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Quality of Life of Chronic Kidney Disease Patients on haemodialysis in a tertiary care centre

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ABSTRACT

Background: End-stage renal failure is a chronic disease that greatly impacts a patient's health-related quality of life mainly due to the imposed limitations in almost all domains of their daily lives affecting >10% of the general population worldwide, amounting to >800 million individuals. Haemodialysis consists of a complex procedure for patients that requires frequent hospital or dialysis centre visits, three times a week,

Objectives: To assess Quality of life and to find an association between QOL, socio-demographic factors, and clinical variables among chronic kidney disease patients on haemodialysis

Material and methods: The sample consisted of 89 patients undergoing haemodialysis. Data was collected by a specially designed questionnaire (KDQOL-36) which apart from the socio-demographic and clinical variables, also included the kidney disease variables for assessing the quality of life.

Results: The results indicated that haemodialysis patients' QOL was impacted by socio-demographic and clinical factors related to dialysis. The study majorly reported that these factors played a major role directly and indirectly, with social activities affecting more followed by emotional disturbances and physical activities.

Conclusion: QOL of haemodialysis patients can be improved by correctable factors like anemia, diabetes, and hypertension. Healthcare practitioners can create personalised interventions that are tailored to the needs of haemodialysis patients by having a deeper grasp of the variables like treatment of co-morbidities decrease in the number of hospitalizations, better management of anemia and decreasing the distance between home & dialysis center.

KEYWORDS: Chronic kidney disease, Haemodialysis, Quality of Life (QOL), emotional disturbances

INTRODUCTION

Reduced renal function, as evidenced by a glomerular filtration rate of <60 ml/min/1.73 m2 and/or indicators of renal damage lasting three months or more are characteristics of CKD [1]. Patients with this disease have low socioeconomic status, a greater risk of morbidity and mortality, and a lower QoL (Health-Related Quality of Life) [2, 3]. Chronic Kidney disease (CKD) is a leading cause of death worldwide, affecting >10% of the general population worldwide, amounting to >800 million individuals [1]. The burden of kidney failure deaths in India is higher than in other low- and middle-income economies with a similar socio-demographic index, implying that even with limited resources, India can reduce its mortality rate [4] According to a 2018 estimate, the number of chronic dialysis patients in India was 175,000, with a prevalence of 129 per million people [5]. According to a comprehensive review, roughly two-thirds of all kidney failure patients died in 2010 without undergoing dialysis [6]. According to 2012 research from the Indian CKD Registry, diabetes, and hypertension, were the most often recognised causes of kidney failure, with the cause unknown in roughly 16% of patients [7]. Such instances, dubbed CKD of unknown etiology, have been documented across the country, with the states of Andhra Pradesh, Odisha, Maharashtra, Goa, and Tamil Nadu having a disproportionately high burden [8]. QoL refers to a person's view of his or her situation in life, as well as the cultural context and values into which he or she is immersed, as well as their goals, expectations, standards, and concerns. It has to do with one's physical condition, mental state, independence, social interactions, beliefs, and environmental uniqueness. As a result, it includes the consequences of the disease and/or therapy on several aspects of life [9].Quality of life, sociodemographic factors, and comorbidities have all been linked in studies of chronic renal patients on haemodialysis [10–12] . Patients with CKD are more likely to develop depression as a result of psychosocial and biological changes connected to dialysis treatment. This population is thought to have three to four times the rate of this disorder as the general population and two to three times the rate of people with other chronic diseases. Depression also raises the risk of renal disease development, as well as poor clinical outcomes and mortality [13]. Although there is a well-established link between depression and QoL in CKD, it can be further explored in terms of the commitment of each domain that incorporates it [14].

METHODOLOGY

This cross-sectional study was conducted among patients with chronic kidney disease who were initiated and on maintenance haemodialysis in the dialysis unit of Aarupadai Veedu Medical College, tertiary centre Puducherry from January 2022 to June 2022.

Patients who were above 18 years diagnosed with CKD and on dialysis for at least 3 months and who are medically stable without any mental/cognitive deterioration were included.

