



ISSN: 2091-2749 (Print)  
2091-2757 (Online)

#### Correspondence

Ms. Jyoti Maharjan  
Dept. of Nursing, Patan  
Hospital, Patan Academy of  
Health Sciences, Lalitpur, Nepal  
Email: mjyotee3@gmail.com

#### Peer Reviewers

Asst. Prof. Dr. Sumana  
Bajracharya, Patan Academy of  
Health Sciences, Nepal

Asst. Prof. Dr. Ashis Shrestha,  
Patan Academy of Health  
Sciences, Nepal

#### Submitted

26 May 2022

#### Accepted



19 Jul 2022

#### How to cite this article

Jyoti Maharjan. Psychological  
distress among patients  
receiving hemodialysis in a  
teaching hospital. Journal of  
Patan Academy of Health  
Sciences. 2022Dec;9(3):89-96.

<https://doi.org/10.3126/jpahs.v9i3.52220>

## Psychological distress among patients receiving haemodialysis in a teaching hospital

Jyoti Maharjan  

Nursing Incharge, Patan Hospital, Patan Academy of Health Sciences, Lalitpur, Nepal

*\*During study period, author was Master in Nursing student at Lalitpur Nursing Campus, School of Nursing and Midwifery, Patan Academy of Health Sciences, Lalitpur, Nepal*

### Abstract

**Introduction:** A psychological distress is highly prevalent conditions among haemodialysis patients, but is often under diagnosed and untreated. It could have negative impacts on their treatment and prognosis of the disease. The purpose of this study was to assess the prevalence of psychological distress in the patients receiving haemodialysis in a teaching hospital.

**Method:** This quantitative cross-sectional study comprised of 59 patients of Chronic Kidney Disease (CKD) receiving haemodialysis at Patan Hospital. The respondents were selected using purposive sampling technique. After taking informed consent, data was collected using interview technique based on structured questionnaires. Depression Anxiety Stress Scale-21 was used to assess the levels of depression, anxiety and stress. Data was analyzed using descriptive statistics in terms of mean, frequency and percentage.

**Result:** The prevalence of depression, anxiety and stress were 71.18%, 62.71% and 20.33% respectively. Majority 30.51% of the respondents had moderate depression, 20.34% had mild, 10.17% had severe and extremely severe depression. Similarly, 32.20% had moderate anxiety, 15.25% had mild, 6.78% had severe and 8.47% had extremely severe anxiety. Likewise, 11.86% had mild stress, 6.78% had moderate stress, and 1.69% had severe stress. The mean and standard deviation of DASS scores were  $34.51 \pm 19.31$ . The prevalence of psychological distress among respondents was 42.37%.

**Conclusion:** The results of the study showed that more than two fifth of the respondents had psychological distress. The highest prevalence was depression which was present in more than two third of the respondents.

**Keywords:** Anxiety, depression, haemodialysis, psychological distress, stress

## Introduction

Chronic kidney disease (CKD) is increasingly recognized as a major public health problem globally and in Nepal.<sup>1</sup> Haemodialysis has proven to be the most effective treatment modality in Chronic Renal Failure.<sup>2</sup> Chronic kidney disease affects both physical and psychological aspects of the patient's life.<sup>3</sup> In a study conducted in Morocco among 103 HD patients, 34% of patients had Major Depressive Episode (MDE) whereas, 25.2% had anxiety disorder.<sup>4</sup> A study in Bangladesh revealed that among 83 patients undergoing haemodialysis, 68.7% were clinically depressed, 13.3% had anxiety disorder, and rest had acute stress disorder, adjustment disorder and one case had psychosis.<sup>5</sup> A study in Nepal showed that among 100 HD patients, 65% had depression in which 22% had mild, 18% had moderate, 21% had severe and 4% had very severe depression.<sup>6</sup>

High levels of anxiety, depression and psychological stress are experienced by these patients that lead increased health care costs, and early mortality.<sup>7</sup> Nurses' special care and attention to effects of stress plays a vital role in providing a framework for appropriate supportive measures towards patients undergoing haemodialysis.<sup>8</sup> Intervention and counselling to nurses through educational programs would raise awareness and promote the biopsychosocial approach to the disease and the patient.<sup>9</sup> Thus, this study aims to assess the psychological distress among patients receiving haemodialysis.

