

Assessment Levels of Depressive Symptoms among Hemodialysis Patients at Kirkuk General Hospital in Kirkuk City

Mustafa O. Noori^{1*}, Maan Hameed Ibrahim Al-Ameri²

Abstract: *The study aims to assess levels of depressive symptoms among hemodialysis patients at Kirkuk general hospital in Kirkuk City. Descriptive design conducted at Kirkuk general hospital in Kirkuk city during the period of October 28th, 2019 to August 21th, 2020. Through a non-probability sample of (100) renal failure patients who experience hemodialysis were selected from Kirkuk general hospital, hemodialysis unit at Kirkuk city. The study showed that most of renal failure patients undergoing hemodialysis had sever level of depression. There is no significant association between level depression with patient's age, gender, education level, occupation, residence, dialysis frequency, number hours, chronic disease, medication & duration of dialysis except marital status & monthly income, the researchers recommended to increase awareness level of patient's & their families about the nature & type of renal disease & how minimize their distress that caused by the disease, as well provide psychological support for improve their psychological status, and training of nursing staff who work at hemodialysis unit on how handle with patients to help them decreased their depressive symptoms.*

Keywords: *Assessment , Depressive Symptoms, Hemodialysis Patients*

I. Introduction

Chronic kidney disease (CKD) is a long-term, high prevalent, health problem and a serious global problem where the kidneys slowly stop working or call renal insufficiency or chronic renal impairment for lasts months or years ⁽¹⁾.

Dialysis is a treatment for people whose kidneys have almost completely stopped working. Dialysis takes away toxins and excess water from the patients' body by using a machine to pump blood outside the body (hemodialysis) or a liquid that added and removed from the belly. ⁽²⁾

Hemodialysis patients have lower quality of life, impairments that are more functional, greater occurrence of psychopathological states including suicide, lower adherence to drug treatment and an increased likelihood of long-term body-pain Therefore, the diagnosis and treatment of these conditions becomes important to improve psychological and overall well-being, quality of life and consequently, reduce morbidity and mortality risk in this population. ⁽³⁾

¹ MSc Student, Department of Psych. Nursing, Collage of Nursing, University of Baghdad and specialist nurse in Ministry of Health and Environment at Kirkuk health directorate, Iraq. Email: mustafaomer014@gmail.com

² Assist. Professor PhD. Maan Hameed Ibrahim, Department of Psych. Nursing, Collage of Nursing, University of Baghdad, Baghdad City, Iraq.

Depression is common in patients with end-stage renal disease and been linked to increased mortality which screening for depression in the general medical population remains controversial. However, given the high prevalence of depression and its significant impact on morbidity and mortality, End stage renal Disease (ESRD) is a major health problem and is rapidly progressing among population worldwide. There are limited data about the prevalence of ESRD in Iraq in general and in Sulaimani governorate in particular ⁽⁴⁾.

Depression is characterized as one of the most assessed psychological aspects regarding studies on patients with renal failure. Depression has identified as the primary mental health problem among dialysis patients. The prevalence of depression is higher among hemodialysis patients, with estimated rates ranging from 23% to 42% in the US and Europe. Identification and treatment of depression during the early stages of CKD is important, since depression can impair recovery, result in poor treatment adherence, and worsen patient quality of life and mental health status ⁽⁵⁾.

The etiology of dialysis-related depression is multifactorial, and it related to biological, psychological, and social mechanisms. Some of the biological mechanisms include increased cytokine levels, possible genetic predisposition, and neurotransmitters affected by uremia. Causes of depression are linked to the dialysis treatment, which requires from a patient to stay attached to the dialysis machine for approximately 4 hours, 3 times a week, a necessity that contributes significantly to a patient's low quality of life and restricts independent living ⁽⁶⁾.

Another factors such as medication side effects and dietary restrictions may further contribute to the impaired levels of perceived quality of life and the emotional distress experience among patients under continuous hemodialysis, leading to more severe symptoms. Similar risk factors are associated with depression, including younger age, female gender, black race, Hispanic ethnicity, lower education, lower family income, unemployment, hypertension, smoking status and diabetes ⁽⁷⁾.

