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Research Paper

Prevalence of Depression in Patients with Chronic Kidney Disease on Hemodialysis and Its Impact on the Quality of Life

Dr. Ashwini Padmashali[1]*

ABSTRACT

Background: Depression is the most common co-morbid psychiatric condition in patients with chronic kidney disease (CKD) undergoing maintenance hemodialysis. The aim of the present study was to evaluate the prevalence of depression in patients with chronic kidney disease undergoing hemodialysis and its impact on the quality of life. **Materials and Methods**: Cross sectional assessment of 105 patients using Mini International Neuropsychiatric Interview (MINI-6), Kidney Disease Quality of Life Short Form (KDQOL-SF) was done over a period of one year duration. **Results**: The mean age of patients undergoing hemodialysis was 51.29 ± 15.26 years. Males (76.2%) outnumbered females in the study population. About 99% of the patients had co-morbid hypertension and 48.5% had co-morbid diabetes mellitus. Major depressive disorder was present in 25.7% with significant bio-socio-occupational dysfunction. Patients with long standing hypertension were significantly more in patients with major depressive disorders in the study sample. In addition, patients with major depressive disorder had poor quality of life with significance in cognitive function, quality of social interaction, social functioning and pain. **Conclusion**: The present study found one in four patients with CKD on hemodialysis has depressive disorder and was associated with patients with longer duration of comorbid hypertension. Patients with depression had higher impartment in the quality of life.

Keywords: *Chronic Kidney Disease, Depression, Hemodialysis*

Chronic kidney disease affects about 10% of the global population and the prevalence of renal replacement therapy (RRT) is predicted to increase significantly in the coming years (1). Common neuropsychiatric disorders seen in patients of CKD are delirium, depression, cognitive impairment, sleep disturbance, anxiety and fatigue (2). Depression is significantly prevalent in patients with chronic kidney disease (CKD) and has been associated with increased morbidity and mortality (2, 3).

Prevalence of depression in general population is around 5% to 10% while the occurrence of depression in subjects with CKD has been reported to be around 10% to 30% (2). Prevalence studies on depression in CKD has been showing varying estimates due to methodological issues. First, majority of studies have used screening tools to assess depression resulting in increased prevalence of depression in CKD patients (4). Second there is overlap of somatic

[1]Department of Psychiatry, USM KLE- IMP, Belagavi, Karnataka, India
*Corresponding Author

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symptoms in depression and CKD (2). Symptoms like decreased energy, poor appetite, and sleep disturbance are seen CKD, which may be recorded as symptoms of depression in patients with CKD (2, 5). Studies which have used structured assessments for diagnosing clinical depression in patients with CKD by Hedayati et al, and Watnick et al reported 19% to 26% (6,7). Important predictors of depression in CKD patients included younger age, white race, female sex and longer duration of maintenance HD therapy (4). A recent Indian study by Gupta S et al on the prevalence of major depression in patients with CKD in a tertiary care hospital was 44.05% and depressive symptoms was 82.14% (8). The study also found association between depression with dialysis shift, higher levels of phosphorus and lower levels of hemoglobin (8).

Depression in Patients with CKD results in substantial decreases in quality of life, functional impairment, and sexual dysfunction (9-12). Preljevic VT et al studied depression and anxiety in dialysis patients and its association with quality of life and mortality (13). The study found that patients on dialysis with co-morbid depression and anxiety had more severe impairment of quality of life than with depression alone (13). Y C Tsai et al studied quality of life in patients with end stage renal disease and mortality in patients with CKD (14). There was significant correlation between physical, psychological and total scores of Quality of life with increased risk of ESRD and death in CKD patients (4). Manavalan M et al assessed health related quality of life (HRQoL) and its determinants in patients with CKD (15). It was found that there was a decline in HRQoL with advance stages of CKD, underprivileged populations socioeconomic parameters had greater impact on HRQoL(15). Treating depression in patients with CKD will help in improving the quality of life and delay the progression of CKD (2). Hence it is important to evaluate the quality of life in patients with CKD and the impact of comorbid depression on the quality of life in these patients.

