

Original Research Article

A STUDY ON PREVALENCE OF DEPRESSION AND ANXIETY AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE

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ABSTRACT

Background: End stage renal disease is a worldwide problem which deteriorates quality of life. Patients with end stage renal disease experience depression due to various reasons.

Materials and Methods: A total of 100 patients with end stage renal disease undergoing hemodialysis in the hemodialysis unit of Katuri Medical college and hospital, Guntur were included in the study.

Results: 1 Significant level of depression was found in female gender, increasing age, patients on 1-3 years of hemodialysis.

Conclusion: End stage renal disease burdens patient not only physically but mentally also. Increasing rates of depression, anxiety amongst CKD patients' needs to be tackled with timely interventions like counseling.

Keywords: Depression, anxiety, quality of life, chronic kidney disease, dialysis.

INTRODUCTION

The prevalence of patients with chronic kidney disease (CKD) is increasing at a rapid pace. End stage renal disease is associated with reduced quality of life and increased mortality rate. Among the factors that affect quality of life and survival in patients with CKD are mental health problems that often develop in patients with reduced renal function.^[1,2]

Depression has been identified as the most common psychiatric disorder prevalent among this group of patients.^[3] The prevalence of depression was found to be between 20-30% in several studies.^[4,5] Major risk factors for depression were illiteracy, socioeconomic factors, marital status, number of children, financial support, gender, hypertension and hypo-albuminemia.

Patients with chronic kidney disease face many problems and limitations, such as job loss, financial problems, depression and poor quality of life.^[6] Also, factors such as lifestyle disorders, job and social status disorders in patients with chronic diseases such as patients with chronic renal failure can lead to early death and suicide in order to get rid of problems and limitations. Studies among the

Indian population are very minimal. This study aims to evaluate the prevalence of depression in patients with chronic kidney disease.

MATERIAL AND METHODS

A cross-sectional study was conducted in hemodialysis unit of Katuri Medical College and Hospital, Guntur, over period of 1 year (from Feb 2022 to Feb 2023). The study included all patients who were undergoing hemodialysis and who gave informed consent for the study. Patients previously diagnosed with psychiatric illness before undergoing dialysis and patients who were terminally ill, and had very poor medical conditions were excluded from the study.

After approval from Institutional Ethics Committee and obtaining written informed consent, a total of 100 patients undergoing dialysis in the Dialysis unit at Katuri Medical College and Hospital were taken for study.

Age, religion, level of education, and marital status were obtained directly from patients, while remaining variables such as age when hemodialysis began, duration of hemodialysis, and co-morbid status were obtained from medical case records.

The following questionnaires were used - Mini International Neuropsychiatric Interview (MINI), version 7.0.2; Hamilton Depression Rating Scale (HAM-D); Hamilton Anxiety Rating Scale (HAM-A) and World Health Organization Quality of Life (WHOQOL-BREF questionnaire)

Statistical Analysis

The data obtained were tabulated and assessed by IBM SPSS V20 software. Continuous variables were outlined using mean, frequency and standard deviation while categorical variables were outlined using frequency and percentage. Means and proportions among groups were compared using independent t-test and chi-square test, respectively. A p value of <0.05 was considered statistically significant. Depression and anxiety were analyzed by applying an ANOVA test, independent t-test and chi-square test. Quality of life was analyzed by applying Pearson's Correlation.

RESULTS

A total of 100 patients undergoing HD who satisfied the inclusion criteria were included in the study.

Male gender constituted about 68% of the total sample of 100 and the remaining 32% were females. Majority of the study sample population was between the ages of 36 and 55 (48%). 29% of the patients were between 20-35 years of age and 23% were between 56-70 years of age.

81% were from nuclear type of family and remaining 19% were from joint family type. 84% of the total sample were married and one among the couple were undergoing hemodialysis. 16% were unmarried patients.

18% of the sample were illiterates and 18% had completed middle school. 15% had completed their primary school and 14% had completed high school. 12% of the sample had completed PUC. 15% were graduates and 8% were post-graduates.

Majority of the patients were from the upper-lower class (34%). 29% were from the lower middle class and 18% from low socioeconomic class. 14% belonged to the upper-middle class, while 5% belonged to the upper socioeconomic class.

51% of the study sample had been undergoing hemodialysis from 5 months to 1 year. 35% of the patients had been receiving hemodialysis for 1-3

years, and 14% had been receiving hemodialysis for more than 3 years.

33% of the total sample was working as clerks, farmers and shop-owners. 21% constituted skilled workers. Semi-skilled workers were about 16% and 13% were unskilled workers of the total sample. 10% were unemployed, professionals were 2% and semi-professionals were 5%.

72% of the participants had hypertension, and 28% had diabetes mellitus. [Table 1].

Depression was observed in 76% of the patients undergoing HD out of a total sample of 100, while 24% were not. Mild depression was present in 45% of the sample, moderate depression was present in 23%, and severe depression was present in 8% of the sample.

