



Original Research

Health Status among End Stage Kidney Disease on Hemodialysis and non-Hemodialysis Patients in Kirkuk city: Comparative Study

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Abstract:

Background: Hemodialysis is a treatment for end-stage renal disease (ESRD) in which a machine filters waste and excess fluids from the blood for patients whose kidneys can no longer perform this function on their own. The health status of a hemodialysis patient can vary depending on several factors, including the underlying cause of their kidney disease, their overall health and medical history, the effectiveness of their dialysis treatments, and their adherence to their treatment plan.

Aim: This study aims to compare the health status among end stage kidney disease on hemodialysis and non-hemodialysis patients at Kirkuk city.

Methods: across –sectional study design was used in their study to assessment health status among end stage kidney disease on hemodialysis and non-hemodialysis patients in Kirkuk city: comparative study during the period from 10/10/2023 to 22/2/2024. Instrument of the study were consists of from three main domain includes demographic data, medical data and health status domine and four sub domain which includes (independency, daily physical activity, psychosocial, and life adaptation. The data were prepared, organized and entered into the computer file; Statistical Package for Social Science (SPSS) (23 version) At (P. value equal or less than 0.05), was employed for data analysis. The descriptive data analysis (frequencies, percentages, and inferential by use Anova and T, test.

Results: The results shows the male more than female and constitute 60 (60.0%), and 67 (67.0%) in the hemo and non-hemodialysis patients respectively, and most of "Age Groups", between (50-59) years and constitute 35.0% in the dialysis patients while non hemodialysis patients between (50-59) years and represent 32.0% .

Conclusions: The findings are based on the results of data analysis. the conclusions are health status of patients with hemodialysis and non-dialysis patients different according to independency, daily physical activities, psycho- social aspects, and adaptation of life., mean score for hemodialysis patients were high and moderate in most items while low in most of items of non- hemodialysis patients ,Health status of hemodialysis patients were poor in compare with non- hemodialysis patients were good health status ,In socio-demographic characteristics of hemodialysis patients age, gender , marital status and occupation has significant effect on health status while non- significant for non - hemodialysis patients

Keywords: Health status, ESKD, Hemodialysis, non-hemodialysis, patients

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Introduction:

A chronic disease (CD), is defined as a condition that last at least three months and involves ongoing medical attention or limits activities of daily living or both. According to the Centers for Disease Control (CDC), there are several types of chronic diseases and as follows: heart disease, cancer, stroke, type 2-diabetes, obesity, arthritis and kidney disease. Many of these chronic diseases are caused by tobacco use, excessive alcohol use, poor nutrition and physical [1]. “. This work will mainly focus on the kidney disease. Chronic kidney disease (CKD), is described as a condition in which the kidneys are damaged and cannot filter blood as well as they should. As a result, excess fluid and waste from blood remain in the body and may cause other health problems, involving stroke, heart disease and other health issues. Chronic kidney disease (CKD), is a growing worldwide public health concern, for example, in 2022, more than 15% of the United States of America adults are estimated to have chronic kidney disease [2] . A decline in the glomerular filtration rate (GFR) or kidney damage that lasts for three months or more is referred to as chronic kidney disease (CKD). Premature death, higher medical costs, and a worse quality of life are all linked to chronic kidney disease (CKD). End-stage kidney disease (ESKD) formerly known as end-stage renal disease (ESRD) [3] . Chronic kidney disease (CKD), also known as chronic renal failure (CRF), is a progressive illness marked by changes to the kidney's structure and function brought on by a variety of factors. Reduced kidney function, an estimated glomerular filtration rate (eGFR) of less than 60 mL/min per 1.73 m², or kidney damage markers like

albuminuria, hematuria, or abnormalities found through laboratory testing or imaging that have persisted for at least three months are the standard definitions of chronic kidney disease (CKD). An estimated 10% of adult individuals globally suffer from some kind of chronic kidney disease (CKD), which causes 1 to 2 million deaths and 28 million years of lost life annually [4] .

