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ASSESSMENT OF PSYCHIATRIC ILLNESSES IN CKD PATIENTS AND THEIR IMPACT ON QUALITY OF LIFE

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ABSTRACT

Background- Patients with CKD are subjected to extremely high levels of stress on all fronts, including the physical, the psychological, the emotional, and the economical. This study was thus conducted to assess psychiatric illnesses in CKD patients and their impact on quality of life.

Methodology- This study was conducted as an observational cross sectional study on patients with CKD seeking care at Department of Medicine, Gandhi Medical College, Bhopal. All the patients were subjected to detailed general and physical examination and findings were documented. Quality of life in CKD patients was assessed using WHO QoL scale. Psychiatric illness were assessed using Brief psychiatric rating scale.

Results-The present study was conducted on 200 cases with CKD with mean age of 43.90±15.753 years. Overall mean quality of life irrespective of domains was 52.72±4.31. Most common psychiatric illness in patients with CKD was depressive mood(99%), and 79.5% had mild depressive mood. We observed a significantly weak negative correlation of uncooperativeness with social domain($r=-0.142$; $p<0.05$). Environmental domain showed a weak positive correlation with guilt feeling and grandiosity($r=0.148$ and 0.147 respectively; $p<0.05$).

Conclusion-The prevalence of mental disease was substantially higher among CKD patients. Patients with CKD were more likely to experience depression followed by anxiety. Patients with a CKD diagnosis are at a much higher risk for the emergence of mental health issues. There was a statistically significant correlation between chronic renal disease and the physical, social, environmental, and psychological dimensions of quality of life in the population we examined. Quality of life was also observed to be diminished in CKD patients(QOL).

Keywords-Quality of life, Chronic renal disease, psychiatric illness, brief psychiatric scale, depression.

INTRODUCTION

Patients who suffer from chronic medical issues frequently need to make adjustments to their goals, way of life, and employment situations. Before coming to terms with their situation, many people go through a period of mourning. However, some people experience persistent suffering, which can lead to the development of psychiatric disorders, the most frequent of which are anxiety and depression.[1] Patients suffering from CKD are dependent on medical procedures and a team of trained medical professionals for the rest of their lives. CKD is a multidimensional disorder that can cause both physical and psychological issues for the patient. The medical condition known as CKD has such a high degree of reliance on the medicine that is used for ongoing maintenance.[2] In addition to this, there are significant limitations placed on the kinds of meals and fluids that can be consumed. Patients who have renal failure frequently also have a multitude of other co-existing medical illnesses and take a wide variety of drugs. All of these factors combine to play a significant part in the development of a wide variety of psychiatric morbidities in CKD patients.[3]

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According to prior research, individuals with CKD are more likely to suffer from affective disorders, specifically depression, as well as organic brain diseases(such as delirium and dementia), substance use disorders, anxiety, and other mental illnesses. Previous research has found that the prevalence of psychiatric disease in CKD patients ranges from about 32 percent to 40 percent overall.[4] Depression can range from 6.5% to 63% of patients whereas prevalence of anxiety problems in patients who have undergone a kidney transplant is anywhere from 10–70%.[5]

Patients with CKD are subjected to extremely high levels of stress on all fronts, including the physical, the psychological, the emotional, and the economical. Because of their dependence and disabilities, these patients may develop a pessimistic view as a result of this. Psychiatric comorbidity in patients with CKD is a crucial factor in determining the success of treatment since it is linked to poor medication adherence. Therefore, it is essential to determine the prevalence of psychiatric illnesses in patients who have CKD as well as the severity of those disorders. It is possible to improve treatment adherence, quality of life, and the overall prognosis of an illness by correctly identifying and treating mental comorbidity. This study was thus conducted to assess psychiatric illnesses in CKD patients and their impact on quality of life.

METHODOLOGY

This study was conducted as an observational cross sectional study on patients with CKD seeking care at Department of Medicine, Gandhi Medical College, Bhopal during the study period of 18 months i.e. from January 2021 to June 2022. All patients of CKD coming to Hamidia Hospital, Bhopal belonging to 18 to 65 years of age were included in the study whereas all CKD patients on Haemodialysis and diagnosed cases of psyciatric disorders were excluded from the study.

