden of disease mostly affecting HD patients with mean SD of 65.581 ± 30.11 , 63.06 ± 22.40 , 39.82 ± 49.16 and 45.53 ± 25.41 , respectively. Hence, the overall mental health composite is lowered in stage 5 and HD.

Table 1: Quality of life in the study population (using KDQOL-SF)

Components	Stage 3	Stage 4	Stage 5	Stage 5D	p-value
Physical health composite					
Physical functioning	37.70 \pm 21.54	37.28 \pm 21.85	39.44 \pm 20.51	38.21 \pm 21.29	0.94
Role – physical	36.69 \pm 48.29	25.48 \pm 43.68	35 \pm 48.30	22.72 \pm 41.97	0.42
Pain	51.45 \pm 16.38	52.35 \pm 18.45	44.75 \pm 19.96	44.28 \pm 20.64	0.06
General health	40.96 \pm 18.18	42.59 \pm 17.86	38.04 \pm 16.84	43.94 \pm 20.45	0.64
Social function	52.21 \pm 17.75	49.51 \pm 15.95	47.5 \pm 25.52	51.62 \pm 21.89	0.86
Energy/fatigue	57.41 \pm 21.74	52.69 \pm 21.18	49.05 \pm 24.26	50.32 \pm 22.04	0.71
Work status	55.64 \pm 49.88	54.80 \pm 50.00	60 \pm 50.26	49.35 \pm 50.15	0.05
Mental health composite					
Quality of social interaction	70 \pm 20.08	67.17 \pm 22.25	63.33 \pm 23.53	68.65 \pm 24.12	0.83
Social support	74.99 \pm 25.01	67.62 \pm 25.21	68.32 \pm 25.30	65.581 \pm 30.11	0.91
Emotional well being	69.41 \pm 16.92	66.46 \pm 17.78	66.8 \pm 19.21	63.06 \pm 22.40	0.63
Role emotional	56.45 \pm 49.71	49.35 \pm 50.15	50 \pm 50.63	39.82 \pm 49.16	0.02
Burden of kidney disease	53.52 \pm 19.99	50.12 \pm 21.06	45.62 \pm 24.60	45.53 \pm 25.41	0.34
Kidney disease problem					
Cognitive	71.50 \pm 20.02	67.88 \pm 19.66	68 \pm 19.36	65.28 \pm 20.21	0.93
Symptoms/problems	77.89 \pm 24.36	73.81 \pm 25.35	76.15 \pm 27.29	72.83 \pm 25.40	0.91
Sleep	54.75 \pm 20.94	56.25 \pm 21.85	50 \pm 21.24	54.96 \pm 22.33	0.62
Effects of kidney disease	69.70 \pm 23.61	65.65 \pm 25.21	61.07 \pm 27.03	65.02 \pm 27.42	0.86
Patient satisfaction					
Dialysis staff encouragement	50 \pm 0	50 \pm 0	50 \pm 0	75.64 \pm 18.73	0
Patient satisfaction	51.34 \pm 16.61	47.43 \pm 14.90	46.66 \pm 10.54	48.70 \pm 15.23	0.99

KDQOL-SF: Kidney disease quality of life-short form

Table 2: Karnofsky performance status scale

Score	Stage 3 (n=62)	Stage 4 (n=52)	Stage 5 (n=10)	Stage 5D (n=77)	p-value
0–40%					
Unable to care for self	0	1 (1.9)	0	4 (5.1)	0.55
50–70%					
Unable to work	40 (64.5)	35 (67.3)	7 (70)	57 (74)	
80–100%					
Able to carry on normal activity	22 (35.4)	16 (30.7)	3 (30)	16 (20.7)	

p-value calculated by ANOVA

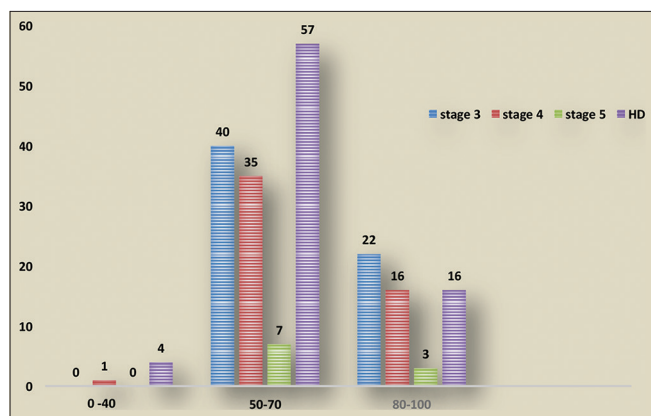


Fig. 1: Karnofsky performance status scale

The cognitive function and problem with the list of patients seem to be low in HD with a mean SD of 65.28 ± 20.21 and 72.83 ± 25.40 , respectively. Sleep and the effect of kidney disease mostly affect the stages of stage 5 with a mean \pm SD of 54.96 ± 22.33 and 65.02 ± 27.42 , respectively. Hence, kidney disease problem composite affects the patient in stage 5 and HD.

Dialysis staff encouragement is high in patients undergoing HD with a mean SD of 75.64 ± 18.73 and seems to be lowered in other stages since they do not undergo dialysis. Patient satisfaction mostly affects stage 5 with a mean SD of 46.66 ± 10.54 .

The result indicated that HRQOL is poor in patients on stage 5 and HD.

Similar results were found in the study conducted by Cruz *et al.* [7] and Manavalan *et al* [8].

CONCLUSION

The Karnofsky performance status scale is an artificial construct which measures a patient's activity level using an 11-point scale. The study evaluated KPS in patients with different stages of CKD. Statistically significant differences ($p > 0.05$) were not found in the performance score among the patients. Although patient's QOL is decreased, their overall functional status is not affected because of standard treatment and economic stability.

The HRQOL of the patients was done using KDQOL-SF 36 (includes a 36-item health survey) and the study concludes that HRQOL declines

with advanced stages of CKD, which indicated that HRQOL is poor in patients who are on dialysis.

ACKNOWLEDGMENT

We would like to thank the Vijaya Group of Hospitals for supporting the basic research ideas and also the resources provided.

AUTHOR CONTRIBUTIONS

All the authors have contributed equally.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest.

FUNDING

Nil.

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