Methodology:

Across –sectional study design has used to guide this study, the approach to assess health status among end stage kidney disease on hemodialysis and non-hemodialysis patients in Kirkuk city: comparative study during the period from 10/10/2023 to 22/2/2024. In order to obtain valid and comprehensive data, the current study was carried out at Kirkuk teaching hospital, Azadi teaching hospital, Al hawija general hospital and al-amal center at Kirkuk governorate .A Purposive (non- probability) sampling has been performed for all patient who suffer from end stage kidney disease who undergoing dialysis and who non hemodialysis, the total population of patient who suffer from end stage kidney disease is 200 sample, 100 patients under hemodialysis and 100 patients non –hemodialysis, A three-point Likert scale was employed, with (3) representing always, (2) some times and (1) for never. The validity of the questionnaire was evaluated by (10) experts in the area, and certain items were adjusted based on their comments and suggestions; all expert opinions were taken into account, the reliability of instrument were 0.81 for all items the data collection process was performed from period from 10th November 2023 to 20th January 2024.The data has been processed, structured, and entered into a computer

file; for data analysis. The data were prepared, organized and entered into the computer file; Statistical Package for Social Science (SPSS) (23 version) At (P. value equal or less than 0.05), was

employed for data analysis. The descriptive data analysis (frequencies, percentages, and inferential by use Anova and T, test .

Table (4-1) Socio demographic characteristic of the study sample (No:100) hemodialysis patients and non- hemodialysis patients

Categories	Hemodialysis patients		Non-Hemodialysis patients	
	F	%	F	%
Gender				
Male	60	60.0	67	67.0
Female	40	40.0	33	33.0
Total	100	100.0	100	100.0
Age				
20-29 years	4	4.0	4	4.0
30-39 years	17	17.0	20	20.0
40-49years	24	24.0	28	28.0
50 -59years	29	29.0	32	32.0
60-69years	26	26.0	16	16.0
Total				
Marital status				
Single	8	8.0	12	12.0
Married	74	74.0	66	66.0
Divorced	5	5.0	5	5.0
Widow	13	13.0	17	17.0
Total	100	100.0	100	100.0
Job				
Employ	8	8.0	15	15.0
Free work	74	74.0	30	30.0
Housewife	5	5.0	20	20.0
Retired	13	13.0	12	12.0
Jobless	0	0	18	18.0
Student	0	0	5	5.0
Total	100	100.0	100	100.0
Monthly income				
Sufficient	17	17.0	29	29.0
Barely sufficient	70	70.0	36	36.0
Insufficient	13	13.0	35	35.0
Total	100	100.0	100	100.0

Table (1) shows the male are more than female and constitute 60 (60.0%), and 67 (67.0%) in the hemo and non-hemodialysis patients respectively, and most of "Age Groups", between (50-59) years and constitute 35.0% in the dialysis patients while non hemodialysis patients between (50-59)years and represent32.0% with regard for marital status most of patients were married in hemo dialysis and non hemod dialysis patients and represent

74(74.0%) and 66 (66.0%) respectively , also the result appear most of hemo dialysis and non hemod dialysis patients were have free work and constitute 74(74.0%) and 30 (30.0%) respectively .with regard to the monthly income high percentage from hemo dialysis and non hemod dialysis patients were Barely sufficient and constitute 70(70.0%) and 36 (36.0%) respectively

Table (4-2)patients responses regarding to independency domains within 3- level scale by total frequencies, percentages and mean of score for both hemodialysis and non-hemodialysis patients .

