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ORIGINAL RESEARCH

Health Status of Hemodialysis Patients with End Stage Kidney Disease in Kirkuk City

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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.

Objectives: This study aimed to assess health status of hemodialysis patients with end stage kidney disease in Kirkuk city: 2023-2024.

Methodology: cross–sectional study design conducted from 10 February 2023 to 22 May 2024. This study was conducted at Kirkuk City Hospitals. A purposive sample (non-probability) consisting of 100 patients under hemodialysis at Kirkuk city hospitals. Data were collected using an interview-structured questionnaire. The structured questionnaire consisted of three main domain includes demographic data, medical data and health status domain which includes (independency, daily physical activity, psychosocial, and life adaptation. A three-point Likert scale was employed, with (3) representing always, (2) some times and (1) for never. Mean of score categorized as low significant less than 1.8, moderate significant: 1.8 to 2.39 and high significant between 2.4 to 3. The data were prepared, organized and entered into the computer file; Statistical Package for Social Science (SPSS) (23 version).The significance level for statistical analysis was set at $p<0.05$. The descriptive data analysis (frequencies, percentages) and inferential statics by use Anova and T test was used for categorical variables.

Results: The results shows the male more than female and constitute 60 (60.0%), most of "Age Groups", between (50-59) years and constitute 35.0% in the dialysis patients.

Conclusion: Health status of patients with hemodialysis 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, Health status of hemodialysis patients were poor, Socio-demographic characteristics of hemodialysis patients age, gender, marital status and occupation has significant effect on health status at $p<0.05$.

Recommendations: Constructing an educational program for hemodialysis patients regarding to improve general health status, an appropriate body weight, encourage the regular physical activity to improve patient's life adaptation, psycho-social support, home and community support in collaboration with Health Governorate, Medical college and Nursing college.

Keywords: Health status, ESKD, Hemodialysis.

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INTRODUCTION

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 (Chen etal ,2019). Hemodialysis, is described as a process of purifying the blood of a patient whose kidneys are not functioning normally. This sort of treatments (i.e., dialysis), real is the extracorporeal removal of unwanted products including creatinine and urea and free water from the blood when the kidneys are in a state of kidney failure. Chronic and severe kidney dysfunction can cause many physical and mental problems. As disease progresses, accumulation of toxins will reach to an extent that patients usually experience a significant influence in their daily activities including feeling of health and nutrition status. This condition may lead to death unless renal replacement therapy (dialysis or kidney transplantation) is started (Perl etal ,2012). Functional status (FS) is the ability to perform activities such as walking, bathing, dressing, getting out of bed, and using the toilet . Is a key aspect of the quality of life, a strong predictor of survival, a determinant of caregiving needs health care costs, and a factor in decisions about medical procedures such as the use of feeding tubes or cardiopulmonary resuscitation. Disability, or functional dependence, is a well-recognized predictor of hospitalization and of poor outcomes in non-dialysis populations but has not been well studied in the renal population. Previous research has suggested that renal patients are vulnerable and often cannot function fully within society, however, few have characterized, in detail, the nature and type of disabilities seen, particularly among dialytic patients (Schmalz et al., 2020). Chronic renal disease is defined as "long-term kidney impairment that can worsen over time." If the damage is severe, dialysis or a kidney transplant may be required in order to live. When the kidneys cease working, this is known as renal failure (Liu et al., 2018). Dialysis is a process that involves pumping blood through a machine that filters waste and restores it to the body. Dialysis and peritoneal dialysis are two different forms of dialysis (Byrne, 2020). Hemodialysis is a therapy that filters wastes and water from the blood in the same way as healthy kidneys do. Hemodialysis aids in the management of blood pressure and the balance of essential minerals in the blood, such as potassium, sodium, and calcium (Salani et al., 2018).

Patients on hemodialysis have a worse quality of life and health status which has a detrimental effect on their physical, social, economic, and psychological well-being. According to studies, patients typically do not seek dialysis until significant co-morbidities have developed due to a lack of knowledge (Alhajim, 2022).