Further, there is some evidence suggesting that depression among patients with continuous hemodialysis could be the result of factors such as a decline in cognitive skills and sexual function, as well as low education levels. It's important to recognize that hemodialysis patients face many additional challenges which increase the possibility of developing depression or anxiety or other mental conditions. Patients experience major changes in their lifestyle. On the one hand, they have very limited, if any, alternative options to the proposed or available treatment of their end-stage renal disease state (which requires strict compliance to their dialysis and medicinal regime). This includes having to adjust to a rigorous dietary prescription and a very limited fluid intake ⁽⁸⁾.

Finally, In view of point of the researcher, identifying and treating psychological problems such depression is very important issue for patient who have renal disease. It is very important to modify and control the patient's way of thinking, to help their thought patterns to be more realistic and helpful to relieve psychological stress.

II. Methodology

2.1 Ethical considerations

The researcher familiarized the study participants to overall goal of the study & confirmed participants that the confidentiality of their data will safeguarded and securely sustained during and following study

participation. And assured study participants that their names would remain unknown in the presentation, reporting, and/or any eventual publication of the study

2.2 Design and setting of study

Descriptive study design used to guide this study for assessing levels of depressive symptoms among hemodialysis patients at Kirkuk general hospitals in Kirkuk City during the period of October 28th, 2019 to August 21th, 2020. A non-probability (purposive) sample of the study consisted from (100) renal failure patients on hemodialysis who were coming to the hospital/ hemodialysis unit in Kirkuk general hospital.

2.3 Instrument of study

The researchers constructs a questionnaire format in order to reach the aims of the study and consists of (3) parts:

(1) Demographic characteristics for the sample such as (gender, age, residence (housing), level of education, marital status, monthly income and occupation).

(2) Medical history of the patients. It comprises from (5) items as following:

A- The duration of dialysis

B- Frequency of dialysis weekly:

C- Number of hours of dialysis, per week.

D- Does the patient was suffering from chronic diseases?

E- Does the patient was using drugs for the treatment of chronic diseases during dialysis?

(3) A specialist scale to measure the levels of depressive symptoms among patients with hemodialysis

2.4 Statistical Analysis

The Coefficient Alpha used to determine the reliability of the present study instrument by application of Statistical Package for Social Science Program (SPSS).

III. Results and discussion

Table (1) show majority (57.0%) of renal failure patients undergoing hemodialysis are male and the remaining (43.0%) are females. This is similar to the study in Republic of Macedonia. Which found the majority of the study subjects 120 (52.173%) were male.⁽⁹⁾

Regarding to the patients age, major group of the sample is between (40-49) years (39.0%). This result agrees with the study in Iran, which indicated that the average age of participants in patients group was 44.12 ± 13.2 years.⁽¹⁰⁾

More than half of the current study sample (73.0%) are living in urban area while (27.0%) of them are living in rural area. This result supported in China, which found that the majority of the study group was living in urban area about 230 patients (80.1%) and the remaining 57 patients living in rural area (19.9%).⁽¹¹⁾

According to the subjects' level of education, the results show that the majority of the study sample is primary school graduates about (67.0%), (14.0%) were illiterate, (15.0%) graduates from secondary school and only (4.0%) have high education level, which graduates from institute, college& more. This result is similar to the study in São Paulo, Brazil, which found that the majority of the sample graduated from primary school (61.1%), (19.4%) graduates from secondary school, (11.1%) were illiterate, and only (8.3%) have high education level.