Data Collection: The data were collected using a pre-designed pre-tested questionnaire KDQOL-36 which was explained to the patient/caregiver after obtaining informed consent in the regional language. Quality of life was assessed using the KDQOL-36 Questionnaire which contains 36 items/questions divided into 2 components i.e., the general component has 12 QOL questions based on SF-12 (a short version of SF-36) and the other is a specific 24-question component about kidney disease. Data was collected through structured interviews during the patient's dialysis sessions.

Statistical Analysis: The collected data were coded, entered into a Microsoft Excel worksheet and exported to SPSS, and analyzed using SPSS version 21 and presented as percentages in categories and then presented as tables and graphs. Chi-square and Pearson tests for correlation were used for the test of significance.

RESULT

The study consisted of 51 (57.3%) males and 38 (42.7%) females with the mean age being 52.06± 15.27 years and the majority (31.5%) were above 60 years. In the study 36% were illiterates and the remaining 68% were educated up to various levels. Among the 89 subjects, 65 were unemployed/homemakers and 24 were employed with a majority of the subject per capita income being >7500 rupees. Most of the subjects reported the distance between the residence and the hospital/ health care centre was between 5 – 10 KMS as shown inTable 1 .

All these factors were statistically significant in comparison with the quality of life (table 6). Hypertension was the most common comorbidity followed by diabetes mellitus and anaemia which seem to be aggravating factors. 21 Patients with anemia received erythropoietin and iron injections and patients with severe anemia (Hb < 6gm/dl) required blood transfusions. Among the 89 subjects 18 had heart diseases (table 2). In the study half of the subjects had a history of previous hospital admission in the past 6 months. Among the 89 subjects, 53 (59.7%) underwent haemodialysis twice a week, 28 (31.5%) once a week and 7 (7.8%) underwent thrice a week as shown in Table 2

[Table 1 about here.]

[Table 2 about here.]

At the time of the interview, the subjects have been asked about the last 4 weeks, many felt calm and peaceful, most of them (45 subjects) had a lot of energy most of the time, 22 and 19 subjects felt depressed a good bit of time and most of the time respectively. Physical and emotional problems played a role in 58 patients when asked about social activities like meeting relatives, friends or any gathering as shown in Table 3 .

17 of the 89 subjects reported their kidney disease interferes too much with their life, 4 replied that too much of their time is spent dealing with kidney disease, 7 of them feel frustrated and 10 felt burdening the family as seen in Table 4.

[Table 3 about here.]

[Table 4 about here.]

During the last four weeks, most of them were bothered somewhat to moderately about soreness in the muscles, chest pain, cramping, itchy and dry skin, shortness of breath, fatigue, lack of appetite and energy, numbness and nausea (table 5).

Daily life has been affected in a certain way which was somewhat to moderately bothering subjects, mainly fluid retention, restriction of diet, and reduced ability to work and to travel. 44 of them were somewhat bothered by continuously being dependent on doctors and other medical staff, 50 reported stress due to the disease, most of them were not about their sex life and some were bothered about their physical appearance as shown in Table 5.

[Table 5 about here.]

All the risk factors i.e socio-demography and comorbidities were highly significant in comparison with the overall quality of life. The subjects have reported the above-mentioned factors were playing a vital role in fueling the deterioration of life Table 6.

[Table 6 about here.]

DISCUSSION

In this study, males were predominant (57.3%) as compared to females. The mean age of subjects who were on dialysis was 52.06± 15.27 years. The present study findings were comparable to a study by Anandraj J et al. in which the majority (59.3%) of the study population was in the 35 – 60 years of age group and the majority (68.6%) were males [15]. They also concurred with a study by Alazmi MA et al. and Veronica GG et al. in which the mean age of the study population was 49.5 years & 58.8 years respectively and males constituted 47.1% and 57.9% of the study population respectively [16, 17]The scores are as expected for any person in a community with low education, low standards of living and poor socioeconomic status. The study by K. Gerasimoula et al. [18]reported almost 100% literacy whereas 70% were educated to a certain level in the present study. Another similar finding was most of the subjects belonged to the lower middle class. As in the present study, 73% were unemployed and K. Gerasimoula et al. [18] reported 25% were unemployed. The socio-demographic factors appear to have an impact on the QOL of the patient directly or indirectly.

