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Anxiety, Depression and Sleep Disturbances among Renal Disorders in Tertiary Care Center

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ABSTRACT

Depression is the most general psychiatric disease in patients with Chronic Kidney Disease (CKD). Depression exposed to affect mortality in end-stage renal disease patient. The main focus of this study was to measure the occurrence of painful symptoms among CKD patients. Co-morbid depression influences harmfully on the excellence of life in Chronic Kidney Disease patients. This study was done to calculate predominance of depression inpatient on hemodialysis (HD) using Patient Health Questionnaire-9, Hamilton Rating Scale for Depression-17 and International Classification of Disease-10 classification of mental and behavioural disorders. It was a cross-sectional study conducted from December 2019 till July 2020, in Nandhyala, Kurnool district region. Informed and written consent was taken. Patients undergoing hemodialysis at the Nandhyala, Kurnool district region for more than three months duration were involved in the study. Psychiatrists monitored Hamilton Rating scale for diagnosis and categorization of depression. Psychiatrists confirmed depression based on International Classification of Disease-10 scale. SPSS version.20 was used for statistical analysis. The study was done among 300 patients. Prevalence of depression was 234 using Patient Health Questionnaire-9 (PHQ-9)and 195 using Hamilton Rating scale (HAD-17)and 153 using International Classification of Disease -10 (ICD-10). Mean depression in females using PHQ-9 was 7 ± 4.33 and in males was 11.04 ± 5.90, and the Median age was 47.6 years. The most common symptom was fatigue among 246. There is a high occurrence of depression in patients with Chronic Kidney Disease (CKD) stage 5 on hemodialysis compared to the general population.

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INTRODUCTION

Chronic Kidney Disease (CKD) is one of the major chronic non-communicable health problems in India. (Ahlawat *et al.*, 2015) Depression is the most general psychiatric problem in Chronic Kidney Disease (CKD) patients. Co-morbid depression impacts negatively on the quality of life in CKD. (Thomas *et al.*, 2014). It is foremost health distress, and like much chronic illness is habitually connected with numerous psychiatric circumstances and poorer quality of life. (Aggarwal *et al.*, 2016) CKD negatively affects patients social, financial and psychological well being. (Aggarwal *et al.*, 2017). It is indistinct if self-reported unhappiness assessment measures

can be used precisely (Shirazian *et al.*, 2017; Erturk *et al.*, 2012). There are different scales used in dialysis patients like the Beck Depression Inventory (BDI) and the Quick Inventory of Depression Symptomatology. (Toups *et al.*, 2016; Andrade and Sesso, 2012).

It was found that using self- or clinician-administered rating scales, Prevalence of depressive symptoms for CKD stage 5 was higher than other stages. (Palmer *et al.*, 2013) The BDI, Hamilton Rating Scale for Depression (HAD-17), Nine-Question Patient Health Questionnaire (PHQ-9) are some of the actions that have been used to screen for depression in patients with End-Stage Renal Disease (ESRD). (Cohen *et al.*, 2007) In a study conducted in Nepal, PHQ-9 was validated for its use in depression. PHQ-9 is a preferred tool for use in Low and Middle-Income Countries (LMICs) (Kohrt *et al.*, 2016; Chhetri *et al.*, 2009; Agrawaal *et al.*, 2019). It has been described that the pervasiveness of pruritus ranges from 40–70% (Mistik *et al.*, 2006; Zucker and Yosipovitch, 2003; Vandana S. Mathur *et al.*, 2010). This study was focused on scrutinizing the occurrences of anxiety, depression and sleep disturbances in CKD populations in Chennai region by using PHQ-9, HAD-17 and ICD-10 scales.

This cross-sectional study was conducted at Nandhyala, Kurnool district region from December 2019 till July 2020. The sample size was calculated using the sample size calculation formula:

$$n = Z^2(pxq)/d2$$

Where, n = required sample size, Z = 1.96 at 95% Confidence Interval, P= estimated prevalence of ESRD population (5% - taking an account of increase in prevalence from previous studies), q = 1-p,d = allowable error, 5%

The formula mentioned above, the minimum estimated sample size at a 95% confidence interval and 5% error, the total sample size computed was 219. Taking a non-response rate of 10%, the sample size was 240. This study has considered 300 patients. Those are above 18 years, and more than 90 days duration were included [as shown in Figure 1].