Sample size

Sample size was estimated using the formula-

$n = \frac{z2(pq)}{d2}$

Where; z=Variant, p= probability of success, q= probability of failure, d= allowable error

n= 200

After oobtaining ethical clearance from Institute's ethical committee, all the cases fulfilling inclusion criteria were enrolled and written consent was obtained from them. Data regarding sociodemographic variables, clinical history, etc. was obtained from all the study participants and entered in proforma. All the patients were subjected to detailed general and physical examination and findings were documented. Quality of life in CKD patients was assessed using WHO QoL scale across 4 domains.[5] Psychiatric illness were assessed using Brief psychiatric rating scale.[6]

All the patients were subjected to detailed investigations and USG. Staging of CKD was done based upon eGFR.

Statistical Analysis

Data was recorded in Microsoft Excel programme and statistical analysis was performed by the SPSS program for Windows, version 25(SPSS, Chicago, Illinois). Continuous variables were presented as mean±SD, and categorical variables were presented as absolute numbers and percentage. Pearson correlation was used to correlate the quality of life with psychiatric illness in patients with CKD. $P<0.05$ was considered statistically significant.

RESULTS

The present study was conducted on a total of 200 cases with CKD with mean age of 43.90±15.753 years.

Table 1- Distribution of cases according to Baseline variables

Sociodemographic variables		Frequency(n=200)	Percentage
Age(years)	≤20	13	6.5
	21-40	73	36.5
	41-60	88	44.0
	61-80	21	10.5
	>80	5	2.5
Sex	Male	109	54.5

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	Female	91	45.5
Investigations	Creatinine(mg/dl)	2.58±1.24	
	Urea(mg/dl)	108.52±19.99	
	Urine Output(24 Hr)(ml)	816.08±282.71	
	Sodium	128.45±9.07	
	Potassium	4.21±0.63	
	eGFR	38.34±15.03	
USG	RPD 1 changes	104	52.0
	RPD 2 changes	96	48.0
Stage of CKD	Stage 1	2	1.0
	Stage 2	36	18.0
	Stage 3a	43	21.5
	Stage 3b	28	14.0
	Stage 4	69	34.5
	Stage 5	22	11.0

Majority of patients belonged to age range of 41 to 60 years(44%) and we reported male predominance for CKD, with male to female ratio of 1.2:1. About 28% cases with CKD were illiterate and 22.5% cases were educated upto higher secondary school. Mean urea and creatinine was 108.52±19.99 and 2.58±1.24 mg/dl respectively. Urine output was 816.08±282.71 ml over 24 hours and eGFR was 38.34±15.03. USG revealed RPD 1 changes in 52% cases. Majority of patients with CKD were diagnosed to be suffering from stage 4(34.5%).

Table 2- Quality of life in patients with CKD

Quality of life	Mean	Standard deviation
Physical Domain	40.57	5.89
Psychological Domain	46.75	10.27
Social Relationship Domain	71.80	9.57
Environmental Domain	51.75	6.28
Overall	52.72	4.31

Mean physical, psychological, social and environmental quality of life was 40.57±5.89, 46.75±10.27, 71.80±9.57 and 51.75±6.28 respectively. Overall mean quality of life irrespective of domains was 52.72±4.31.

Table 3- Psychiatric illness in patients with CKD

Brief psychiatric rating scale	Absent	Very mild	Mild	Moderate	Moderately severe	Severe
Somatic concern	40(20%)	69(34.5%)	41(20.5%)	35(17.5%)	15(7.5%)	0(0%)
Anxiety	14(7%)	34(17%)	27(13.5%)	44(22%)	57(28.5%)	24(12%)
Emotional withdrawal	117(58.5%)	83(41.5%)	0(0%)	0(0%)	0(0%)	0(0%)
Conceptual disorganization	199(99.5%)	1(0.5%)	0(0%)	0(0%)	0(0%)	0(0%)
Guilt feelings	53(26.5%)	76(38%)	38(19%)	22(11%)	11(5.5%)	0(0%)
Tension	45(22.5%)	97(48.5%)	41(20.5%)	16(8%)	1(0.5%)	0(0%)
Mannerisms & posturing	164(82%)	36(18%)	0(0%)	0(0%)	0(0%)	0(0%)
Grandiosity	157(78.5%)	27(13.5%)	16(8%)	0(0%)	0(0%)	0(0%)
Depressive mood	2(1%)	25(12.5%)	159(79.5%)	14(7%)	0(0%)	0(0%)
Hostility	166(83%)	15(7.5%)	16(8%)	3(1.5%)	0(0%)	0(0%)
Suspiciousness	180(90%)	20(10%)	0(0%)	0(0%)	0(0%)	0(0%)