In this study, almost (51.6%) of them felt good and fair (31.4%) regarding their health. Around 65.1% limited themselves to little and 32.5% limited to a lot of physical activity. The majority have also reported that their regular daily activity and accomplishment of work were reduced. Almost 41.5% reported Emotional disturbance and carrying out any kind of work carefully and pain caused a certain level of interference or disturbance in the majority (26.9%) of the subjects.

The present study findings were similar to Alazmi MA et al. in which Occupational/professional duties and tasks were affected in 5/6 studied patients due to chronic haemodialysis [16] These findings differed from a study by Ajeebi A et al. in which the mean domain scores of the Physical domain were higher (49.4) as compared to the mental domain (38.7) [19]

In this study, in the past 4 weeks, many have felt calm and peaceful and had a lot of energy most of the time. Although 46% of subjects felt depressed frequently.patients and interfered in their social activities like meeting relatives, friends or any gathering.

The present study findings were similar to a study by Alazmi MA et al. in which family relationships and communications in 83.3% of studied patients were affected by chronic haemodialysis [16]. Similar findings were also observed in a study by Azka L et al. in which using SF-36 scoring, the mean score of quality of life was 47.29±27.05. The mean score for Physical Health Composite Summary (PCS) was 37.05±8.7 and Mental Health Composite Summary (MCS) was 43.44±9.24 Thirty-Eight cent (38%) patients had perceived health as above average and 62% thought that their health was below average [20]

In the present study, 19.1% of the subjects reported their kidney disease interferes too much with their life and 11.2% felt burdening the family. During the last four weeks, most of them were bothered somewhat to moderately about soreness in the muscles, chest pain, cramping, itchy and dry skin, shortness of breath, fatigue, lack of appetite and energy, numbness and nausea and it was also observed that daily life has been affected in a certain way which was somewhat to moderately bothering subjects, mainly fluid retention, and restriction of diet, reduced ability to work and to travel.

The present study findings were comparable to a study by Yaya et al. in which the average score of SF — 36 fields was 72.5 for physical pain, 64.2 for general health and 80.4 for mental health. The score was 82.5 for life and relationship with others. Higher scores depicted the domain is affected [21]. Similar findings were noted in a study by AlHajim SA et al. in which the present study showed that the physical domain of QOL was the most affected, followed by psychological, environmental and social domains [22].

The present findings concurred with a study by Gerasimoula K et al. in which the majority had difficulty in relations with the social environment and family environment [18]. This finding corroborated with a study by Utsav Joshi et al in which the environmental domain (53.17±15.59), was most commonly affected followed by the psychological domain (51.23±18.61), social domain (49.86±21.64), and physical domain (45.93±16.90) [23]. Thenmozzhi P also observed that there is role limitation caused by physical health problems, role limitation caused by emotional health, and burden of kidney disease scales yielded the lowest scores [24].

CONCLUSION

The study concluded in general majority felt good and fair about their health. 38% of patients have reported that their kidney disease has impeded their life too much with social activities getting affected more followed by emotional disturbances and physical activities. QOL of haemodialysis patients can be improved by correctable factors like Anemia, Diabetes and hypertension. Healthcare practitioners can create personalised interventions that are tailored to the needs of haemodialysis patients by having a deeper grasp of the variables influencing their quality of life like treatment of co-morbidities, decrease in the number of hospitalizations, better management of Anemia, promoting occupational and vocational rehabilitation and decreasing the distance between home & dialysis centre.