Patients were diagnosis based on Patient Health Questionnaire-9 (PHQ-9), Hamilton Rating scale (HAD-17), and International Classification of Disease -10 (ICD-10) questionnaires. PHQ-9 has been validated tool for screening and diagnosis of depression.

The patients have taken 1 minute to fill the questions, and they were not allowed to communicate them self. The psychiatrist administered HAD -

17 for the diagnosis and categorized the depression range. And then patients involved the diagnosis depression based on ICD-10 of mental disorders. The most leading Statistical software SPSS Version.20 has implemented for the analytical process.

RESULTS AND DISCUSSION

A total number of patients included in the final analysis was 300. In this series of 300 patients were examined in the Nandhyala, Kurnool district. The median age of patients was 47 years which is similar to study in Krishna Kumar Agarwaal et al. and the previous study at BPKIHS. (Chhetri *et al.*, 2009; Agrawaal *et al.*, 2019) [as shown in Table 1].

Mean PHQ-9 was 8.86±5.48, and HAD-17 was 12.33±7.01. The Most Common Symptom was fatigue, and Psychomotor agitation was 246 based on PHQ-9(n=300) [as shown in Table 2].

Grading of Depression evaluated by Patient Health Questionnaire-9(PHQ-9), Hamilton Rating scale (HAD-17) and then International Classification of Disease-10(ICD-10) [as shown in Table 3].

In this study, age did not play the significant impact of depression as there were no variations in means. Men had more instances of depression which was comparable to other studies. The median duration of dialysis patients in this study has two years.

This study compared PHQ-9 with 30 items dialysis symptoms index and found that a median of PHQ score of more than 9 is comparable. In this study implemented one more metrics, namely the HAD - 17 is a screening technique of depression.

The widespread occurrences of depression measured by PHQ-9 were 78%, HAD-17 was 65%, and ICD-10 was 51%. Mean depression in females by implementing PHQ-9 was 7±4.33 and males was 11.04±5.9. Correspondingly, the mean depression in females by measuring HAD-17 was 11.76±6.75 and males have 13.00±7.32.

The main benefit of PHQ-9 was self-monitored, and it has taken approximately a one minute to fill by the patient, and also this study faced on disadvantage was low specificity.

Pittsburgh Sleep Quality Index (PSQI) test measures the quality of sleep in patients during hemodialysis treatment. PSQI score range from 1 to 21, It specifies that starting average score 1 to severe score 21 out of 300 patients 45 patients are having a score between 1 to 5, It represents that they are in average scores.