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Hallucinatory behavior	179(89.5%)	17(8.5%)	4(2%)	0(0%)	0(0%)	0(0%)
Motor retardation	43(21.5%)	146(73%)	11(5.5%)	0(0%)	0(0%)	0(0%)
Unco-operativeness	143(71.5%)	51(25.5%)	6(3%)	0(0%)	0(0%)	0(0%)
Unusual thought content	93(46.5%)	94(47%)	13(6.5%)	0(0%)	0(0%)	0(0%)
Blunted effect	84(42%)	114(57%)	2(1%)	0(0%)	0(0%)	0(0%)
Excitement	200(100%)	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Disorientation	151(75.5%)	49(24.5%)	0(0%)	0(0%)	0(0%)	0(0%)

Most common psychiatric illness in patients with CKD was depressive mood(99%), and 79.5% had mild depressive mood. Motor retardation was found in 78.9% cases whereas tension was reported in 77.5% cases. Other psychiatric illness in decreasing proportions were guilt, blunted effect, unusual thoughts, emotional withdrawal, uncooperativeness, disorientation, Grandiosity, Mannerism and posturing, Hostility, Hallucinatory behavior, suspiciousness and conceptual disorganization. Excitement was noted in none of the cases.

Table 4- Correlation of Brief psychiatric rating scale with quality of life

Brief psychiatric rating scale	Physical		Psychological		Social		Environmental		Total	
	Correlation	P value	Correlation	P value	Correlation	P value	Correlation	P value	Correlation	P value
Somatic concern	-0.099	0.162	0.023	0.751	0.007	0.921	0.077	0.278	0.012	0.871
Anxiety	0.028	0.696	-0.011	0.874	-0.038	0.592	0.027	0.704	-0.009	0.905
Emotional withdrawal	0.115	0.104	-0.047	0.505	-0.109	0.125	-0.04	0.565	-0.064	0.366
Conceptual disorganization	0.041	0.561	-0.019	0.789	-0.021	0.770	-0.02	0.781	-0.016	0.823
Guilt feelings	0.090	0.208	0.028	0.696	-0.062	0.387	.148*	0.037	0.067	0.347
Tension	-0.038	0.589	-0.001	0.987	-0.023	0.745	-0.044	0.538	-0.043	0.548
Mannerisms and posturing	0.074	0.297	0.049	0.495	-0.038	0.594	-0.05	0.502	0.016	0.824
Grandiosity	0.044	0.536	0.089	0.212	0.021	0.763	.147*	0.038	0.133	0.060
Depressive mood	-0.010	0.892	0.057	0.421	-0.021	0.770	-0.048	0.501	0.002	0.980
Hostility	0.027	0.708	0.113	0.112	0.122	0.086	0.064	0.367	0.167*	0.018
Suspiciousness	0.019	0.792	-0.075	0.293	0.058	0.418	0.024	0.737	0.003	0.971
Hallucinatory behavior	0.021	0.763	-0.037	0.599	0.033	0.647	-0.084	0.236	-0.028	0.698
Motor retardation	0.093	0.189	-0.013	0.855	0.077	0.279	0.066	0.352	0.091	0.200
Unco-operativeness	-0.034	0.634	0.110	0.122	-.142*	0.045	0.050	0.484	-0.007	0.922
Unusual thought content	0.117	0.099	0.078	0.270	0.073	0.303	0.003	0.971	0.128	0.070
Blunted effect	0.033	0.645	-0.072	0.308	0.121	0.087	-0.04	0.576	0.021	0.768
Excitement	-	-	-	-	-	-	-	-	-	-
Disorientation	-0.041	0.560	-0.005	0.943	-0.021	0.768	-0.09	0.168	-0.065	0.364

We observed a significantly weak negative correlation of uncooperativeness with social domain($r=-0.142$; $p<0.05$). Environmental domain showed a weak positive correlation with guilt feeling and grandiosity($r=0.148$ and 0.147 respectively; $p<0.05$).

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DISCUSSIONS

Patients who suffer from chronic renal disease are more likely to experience neuropsychiatric issues, such as clinical depression, anxiety disorders, and cognitive impairment(CKD). These illnesses frequently result in a decline in one's quality of life, as well as extended hospital stays and increased mortality rates. Several hypotheses have been put forward over the course of the past few decades in an effort to explain the link that exists between CKD and neuropsychiatric diseases. The most prevalent theory is one that accounts for the presence of cerebrovascular disease as well as an accumulation of uremic toxins in the bodies of adult patients who have CKD.[7] The current research was conducted on a total of 200 patients who were diagnosed with CKD in order to evaluate the influence that psychological diseases have on patients' quality of life.