As there has been varying rates of prevalence of depression in patients with CKD, the present study aims to evaluate the prevalence of depression in patients with chronic kidney disease on hemodialysis by clinical interview and the factors associated with occurrence of depression. The present study also aims to evaluate the quality of life in patients with CKD on hemodialysis and the impact of depressive disorder on the quality of life.

MATERIALS AND METHODS

This was a cross-sectional study of outpatients with CKD undergoing hemodialysis recruited consecutively from January 2015 to December 2015 at SDM College of Medical Sciences and Hospital, Dharwad, India. Eligible patients were included with the following inclusion criteria: a) subjects age above 18 years, b) patients diagnosed with CKD and undergoing hemodialysis. Subjects with significant impairment in attention leading to delirium during examination were excluded in the study. The study was approved by institutional ethics committee, SDM College of Medical Sciences and Hospital, Dharwad, India.

Demographic and clinical data were collected from the patient and the caregivers. Co-morbid medical illness was defined as medical conditions other than CKD and included hypertension, diabetes mellitus, congestive heart failure, coronary artery disease, cerebro-vascular disease, peripheral vascular disease, lung disease, liver disease and infection with human immunodeficiency virus (HIV). Any previous history and family history of psychiatric illness in the subjects were recorded.

Assessment of Depression and Quality of Life:

Participants were assessed for depressive disorder using Mini International Neuropsychiatric Interview (MINI) (version 6) (16) and patients were categorized as depressed or non-depressed based on the presence or absence diagnosis of current major depressive episode. The MINI was administered to all the participants after taking the detailed medical history. The MINI is a frequently used semi-structured clinical interview for psychiatric evaluation based on DSM-IV (20) criteria and has established reliability and validity (16).

Participants were evaluated using Kidney Disease Quality of Life- Short Form (KDQOL-SF) (17). Kidney Disease Quality of Life-Short Form (KDQOL-SF) developed by RAND is a standard and self- administered questionnaire that include both general and specific dimensions in relation to quality of life in patients with kidney diseases. This is a valid and reliable multi-dimensional tool which covers the variables related to kidney disease and the dimensions of SF-36 questionnaire which has been used in Indian population (18). The raw pre-coded numerical values of KDQOL-SF were transformed to 0-100 range and higher the transformed score indicated better quality of life. The 36-item questionnaire on health survey (SF -36) has been assessed by using the summary scores of Physical Component Summary and Mental Component Summary. The Physical Component Summary included the scores of Physical functioning, Role limitation Physical, Pain, General Health while the Mental Component Summary included the scores Emotional well-being, Role limitation Emotional, Social functioning and Energy (41).

Data Analysis:

Participants were categorized into two groups depending on the presence or absence of depression based on MINI diagnosis of current major depressive episode. The demographic, clinical characteristics and laboratory data were compared between the depressed group and non-depressed group. Chi square test was used for the analysis of categorical variables and Independent T test was used for numerical variables. The level of significance was set as $p < 0.05$. Data was analyzed with using Statistical Package for Social Sciences – version 13. (SPSS, Chicago, IL, USA).

RESULTS

A total of 105 patients were recruited for the purpose of this study from January 2015 to December 2015. On evaluation of the patients using MINI Neuropsychiatric Interview, it was found that 27 (25.7%) subjects had symptoms suggestive of major depressive disorder at the time of assessment. All the subjects had significant depressive symptoms with anhedonia and psychomotor retardation. Ideas of guilt were expressed by 51 (48.6%) and active suicidal ideas were present in 5 (5.7%) subjects. Physical symptoms reported were reduced appetite in 84 (80%), 69 (65.7%) reported of changes in sleep and easy fatigability was present in 87(82.9%) of the total sample. The presence of psychomotor retardation was found in 56(53.3%) patients of the total sample.