AIMS OF THE STUDY

General objective:

To assess health status of hemodialysis patients with end stage kidney disease in Kirkuk city

Specific objective:

1. To asses' health status for patient with hemodialysis.
2. To find out relationship between patient's health status and a certain demographic characteristic, such gender, age, and educational level.

METHODOLOGY

Study design: Across–sectional study design has used to guide this study, the approach to assess health status among end stage kidney disease on hemodialysis in Kirkuk city during the period from 10 February 2023 to 22 May 2024.

Setting of the study: the study conducted at Kirkuk teaching hospitals (dialysis center). 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.

Study Sample: A Purposive (non-probability) sampling has been performed for 100 patients under hemodialysis.

Tool of the study: Data were collected using an interview-structured questionnaire. The structured questionnaire consisted of three main domain includes demographic data, medical data and health status domain which includes (independency, daily physical activity, psychosocial, and life adaptation.

Scoring system: A three-point Likert scale was employed, with (3) representing always, (2) some times and (1) for never. Mean of score categorized as low significant less than 1.8,

Moderate significant: 1.8 to 2.39 and high significant between 2.4 to 3.

Validity and Reliability of tool: The validity of the questionnaire was evaluated by (10) experts 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.

Data Collection Methods: the data collection process was performed from period from 10th November 2023 to 20th January 2024 by using interview technique. 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, mean) and inferential statics by use Anova and T test was used for categorical variables.

RESULTS

Table (1) Shows the male are more than female and constitute 60 (60.0%), in the hemodialysis patients and most of patients are within age group between (50-59) years and constitute 35.0% in the dialysis patients with regard for marital status most of patients were married in hemodialysis patients and represent 74(74.0%), also the result appear most of hemodialysis patients have free work and constitute 74(74.0%) with regard to the monthly income high percentage from hemodialysis patients were Barely sufficient and constitute 70(70.0%).

Table (2) shows the mean of score were moderate and high significant at all questions of performance for hemodialysis patients.

Table (3) shows the mean of score were moderate significant at all questions for environment of hemodialysis patients in all items.

Table (4) One-way Analysis of Variance for the comparative differences between hemodialysis health status domain and their age and shows that there are high significant differences between hemodialysis patients domains and their age at value ≤ 0.05.

Table (5) T. test for sex and shows 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:

The present study shows male patients are dominated, accounting for more than half of all patients 60(60.0%), in the hemodialysis, the current finding are consistent with influence of gender and age on hemodialysis practices conducted by Weigert and others 2019 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 and others (2020) to describe the health status and its change in older maintenance hemodialysis patients and to demonstrate characteristics associated with health-related to 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 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 Elsden and others (2022) at Menoufya

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 hemodialysis were Barely sufficient and constitute 70(70.0%). 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 hemodialysis represent 74(74.0%), also the result appear most of hemodialysis patients have free work and constitute 74(74.0%). Aeddula and others (2023) mention most frequent primary disorders that lead to chronic kidney disease (CKD) and, eventually, end-stage renal disease (ESRD) are as Type 2 diabetes (30% to 50%) Type1 Diabetes Mellitus (3.9%) prevalent fundamental illness, affecting 34% (n = 17) of patients. And this study supports our study.

Table (2) patient's responses regarding to performance activity of patients within 3- level scale by total frequencies, percentages and mean of score for both hemodialysis and non-hemodialysis patients. The present finding is inconsistent with a cross-sectional cohort study conducted on 314 hemodialysis patients from six hemodialysis clinics by Mark and others (2015) who discover Patients on dialysis performed considerably worse on executive function tests compared to population norms, but not on memory tests. This difference was maintained in the subgroup with scores ≥24. Studym conducted by Salih (2021), The results of this study showed that the citizen have poor knowledge and negative behaviors toward sterile water at rural area, also the result shows a significant statistical association between knowledge and attitudes of citizen with education level, gender, marital state and source of water in rural area.