Patients with CKD had their quality of life evaluated using the WHO QoL scale, and overall mean quality of life, regardless of domains, was calculated to be 52.72±4.31 points. Psychiatric illness in patients with end-stage renal disease could be attributed to the multiple stressors they face, such as financial problems, difficulty in holding down a job, waning a sexual desire and impotence, fear of dying, limitations on fluid and food intake, itching, fatigue, limitations on time, risk of unemployment, transportation difficulties, loss of bodily function, length of dialysis treatment, and limitations on physical activities.

Patients with a CKD are at an extremely high risk for developing depression. Our study shows that among people with CKD, depressive symptoms were extremely common(99%), with 79.5% of those affected suffering from mild depression. Palmer et al in their systematic review involving 55,982 patients of CKD found that 26.5% of patients with CKD had depressive symptoms when evaluated using screening questionnaires, and that 21.4% of patients with CKD had clinically significant depression when evaluated using clinical interview.[8] The depression's prevalence in CKD patients is 2 to 3 times higher than in people with other chronic conditions as diabetes, CAD, or COPD. According to two sources.[9,10] Due to this, CKD patients have around a 1.5-fold greater rate of antidepressant prescriptions than the overall population.[11] CKD-related depression is linked with a number of people characterstics, socioeconomic, and clinical risk factors, including but not limited to, female sex,younger age, Black race, Hispanic ethnicity, poor education, lower income, unemployed, hypertension, smoking habit, and diabetes.[12,13] Because these risk factors appear to be more common in CKD patients than with the general population, it is probable that the increased incidence of depressive symptoms in the CKD population can be attributed, at least in part, to them.[14]

Anxiety is another major psychological issue reported in CKD people. In roughly 93% and 80% of the cases, respectively, anxiety and somatic concerns were reported. Loosman et al documented anxiety in 45.7% patients on dialysis (HADS).[15] Lee et al reported anxiety in 24.8% of patients at stage 3, 29.9% of patients at stage four, and 34.3% of patients at stage five.[16]

We found that despite the fact that patients who did not experience emotional withdrawal had a significantly higher mean quality of life across all psychological, social, environmental, and total categories. The observed link between conceptual disorganisation and quality of life was not statistically significant($p>0.05$), despite the fact that patients who lacked conceptual disorganisation had a higher mean quality of life across psychological, social, environmental, and total dimensions. The overall quality of life for patients with mild conceptual disorganisation was higher. Consistent with results of earlier studies, Kafale et al[17] research showed a reduction in quality of life across every stages of CKD. Similar findings have been reported by other researchers.[18,19]

Uncooperativeness was shown to have a marginally significant inverse relationship with the social dimension($r=-0.142$; $p<0.05$). A much less strength was observed in this connection than was anticipated. The correlations between environmental domain and guilt feeling and grandiosity were weak but statistically significant($r = 0.148$ and 0.147, respectively; $p <0.05$). Our research showed, however, that the link between animosity and improved wellbeing was weaker than we had anticipated(p less than 0.05). Elhadad et al. found that patients whose quality of life scores were considerably poorer than employed patients were those who had either stopped working after starting dialysis or had never worked before starting dialysis.[20] These results corroborate those of Kalender et al.(2007), who discovered that patients who were employed enjoyed a better quality of life than those who were not. From this, we can infer that boosting one's activity and productivity levels can help to enhance life satisfaction.[21]

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Our investigation revealed a robust link between sexual engagement and happiness. These results are consistent with Pagels et al.[19] in which the authors found no correlation between gender and HRQoL using the SF-36.

There are a number of caveats to the present study, including its small sample size and the difficulty of recruiting people in the early stages of CKD. Since the study was cross-sectional in nature, we could only look for associations between variables rather than the underlying causal relationships between them. To learn more about how CKD affects quality of life over time, it is necessary to do longitudinal studies that incorporate qualitative assessments.

CONCLUSION

It was deduced that the prevalence of mental disease was substantially higher among CKD patients. Patients with CKD were more likely to experience depression followed by anxiety. Patients with a CKD diagnosis are at a much higher risk for the emergence of mental health issues. There was a statistically significant correlation between chronic renal disease and the physical, social, environmental, and psychological dimensions of quality of life in the population we examined. Quality of life was also observed to be diminished in CKD patients(QOL). Beginning training programmes with the aim of early diagnosis and treatment of psychiatric disorder in ESRD patients is essential.

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