The highest percentages of the sample (62.0%) were married while (31.0%) were single. This agrees with study in Lahore Pakistan, found that (86.5%) of the sample were married.⁽¹²⁾

Concerning with economic status, about (77.0%) of the study sample have inadequate monthly income, (17.0%) have somehow adequate, whereas (6.0%) of them have adequate monthly income. This result supported by the study in Al-Khari, Saudi Arabia who found that majority (53.45%) of the study sample presented with low monthly income.⁽¹³⁾

Finally, in regarding to the occupation status, about (74.0%) of the renal failure patients are jobless, (13.0%) are free work, (7.0%) are retired and only (6.0%) of them are employed. The findings result of present study is similar to the study in Amman, Jordan, who found that (71%) of the study sample is unemployed and with no job, (10%) of them were retired and only (18%) of them were employed.⁽¹⁴⁾

Table (2) shows that the majority (42.0%) of renal failure patients in the present study has duration on hemodialysis for (1-5) years, (21.0%) between (6-10) years, (17.0%). The result agrees with the study in Kerala, Southern India, founded that the majority (50.5%) of the patients have duration on dialysis for 5 years or less.⁽¹⁵⁾

Regarding the frequency of dialysis and hours per week, the most of the sample (73.0%) receive two sessions of hemodialysis per week for six hours or less on dialysis every week, whereas (27.0%) of them receive three sessions of hemodialysis per week for nine hours per week. This result is disagreed with the study in Saudi Arabia, who found that the majority of the patients about (85.1%) receive three sessions of hemodialysis weekly.⁽¹⁶⁾

Concerning with chronic diseases, the resent study shows that (21.0%) of the patients do not have chronic disease and (79.0%) of them suffer from chronic disease like hypertension, diabetes mellitus and others, but only (66.0%) of them using drugs for the treatment of chronic diseases during dialysis. This finding agrees with the study of in Santa CASA de Misericordia, who found the majority of the patients have chronic disease.⁽¹⁷⁾

Table (3) shows that the majority (67.0%) of renal failure patients undergoing hemodialysis have sever level of depressive symptoms; (25.0%) have moderate depressive symptoms; (8.0%) have mild depressive symptoms. The results of the present study supported by the study in Qazvin, which found that the majority of the sample have severe depression about (65%)⁽¹⁸⁾.

Table (4) shows there is a significant association between depressive symptoms level with marital status & monthly income while no significant association between level of depression and demographic characteristics as age, gender, level of education, occupation and residence follow up (p value > 0.05). The study finding supported by the study in Saudi Arabia which indicate that there is no significant association between level of depression and patient's gender, level of education and occupation, also showed that there is a significant association between level of depression and the patients marital status and this is consistent with the result of the present study⁽¹³⁾.

Table (5) shows no significant association between level of depressive symptoms and medical history of the sample include frequency of dialysis, number of hours, chronic disease, medication and duration of dialysis. This result is agree with study in Jordan , which indicated no significant association between levels of depression & the duration or frequency of dialysis sessions per week⁽¹⁹⁾.

IV. Conclusions

Most of renal failure patients undergoing haemodialysis have sever level of depressive symptoms. There is no significant association between level level of depressive symptoms with the patient age, gender, level of education, occupation, residence, frequency of dialysis, number of hours, chronic disease, medication and duration of dialysis except the marital status and monthly income.

V. Recommendations

The researchers recommended to increase awareness level for renal failure patients & their families about the nature and type of renal disease and how to minimize their distress that caused by the disease. Psycho educational programs and provide psychological support for renal failure patients and their families in order to improve their psychological status. Training of nursing staff who work at hemodialysis unit on how to handle with patients to help them decreased their depression. In addition, the necessary to presence the psychologist and social worker at dialysis unit to provide psychological support for renal failure patients.

Table (1) Distribution of the Study Sample by Their Demographic Characteristics.

Sample Demographic Characteristics					
Gender			Residency		
	No.	%		No.	%
Male	57	57.0%	Urban	73	73.0%
Female	43	43.0%	Rural	27	27.0%
Total	100	100.0%	Total	100	100.0%
Age			Level of Education		
	No.	%		No.	%
19 years or less	4	4.0%	Illiterate	14	14.0%
20-29	11	11.0%	Primary	67	67.0%
30-39	13	13.0%	Secondary	15	15.0%
40-49	39	39.0%	Institute, college& more	4	4.0%
50 years or more	33	33.0%	Total	100	100.0%
Total	100	100.0%			
Marital Status			Monthly Income		
	No.	%		No.	%
Unmarried	31	31.0%	Adequate	6	6.0%
Married	62	62.0%	Inadequate	77	77.0%
Other	7	7.0%	Somehow Adequate	17	17.0%
Total	100	100.0%	Total	100	100.0%
Occupation					
			No.	%	

Employed	6	6.0%
free work	13	13.0%
Retired	7	7.0%
Jobless	74	74.0%
Total	100	100.0%

No. = Number of the sample, % = Percentages.