## Method

This was a quantitative cross-sectional study of the patients receiving haemodialysis at Patan Hospital. The study was conducted from September to November 2019 after ethical clearance from the Institutional Review Committee of Patan Academy of Health Sciences. A non-probability purposive sampling technique was used. As the total population of patients receiving haemodialysis was 69, using the Cochran's

finite sample size calculation formula, the final sample size was 59. The variables of this study were age, gender, employment, duration of dialysis, number of dialysis per week.

All patients aged  $\geq 18$  y, diagnosed with CKD and receiving haemodialysis in Patan Hospital for  $\geq 2$  m were included in this study. Those who had underlying psychiatric disorder prior to haemodialysis were excluded. Informed verbal consent was taken using generic PAHS consent form, from each respondent. The data was collected by face to face interview. The questions were read aloud to the respondents and the choices of answers as told by the respondents, were filled by the researcher.

Prevalence of psychological distress was analysed using validated Nepalese version of DASS 21-N, self-report scales questionnaire. Psychological distress was categorized as normal, mild, moderate, severe and extremely severe according to the categorization and interpretation of DASS-21 Subscales Scores.<sup>9</sup> The proportion of respondents with scores below mean value of total DASS were classified as no psychological distress and those with scores above the mean value were classified as psychological distress, Table 1.

**Table 1. Categorization and interpretation of DASS-21 subscales scores.<sup>10</sup>**

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely severe	28 +	20 +	34 +

The data was coded, entered, classified and analyzed using Statistical Package for Social Science (SPSS) 16.0 version. Data analysis was done using descriptive statistics in terms of mean, frequency, and percentage.

## Result

The data was obtained from the total 59 respondents receiving haemodialysis in

Haemodialysis Ward of Patan Hospital. Out of 59 respondents, maximum number 28.81% were in the age group of 60-69 y and the mean and standard deviation of age was 51.27 ±16.90 y. The respondents 15.25% belongs to the age groups of 30-39, 40-49 and 50-59, Table 2. The duration of dialysis of maximum number of respondents 45.76% was more than 1 y to 5 y, Table 3.

Among 59 respondents, 71.18% respondents had depression, 62.71% and stress 20.4%, Table 4.

The mean score and standard deviation of DASS scores were 34.50 ± 19.31. The respondents with no psychological distress were 57.63% and with psychological distress were 42.37%, Figure 1.

**Table 2. Socio-demographic variables of respondents, N=59**

Variables	Frequency	Percentage
<b>Age (in y)</b>		
<30	8	13.56
30-39	9	15.25
40-49	9	15.25
50-59	9	15.25
60-69	17	28.81
70 and above	7	11.86
Mean age ± SD =51.27±16.90		
<b>Gender</b>		
Male	38	64.41
Female	21	35.59
<b>Employment</b>		
Unemployed	44	74.58
Employed	8	13.56
Retired	7	11.86
<b>Affordability to treatment</b>		
Yes	54	91.53
No	5	8.47

**Table 3. Clinical characteristics of respondents, N=59**

Variables	Frequency	Percentage
<b>Duration of dialysis</b>		
2 m- 1 y	22	37.29
>1 y-5 y	27	45.76
>5 y -10 y	10	16.95
<b>Number of dialysis per week</b>		
Once in a week	4	6.78
Twice in a week	36	61.02
Thrice in a week	19	32.20