The mean age of the participants was 51.29 years (SD=15.26). About 80 (76.2%) patients were males and 25 (23.8%) females were included in this study. Mean Age of the patients with depression was 52.8 years (sd =13.8) and patients without depression was 50.7 years (sd =15.7). About 21 (77.7%) males had depression and 6 (22.2%) females had depression among the patients who underwent dialysis. Mean years of education being 2.74 years (sd = 1.63) in patients with depression and in patients without depression was found to be 2.49 years (sd=1.59). Patients with depression were similar in terms of domicile (rural and

urban), occupation (employed and unemployed), socioeconomic status and there was no statistical difference observed between the patients with depression and patients without depression in gender, mean age and mean years of education.

About 51 (48.7%) of the patients had co-morbid diabetes mellitus and all subjects had hypertension in the current sample. Co-morbid ischemic heart disease (IHD) and stroke was present in 36 (34%) and 8 (7.6%) of the patients respectively. The history of neuropathy and PVD (Peripheral Vascular Disease) was present in 41 (39%) and 13 (12%) patients respectively. About 27 (25.7%) of the study sample had history of smoking or chewing tobacco amounting to dependence pattern. The above variables were not statistically significant among the group with depression compared to that of the group without depression. Patients with depression had co-morbid hypertension for longer duration 11.7 (sd =11.2) years when compared to patients without depression 7.37 (sd =7.9) years which was statistically significant.

Family history of diabetes mellitus, hypertension and ischemic heart disease was more in the patients of depressive group than the group of CKD patients without depression, but were not statistically significant. The occurrence of co-morbid infectious diseases HIV, Hepatitis B infection and Hepatitis C infections was 1%, 2% and 3% respectively. One of the patients in the depressed group was diagnosed with HIV and 2 patients in non-depressed group had Hepatitis C, whereas Hepatitis B positive status was equal among both the groups.

Mean years of hemodialysis was around 1.78 years (sd = 1.311) in subjects with depressive group and 1.63 years (sd =1.27) in subjects without depressive disorder. There was no statistical difference in between the two groups. The mean value of hemoglobin in the study sample was 8.5 (sd = 1.9), indicating that most of them had moderate degree of anemia. The mean values of total leukocyte count and platelet count was adequate. The Serum albumin levels were slightly lower than normal and was found to be 3.11 (sd =1.18). The mean urea and creatinine were high and was 109.4 (sd=61.7) and 12.9 (sd =9.5) respectively. The electrolytes sodium and potassium mean values were within the normal range. There was no statistical difference in the laboratory parameters between the subjects with depression when compared with those not having depressive disorder.

Table1: Demographic and Clinical details in patients with Depression compared with those without Depression in the study sample

Variable	Subjects With Depression N=27	Subjects Without Depression N=78	$\chi 2$ or t	p value
Age (years)	52.8 (sd =13.8)	50.7 (sd =15.7)	- 0.63	0.52
Gender N (%)				
Male	21 (77.7)	59 (75.6)	0.05	1.0
Female	6 (22.2)	19 (24.3)		
Marital Status				
Married	21 (77.7)	67(88.8)	0.95	0.36
Single/Separated/Divorced	6 (22.2)	11(11.2)		
Socioeconomic Strata				
BPL card holders**	19(70.3)	58(74.3)	0.163	0.432
APL card holders***	8(29.7)	20(25.7)		
Years of Education(mean/sd)	2.74(1.63)	2.49(1.59)	-0.71	0.48
Diabetes Mellitus (Years) (mean/sd)	7.74(10.509)	6.67(8.78)	-0.52	0.60