Table (2): Distribution Medical History of the Study Sample

Medical History					
Frequency of Dialysis			Number of Hours		
	No.	%		No.	%
Two/week	73	73.0%	≤6	73	73.0%
Three/week	27	27.0%	9	27	27.0%
Total	100	100.0%	Total	100	100.0%
Chronic Disease			Medication		
	No.	%		No.	%
Yes	79	79.0%	Yes	66	66.0%
No	21	21.0%	No	34	34.0%
Total	100	100.0%	Total		100.0%
Duration of Dialysis					
Years			No	%	
<1			12	12.0%	
1-5			42	42.0%	
6-10			21	21.0%	
11-15			17	17.0%	
16≥			8	8.0%	
Total			100	100.0%	

No. = Number of the sample, % = Percentages.

Table (3) Distribution of the Sample according to the levels of depressive symptoms .

Levels of Depression										
Levels of Depression	No disorder		Mild		Moderate		Severe		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
	0	0.0%	8	8.0%	25	25.0%	67	67.0%	100	100.0%

0-7= no disorder 8-10= Mild Depression 11-15= Moderate Depression 16-21= Severe Depression

Table (4): Association between depressive symptoms level and demographic characteristics of the sample.

Levels of Depression

Demographic characteristics	X ²	df	p-value
Gender	0.210	1	0.900
Age	13.842	4	0.311
Levels of Education	0.362	3	0.996
Marital Status	59.227	2	0.001
Income	27.149	2	0.001
Occupation	3.421	3	0.754
Residency	0.914	1	0.633

X²→ Chi- square df→degree of freedom p-value → Probability

Table (5): Association between depressive symptoms level and Medical History of the sample.

Levels of Depression			
Medical History	X ²	df	p-value
Frequency of Dialysis	0.562 ^a	2	0.755
Number of Hours	0.562 ^a	1	0.755
Chronic Disease	0.532 ^a	1	0.767
Medication	0.432 ^a	1	0.806
Duration of Dialysis	13.437 ^a	4	0.098

X²→ Chi- square df→degree of freedom p-value → Probability

VI. References

1. Lee, M. C., Wu, S. F. V., Hsieh, N. C., & Tsai, J. M. (2016). Self-management programs on eGFR, depression, and quality of life among patients with chronic kidney disease: a meta-analysis. 10 (4), 255.
2. Crane, D.; Tupling, K.; Latchford, G.; Wilkie, M.; Edwards, L.; Davies, S.; Mathers, N.; Bekker, H.; Gavaruzzi, T.; Summers, B.; Stiggelbout, A.; Johnson, O.; Jones, S.; Baxter, P.; Meads, D. and Dunn, L. (2016). Dialysis: making the right choices for you: The Dialysis Decision Aid booklet, NHS Hospital Trusts at Leeds, Sheffield, Don Caster, Bradford, York, Hull, and North Staffordshire. 8-9.
3. Aggarwal, H. K., Jain, D., Dabas, G., & Yadav, R. K. (2017). Prevalence of depression, anxiety and insomnia in chronic kidney disease patients and their co-relation with the demographic variables. 38 (2), 35-36.
4. Sharif, D. A., Awn, A. H., Murad, K. M., & Meran, I. M. (2017). Demographic and characteristic distribution of end-stage renal failure in Sulaimani Governate, Kurdistan region, Iraq. Int J Med Res Prof, 3, p.p.155-158. Available at: www.ijmrp.com
5. Fan, L., Sarnak, M. J., Tighiouart, H., Drew, D. A., Kantor, A. L., Lou, K., Shaffi, K.; Scott, T.& Weiner, D. E. (2014). Depression and all-cause mortality in hemodialysis patients. American journal of nephrology, Vol. 40, No.1, p.p. 2-3. Available at: <https://doi.org/10.1159/000363539>
6. Wang, L. J., & Chen, C. K. (2012). The psychological impact of hemodialysis on patients with chronic renal failure. *Renal failure-the facts*, 217-236.

