Prevalence of depression among patients with end stage renal disease

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ABSTRACT

Introduction: Patients with ESRD are highly susceptible to the psychiatric illnesses of which depression is the most common illness. Depression affects the outcome through its effects on the underlying disease, compliance to treatment, nutrition, immunity, marital & family dynamics and through access to care. Studies assessing the prevalence of depression and its associated risk factors among the patients of end stage renal disease will help in planning appropriate measures for its prevention and management.

Materials and Methods: A cross-sectional descriptive study was carried among 60 patients suffering from ESRD, undergoing maintenance hemodialysis in the dialysis unit of the institute during July-September 2014. A semi-structured questionnaire was used to evaluate the socio-demo graphic and disease related factors. Depression was assessed using a validated Telugu version of the patient health questionnaire (PHQ 9). Data analyzed, includes numbers, percentages, mean values with standard deviation. A multiple linear regression analysis was used to assess the various risk factors for depression.

Results: The mean age of patient was 44.53±13.55 years, 46(76.7%) were male, 33 (55%) were belonging to upper lower class and 17(28.3%) patients were having past history of depression. A total of 38 (63.3%) were having major depressive symptoms and 28 (46.7%) were categorized as having moderately severe depressive symptoms. Lower socioeconomic status (p=0.045), past history of depression (p=0.009) and awareness about the poor prognosis (p=0.003) were significantly associated with the depressive symptom scores among the studied sample.

Conclusion: Depression is a common psy chiatric condition among the patients with end stage renal disease and has often remained undetected and undiagnosed. It has been associated with the increased mortality. Identi fying and treating depression among these patients is imperative in order to reduce the burden of morbidities and mortality among these patients.

Keywords: End Stage Renal Disease, Depression, Risk factors

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INTRODUCTION

Chronic Kidney Disease (CKD) is a progressive disease that causes a permanent impairment of renal function and premature death.[1] CKD adversely affects the health and the social life and also causes tremendous economic loss. The burden of Chronic Kidney Disease is increasing rapidly worldwide. In India too, there is a significant burden of Chronic Kidney Disease with the prevalence varying from 0.79% to 1.4%.[2] The increasing prevalence of diabetes, hypertension and ischemic heart disease has been attributed to the rise in CKD. CKD is often diagnosed in advanced stages due to lack of awareness in the people as well as limited access to health care services, especially in the rural areas. [3]

End-Stage Renal Disease (ESRD) is a final stage of CKD where an individual requires interventions like kidney transplant or some form of dialysis in order to survive. Patients with ESRD are highly susceptible to the psychiatric illnesses of which depression is the most common illness. The prevalence rate has varied widely in different studies, in different populations, using different assessment tools. A very high prevalence rate (27-39%) has been reported in some studies.[4-6] The factors attributed being restrictions in diet, functional limitations, adverse effects of medications, changes in self-perception and fear of death. The symptoms of depression consist of anhedonia, feelings of sadness, helplessness, hopelessness, guilt and is accompanied by changes in sleep, appetite and libido.[7] Depression affects the outcome through its effects on the underlying disease, compliance to treatment, nutrition, immunity, marital & family dynamics and through access to care.[4] Depression not only adversely affects the general health of the patient but also increases the duration and frequency of hospitalization and may also affect the kidney-replacement therapy. There is an increase in mortality in dialysis patients and also increased risk of suicide.[8] Depression in patients with other medical or psychiatric illness is of greater intensity and more difficult to treat than depression without any other disorders.[4] Co-morbid depression has a negative impact on life in chronic kidney disease and improved detection and intervention will improve its outcomes.[5]

Studies assessing the prevalence of depression and its associated risk factors among the patients of end stage renal disease will help in planning appropriate measures for its prevention and management. The objectives of the present study were to assess the prevalence of depression and associated risk factors among patients with end stage renal disease receiving haemodialysis treatment.