Hypertension (Years) (mean/sd)	11.7(11.2)	7.37(7.9)	-2.19	0.03*
Dialysis (Years) (mean/sd)	1.78(1.311)	1.63(1.27)	-0.52	0.60
History of Ischemic heart disease				
Present	13(48.14)	23(29.48)	3.1	0.10
Absent	14(51.85)	55(70.51)		
History of Stroke				
Present	0	8(10.25)	2.99	0.11
Absent	27(100)	70(89.74)		
History of Smoking				
Present	5(18.51)	22(28.20)	0.98	0.44
Absent	22(81.48)	56(71.79)		
History of Neuropathy				
Present	11(40.74)	30(38.46)	0.04	0.82
Absent	16(59.25)	48(61.53)		
History of Peripheral Vascular Disease				
Present	4(14.81)	9(11.53)	0.19	0.73
Absent	23(85.18)	69(88.46)		
Past history of Psychiatric illness				
Present	1(3.70)	2(2.56)	0.09	1.00
Absent	26(96.29)	76(97.43)		
Family history of CKD				
Present	1(3.70)	6(7.69)	0.51	0.67
Absent	26(96.29)	72(92.30)		
History of Alcohol use				
Present	6(22.22)	17(21.79)	0.002	1.00
Absent	21(77.77)	61(78.20)		
HIV Infection				
Positive	1(3.70)	0	2.91	0.25
Negative	26(96.29)	78(100)		
Hepatitis-B Infection				
Positive	1(3.70)	1(1.28)	0.63	0.45
Negative	26(96.29)	77(98.71)		
Hepatitis-C Infection				
Positive	2(7.40)	1(1.28)	2.71	0.16
Negative	25(92.59)	77(98.71)		

** P value < 0.05*
*** BPL – Below Poverty Card*
**** APL – Above Poverty Card*

Quality of life and Depressive Disorder:

Table 2 gives summary of the scores of KDQOL-SF in the current sample. Patients with depression had significantly lesser scores in symptom list, cognitive functions and quality of social interaction when compared to the patients without depressive disorder, which were statistically significant. The mean values of effects of kidney disease, burden of kidney disease, work Status, sleep, dialysis staff encouragement and patient satisfaction were similar across the group. Patients' response to questions related to sexual functioning was less than 25% of total sample and the responses were not different across the groups. The mean scores of Physical component summary scores were significantly lesser in subjects with depression when compared with those of patients without depression on hemodialysis, while the scores on Mental component summary were not statistically different between the two groups.

Table 2: Comparison of Quality of Life in patients with depression when compared to patients without depression

Variable	Subjects With Depression N=27	Subjects Without Depression N=78	T	p value
ESRD targeted areas				
Symptom list (mean/sd)	66.43(8.92)	74.01(8.51)	3.93	<0.001*
Effects of Kidney disease (mean/sd)	76.27(9.01)	79.36(9.07)	1.53	0.129
Burden of Kidney disease (mean/sd)	73.84(18.34)	68.02(16.21)	-1.552	0.124
Work Status (mean/sd)	86.96(6.16)	85.41(5.48)	-1.983	0.15
Cognitive function (mean/sd)	60.8(21.53)	72(12.9)	3.223	0.002*
Quality of social interaction (mean/sd)	42.9(19.97)	54.16(16.26)	2.92	0.004*
Sexual function (mean/sd)	15.74(28.71)	11.85(26.33)	-0.645	0.520
Sleep (mean/sd)	54.62(13.04)	59.21(11.56)	1.718	0.089
Social support (mean/sd)	56.48(13.59)	53.84(14.98)	-0.806	0.422
Dialysis staff encouragement (mean/sd)	86.11(14.43)	83.81(15.22)	-0.685	0.495
Patient satisfaction (mean/sd)	53.7(15.56)	48.5(13.74)	-1.637	0.105
36 item health survey (SF – 36)	33.15(8.43)	37.26(8.85)	2.10	0.038**
Physical Component Summary	41.89(5.95)	43.46(5.28)	-1.21	0.208
Mental Component Summary				

*P Value < 0.01
**P Value < 0.05

DISCUSSION

The findings from the study indicate that every fourth patient undergoing hemodialysis for CKD had developed current major depressive episode causing significant impairment in the patient. The study sample represented the population diagnosed with chronic kidney disease and being subjected to dialysis for more than of one year. Hedayati et al and Chen et al used similar interview method, with the prevalence of current major depressive episode was about 23.5%. (14,15) Watnick et al found 19% prevalence of major depressive disorder in predominantly whites on hemodialysis using MINI diagnostic interview. (16) The other variables on MINI which was found to be significantly higher were changes in appetite, sleep, fatigability and inattention. These associated symptoms are manifestation of underlying medical illness hence these symptoms scored higher among the scales used for evaluating depressive illness. (17,18,19) Our study findings are similar to the above studies which have used clinical interview method with standardized scales. Higher physical complaints can be common for both underlying medical condition and comorbid depressive disorder.