Independency Sleep		Hemodialysis				Non hemodialysis				
Items	Questions	F	%	M S	Sig	Questions	F	%	MS	Sig
Do you feel difficulty in sleeping	Never	12	12.0	2.4	HS	Never	73	73.0	1.3	LS
	sometimes	32	32.0			Sometimes	19	19.0		
	Always	56	56.0			Always	8	8.0		
Do you satisfied with your sleep	Never	16	16.0	2.3	MS	Never	68	68.0	1.4	LS
	sometimes	31	31.0			Sometimes	22	22.0		
	Always	53	53.0			Always	10	10.0		
Do you feel a change in year sleep with aging	Never	8	8.0	2.5	HS	Never	12	12.0	2.3	MS
	sometimes	29	29.0			Sometimes	37	37.0		
	Always	63	63.0			Always	51	51.0		
Total mean of score: 2.4						Total mean of score : 1.6				
MS =mean of score Low significant less than 1.8 , moderate significant :1.8 to 2.39 high significant :2.4 to 3										

Table (3) shows the mean of score were high and moderate significant at all questions for hemodialysis patients while low and moderate significant for non- hemodialysis patients

Table (4-3)patients responses regarding to nutrition within 3- level scale by total frequencies, percentages and mean of score for both hemodialysis and non-hemodialysis patients .

Items	Nutrition Questions	Hemodialysis				Non hemodialysis				
		f	%	M S	Sig	F	%	MS	Sig	
Does year eating food decreased with aging	Never	16	16.0	2.4	HS	Never	12	12.0	2.3	MS
	Sometimes	20	20.0			s	52	52.0		
	Always	64	64.0			Always	36	36.0		
Dose kind of food is changes with aging	Never	10	10.0	2.6	HS	Never	9	9.0	2.2	MS
	Sometimes	18	18.0			s	51	51.0		
	Always	72	72.0			Always	40	40.0		
Do you need the aid of other as you eat	Never	10	10.0	2.6	HS	Never	17	17.0	2.2	MS
	Sometimes	11	11.0			s	60	60.0		
	Always	79	79.0			Always	23	23.0		
Total mean of score : 2.5					Total mean of score= 2.2					
MS =mean of score Low significant less than 1.8 , moderate significant :1.8 to 2.39 high significant :2.4 to 3										

Table (3) shows the mean of score were high significant at all questions for hemodialysis patients while moderate significant for non- hemodialysis patients

Table (4-4a) One-way Analysis of Variance for the comparative differences between hemodialysis health status domain and their age .

Domains	S.O.V	Sum of Squares	D.F	Mean Square	F	Sig.
Independence domain	Between Groups	5.887	4	1.472	6.851	.000
	Within Groups	20.194	94	.215		HS
	Total	26.081	98			
Daily physical activities	Between Groups	2.014	4	.504	5.631	.000
	Within Groups	8.496	95	.089		HS
	Total	10.510	99			
Psycho - social aspect	Between Groups	2.461	4	.615	6.009	.000
	Within Groups	9.729	95	.102		HS
	Total	12.190	99			
Adaptation of Life	Between Groups	.948	4	.237	5.686	.000
	Within Groups	3.962	95	.042		HS
	Total	4.910	99			

Table (4-4a) this table shows that there are high significant differences between hemodialysis patients domains and their age at value ≤ 0.05 .

Table (4-4b) One-way Analysis of Variance for the comparative differences between non hemodialysis health status domain and their age .

Domains	S.O.V	Sum of Squares	D.F	Mean Square	F	Sig.
Independence domain	Between Groups	8.167	40	.204	.812	.755
	Within Groups	14.833	59	.251		NS
	Total	23.000	99			
Daily physical activities	Between Groups	13.440	40	.336	.955	.555
	Within Groups	20.750	59	.352		NS
	Total	34.190	99			
Psycho - social aspect	Between Groups	8.560	40	.214	.734	.849
	Within Groups	17.200	59	.292		NS
	Total	25.760	99			
Adaptation of Life	Between Groups	11.023	40	.276	.535	.981
	Within Groups	30.367	59	.515		NS
	Total	41.390	99			

Table (4-4b) T test for Comparison of between hemodialysis health status domain and their regarding to their gender.