MATERIALS AND METHODS

A cross-sectional descriptive study was carried among 60 patients suffering from ESRD, undergoing maintenance hemodialysis in the dialysis unit of Prathima Institute of Medical Sciences, Karimnagar, Telangana during the period of July-September 2014. The patients were selected through purposive sampling. The purpose of the study was explained to them and informed consent was obtained. The study protocol was approved by the institutional ethics committee of Prathima Institute of Medical Sciences. Adequate privacy and confidentiality was maintained during the process of data collection. Patients having age less than 18 years, severely ill, impaired cognition and not willing to participate were excluded from the study. The questionnaire was administered by a second year postgraduate student of the community medicine department who was trained in interview technique. A semi-structured questionnaire was used to evaluate the socio-demographic and disease related factors. The socio-demographic information consisted of patient's age, sex, socioeconomic status, marital status, etc. Kuppuswammy's socioeconomic status scale was used to assess the socioeconomic status of the participants as most of them belonged to urban areas. Kuppuswammy's socioeconomic status scale is a composite index of income, occupation, and education.[9] Depression was assessed using a validated Telugu version of the patient health questionnaire (PHQ 9). Patient Health Questionnaire (PHQ 9) provides criteria-based diagnosis of depression and is used to assess the prevalence as well as severity of depression. It reflects DSM-IV diagnostic criteria for the depression, and can be used as a diagnostic tool for major and minor depression. Depression severity can be graded as minimal, mild, moderate, moderately severe and severe depression. Data analyzed, includes numbers, percentages, mean values with standard deviation. A multiple linear regression analysis was used to assess the various risk factors like age, sex, socioeconomic status, past history of depression, duration of illness, awareness about poor prognosis and co-morbid conditions in depression.

RESULTS

Table 1: Baseline characteristics of respondents

Characteristics		No.	Percentage
Age(in years)	<30 Years	8	13.3
	30-50 Years	31	51.7
	> 50 Years	21	35.0
Sex	Male	46	76.7
	Female	14	23.3
Education	Illiterate	24	40
	Primary school	6	10
	Middle School		
	Certificate	1	1.7
	High School		
	Certificate	15	25
	Intermediate	7	11.7
	Graduate or		
	Post-Graduate	7	11.7
Socio Economic Status	Upper Middle	2	3.3
	Lower Middle	8	13.3
	Upper Lower	33	55
	Lower	17	28.4

The mean age of patient was 44.53±13.55 years and most of them 31(51.7%) were between the age of 30-50 years. The majority of the respondents, 46(76.7%) were male. A total of 24 (40%) patients were illiterate and 33 (55%) were belonging to an upper lower class.

Table 2: Other characteristics of respondents

Characteristics		No.	Percentage
Past history of depression	Yes	17	28.3
	No	43	71.7
Family history of depression	Yes	4	6.7
	No	56	93.3
Duration of illness	< 1 Year	7	11.7
	1-5 Years	45	75
	> 5 Years	8	13.3
Aware about prognosis	Yes	48	80
	No	12	20
Co-morbidities	Yes	54	90
	No	6	10
Total	60	100	

Table 2 describes the other characteristics of respondents. Out of the total sample, 17 (28.3%) patients were having past history of depression, whereas only 4 (6.7%) patients were having a family history of depression. The majority of the respondents 45 (75%) were having the ESRD since 1-5 years and 54 (90%) were having the co-morbidities.

Table 3: Prevalence of depressive symptoms among respondents

Variables	Number	Percentage
Other Depressive Symptoms	38	63.3
Major Depressive Symptoms	22	36.7
Total	60	100

Table 3 shows the prevalence of depressive symptoms among respondents. A total of 38 (63.3%) were having other depressive symptoms whereas 22 (36.7%) were having the major depressive symptoms.