In our study we found the mean of score were moderate and high significant at all questions for hemodialysis patients while low significant for non-hemodialysis patients in a similar results of a cross-sectional survey study research conducted out at King Abdul-Aziz Medical City (KAMC), Riyadh, in the HD unit in 2014 by Alkatheri and others (2014) that revealed that 28.09% of individuals had strong medication adherence, whereas 31.46% and 40.45% of patients had low and medium adherence, respectively. As a result, it was determined that 71.91% of the dialysis unit's patients did not take their medications as prescribed. Being married (P = 0.012) and having an older age (P= 0.024) both raised adherence levels, whereas having a medium level of education (P= 0.024) lowered it. However, the degree of medication adherence does not appear to be impacted by factors such as gender, the existence of a caregiver, the number of people living in the home, or work status. These findings urge the doctors working in HD units to create intervention plans that would boost drug compliance. The study indicates that there Sociodemographic and clinical characteristics seems to influence the health status in hemodialysis patients Results Gerasimoula and others 2020 and Zina 2022 to explore the health status of hemodialysis patients. Of the 320 patients receiving hemodialysis, 57,2% were men, and 28,1% of participants were between the ages of 71 and 80. The Ministry of health should plan for a strategy of regular screening for chronic renal failure in women and increasing the awareness of the women (Mohammed et al ,2020). 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).

CONCLUSIONS:

Health status of patients with hemodialysis 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. Health status of hemodialysis patients were poor in most health status domain. In socio-demographic characteristics of hemodialysis patients such as age, gender, marital status and occupation has significant effect on health status hemodialysis patients.

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TABLES:

Table (1): demographic characteristics of the study sample (100) patients

Variables		No.	%
Gender	Male	60	60.0
	Female	40	40.0
	Total	**100**	**100.0**
Age	20-29 years	4	4.0
	30-39 years	17	17.0
	40-49years	24	24.0
	50 -59years	29	29.0
	60-69years	26	26.0
	Total	**100**	**100.0**
Marital status	Single	8	8.0
	Married	74	74.0
	Divorced	5	5.0
	Widow	13	13.0
	Total	**100**	**100.0**
Job	Employ	8	8.0
	Free work	74	74.0
	Housewife	5	5.0
	Retired	13	13.0
	Jobless	0	0
	Total	**100**	**100.0**
Monthly income	Sufficient	17	17.0
	Barely sufficient	70	70.0
	Insufficient	13	13.0
	Total	**100**	**100.0**

Table (2): Patients responses regarding to performance for hemodialysis patients

Performance			Hemodialysis patients			
No	**Items**	**Answer**	**F**	**%**	**M S**	**Sig**
1	**Do you fell difficulty in fulfilling your home tasks**	Never	9	9.0	2.6	HS
		sometimes	19	19.0		
		Always	72	72.0		
2	**Do you have enough energy to practice your daily life**	Never	20	20.0	2.3	MS
		Sometimes	30	30.0		
		Always	50	50.0		
3	**Do you find a difficulty in standing and solve you family affairs and**	Never	11	11.0	2.1	MS
		sometimes	65	65.0		

problems	Always	24	24.0	

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): Patients responses regarding to environment for hemodialysis patients

Environment			Hemodialysis			
No	**Items**	**Answer**	**F**	**%**	**M S**	**Sig**
1	**Do you fell that your environment is healthy**	Never	15	15.0	2.0	MS
		Sometimes	67	67.0		
		Always	18	18.0		
2	**Do you satisfied with your residency conditions**	Never	12		1.9	MS
		Sometimes	77			
		Always	11			
3	**Do you try to make your own healthy environment**	Never	11	11.0	2.0	MS
		Sometimes	75	75.0		
		Always	14	14.0		
4	**Do you fell that individuals around you try to maintain your healthy environment**	Never	9	9.0	2.6	MS
		Sometimes	16	16.0		
		Always	75	75.0		

MS= mean of score Low significant less than 1.8, moderate significant: 1.8 to 2.39, high significant: 2.4 to 3

Table (4): 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 (5): T test for Comparison of between hemodialysis health status domain and their regarding to their gender

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