**Discussion**

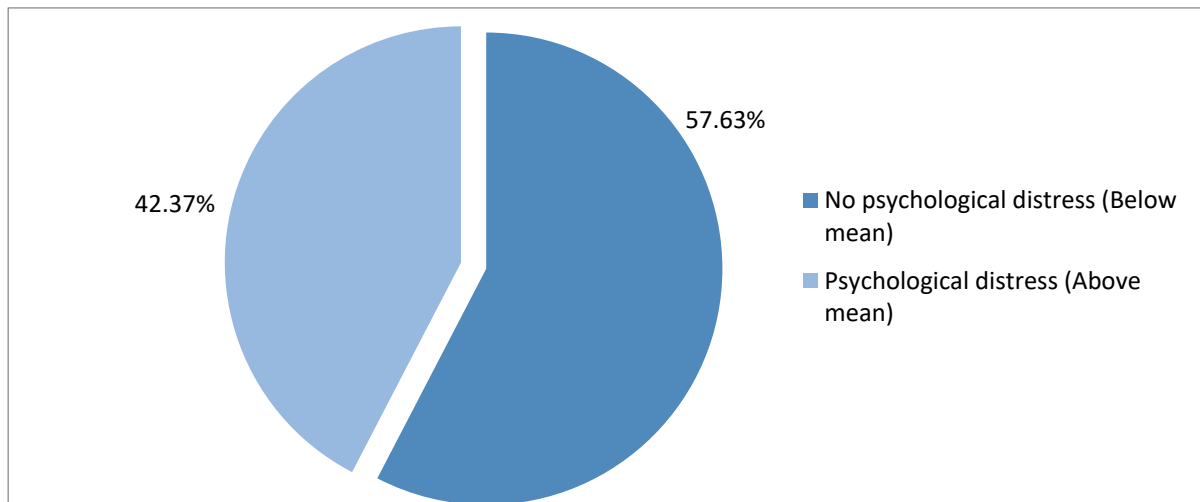
The study represents that out of 59 respondents, maximum number 28.81% were in the age group of 60-69 y and the mean and standard deviation of age was 51.27 ± 16.90 y. The respondents 15.25% belongs to the age groups of 30-39, 40-49 and 50-59 whereas 13.56% of the respondents belong to less than

30 y of age. And 11.86% of respondents were in the age group of 70 and above. Gender wise, 64.41% were male and 35.59% were female. The employment status of respondents; 74.58% were unemployed, 13.56% were employed and 11.86% were retired. Affordability to treatment; 91.53% can afford the treatment of dialysis and 8.47% cannot afford the treatment.

**Table 4. Level of depression, anxiety and stress using DASS-21, N=59**

Severity	Depression		Anxiety		Stress	
	N	%	N	%	n	%
Normal D= 0-9 A=0-7 S=0-14	17	28.81	22	37.29	47	79.66
Mild D= 10-13 A= 8-9 S= 15-18	12	20.34	9	15.25	7	11.86
Moderate D= 14-20 A= 10-14 S= 19-25	18	30.51	19	32.20	4	6.78
Severe D= 21-27 A= 15-19 S= 26-33	6	10.17	4	6.78	1	1.69
Extremely Severe D= 28+ A= 20+ S= 34+	6	10.17	5	8.47	0	0

Note: D= Depression, A= Anxiety, S= Stress.



Note: Total DASS Mean ± SD=34.50 ± 19.31

**Figure 1. Prevalence of psychological distress based on DASS-21 total score mean value**

The duration of dialysis of respondents; 45.76% of respondents were receiving dialysis for more than 1 y to 5 y, 37.29% were receiving dialysis from 2 m to 1 y, and only 16.95% of respondents were receiving for more than 5 y to 10 y. Maximum numbers of 61.02% respondents were doing dialysis twice a week, 32.20% were doing dialysis thrice a week, and 6.78% respondents were doing dialysis once a week.

The study findings show level of depression, anxiety and stress where majority of the respondents which is 30.51% had moderate depression. Whereas, 20.34% had mild, 10.17% had severe and extremely severe depression. These findings are similar to a cross-sectional study done at Riyadh, Saudi Arabia, among 133 HD patients, 25.6 % had mild depression, , 45.9% had moderate and 12% had severe depression.<sup>11</sup> Another study

in Karnataka, among 100 respondents, showed that majority 31% of the subjects were mildly depressed, 17% moderately depressed, 7% severely depressed, and 3% of the subjects showed extreme depression.<sup>12</sup> In Pokhara, majority of the patients 84.8% have various degree of depression in which mild 21.7%, moderate 30.8%, and severe 32.6%.<sup>13</sup>

This study is contrasted by a study in Iran showed 88.8% had severe depression and 11.2% had moderate depression among 160 HD patients.<sup>14</sup> Another study in Chandigarh, India, showed 11.8% had moderate, 3.1% had moderately severe, and only 0.8% of patients had severe depression among 612 patients on HD.<sup>15</sup> Different sample sizes, various social and cultural differences, education and employment status might be the causes for differences between the results of these studies and the present study.