The mean age of the patients with depression was 52.8 years and patients without depression was 50.7 years. The sample was overrepresented by men. The mean age and sex distribution in the current study sample was comparable with the previous studies. (21,22,23,24,25). The majority of the study population had good social support and there was no significant difference between the patients who had depression and who remained free of depression. These results were similar to some of the previous studies indicating that majority of the

study population had good social support. (22,23,26,27). The sociodemographic findings of the study sample are comparable with the previous studies. (21,22,23,24,25, 26,27,28,29)

The occurrence of diabetes mellitus and hypertension was 48.57% and 99.04% respectively in the current sample. This was similar to the previous studies done by Hedayati et al (14) and Fischer et al.30 The study by Sinatra et al had co-morbid diabetes and hypertension in 22.9% and 41.9% patients respectively.31 Consistent finding has been occurrence of higher prevalence of hypertension in the previous studies. (14 30 31 32 33) The mean duration of co-morbid medical conditions like diabetes mellitus and hypertension in patients with depression in our study was 7.74 and 11.7 years respectively. A study was done by Kawamura T et al, where the mean duration of diabetes among the study sample was 21.8 years and this was higher when compared to our study population.(34) The mean duration of dialysis in the depressed group was 1.78 years which was slightly higher than the non-depressed group, but were not statistically significant. This finding was similar to the study done by Rajan E and Subramanian S J (35) and Yu Z L et al.(36)

This study also assessed the presence of various co-morbidities influencing the occurrence of depression in the study population. Comorbid ischemic heart disease was present in 48.14%, neuropathy 40.74%, peripheral vascular disease 14.81%, past history of psychiatric illness in 3.7%, HIV and Hepatitis B infection in 3.7% and Hepatitis C infection in 7.4%. The presence of smoking was more in patients in non-depressed group 28.2% and alcohol use was more in depressed group which was 22.2%. Although most of the co-morbid medical conditions were more in the depressed group, it failed to meet statistical significance.

The mean age of the subjects with depression was 52.8 years which was slightly higher than the subjects without depression 50.7 years. It was also found that the males in the study population had higher prevalence of depressive symptoms when compared to females. These results were similar other studies mentioned earlier.1,37,38 In the group with depression, 59.2% people were from urban background. According to study by Vettah R E et al39 there was no difference in domicile across the study sample. In a study conducted by NNN Dialeet al.40 56.4% population with depression were from urban background, this was similar to our study.

Quality of life and Depressive Disorder:

A comparison between the quality of life in depressed patients and non-depressed patients revealed the scores on the symptom list, cognitive functioning domain, quality of social interaction was significant with p values <0.001, 0.002 and 0.004 respectively. According to this study patients with CKD on hemodialysis had poor quality of life with significant impairment in the sexual functioning. The study finding was consistent with the study done by Rosas SE et al who studied the association of quality of life and erectile dysfunction in hemodialysis patients. Sexual functioning was assessed using International Index of Erectile Function (IIEF-5) and quality of life was assessed using KDQOL-SF. There was a profound association between the emotional domain of SF-36 and erectile dysfunction. The mean scores of quality of life was significantly lower in patients with erectile dysfunction, the values were found to be significant in poor social interaction, decreased emotional wellbeing, role limitation due to emotional problems and poorer social function.(40)

CONCLUSION

The present study found high degree of co-morbid depression in patients of chronic kidney disease undergoing hemodialysis as well as impairment in the quality of life. It was also found that patients of CKD had co-morbid hypertension more than diabetes. Assessing all the patients of CKD for the presence of psychiatric co-morbidity may have a role in improving the treatment outcome and improving the quality of life.

REFERENCES

(1) Moriera J M et al. *neuropsychiatric disorders and renal diseases: an update.* J Bras Nefrol 2014;36(3): p. 396-400.