Categories	Gender	No.	X	S.D	T.obs	P≤ 0.05
Independence domain	Male	59	2.7119	.64463	45.651	.000 HS
	Female	40	3.0000	.00000		
Daily physical activities	Male	59	2.9153	.33673	1.083	0.300 NS
	Female	41	2.9512	.31235		
Psycho - social aspect	Male	59	2.8644	.43381	10.979	0.001 S
	Female	41	2.9756	.15617		
Adaptation of Life	Female	59	2.9661	.26038	.189	.665 NS
	Male	41	2.9756	.15617		

Df=98

Table (4-18 a) presented that there were significant differences between hemodialysis health status domain according to gender at P value ≤ 0.05 except for daily physical activities and adaptation of life domains.

Discussion of The Results:

This chapter interpret and discuss the results that obtained through health status among end stage kidney disease on hemodialysis and non-hemodialysis patients in Kirkuk city : comparative study

The present study samples consist of 200 patients 100 hemodialysis – 100 non-hemodialysis, according to gender groups. Male patients are dominated, accounting for more than half of all patients 60(60.0%), and 67(67.0%), in the hemodialysis and non-hemodialysis patients respectively, the current finding are consistent with Influence of gender and age on hemodialysis practices conducted [4]in a European multicenter analysis those find male more than female (80% versus 73%; at P<0.01) this result is agreement with the study .Study conducted in Japanese Dialysis Outcomes performed by Ishiwatari [5]to describe the health status and its change in older maintenance hemodialysis patients and to demonstrate characteristics associated with health-related health status. This study is agreement with the results of our study "Age Groups", between (50-59) years and constitute 35.0% in the dialysis patients while non hemodialysis patients between (50-59) years and represent32.0%. The result is

similar with Ishiwatari who find the result of Hemodialysis patients aged 70–79 years.

The current finding is consistent with descriptive study design was used, done by (6) Elsdén, at Menoufyia university hospital to assess health status condition among patients with hemodialysis who find that gender and line of business of hemodialysis patients are closely related to each other. According to this study results, with regard to the monthly income high percentage from hemo dialysis and non-hemodialysis patients were Barely sufficient and constitute 70(70.0%) and 36 (36.0%) respectively. The result supported by Elsodany who find in his study most of patients have barely insufficient there for he is agreement with our study result. According to this study results, for marital status most of patients were married in hemo dialysis and non-hemodialysis patients and represent 74(74.0%) and 66 (66.0%) respectively, also the result appears most of hemo dialysis and non -hemodialysis patients were have free work and constitute 74(74.0%) and 30 (30.0%) respectively. Depending on this study results, the patient with hemodialysis have sleep disturbance) shows the mean of score were high and moderate significant at all questions for hemodialysis patients while low and moderate significant for

non- hemodialysis patients. There is study that supports the results of the researcher's study that was conducted before, Physical Activity and Sleep Patterns in Hemodialysis Patients in a Suburban Environment done by Williams [7] showed A large number of patients had poor-quality sleep, with hemodialysis because effect of hemodialysis pattern on patient's life style