Regarding anxiety, the current study showed majority of the respondents 37.29% had normal anxiety. Likewise, 32.20% had moderate anxiety, 15.25% had mild, 6.78% had severe and 8.47% had extremely severe anxiety. These findings are supported by the study done in Malaysia, in which out of total 108 respondents, 50.9% had varying degree of anxiety ranging from mild 12%, severe 8.3%, to extremely severe 9.3%.<sup>16</sup> These findings are contrasted by a study in Sari, Mazandaran, Iran revealed 92.5% had severe anxiety, 7.5% had moderate anxiety among 160 haemodialysis patients.<sup>14</sup> High levels of anxiety might be the result of low economic status of the respondents as majority of them were unemployed. Another study conducted in Pondicherry, showed 14.3% of mild and moderate anxiety among 14 patients of haemodialysis.<sup>17</sup> The difference in the prevalence of anxiety can be the result of improved socioeconomic status and high literacy rate in respondents.

In relation to stress, the current study showed majority of the respondents i.e. 79.66% had normal stress. Likewise, 11.86% had mild stress, 6.78% had moderate stress, and 1.69% had severe stress. This study is supported by

a study conducted in Malaysia, in which out of total 108 respondents, 35.2% patients had stress symptoms, exhibiting mild 20.4%, moderate 10.2%, severe 1.9% and extremely severe stress 2.8% respectively.<sup>16</sup>

This study is contrasted by a study conducted in Egypt among 250 haemodialysis patients, in which, 36% had moderate level of stress, while 14% of them had severe, 1% had extremely severe level of stress, and 23% mild stress levels.<sup>18</sup> Another study conducted in Pondicherry, India, also showed 35.71% had stress in which 21.43% had moderate stress among 14 patients of haemodialysis.<sup>17</sup> The prevalence of stress was significantly higher than the current study which might be the result of different cultural background and in rural area. Specifically, majority of the respondents were in younger age and diagnosed their condition at age of 20s and 40s which could be linked to high levels of stress.

The current study had examined the prevalence of depression, anxiety and stress in haemodialysis patients. Hence, the findings of the current study represent that out of 59 respondents, 71.18% respondents had depression, 62.71% had anxiety and 20.33% had stress. The mean score and standard deviation of DASS total scores were  $34.50 \pm 19.31$ . The respondents with no psychological distress were 57.63% and with psychological distress were 42.37%.

Maximum research revealed a high prevalence of depression and anxiety among patients with CKD. The similar study done at Riyadh, Saudi Arabia, among 133 HD patients, the level of depression was 83.5%.<sup>11</sup> Another study in Saudi Arabia, 24.6% had depression and 19.7% had anxiety symptoms in patients receiving haemodialysis.<sup>19</sup> Similarly, the prevalence of depression was 36.3%, anxiety 46.6% and stress 19.9% out of 1332 patients on haemodialysis in Malaysia.<sup>20</sup> The findings of the study were similar to the study conducted in Malaysia, in which the mean and standard deviation of DASS total scores at the baseline was  $31.44 \pm 20.95$ , among 108 HD patients.<sup>16</sup> In

Indonesia, the prevalence of depression and anxiety was 46% and 30.5% respectively.<sup>21</sup> The occurrence of anxiety and quality of life depends on patient's acceptance of their illnesses. So, the health practitioners should help patients to accept their illnesses.