7. Shirazian, S., Grant, C. D., Aina, O., Mattana, J., Khorassani, F., & Ricardo, A. C. (2017). Depression in chronic kidney disease and end-stage renal disease: similarities and differences in diagnosis, epidemiology, and management. *Kidney international reports*, Vol. 2, No. 1, p.p. 94. Available at: <https://doi.org/10.1016/j.ekir.2016.09.005>
8. Grigoriou, S. S., Karatzaferi, C., & Sakkas, G. K. (2015). Pharmacological and non-pharmacological treatment options for depression and depressive symptoms in hemodialysis patients. *Health psychology research*, 3(1).
9. Pop-Jordanova, N., & Polenakovic, M. (2016). Are Depression and Anxiety Common in Hemodialyzed Patients? *14* (2), 84-88.
10. Hajseyed, J. A., Shafikhani, A. A., Allami, A., Charkhchian, M., & Shiraghaee, M. (2017). Depression and anxiety among patients with chronic kidney disease receiving hemodialysis in Iran. *4* (1), 22- 25.
11. Lin, X., Lin, J., Liu, H., Teng, S., & Zhang, W. (2016). Depressive symptoms and associated factors among renal-transplant recipients in China. *3* (4) 347-353.
12. Anees, M., Barki, H., Masood, M., Ibrahim, M., & Mumtaz, A. (2008). Depression in hemodialysis patients. *24* (4), 560-563.
13. Alqarni, A. M., Alghamdi, E. A., Alaqil, N. A., Alzahrani, A. H., Aldhfyar, Y. M., & Alruwaili, S. A. (2019). Prevalence of Anxiety, Depression, and its Related Influencing Factors among Patients with End-stage Renal Disease on Hemodialysis in Al-Kharj, Saudi Arabia. *8* (1), 55-62.
14. Al Awwa, I. A., & Jallad, S. G. (2018). Prevalence of depression in Jordanian hemodialysis patients. *12* (2), 2-3
15. Nelson, V., Gopalakrishnan, S., Rakesh P.S, Simon, S., Babu, V., Vikraman, V., Abraham, S. & Mohammed, Y. (2015). Depression among Dialysis Patients, Attending a Tertiary Care Hospital in Kerala, Southern India, *40* (2) 35-37.
16. Al Garni S., R. (2006). Assessment of Health Related Quality of Life Among End- Stage Renal Disease (ESRD) Adults Patients Undergoing Hemodialysis At The Eastern Region, Thesis At Medical Surgical Nursing, College Of Nursing, and King Saud University.
17. Stasiak, C. E. S., Bazan, K. S., Kuss, R. S., Schuinski, A. F. M., & Baroni, G. (2014). Prevalence of anxiety, depression, and its comorbidities in patients with chronic kidney disease on hemodialysis and peritoneal dialysis. *36* (3), 325-331.
18. Hajseyed, J. A., Shafikhani, A. A., Allami, A., Charkhchian, M., & Shiraghaee, M. (2017). Depression and anxiety among patients with chronic kidney disease receiving hemodialysis. *International Journal of Applied Behavioral Sciences (IJABS)* Vol. 4, No. 1, p.p. 22- 25.
19. Al Awwa, I. A., & Jallad, S. G. (2018). Prevalence of depression in Jordanian hemodialysis patients. *Iranian journal of psychiatry and behavioral sciences*, Vol.12, No. 2, p.p. 2-3, Available at: <http://creativecommons.org/licenses/by-nc/4.0/>