

ORIGINAL ARTICLE

ASSESSMENT OF QUALITY OF LIFE IN CHRONIC KIDNEY DISEASE PATIENTS IN A TERTIARY CARE HOSPITAL FROM SOUTH INDIA

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ABSTRACT

Introduction: The study was conducted to assess the physical and mental health dimensions of quality of life in the various stages of chronic kidney disease.

Methodology: 100 patients in stages 1–5 of chronic kidney disease and 40 in hemodialysis were studied. Quality of life was rated by the Medical Outcomes Study Short Form 36- Item (SF-36) and functional status by the Karnofsky Performance Scale. Clinical, laboratory and sociodemographic variables were investigated.

Results: Quality of life decreased in all stages of kidney disease. The dimensions showing lower values in stages 1 and 2 were emotional role functioning and general health; in stage 3, physical role functioning and vitality; and in stages 4 and 5 and hemodialysis, physical role functioning and general health.

Conclusion: Quality of life is decreased in renal patients in the early stages of disease. No association was detected between the stages of the disease and the quality of life. It was possible to establish sociodemographic, clinical and laboratory risk factors for a worse quality of life in this population. It is a small study so cannot be applied in all aspects.

Keywords: Predialysis; Hemodialysis; SF-36; Chronic kidney insufficiency, Mental health, HRQoL.

INTRODUCTION

The incidence and prevalence of patients with chronic kidney disease (CKD) is increasing worldwide. 10% of the population worldwide is affected by chronic kidney disease (CKD), and millions die each year because they do not have access to affordable treatment.¹

According to the 2010 Global Burden of Disease study, chronic kidney disease was ranked 27th in the list of causes of total number of deaths worldwide in 1990, but rose to 18th in 2010.²

The average incidence of chronic kidney disease Stage 5 (CKD5) in developing countries is 150 per million, an incidence lower compared to the developed nations. In India, an estimated 100-220 per million population reach CKD5 and approximately 10% of these patients receive renal replacement therapy mainly due to socioeconomic limitations.³

When evaluating and improving health care in chronic diseases, symptoms, function in daily life and well-being are important patient outcomes. Health-related quality of life (HRQoL) is a significant key indicator of how a condition affects the patient's life.

HRQoL assessments can therefore identify possible problem areas related to health experiences. The concept of HRQoL builds on the subjective assessment of the impact of disease and its treatment across the physical, psychological and social domains of functioning and well-being as is multidimensional.⁴

CKD 1–3 are not usually considered to impact on the individual's health experience, although some disturbances may already have emerged. However, in CKD 4 the individual perceives an increasing amount of symptoms which may affect the HRQoL.⁶ Fatigue, muscle weakness, restless legs, cramps, itching, nausea and loss of appetite are frequently reported symptoms.⁷

Impaired HRQoL is well described among patients on dialysis treatment.⁸ Low HRQoL scores in dialysis patients are further strong and independent predictors of hospitalization and mortality.⁹ However, some studies have demonstrated deteriorated HRQoL also in early stages of CKD, especially in physical health but also in mental health.¹⁰

Few studies have examined HRQoL patterns in different stages of CKD which indicate that more

knowledge is needed. The objective of this study was therefore to evaluate HRQoL in patients with different stages of CKD up to initiation of dialysis treatment and to explore possible correlating and influencing factors and to signify need for multidisciplinary approach

It was assumed that HRQoL would decline progressively with impaired renal function but also that comorbidity, age, gender, inflammation, anemia, hypertension and altered nutritional markers would impact negatively on HRQoL.

METHODOLOGY

This was a cross-sectional study involving all the patients with chronic kidney disease and who are on hemodialysis from a tertiary care hospital , PSIMS &RF in chinoutpalli. . We excluded patients with recent history of severe sepsis requiring hospitalization, severe trauma, recent fracture and malignancy. Initially, a list of all patients with CKD (and another for those on hemodialysis) was made, and a consecutive number was given to each one. Then, a starting point was chosen at random and every fifth record (this interval was prespecified) on the list was selected.

The procedure was repeated until the estimated number of participants was reached. The subjects were interviewed prior to the medical visits or after the hemodialysis session in a separate room by two trained interviewers.

