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DEPRESSION AND ANXIETY DISORDERS IN PATIENTS OF CHRONIC KIDNEY DISEASE UNDERGOING HAEMODIALYSIS

Psychiatry

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ABSTRACT

Introduction: Chronic renal disease (CKD) is a devastating and life-threatening illness. Haemodialysis is one of the renal replacement treatments for CKD patients. chronic renal illness has significant impact on the social and psychological states of patients making them vulnerable to psychiatric disorders. Therefore, the purpose of this study was to assess the frequency of depression and anxiety in these patients. **Materials and Methods:** The present study was a cross-sectional study on 71 CKD patients undergoing haemodialysis. Patients were selected using the purposive sampling method. The data gathering tools in this study included demographic information form, MINI and the Hamilton depression and anxiety rating scales. The data were analysed using descriptive statistics (percentage, mean, and standard deviation) as well as Chi-square test in SPSS version 20. **Results:** In 71 patients, 70.4% of patients had depression and 63.2% had anxiety using HADS and HARS rating measures. Most of these cases had mild depression and mild anxiety scores. There was no significant association found between the depression and anxiety scores and age, gender, marital status, and income and other demographic and clinical factors. **Conclusion:** People with CKD undergoing haemodialysis had significantly high depression and anxiety scores.

KEYWORDS

Chronic kidney disease, dialysis, depression, anxiety

INTRODUCTION

Chronic kidney disease (CKD) manifests as kidney damage reflected by imaging or proteinuria, decreased kidney function estimated by glomerular filtration rate that persists for more than three months.[1] CKD prevalence taking into consideration all the five stages of the disease is 13.4% globally. Though prevalence of CKD is higher in the developed countries, due to changes in aging population, with increase in the elderly and increase in the risk factors for CKD (Diabetes, Hypertension, cardiovascular diseases) in developing countries prevalence of CKD is also on rise.[2] This projected increase in developing countries will exacerbate the burden of countries with poor economy. Only 20% of CKD patients are treated with renal replacement therapies like dialysis in most developing countries.[3] In India the prevalence of CKD was 17.2% in a Screening and Early Evaluation of Kidney disease conducted in multiple centres. [4]

Depression and anxiety disorders are commonly seen in CKD patients' along with delirium, dementia, psychosis, personality disorders and substance use disorders. Depression in CKD is either a reaction to illness and associated treatment or changes in life style, loss of autonomy, health status and financial burden. [5] It can also occur in chronic diseases like CKD due to poor quality of life and functional impairment.[6] The prevalence of Depression is much higher in CKD patients undergoing haemodialysis in comparison to the earlier stages of CKD.

Depression in CKD patients further worsens quality of life, lowers treatment compliance, increase mortality and morbidity, affects the health status, and increases hospital utilization.[7,8,9] Depression is also known to occur in CKD patients in response to loss, this could be loss of physical health, loss of occupational function, loss of physical function including sexual functioning, loss of role functioning in family and society.[10] Depression has an unfavourable effect on the course and outcome of the physical illness. It is considered as an early indicator of poor prognosis.[11]

Anxiety disorders like depression have significant implications on clinical and psychological outcomes of CKD patients.[12] The prevalence of anxiety disorders is much higher in CKD patients as to other chronic diseases like diabetes mellitus and malignancies.[13] Research also states that the incidence of anxiety disorders was higher than depression in patients of CKD undergoing haemodialysis. Concomitant depression further increases the risk of anxiety disorders in these patients. Also, depression and anxiety disorders are bidirectional risk factors with one increasing the risk of other disorder.[14] Though much research exists on depression and anxiety disorders in different stages of CKD and in those in dialysis treatment. They have fallen short due to different methodologies, patient populations and whether clinical interviews or screening tools used for assessment. This study aimed to assess the prevalence of depression and anxiety disorders in patients of CKD undergoing haemodialysis.

MATERIALS & METHODS

This is a cross sectional study conducted at a dialysis unit of a tertiary hospital. Chronic kidney disease patients undergoing haemodialysis were approached either before and after they have undergone dialysis. After explaining the purpose of the study, those who have given written informed consent were included in the study by purposive sampling. All the questionnaire/tools for the study including socio demographic and clinical details and rating scales were administered and entered specially designed proforma. The inclusion criteria are patients aged above 18yrs on at least three months duration of maintenance haemodialysis. Patients with past psychiatric history or on psychiatric medications, patients with cognitive impairment, who had kidney transplantation and acute physical illness interfering with the interview were excluded. For diagnosing depression and anxiety disorders MINI interview was used. HARS and HADS were used to assess severity of symptoms. Study received approval from Institutional ethics committee.