Significant correlation was found between depression in patients undergoing hemodialysis and age, gender, duration of hemodialysis and socioeconomic status. There was no significant correlation between depression in patients on HD and their respective educational backgrounds. [Table 2]

Anxiety in patients undergoing hemodialysis

64% of the total sample 100, found to have anxiety and 36% were without anxiety. Among the percentage of sample with anxiety, 39% were with mild anxiety, 18% were with moderate anxiety, and 7% were with severe levels of anxiety.

Significant correlation was found between anxiety in patients undergoing hemodialysis and gender and socio-economic status. Males were significantly found to be more anxious than females. Lower middle class people were found to be significantly more anxious than the rest of classes. [Table 3]

Quality of life in patients undergoing hemodialysis

Age is found to be negatively correlated with 'r' value as -0.213 with QOL. The correlation between QOL and literacy of patients undergoing HD came out with 'r' value of +0.465 which was a positive correlation. Correlation with QOL and socioeconomic status of patients undergoing HD was a positive correlation with an 'r' value of +0.284. As the duration of HD was considered, it has a negative correlation with QOL with an 'r' value of -0.386. Levels of anxiety and depression were negatively correlated with QOL, with 'r' values as -0.754 and -0.863. [Table 4]

Table 1: M.I.N.I in study sample

M.I.N.I.	Frequency	Percent
Alcohol and nicotine use disorder	18	18
Alcohol and nicotine use disorder and major depressive disorder	5	5
Alcohol use disorder	20	20
Borderline Personality Disorder	3	3
Generalized anxiety disorder	14	14
Generalized anxiety disorder and Panic Disorder	5	5
Major depressive disorder	14	14
Major depressive disorder and Generalized anxiety disorder	3	3
Nicotine use disorder	15	15
Nicotine use disorder and Generalized anxiety disorder	3	3

Table 2: Means of depression among age, gender, socioeconomic status, duration of hemodialysis, and education

Variables	Categories	N	HAM – D		
			Mean	S.D	P- Value
Gender	Male	68	14.32	8.31	0.024
	Female	32	18.14	6.57	
Age	< 35 Years	29	11.92	8.35	0.0132
	36 - 55 Years	48	13.56	7.67	
	> 56	23	16.52	8.91	
Duration of hemodialysis in years	< 1 year	51	11.35	6.79	0.007
	1 -- 3 Year	35	16.42	7.53	
	>3 Years	14	14.54	8.64	
Socioeconomicstatus	Upper	5	18.24	6.58	0.033
	Upper middle	14	14.25	7.32	
	Lower middle	29	15.34	5.48	
	Upper lower	34	12.65	6.59	
	Lower	18	10.45	6.32	
Education	Illiterate	18	11.92	8.35	0.262
	Primary School	15	13.56	7.67	
	Middle School	18	16.52	8.91	
	High School	14	11.35	6.79	
	PUC	12	16.42	7.53	
	Graduate	15	14.54	8.64	
	Post Graduate	8	18.24	6.58	

Table 3: Means of anxiety among age, gender, socioeconomic status, duration of hemodialysis, education

Variables	Categories	N	HAM – A		
			Mean	S.D	P- Value
Gender	Male	68	12.61	6.51	0.031
	Female	32	9.86	4.21	
Age	< 35 Years	29	11.28	7.05	0.311
	36-55Years	48	10.54	6.24	
	> 56	23	8.64	5.41	
Duration of hemodialysis in years	< 1 year	51	8.45	6.82	0.236
	1 -- 3 Year	35	10.62	7.45	
	>3 Years	14	7.42	6.15	
Socioeconomicstatus	Upper	5	7.65	4.52	0.023
	Upper middle	14	8.72	6.58	
	Lower middle	29	12.35	3.24	
	Upper lower	34	11.68	6.58	
	Lower	18	8.32	6.41	
Education	Illiterate	18	11.58	6.24	0.075
	Primary	15	8.46	5.41	
	School				
	Middle School	18	9.48	6.82	
	High School	14	8.34	7.45	
	PUC	12	10.54	6.15	
	Graduate	15	9.68	4.52	
	Post Graduate	8	8.64	6.58	

Table 4: Correlation of age, education, socioeconomic status, HD duration, depression, and anxiety with QOL

Correlation with QOL	r - Value	P - Value
Age	-0.213	0.046
Literacy	0.465	0.0001
Socioeconomic status	0.284	0.031
Dialysis Duration	-0.386	0.012
HAM A	-0.754	0.0001
HAM D	-0.863	0.0001

DISCUSSION

The current study aimed to know the severity of depression, anxiety, and also to assess quality of life in correlation with certain socio- demographic variables in the patients undergoing HD. Depression and anxiety were graded using standard scales, and quality of life was assessed using the WHOBREF-QOL scale.

The study sample 100, mostly comprised of males (n=68) and less number of female patients (n=32). Major percentage of the study sample belonged to age group of 36-55 years (n=48), and then age group <35 years with n=29, under age group of >56 years with n=23. Other variables like duration of hemodialysis, socioeconomic status and level of education were considered to derive results and conclusions.