Other Study conducted in Private Tertiary Australian hospital, performed by Ben [8] to measure hemodialysis patients' nutrition using the scored Patient-Generated Subjective Global Assessment (PG-SGA) this study is agreement with our study result and find twenty percent of patients were malnourished in hemodialysis and eighty percent of patients were well fed. Patients who were categorized as moderately malnourished or at risk of malnutrition had a substantially higher median score than well-nourished patients. Discussion the Relationships of Socio-Demographic Characteristic Variables Concerning with. The study indicates that there Sociodemographic and clinical characteristics seems to influence the health status in hemodialysis patients Results: [9] To explore the health status of hemodialysis patients. Findings: Of the 320 patients receiving hemodialysis, 57,2% were men, and 28,1% of participants were between the ages of 71 and 80. The average overall health status score, which ranges from 0 to 30, was determined to be 17.43. Participants under 60 years old ($p= 0,009$), with higher educational attainment ($p= 0.001$), highly informed about their health problem ($p= 0,013$), adhering to treatment recommendations and the suggested diet ($p= 0,025$ & $p= 0,012$, respectively), having excellent relationships with medical and nursing staff and other patients ($p<0,001$), not having problems in their social or familial environments ($p= 0,001$), receiving assistance at home ($p<0,001$), and not hiding their health condition from others ($p<0,001$). Additionally, it was discovered that. the table shows there are no significant differences between non hemodialysis health status domains and their age at value ≤ 0.05 . and this support our study conclusions According to the study's analysis, there shows that there are high significant differences

between hemodialysis patients domains and their marital status at value ≤ 0.05 . A prospective cohort study of 1064 Japanese hemodialysis patients aged 30 years or above yielded different results. Three categories were used to categorize marital status: married, single, and divorced/widowed. The study conclude there is no significant association between Factors that affecting patients' decision and demographic characteristics, also the study concluded many factors effects that affecting patients' decision about period of hospitalization most of the environmental factors that effect on patients decision was noises and alarms while the psychosocial events was thinking about death in hospital with related for factors related to treatment and communication was fear from machines [10]

Completed by [11] the results imply that being single is a substantial predictor of both CVD and all-cause mortality, and that being receiving divorced or widowed is a significant predictor of CVD mortality in patient's hemodialysis.

Table (4-4a) this table shows that there are high significant differences between hemodialysis patients' domains and their age at value ≤ 0.05 . Conclusions According to the study's Description a Descriptive A-non-probability (purposive sample) of 174 male and female end-stage renal disease patients receiving hemodialysis in the city of al-Najaf, Ashraf. Conducted by [12]Zeena R.AI-Rubaia The majority of patients had an ESRD diagnosis more than a year ago from those who have at than a year's worth of experience receiving hemodialysis for maintenance. Descriptive data analysis (frequencies, percentages, mean, standard deviation, and person correlation) was used to examine the data. Findings according to the 174 participants' acceptable measurement findings, around 35.1% of them were deemed sufficient. and 64.9% failed to reach sufficient. 10.9% of respondents to the health status survey reported having a high health status, while 89.1% reported having a bad health status in conclusion: According to the study's findings, patients receiving dialysis for chronic renal disease had generally low health status scores across all domains. Gender and

educational attainment had an impact on one or more health status dimensions. Patients with end-stage renal disease have a worse health status.

Conclusions:

The results shows the male more than female and constitute 60 (60.0%), and 67 (67.0%) in the hemo and non-hemodialysis patients respectively, and most of "Age Groups", between (50-59) years and constitute 35.0% in the dialysis patients while non hemodialysis patients between (50-59) years and represent 32.0%. Also the study conclude Health status of patients with hemodialysis and non-dialysis patients different according to independency, daily physical activities, psychosocial aspects, and adaptation of life. With regard for Medical date for patients with hemodialysis showed 46(46.0%) from hemodialysis patients have dialysis for more than 5 years with regard for number of session dialysis most of them have two session per week and constitute 62(62.0%) also the result shows majority of hemodialysis patients have chronic disease (diabetes mellitus and hypertension and represent 92(92.0%) , 83(83.0%). Mean score for he.modialysis patients were high and moderate in most items while low in most of items of non- hemodialysis patients .Health status of hemodialysis patients were poor in compare with non- hemodialysis patients were good health status .Except for privacy conditions, most of the patients had good satisfaction from the perception of doctors, nurses, and services appreciated. This is because high professional nurses had graduated with complete education and moral dealing with professionals in fields [13] In socio-demographic characteristics of hemodialysis patients such as age, gender, marital status and occupation has significant effect on health status while non-significant for non -hemodialysis patients

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