This finding is inconsistent with a study in Norway, which concluded that among 109 participants, 22% suffered from depressive disorder, 17% suffered from anxiety disorder.<sup>22</sup> Another observational multicenter study in Hyderabad, among 100 ESRD patients on haemodialysis, showed the prevalence of depression was 20.7%, anxiety was 15.1% and stress was 16.1%.<sup>23</sup> Around 66% of depressive disorder and 61% of anxiety disorder were found in patients on HD in Western Rajasthan.<sup>24</sup> In Manglore, 8.42% had depression, 3.15% had anxiety and 5.26% had stress in patients receiving haemodialysis.<sup>25</sup>

Although the prevalence of psychological problems was studied in both studies, this is contradicted by the findings of the present study. The difference in prevalence of depression in these studies may be due to use of different tool to assess the depression. Depression and anxiety were related to gender, occupation, income and duration of dialysis.

The study was done on small sample size. Non probability purposive sampling method was used to select sample and was confined to Patan Hospital only. So, the results could not be generalized. This study is cross sectional in nature which only reveals prevalence. It did not include any follow up or intervention for the patient suffering from psychological distress. DASS-21 is a self-administered questionnaire. Data collection was done through face to face interview. So, there might cause response bias.

## Conclusion

Depression, anxiety and stress have a high prevalence in haemodialysis patients. The results of the study showed that the highest

prevalence was depression 71.18% followed by anxiety 62.71% and stress 20.33%. It also revealed that most of the respondents had moderate depression 30.51% and moderate anxiety 32.20% and few had moderate stress 6.78%. The mean score and standard deviation of DASS total scores were  $34.50 \pm 19.31$ . The respondents with no psychological distress were 57.63% and with psychological distress were 42.37%. Rapid and accurate diagnosis of psychological problems and its treatment seems necessary to improve quality of life, prognosis, and survival of these patients.

## Acknowledgement

This study was a research thesis for Master in Nursing. I would like to acknowledge deep sense of gratitude to my thesis guide Ms. Shobha Laxmi Bajracharya and Dr. Priscilla Samson for the valuable advice, suggestions and support during my research thesis. I also express sincere gratitude to Nursing Incharge Ms. Kanti Chhetri and all the nursing staffs and participants of haemodialysis unit for their co-operation during data collection.

## Conflict of Interest

None

## Funding

None

## Reference

1. Sigdel MR, Pradhan RR. Chronic kidney disease in a tertiary care hospital in Nepal. *J Inst Med.* 2018;42(1):104-11. | [Google Scholar](#) | [Full Text](#) |
2. Gerogianni S, Babatsikou F, Gerogianni G, Grapsa E, Vasilopoulos G, Zyga S, et al. Concerns of patients on dialysis: a research study. *Health Sci J.* 2014;8(4):423-37. | [Google Scholar](#) | [Full Text](#) |
3. Danial K, Khurram A, Ahmed K, Ali Z. Prevalence of depression among the patients with end-stage renal disease and their care givers, and its associated factors at a tertiary care hospital in Karachi. *Ann Punjab Med Coll.* 2016;10(4):217-21. | [DOI](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
4. El Filali A, Bentata Y, Ada N, Oneib B. Depression and anxiety disorders in chronic