All the subjects gave written informed consent to participate in the study. To assess the QOL, we used the Medical Outcomes Study Short Form 36-Item Health Survey (SF-36), a generic instrument translated and validated in Brazilian patients with ESRD and kornoffsky scale. SF-36 instrument is divided into 8 dimensions: physical functioning, physical role functioning, pain, general health, vitality, social role functioning, emotional role functioning, mental health. The results of each scale vary from 0 to 100 (worse to best possible status). The physical and mental components of the 8 scales were combined into a physical component summary (PCS) and a mental component summary (MCS).

Chronic kidney disease (CKD) is defined as the presence of kidney damage or a glomerular filtration rate (GFR)<60 ml/min/1.73 m² for ≥3 months . Stages of CKD and levels of renal function are described in Table 1.

Table 1: Stages of chronic kidney disease (CKD) related to levels of kidney function, i.e., glomerular filtration rate (GFR) (National Kidney Foundation, 2002)⁵

CKD Stage	Description	GFR (ml/min/ 1.73 m2)
1	Kidney damage with normal or increased kidney function	≥ 90
2	Kidney damage with mildly diminished kidney function	60 – 89
3	Moderately reduced kidney Function	30 – 59
4	Severely decreased kidney function	15 – 29
5	Kidney failure	<15

RESULTS

Among the 140 patients in our study, 100 were ckd pts and 40 were on hemo dialysis. Predialysispts are divided into 5 stages and then grouped into 4 groups. The patients in the three groups of CKD stage and those on hemodialysis were similar with regard to their sociodemographic characteristics. With respect to laboratory variables, the groups differed in some characteristics.

Table2: Characteristics of study participants

CKD Stage	Cases
1&2	20
3	32
4&5	48
Hemodialysis	40

Table 3: Socio demographic profile

Variable	Stage1&2	Stage3	Stage4&5	Hemodialysis
Gender				
Male	11	19	28	22
Female	9	13	20	18
Mean Age (years)	52.8 ±10.5	58.3±16.9	58.1±16.5	52.5±15.9
Education				
Illiterate	4	4	6	5
School	8	17	25	25
College	8	11	17	10

Table 4 : Risk factors

Risk factors	Stage 1&2	Stage3	Stage4&5	Hemodialysis
Hypertension	4	6	13	9
Diabetes	5	7	13	13
Glomerulonephritis idiopathic	2	2	4	2
Hemoglobin (g/dl)	14.6±1.9	13.0±1.	11.8±1.7	11.2±1.8

Table 5: Quality of life according to stage of chronic kidney disease:

Variable	Stage1&2 Mean ± SD	Stage3 Mean ± SD	Stage4&5 Mean ± SD	Hemodialysis Mean ± SD
Hb	13 ± 2	12 ± 2	11 ± 1	10 ± 2
PF	79 ± 9	74 ± 8	68 ± 8	61 ± 11
PRF	68.7 ± 15.8	64.1 ± 12.6	57.8 ± 17.2	48.8 ± 21.1
BP	65 ± 9	59 ± 6	61 ± 7	60 ± 5
GH	57 ± 19	60 ± 10	53 ± 8	53 ± 7
VT	61 ± 13	54 ± 10	58 ± 7	55 ± 7
SRF	76.9 ± 16.0	71.9 ± 11.4	73.4 ± 12.5	61.9 ± 15.7
MH	63 ± 11	60 ± 5	62 ± 6	61 ± 4
PSC	67.5 ± 7.4	63.9 ± 5.8	59.6 ± 5.4	55.3 ± 7.2
MCS	62.4 ± 8.9	63.2 ± 7.9	66.4 ± 6.3	59.4 ± 6.7
KS	80 ± 7	84 ± 9	77 ± 7	70 ± 12

Table 6: Mean and Standard Deviation for PSC, McS and KS

Variable	Stage1&2 Mean ± SD	Stage3 Mean ± SD	Stage4&5 Mean ± SD	Hemodialysis Mean ± SD	Total Mean ± SD
PSC	67.4 ± 7.4	63.9 ± 5.8	59.6 ± 5.4	55.3 ± 7.2	60.4 ± 7.6
McS	62.4 ± 8.9	63.2 ± 7.9	66.4 ± 6.3	59.4 ± 6.7	63.1 ± 7.7
KS	80.2 ± 6.9	83.7 ± 8.7	76.9 ± 6.9	70.1 ± 11.9	77.0 ± 10.3

There were total 20 patients of CKD stage 1 &2. Maximum number of patients were of CKD stage 4&5. 40 patients were on Hemodialysis.