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Characteristics	Frequency	Percent
<20 years	3	3.4
21- 30 years	6	6.7
31- 40 years	11	12.7
41- 50 years	23	25.8
51- 60 years	18	20
>60 years	28	31.5
Gender		
Male	51	57.3
Female	38	42.7
Education		
Illiterate	32	36
Primary	18	20.2
Secondary	19	21.4
Graduate	20	22.4
Occupation		
Unemployed	65	73
Employed	24	27
Per capita income		
<2500	15	16.9
2500- 7500	24	27
>7500	50	56.1
Distance between residence and hospital		
<5 KM	25	28
5- 10 KM	37	41.6
>10 KM	27	30.4

Table 1: Sociodemographic profile distribution

Comorbidities and Dialysis Status	**No. (N=89)**	**Percent**
Comorbidities		
Anemeia	33	37
Diabetes mellitus	34	38.2
Hypertension	44	49.4
Heart diseases	18	20.2
Previous admission		
None	41	46
Once	20	22.5
Twice	4	4.6
≥Thrice	23	25.9
Dialysis once a week	28	31.5
Dialysis twice a week	53	59.7
Dialysis thrice a week	7	7.8

Table 2: Distribution according to comorbidities, previous admission and dialysis status

Felt in the last 4 weeks	All time	Most time	A good bit of time	Sometime	Little bit	Total
felt calm and peaceful	2	24	17	16	-	59
have a lot of energy	1	45	10	2	3	61
felt Sad and depressed?	1	19	22	8	2	52
interfered with your social activities	-	17	23	11	8	59

Table 3: How you feel and how things have been with you during the past 4 weeks

Patients’ feelings about kidney disease (true/false)	Interferes too much	Too much of my time spent	feel frustrated	feel burden on my family
Definitely true	-	1	3	3
Mostly true	17	4	4	7
Don’t know	28	35	13	26
Mostly false	12	19	40	24
Definitely false	1	-	-	1
Total	58	59	60	61

Table 4: Patients’ feelings about kidney disease (true/false statement)

The extent of Symptoms and Difficulties	**Not at all bothered**	**Somewhat bothered**	**Moderately bothered**	**Very much bothered**	**Total**
Muscle Soreness	17	25	15	3	60
Chest pain	44	13	1	1	59
Cramps	8	31	15	2	59
Itchy skin	31	28	-	-	59
Dry skin	27	24	-	-	51
Shortness of breath	39	20	-	-	59
Faintness or dizziness	39	18	1	-	58
Lack of appetite	8	50	2	-	60
Lack of energy	18	37	4	-	59
Numbness in limbs	31	27	1	-	59
Nausea or Stomach upset	21	38	1	-	60
Problems with access or catheter site	10	49	3	1	63
Effects of Kidney Disease on Your Daily Life					
Fluid restriction	8	49	1	1	59
Dietary restriction	8	45	3	-	56
ability to work	18	36	5	-	59
ability to travel	19	34	5	-	58
Being dependent	9	44	6	-	59
Stress or worries	6	50	2	-	58
Sex life	39	18	-	-	57
Personal appearance	16	42	-	-	58

Table 5: Extent of symptoms, difficulties and effect of chronic kidney disease on patients' daily life

Characteristics	Quality of life	Mean	SD	95% Confidencer Interval		p-value
Education	Good (60)	1.63	0.75	2.36	1.75	<0.001*
	Poor (29)	3.69	0.47	2.31	1.79	
Occupation	Good (60)	1		0.92	0.72	<0.001*
	Poor (29)	1.82	0.38	0.97	0.68	
Distance from residence to hospital	Good (60)	1.58	0.49	1.54	1.15	<0.001*
	Poor (29)	2.93	0.25	1.5	1.18	
Per capita income	Good (60)	2.1	0.77	1.18	0.61	<0.001*
	Poor (29)	3	-	1.1	0.69	
Anaemia	Good (60)	1.45	0.5	0.73	0.36	<0.001*
	Poor (29)	2	-	0.67	0.42	
Diabetes mellitus	Good (60)	1.43	0.49	0.75	0.37	<0.001*
	Poor (29)	2	-	0.69	0.43	
Hypertension	Good (60)	1.26	0.44	0.9	0.56	<0.001*
	Poor (29)	2	-	0.84	0.61	

SD: Standard Deviation. 95% CI: 95% Confidence Interval. *Statistically significant.

Table 6: Association between Quality of Life and sociodemographic factors and risk factors