(2) Hedayati SS, Bosworth HB, Kuchibhatla M, Kimmel PL, Szczech LA. *The predictive value of selfreport scales compared with physician diagnosis of depression in hemodialysis patients*. Kidney Int. 2006; 69:1662–1668. [PubMed: 16598203].

(3) Walters BA, Hays RD, Spritzer KL, et al. Health-related quality of life, depressive symptoms, anemia, and malnutrition at hemodialysis initiation. Am J Kidney Dis. 2002; 40:1185–1194. [PubMed: 12460037].

(4) Dogan E, Erkoc R, Eryonucu B, et al. Relation between depression, some laboratory parameters, and quality of life in hemodialysis patients. Ren Fail. 2005; 27:695–699. [PubMed: 16350820].

(5) Drayer RA, Piraino B, Reynolds CF III, et al. Characteristics of depression in hemodialysis patients: Symptoms, quality of life and mortality risk. Gen Hosp Psychiatry. 2006; 28:306–312. [PubMed: 16814629].

(6) Turk S, Atalay H, Altintepe L, et al. Treatment with antidepressive drugs improved quality of life in chronic hemodialysis patients. Clin Nephrol. 2006; 65:113–118. [PubMed: 16509460]

(7) Peng YS, Chiang CK, Hung KY, et al. The association of higher depressive symptoms and sexual dysfunction in male haemodialysis patients. Nephrol Dial Transplant. 2007; 22:857–861. [PubMed: 17121784]

(8) Gupta S, Patil NM, Karishetti M, Tekkalaki BV. Prevalence and clinical correlates of depression in chronic kidney disease patients in a tertiary care hospital. Indian J Psychiatry 2018; 60:485-8.

(9) Teles F et al. *Depression in Hemodialysis: Role of Dialysis Shift.* Clinics 2014; 69(3):198-202.

(10) Preljevic VT et al. *Anxiety and depressive disorders in dialysis patients: association to health-related quality of life and mortality*. General Hospital Psychiatry.2013; 35:619–24.

(11) Tavallaii SA et al. *Socioeconomic Links to Health-Related Quality of Life, Anxiety and Depression in Kidney Transplant Recipients*. Iranian Journal of KidneyDiseases. 2009;3(1):40-4.

(12) Cruz MC, Andrade C, Urrutia M, Draibe S, Nogueira-Martins LA, Sesso RCC. *Quality of life in patients with chronic kidney disease. Clinics.* 2011;66(6):991-5.

(13) Hedayati et al. *Prevalence of Major Depressive Episode in CKD*. American Journal of Kidney Diseases, Vol 54, No 3 (September), 2009: pp 424-32.

(14) Chen et al. *Risk of major depression in patients with chronic renal failure on different treatment modalities: A matched-cohort and population-based study in Taiwan.* Hemodialysis International. 2016; 20:98–105

(15) Watnicketal. Validation of 2 Depression Screening Tools in Dialysis patients. Am Journal of Kidney Dis.2005; 46(5): 919-24