84 patients are having score 6 to 10, 106 patients have score value lies in between 11 to 15, and 65
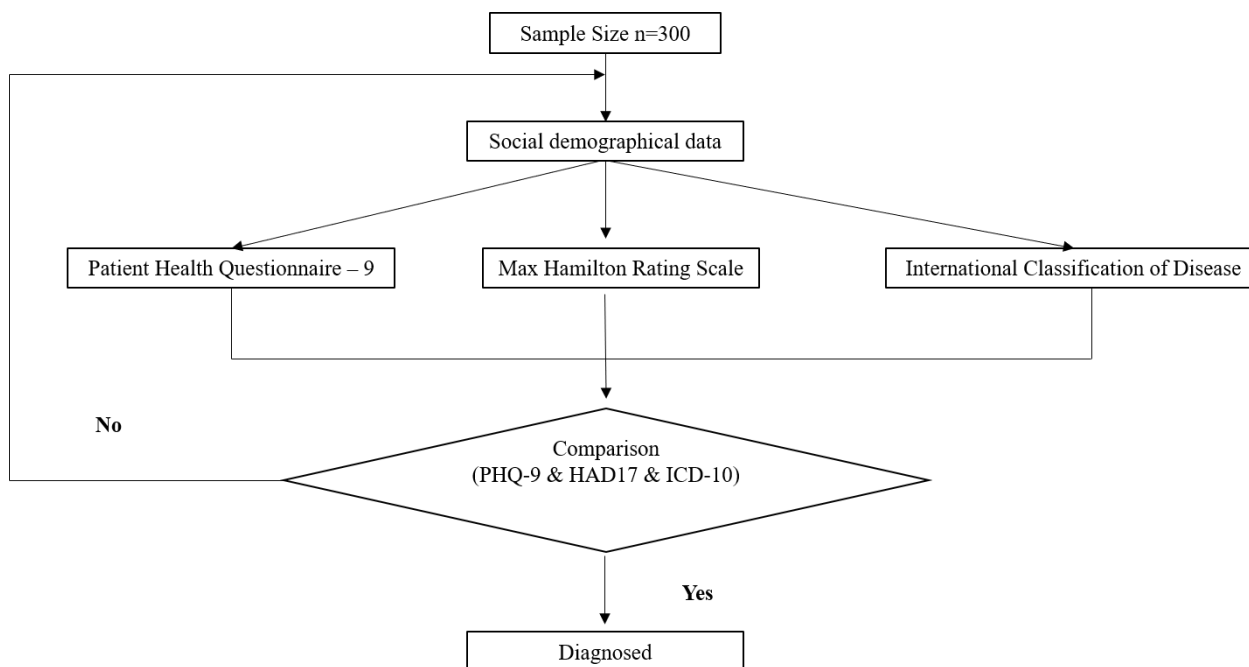
Figure 1: Flow of the diagnosing process

Table 1: Characteristics of Study (n=300)

S.No.	Attributes	Categories	Sample Size (n)	Percentage (%)
1	Age	<20	3	1%
		20 to 30	40	13.33%
		31 to 40	58	19.33%
		41 to 50	60	20%
		51 to 60	55	18.33%
		>60	84	28%
2	Duration of the diagnosis	< 5 Months	27	9%
		6 to 12 Months	66	22%
		13-24 Months	99	33%
		25-48 Months	60	20%
		>48 Months	48	16%
3	PHQ –9 (Total Scores)	<10	189	63%
		10 to 15	111	37%
		15 to 20	48	16%
		>20	15	5%

Table 2: Occurrences of Different Symptoms of PHQ-9 (n=300)

S.No	Attributes	Sample Size (n)	Percentage (%)
1	Suicidal ideation	135	45%
2	Concentrating difficulties	138	46%
3	Blaming oneself	159	53%
4	Sleeping difficulties	168	56%
5	Appetite problems	183	61%
6	Anhedonia	195	65%
7	Depressed mood	201	67%
8	Fatigue	246	82%
9	Psychomotor agitation	246	82%

Table 3: Level of Depression (n=300)

S.No	Level of Depression	Grading	Sample Size (n)	Percentage (%)
1	PHQ-9	Minimal	66	22%
		Mild	123	41%
		Moderate	63	21%
		Moderately Severe	33	11%
		Severe	15	5%
2	Max Hamilton score (HAD-17)	Normal	105	35%
		Mild	66	22%
		Moderate	54	18%
		Severe	63	21%
		Very Severe	12	4%
3	ICD-10	No Depression	147	49%
		Mild Depressive Episode without Somatic Syndrome	39	13%
		Mild Depressive Episode with Somatic Syndrome	6	2%
		Moderate Depressive Episode without Somatic Syndrome	21	7%
		Moderate Depressive Episode with Somatic Syndrome	39	13%
		Severe Depressive episode without psychotic symptoms	48	16%

Table 4: PSQI Score (n=300) for measuring of the insomnia

S.No	PSQI Score	Number of Patients (n=300)
1	1 to 5	45
2	6 to 10	84
3	11 to 15	106
4	16 to 21	65

patients have the score level from 16 to 21. It shows that severely affected in insomnia [as shown in Table 4].

CONCLUSION

In this study concludes that there are high occurrences of depression in the patient's on hemodialysis compared with the general population. Here found that the PHQ -9 scale has been having sound sensitive and easy administration So that it can be implemented to screen the patients if the PHQ-9 score was above 9. The patients need to be subjected to psychiatric evaluation. Also that the depression to morbidity.

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