The data was analysed using MS excel 2013 version and SPSS version 20.0. The categorical data will be analyzed using percentages. A probability value of <0.05 will be considered as statistically significant. Inferential statistics will be analyzed by using Chi-square test.

Tools Used :

1) Proforma which includes socio demographic and clinical variables

2) Mini-International Neuropsychiatric Interview (MINI)-

It is a semi-structured interview. The M.I.N.I. was designed as a brief structured interview for the major psychiatric disorders in DSM-IV and ICD-10. Validation and reliability studies have been done comparing the M.I.N.I. to the SCID-P for DSM-III-R and the CIDI (a structured interview developed by the World Health Organization for lay interviewers for ICD-10)sensitivity 0.86 and specificity 0.95.

3) Hamilton Anxiety Rating Scale (HARS)-

it is a clinician administered, typically semi-structured interview designed to assess anxiety symptoms not specific to any disorder, which has demonstrated adequate reliability and validity. It has 14 items, each measuring specific anxiety symptom clusters which are rated by the interviewer on a scale from 0 (not present) to 4 (very severe). A score of 8-14 indicates mild anxiety, 15- 23 indicates moderate anxiety and a score more than 24 indicates severe anxiety.

4) **Hamilton Depression Rating Scale (HADS) -**

This is a clinician rated scale for assessing depression severity among patients. The 17-item version of the HAM-D has become the standard for clinical trials and, over the years, the most widely used scale for controlled clinical trials in depression. There is some consensus for interpretation of the total scores: very severe >23, severe: 19–22, moderate: 14-18, mild: 8–13, and no depression: 0-7.

RESULTS

Total of 71 CKD patients undergoing dialysis were included in this study. Majority of patients belonged to age group of 51-60 yrs. (38%). 60% of the patients were male, 71% belonged to rural background, 79% were married, 66% were unemployed, 77% belonged to nuclear family.

The physical comorbidities most common were Hypertension (29%) and Diabetes mellitus (13.3%), while 57.7% had no physical comorbidities. 45% of the caregivers were spouses (Table-1).

Table-1 Sociodemographic details of CKD patients

Age in years	N	Percentage
40-50	21	29%
51-60	27	38%
61-70	23	32%
Gender		
Male	43	60%
Female	28	39%
Locality		
Rural	51	71%
Semi urban	11	15%
Urban	9	12%
Marital status		
Married	56	79%
Unmarried	15	21%
Employment		
Self-employed	24	34%
Unemployed	47	66%
Type of family		
Nuclear	55	77%
Joint	14	19%
Extended	2	2%
Religion		
Hindu	48	67%
Muslim	12	16%
Christian	11	15%
Comorbidities		
None	41	57.7%
HTN	21	29%
Diabetes	9	13.3%
Care giver		
Spouse	32	45%
Sibling	12	16%
Son	13	18%
Daughter	11	15%
Others	3	4%

52%patients underwent four dialysis sessions per week followed by 19 % of patients having dialysis two times in a week. Majority of patients (46%) were undergoing dialysis for a duration of 4-12 month, followed by 39% of patients undergoing dialysis for 13-24 months, patients who underwent dialysis for more than three years is 1%. The mean duration of dialysis was 14.9±7.86 months (Table-2).

Considering the HADS scores 70.4% of patients had depression, while 29.5% had no depression. Most of the patients had mild depression (36.6%). With HARS scores 63.2% of patients had anxiety and 36.6% had no anxiety. With 30.9% of patients having mild anxiety (Table-3).

Among the depressive disorders, majority had mild depression (53%), 12% with recurrent depression, 8% with dysthymia and 6% with major depressive disorder using MINI instrument.

Among the anxiety disorders, 54% had panic disorder, 28% generalised anxiety disorder and 18% phobic disorder using MINI scale.

Table 2- Clinical details of patients of CKD undergoing haemodialysis

EGFR	Number	Percentage
Below 15	18	25%
15-29	53	74%
Frequency of dialysis/week		
1	10	14%
2	14	19%
3	10	14%
4	37	52%
More than 4	5	7%
Duration of dialysis		
4 to 12 months	33	46%
13 to 24 months	28	39%
25 to 36 months	9	12%
Above 3 years	1	1%

Table 3- Depression and Anxiety severity scores

HAM-D		Number(N)	Percentage(%)
0-7	No	21	29.5%
8 to 13	Mild	26	36.6%
14 to 18	Moderate	13	18.3%
19 to 22	Severe	11	15.5%
> 23	Very severe	0	0
HAM-A			
0-7	No	26	36.6%
8-14	Mild	22	30.9%
15-23	Moderate	14	19.7%
>24	Severe	9	12.6%