- hemodialysis patients and their quality of life: a cross-sectional study about 106 cases in the northeast of morocco. *Saudi J Kidney Dis Transpl.* 2017;28(2):341-8. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
5. Iqbal S, Talukder US, Chowdhury TA, Billah MM, Anana MA, Rahim MA, et.al. Psychiatric co morbidities in ESRD patients recently placed on haemodialysis: a prospective observational study from a tertiary care hospital. *Bangladesh Crit Care J.* 2016;4(1):28-32. | [DOI](#) | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
  6. Agrawaal KK, Chhetri PK, Singh PM, Manandhar DN, Poudel P, Chhetri A. Prevalence of depression in patients with chronic kidney disease stage 5 on hemodialysis at a tertiary care center. *JNMA J Nepal Med Assoc.* 2019;57(217):172-5. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  7. Rahimipour M, Shahgholian N, Yazdani M. Effect of hope therapy on depression, anxiety, and stress among the patients undergoing hemodialysis. *Iran JNursMidwifery Res.* 2015;20(6):694-99. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  8. Naderifar M, Tafreshi MZ, Ilkhani M, Kavousi A. The outcomes of stress exposure in hemodialysis patients. *J Renal Inj Prev.* 2017;6(4):275-81. | [Google Scholar](#) | [Weblink](#) |
  9. Gerogianni SK, Babatsikou FP. Psychological aspects in chronic renal failure. *Health Sci J.* 2014;8(2):205-14. | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
  10. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the Beck depression and anxiety inventories. *Behav Res Ther.* 1995;33(3):335-43. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  11. AIDukhayel A. Prevalence of depressive symptoms among hemodialysis and peritoneal dialysis patients. *International journal of health sciences.* 2015 Jan;9(1):9. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
  12. Divyashree CR, Nalini GK, Deepak P, Sahana GN, Nagaraal JV, Mohith N, et al. Assessment of depression among patients undergoing haemodialysis: a cross-sectional study. *IntJ Basic ClinPharmacol.* 2019;8(6):1278-82. | [DOI](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  13. Khadka S, Adhikari R, Paudel T. Depression among chronic kidney diseases patients receiving hemodialysis. *J KarnaliAcad Health Sci.* 2020;3(2):73-9. | [DOI](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  14. Shafipour V, Alhani F, Kazemnejad A. A survey of the quality of life in patients undergoing hemodialysis and its association with depression, anxiety and stress. *J Nurs Midwifery Sci.* 2015;2(2):29-35. | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  15. Ahlawat R, Tiwari P, D'Cruz S. Prevalence of depression and its associated factors among patients of chronic kidney disease in a public tertiary care hospital in India: a cross-sectional study. *Saudi J Kidney Dis Transpl.* 2018;29(5):1165-73. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Weblink](#) |
  16. Hmwe NT, Subramanian P, Tan LP, Chong WK. The effects of acupressure on depression, anxiety and stress in patients with hemodialysis: a randomized controlled trial. *IntJNursStud.* 2015;52(2):509-18. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  17. Santhi A, Samson R, Srikanth, Pethuru D. Effectiveness of physical activity on depression, anxiety, stress and quality of life of patients on hemodialysis. *Biomed Res.* 2018;29(9):1885-90. | [DOI](#) | [Google Scholar](#) | [Weblink](#) |
  18. Bukhary FE, Sayied NE, Abo-El-Magd MH, Saber EH. Psychological stress and coping strategies among chronic hemodialysis patients at el-Minia University Hospital. *AAMJ.* 2013;11(3):1-48. | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  19. Mosleh H, Alenezi M, Al Johani S, Alsani A, Fairaq G, Bedaiwi R. Prevalence and factors of anxiety and depression in chronic kidney disease patients undergoing hemodialysis: a cross-sectional single-center study in Saudi Arabia. *Cureus.* 2020;12(1):e6668. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
  20. Bujang MA, Musa R, Liu WJ, Chew TF, Lim CT, Morad Z. Depression, anxiety and stress among patients with dialysis and the association with quality of life. *Asian JPsychiatry.* 2015;18:49-52. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
  21. Marthoenis M, Syukri M, Abdullah A, Tandil TM, Putra N, Laura H, et al. Quality of life, depression, and anxiety of patients undergoing hemodialysis: Significant role of acceptance of the illness. *IntJ Psychiatry Medicine.* 2021;56(1):40-50. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
  22. Preljevic VT, Østhus TB, Os I, Sandvik L, Opjordsmoen S, Nordhus IH, et al. Anxiety and depressive disorders in dialysis patients: association to health-related quality of life and mortality. *General hospital psychiatry.*

- 2013;35(6):619-24. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Web link](#) |
23. Rajput AH, Kumar MS. Depression, anxiety & stress among patients of end stage renal disease undergoing hemodialysis. *Ann Psychophysiol.* 2017;4:07-15. | [DOI](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
24. Gadia P, Awasthi A, Jain S, Koolwal GD. Depression and anxiety in patients of chronic kidney disease undergoing haemodialysis: a study from western Rajasthan. *J Family Med Prim Care.* 2020;9(8):4282-6. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |
25. de Brito DC, Machado EL, Reis IA, do Carmo LP, Cherchiglia ML. Depression and anxiety among patients undergoing dialysis and kidney transplantation: a cross-sectional study. *Sao Paulo Med J.* 2019;137(2):137-47. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) | [Weblink](#) |