Depression and anxiety among patients undergoing hemodialysis

Based on the interpreted results in the current study, it was observed that 76% of patients undergoing HD had depression, of which 45% had mild depression, 23% had moderate depression and 8% had severe depression. In a study done by Taskapan et al,^[7] Hamilton depression rating scale (HDRS) and Hamilton anxiety rating scale (HARS) were used to measure depression and anxiety. In their study, 35% of the study participants were diagnosed with depression. The prevalence of depression among HD patients according to various studies was identified as 60.5% (Kao et al),^[8] 52.5% (Bossola et al),^[9] Most of the studies used the Becks depression inventory or Hospital Anxiety Depression scale to identify depression among HD patients. Many of the patients undergoing HD and having depression have attributed their low mood to being dependents on their rest of the family members in order to attend their HD sessions and individual's state of dependency on a machine.

The prevalence of anxiety disorder in the present study was about 64% (n=64). Among these, 39% had mild anxiety, 18% had moderate anxiety, and 7% had severe anxiety. Taskapan et al,^[7] used the same tool as present study (HARS) to measure anxiety disorders and identified anxiety in 35% of the study participants. Chen et al,^[10] observed that 21% of the 200 study patients undergoing HD had anxiety. Higher levels of anxiety were observed in current study compared to previous studies. In a study by Montinaro et al,^[11] anxiety disorder was diagnosed in 43% of the study participants.

In this current study, age is not found to have any significant influence on the prevalence of anxiety but depression is found to be significantly higher in age groups > 56 years. The study by Taskapan et al,^[7] also did not find any relationship between age and psychiatric morbidity among ESRD patients. The current study was in conformation with another study done by Araujo et al,^[12] where he studied the prevalence of depression was found to be more among old age patients with the average age of the depressive patients being 55.7 years. In a study by Drayer et al,^[13] he concluded that depressed patients are of younger age and have a low quality of life.

There was a higher mean value with regard to depression in female patients undergoing HD, which was statistically significant. This finding is similar to the study by Araujo et al,^[12] where females were found to have a greater prevalence of depression.

Higher mean scores of anxiety were observed in illiterates and higher mean scores of depression were found in a higher level of education (PG level of education but the results were not statistically significant in the current study). Araujo et al,^[12] in their study on 400 HD patients concluded that lower the level of education, higher the level of depression in these patients. Gerogianni, G et al,^[14] have found a significant association between depression and anxiety in patients undergoing HD with low level of

education. Taskapan et al,^[7] concluded that education has no influence over the prevalence of depression.

In this study, the duration of dialysis was not found to have a significant relationship with anxiety. However, statistical significance was established with the presence of depression and patients undergoing HD for 1-3years of duration. According to a study done by Cengić B, Resić H et al,^[15] he found that patients in 1st HD shift were significantly more depressed and have significantly worse mental health in comparison to patients in 3rd HD shift. Several other studies also did not find a significant relationship between duration of dialysis and psychiatric morbidities like studies done by Taskapan et al.^[7] A significant relation was observed between the presence of anxiety and patients undergoing HD belonging to lower middle socioeconomic status in presence study.

Quality of life in patients undergoing hemodialysis

According to a study done by Sathvik BS et al,^[16] patients with End-stage renal disease (ESRD) on maintenance hemodialysis have lower quality of life in comparison to the general population. They also found that higher age has a negative correlation with QOL in hemodialysis which was a similar finding to current study. In the current study, age of the patient and the duration of hemodialysis were negatively correlated with quality of life which was statistically significant, concluding that with increasing age and duration of HD, quality of life decreases.

However, a statistically significant positive correlation has been established between the level of education and QOL. This is in confirmation with a study done by Chiang CK et al,^[16] who also reported a positive relationship between the level of school education and the QOL but the physical health domain was also considered in that study.

According to a study done by Anees M et al,^[17] patients who were on dialysis for a longer period (dialysis vintage) had lower QOL scores. However in a study conducted by Veerappan et al,^[18] longer dialysis vintage was shown to be a positive predictor of QOL. Ricardo sesso et al,^[19] found that people from low socioeconomic status had poor quality of life, which is similar to present study. Joshi U et al,^[20] studied 150 patients on HD and concluded that low income status and increased duration on hemodialysis were the only independent negative predictors of QOL of patients on maintenance hemodialysis. In the current study, levels of depression and anxiety were negatively correlated with patients QOL. Cukor et al,^[21] found that compared with HD patients with depressive disorders, HD patients diagnosed with anxiety disorders have improved quality of life. Presence of depression and anxiety were negatively correlated that is depression and anxiety significantly decreases QOL in patients undergoing HD according to current study.

CONCLUSION

End stage renal disease is increasing at an alarming rate worldwide. The psychiatric comorbidities that come along with treatment with dialysis are also at rise. Identification and early intervention of depression and anxiety in patients undergoing hemodialysis is impertinent.

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