Table 4- Association of socio demographic and clinical data with Depression

Parameter	T value	P value
Age (above 50 years)	0.42	0.67
Gender	0.34	0.73
Employment	-1.39	0.844
Marital status	-0.98	0.164
Type of family	0.74	0.48
Locality	0.18	0.83
Presence of comorbidities	-0.30	0.381
Duration of dialysis (above 1 year)	1.11	0.27
Frequency of dialysis	0.35	0.78

P value < 0.05 being significant

There were no statistically significant associations found between the sociodemographic and clinical variables and depression scores (Table-4). Similarly, no statistically significant associations were found between anxiety scores and socio demographic and clinical variables(Table-5).

Table 5-Association between Anxiety and socio demographic and clinical variables

Parameter	T value	P value
Age above 50 years	0.48	0.62
Gender	0.70	0.48
Employment	-1.33	0.09
Marital status	0.91	0.182
Type of family	1.27	0.28
Area	1.24	0.29
Presence of comorbidities	0.94	0.175
Duration of dialysis (above 1 year)	0.34	0.73
Frequency of dialysis	0.18	0.907

P value < 0.05 being significant

DISCUSSION

This study set to evaluate the frequency of depression and anxiety in chronic kidney disease patients with haemodialysis treatment. We included 71 patients who met the inclusion criteria. In our study 70.4% of patients were having depression. This was like a polish study[15] where 78.5% were diagnosed with a depressive disorder. However, the prevalence of depression in chronic kidney disease patients varies from 35%[16] to 57.30%[17] in different studies.

In our study 63.2% of cases had anxiety which contrasts with study done by Taskapan et al[16] where anxiety disorder diagnosis was found in 30% of patients. In another study the frequencies of depression and anxiety among CKD patients were 24.6% and 19.7%, respectively.[18] This wide variations in the frequency of depression and anxiety in CKD patients could be attributed to the different assessment tools used. Few have used clinical interviews, while other have used

structured and semi structured questionnaires for assessment. Other reasons could be differences in the patient characteristics, sample size of patients, socio economic discrepancies. The disparity in frequencies of depression and anxiety could be due to the lack of clarity of assessment of depression and anxiety symptoms and syndrome diagnosis. Our study used Hamilton depression and anxiety rating tools. In comparison to another study[17] which has used the same rating scales, majority of our cases had mild depression and mild anxiety.

Depression and anxiety disorders usually coexist with most chronic medical illness, Kimmel et al[19] demonstrated that the prevalence of depression and anxiety in chronic kidney disease is significantly higher than the other chronic medical diseases.

Our study did not find any significant associations between the demographic variables and depression and anxiety severity. In contrast socioeconomic status and marital status were found to be associated with depression in a study done by Mosleh et al [18]. Research on depression and anxiety in CKD patients with haemodialysis treatment has observed female preponderance in prevalence of depression and anxiety disorders.[20,21] Previous research has observed that increasing age predisposes to increased risk of both depression and anxiety [18,22] Also low socio-economic status with low education, being unemployed increasing risk of depression.[23] Our study did not find any such association between socio economic status and depression. Our study did not find significant differences in duration of dialysis and depression and anxiety which is like other studies. [18,24]

Despite variations in frequencies of depression and anxiety in chronic kidney disease patients undergoing haemodialysis, the high prevalence of these psychiatric disorders is a major concern. Effective screening of most associated psychiatric disorders in patients of CKD with dialysis can ensure implementation of timely interventions which might be beneficial to these patients. Future research can be directed to address on what causes depression and anxiety in CKD patients, and how the presence of these psychiatric issues can influence the course and prognosis of CKD patients which requires longitudinal study designs.

Our study has the following limitations, this study was conducted at a single dialysis unit hence results cannot be generalised. Our study limits with assessing the frequency of depression and anxiety. We did not assess the association of some factors like compliance to treatment that may have been affected in the presence of psychiatric disorders. The strength of our study is that we used both structured interview for psychiatric diagnosis and rating scales to assess severity of depression and anxiety. Hence, we were able to make a diagnosis of depression and anxiety disorders and also assess severity of depressive and anxiety symptoms.

CONCLUSION

Depression and anxiety disorders are prevalent in CKD patients undergoing haemodialysis. In our study the prevalence of depression and anxiety is 70.4% and 63.2% respectively. We did not find any significant associations between demographic details and anxiety and depression. Screening and early identification of psychiatric disorders in CKD patients will ensure implementation of effective psychiatric treatment. This will improve quality of life and prevent adverse outcomes in CKD patients.

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