(16) Han S J and Kim H W. *Quality of Sleep in Predialysis Patients with Chronic Kidney Disease*. International Journal of Bio-Science and Bio-Technology.2014;6(5):101-10
(17) Jhamb M et al. *Prevalence and Correlates of Fatigue in Chronic Kidney Disease and End- Stage Renal Disease: Are Sleep Disorders a Key to Understanding Fatigue*. A m J Nephrol. 2013; 38:489–95
(18) Salifu et al. *Sleep Duration and Chronic Kidney Disease: Analysis of the National Health Interview Survey*. Cardiorenal Med .2014;4:210–6
(19) Singh et al. *Epidemiology and risk factors of chronic kidney disease in India – results from the SEEK (Screening and Early Evaluation of Kidney Disease) study*. BMC Nephrology .2013; 14:114
(20) Han S J and Kim H W. *Quality of Sleep in Predialysis Patients with Chronic Kidney Disease*. International Journal of Bio-Science and Bio-Technology.2014;6(5):101-10
(21) Eknoyan G, Lameire N, Barsoum R; et al. "*The burden of kidney disease: improving global outcomes*". Kidney Int. 2004; 66:1310-4.
(22) Kimmel PL, Thamer M, Richard CM, Ray NF. *Psychiatric illness in patients with end stage renal disease.* Am J Med. 1998;105: 214- 21.
(23) Tamura M K et al. *Anemia and risk for cognitive decline in chronic kidney disease*. BMC Nephrology .2016;17:13
(24) O'Lone et al. *Cognition in people with end stage kidney disease treated with Hemodialysis: A systematic review and meta-analysis.* Am J Kidney Dis. 2016;67(6):925-35
(25) M. Meurs et al. *Grey matter volume and white matter lesions in chronic kidney disease: exploring the association with depressive symptoms.* General Hospital Psychiatry.2016;40:18 –24
(26) Hartung E A et al. *Evaluation of Neurocognition in Youth with CKD Using a Novel Computerized Neurocognitive Battery.* Clin J Am Soc Nephrol.2016; 11: 39–46
(27) Vasquez V, Novarro N, Valdes RA, Britton GB. *Factors associated to depression in renal transplant recipients in Panama.* Indian J Psychiatry 2013; 55:273-8.
(28) Rai M, Rustagi T, Rustagi S, Kohli R. *Depression, insomnia and sleep apnea in patients on maintenance hemodialysis.* Indian J Nephrol. 2011; 21:223-9.
(29) Fischer et al. *Factors associated with depressive symptoms and use of antidepressant medications among participants in the chronic renal insufficiency cohort (CRIC) and Hispanic CRIC studies.*Am J Kidney Dis. 2012;60(1):27-38
(30) Sinatra M et al. How Dialysis Patients Live: A Study on Their Depression and Associated Factors in Southern Italy. SciRes. Psychology. 2011;2(9): 969-77
(31) Alavi NM et al. *Depression, Anxiety, Activities of daily living and Quality of life scores in patients undergoing renal replacement therapies.* Transplantation Proceedings.2009;41:3693–6
(32) Fraser et al. *The burden of comorbidity in people with chronic kidney disease stage 3: a cohort study.* BMC Nephrology.2015;16:193
(33) Kawamura T et al. *Factors Associated with Changes in Brain Atrophy during a Three- Year Observation in Elderly Diabetic Patients: Effect of Renal Impairment on Hippocampal Atrophy.* Dement Geriatr Cogn Disord Extra., 2016. 6: p. 55–67.
(34) Rajan EJ, Subramanian S. *The Effect of Depression and Anxiety on the Performance Status of End-stage Renal Disease Patients Undergoing Hemodialysis*. Saudi J Kidney Dis Transpl. 2016;27(2):331-4
(35) Yu ZL et al. *Evaluation of adherence and depression among patients on peritoneal dialysis.* Singapore Med J.2012; 53(7): 474-80

(36) Chiang et al.: *Prevalence and correlates of depression among chronic kidney disease patients in Taiwan*. BMC Nephrology 2013 14:78.
(37) Chen et al. *Depression and Suicide Risk in Hemodialysis Patients with Chronic Renal Failure.* Psychosomatics 2010; 51(6):528
(38) Vettath RE, Reddy Y, Dutta S, Singh Z, Mathew M, et al. *A multicenter cross-sectional study of mental and physical health depression in MHD patients.* Indian J Nephrol. 2012; 22:251-6.
(39) N.N.N Diale et al. *Factors Related to Depression in Patients Undergoing Hemodialysis Due to Renal Failure in Senegal.* Psychology.2015;6:409-14
(40) Rosas SE et al. *Association of decreased quality of life and erectile dysfunction in hemodialysis patients*. Kidney International. 2003; Vol. 64:232–8
(41) Farivar SS, Cunningham WE, Hays R. Correlated physical and mental health summary scores for the SF-36 and SF-12 Health Survey, V.1. Health Qual Life Outcomes. 2007; 5:54.

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Conflict of Interest
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