Table 3 shows basic socio demographic profile of study participants. Mean age of all participants was around 56 years.

QOL, as evaluated by the means of SF-36 domains, decreased with respect to all domains in all stages and no much difference in between groups.

The dimensions, emotional role functioning and general health showing lower values in stage 1 and 2; physical role functioning and vitality in stage 3; physical role functioning and general health in stage 4&5 and hemodialysis. No difference was observed among the groups regarding the PCS, and the MCS and kps (Table 4)

Evaluating sociodemographic data, patients who had education performed better than the others in mean PCS. No significant difference was found between the mean PCS and MCS and kps when the patients were divided by the etiology of CKD and the occurrence of hospitalization.

Figure 1 HRQoL domains and summary scores (M) in different stages of Chronic Kidney Disease (CKD). PF = Physical functioning, RP = Role physical, BP = Bodily pain, GH = General health, VT =

Vitality, SF = Social functioning, RE = Role emotional, MH = Mental health, PCS = Physical summary scores, MCS = Mental summary scores

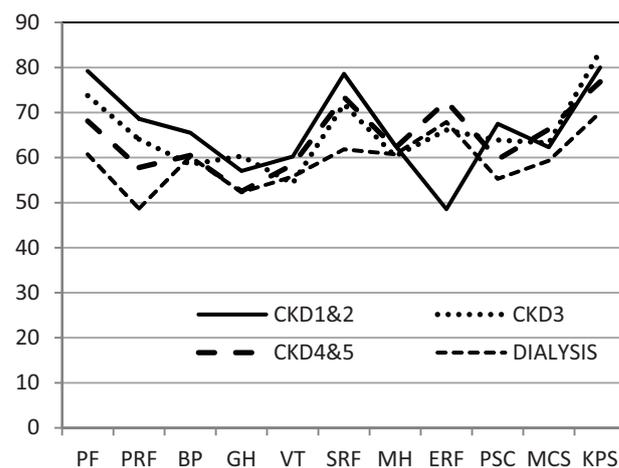


Figure 1: HRQoL domains and summary scores (M) in different stages of Chronic Kidney Disease (CKD)

From multivariate tests (MANOVA for combined variables p< 0.001 significant) of between subjects effect p< 0.001. With regards to age correlation significant at 0.01 level (2 tailed)

DISCUSSION

Our study showed that low QOL scores in the early stages of CKD, although a significant decrease in QOL progressively in the different stages of renal disease was not demonstrated. Mean values of the physical components reduced as early as stages 1–3 of CKD and mental health also seemed to be compromised, based on the mean values of the SF-36 scores, which were below 70 in most dimensions. Normal healthy populations usually have scores above this level in most studies. Few studies have evaluated the QOL of patients in the early stages of CKD. In these studies, a significant reduction in QOL was also not identified according to the progression of renal dysfunction. What is reported more frequently in the literature is a decrease in the physical domains of QOL in the advanced stages of CKD, which was also identified in our study.

The subjective assessment of QOL is multifactorial, and therefore the progression of renal dysfunction may not be the only determinant in its deterioration. In our study, more sociodemographic factors (age, gender, professional activity, income) were associated with decreased QOL than physical factors. Subjective factors such as adaptation to disease and treatment, satisfaction with the medical staff and social support may interfere directly in the assessment of QOL, but were not evaluated in this study.

Some limitations of the present study are the relatively small sample size to detect significant differences between the stages of CKD. The cross-sectional design of the study only permitted us to determine associations between variables and not causal relationships. Thus, longitudinal studies that take into account qualitative assessments should be conducted to seek a better understanding of the influence of the progression of CKD on QOL.

CONCLUSION

In this study, we observed decreased mental health of patients in the early stages of CKD. Early multidisciplinary team effort, especially with mental health

professionals improve the QOL. The health professionals responsible for the care provided to this population should ideally be familiar with and trained in the application of the QOL assessment tools, which may be valuable in the global assistance of these patients, even in the earlier stages of disease, and allow timely health care interventions in the course of disease.

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