Table 4: Severity of depressive symptoms among respondents

Variables	Number	Percentage
None- Minimal (Score 1-4)	5	8.3
Mild (Score 5-9)	11	18.3
Moderate (Score 10-14)	16	26.7
Moderately Severe (Score 15-19)	28	46.7
Total	60	100

Table 4 reflects the severity of depressive symptoms among respondents based on the PHQ 9 scores. It has been observed that 28 (46.7%) were having scores between15-19 and were categorized as having moderately severe depressive symptoms, 16 (26.7%) were having scores between10-14 and were categorized as having moderate depressive symptoms. A total of 11 (18.3%) were labeled as having mild depressive symptoms (score 5-9) and only 5 (8.3%) were having scores between1-4 and categorized as having none-minimal depressive symptoms. None of the respondent in our study was categorized as having severe depression.

Table 5: Evaluation of associated factors of depression among respondents

Risk factors	B	t	P
Age	-0.009	-0.631	0.950
Sex	-0.097	-0.752	0.455
Socioeconomic status	0.245	1.966	0.045
Past history of depression	-0.227	-1.679	0.009
Duration of illness	0.238	1.826	0.074
Aware about poor prognosis	-0.251	-1.858	0.039
Co-morbidities	-0.069	-0.532	0.579

Table 5 deals with the evaluation of associated risk factors of depression among respondents through multiple linear regression analysis. It has been observed that socioeconomic status (p=0.045), past history of depression (p=0.009) and awareness about the poor prognosis (p=0.039) were significantly associated with the depressive symptom scores among the studied sample. There was no significant association observed between depressive symptom scores and age of the respondents, sex, duration of illness and co-morbid conditions of the respondents.

DISCUSSION

Depression is one of the most common psychiatric abnormality observed among the patients with end stage renal disease and has been associated with the increased mortality. Identifying and treating depression among these patients is imperative in order to reduce the burden of morbidities and mortality among these patients. However, studies have shown that evaluation of mental health among patients with chronic renal diseases has remained neglected entity and depression coupled with other psychiatric morbidities has remained undetected and undiagnosed in such patients.

In the present study, we have obtained a high prevalence of depression. A total of 36.7 % were having major depressive symptoms and 46.7% were

categorized as having moderately severe depressive symptoms. A systematic review and meta-analysis conducted by Palmer et al showed that the prevalence of depressive symptoms of CKD using rating scales was 39.3%, however, authors suggested that self-reported scales may overestimate the prevalence of depression and should be used cautiously.[4] A systematic review conducted by Murtagh et al showed 27% prevalence of depression.[6] The difference in the prevalence rates may be attributed to various scales used by the authors. In our study, we have used PHQ-9, a most widely used screening instrument for assessing the depression. Similarly a study conducted by Rai et al used PHQ 9 in a tertiary care hospital in New Delhi, obtained a high prevalence (47.8%) of depression among patient with end stage renal diseases.[7]

Depression adversely affects the medical outcomes among the patients with ESRD through a number of mechanisms, including its effect on the underlying disease process, deprived nutritional status, noncompliance with treatment and immunologic dysfunction leading to impaired quality of life and increased mortality.[10] The mean age of patients in our study was 44.53±13.55 years, 76.7% were males, 40% patients were illiterate and 55% were belonging to an upper lower class. In a study conducted by Sanathan et al in Mysore, Karnataka, the mean age of the patients was 48.42±14.47 years and 74.60% patients were belonging to lower socioeconomic status. The authors reported significant associations between depressive symptoms and female gender, advanced age and lower socioeconomic status.[11]Several studies have demonstrated the association between low socioeconomic status and depression. Although the causal mechanism between depressive symptoms and poor socioeconomic status is not clear, feelings like blame and guilt for low socioeconomic status positions of the person may contribute to the increased frequency of depressive symptoms.[12-13] In our study, past history of depression and awareness about poor prognosis were found to be significantly associated with the depressive symptom scores. Studies have shown that individuals who have a history of depression compared to those who have no such history are vulnerable for recurrence of depression. Similarly, patients who are aware of poor prognosis further exposes them to stressful life events, thereby increasing the frequency of depressive episodes. [14]

CONCLUSION

Depression is a common psychiatric condition among the patients with end stage renal disease and has often remained undetected and undiagnosed. It has been associated with the increased mortality. Identifying and treating depression among these patients is imperative in order to reduce the burden of morbidities and mortality among these patients.

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