

Determination of Health Literacy among End Stage Renal Disease Patients

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ABSTRACT

Background: Patients with end-stage renal disease require hemodialysis treatment to maintain renal function and need adequate health literacy skills to manage symptoms that may arise and cope with physical, psychological and financial changes. In addition, the patients are expected to be able to make their own decisions on how to manage the disease and adhere to treatment. The Study aimed to assess health literacy levels among end-stage renal disease patients.

Methodology: A descriptive A-non-probability (purposive sample) of (171) male and female hemodialysis patients in al-Najaf al-Ashraf city of patients with end-stage renal disease and undergoing hemodialysis. Most patients were diagnosed with ESRD > one year ago from those who have been on a maintenance hemodialysis program for more than a year. Data were analyzed by using descriptive data analysis (frequencies, percentages, mean, standard deviation, Fisher's exact test).

Results: Our results show that the overall assessment of patient health literacy level is Inadequate at the mean score of (20.98), also assessment according to the three-domain (health care, disease prevention and health promotion) result shows the lowest mean index at health promotion (18.560) with a high percentage in the difficulty of responses (66.7%)

Conclusions: The study concluded that End-stage renal disease Patients undergoing hemodialysis have an inadequate level of health literacy. They reflect difficulties in understanding and processing health information, which may interfere with therapeutic management and self-care decisions making about their health

Keywords: Determination, Health Literacy, Renal Disease.

INTRODUCTION

Chronic kidney disease (CKD), commonly known as chronic renal failure, is a widespread non-communicable illness that affects individuals all over the world. It is an umbrella term for kidney injury or impaired function that lasts more than three months. A lower estimated glomerular filtration rate (GFR) shows a decline in the kidney's capacity to remove waste and excess fluid from the blood in CKD ⁽¹⁾. Over time, CKD can worsen and lead to major problems such as high blood pressure, anaemia, bone disease, and even kidney failure. It is critical to control and monitor CKD through lifestyle modifications, medication, and regular doctor visits⁽²⁾. National Kidney Foundation (2022), report that In the early stages of the disease, most people do not have symptoms. But as kidney disease gets worse, wastes can build up in the blood and make a person feel sick then may develop other problems, like anaemia, weak bones, poor nutritional health, and nerve damage. Because renal are vital to many of the body's functions ,In addition Aggravate chronic kidney disease can result in end-stage renal disease, which is the final stage of CKD ⁽³⁾. End-stage renal disease (ESRD) known as stage five CKD, are incurable and woeful individuals of all ages ⁽⁴⁾. It is occurs when Estimated Glomerular Filtration Rate (eGFR) falls below 15 mL/min per 173m², indicating that kidney function is no longer capable of sustaining life over the long term⁽⁵⁾. That lead to retention of uremic waste products and toxin in the body that need for renal replacement therapy (RRT), such as dialysis or kidney transplantation ⁽²⁾. End-Stage renal disease patients have two main choices for treatment hemodialysis and kidney transplantation ⁽⁶⁾. Hemodialysis (HD) is a process that removes accumulated solute from a patient with near-total or total loss of renal function ⁽⁷⁾. Adequate HD raises the patient survival, health-related quality of life, and biochemical outcomes and lowers complications of disease and disease-related hospitalizations It decreases morbidity and mortality ⁽⁸⁾. Patients undergoing hemodialysis most have adequate health literacy to make increasingly complicated decisions during their treatment path. Some of these include decisions on food intake, medicines, clinic visit frequency, treatment options ⁽⁹⁾. Health literacy of hemodialysis patients' define as knowledge, motivation, and competencies to access, understand, appraise, and apply health information to make judgments and decisions in everyday life concerning healthcare, disease prevention, and health promotion to maintain or improve their quality of life throughout their lives ⁽¹⁾. Inadequate health literacy causes patients undergoing hemodialysis to have a poor understanding of the disease process, poor recall and

comprehension of advice and instructions from the medical staff, and poor problem-solving skills ⁽¹⁰⁾. This leads to negative health outcomes such as lower self-management skills, higher rates of morbidity, and absence of preventative care. For example, diabetic patients on dialysis with inadequate health literacy are more likely to have poor glycemic control and retinopathy ⁽¹¹⁾. There is little research characterizing health literacy, and examining health literacy among end-stage renal disease, limited health literacy is common in patients initiating hemodialysis therapy ⁽¹²⁾. Generally, there have been no studies in Iraq focusing on health literacy, among End-stage renal disease patients or chronic kidney disease in general. For that, the present study focuses on the most important topic in nursing studies to fill a gap in nursing research.

METHODS AND MATERIALS

A quantitative descriptive cross-sectional design was used to assess health literacy among end-stage renal disease patients undergoing hemodialysis. The study was conducted at AL-Najaf AL-Ashraf City /AL Sadder Medical City the Specialized Center for Kidney Diseases and Transplantation's Hemodialysis Unit. A non-probability (purposive) sample of (171) patients was selected from those who visited the Hemodialysis Unit at the Specialized Center for Kidney Diseases and Transplantation in Al-Najaf Al-Ashraf .An assessment instrument used to assess health literacy level among end stage renal disease patients, the instrument included two parts :Part I : Patient's Socio-Demographic Characteristics :The characteristics of the subjects under study included (age, gender, level of education, marital states , Residence , occupation , source of health information, duration of disease, and number of dialysis session per week).Part II : Health Literacy scale : The scale was derived from a conceptual model that integrates three health-relevant domains (health care, disease prevention, health promotion) and four sub-scale cognitive competencies (accessing, understanding, appraising, and applying) related to health relevant decision-making and tasks. Taken together, these domains and competencies create a matrix capable of measuring health literacy with 12 sub-dimensions, operationalized by 47 items ^(13,14). The scale of 47 items are answered by participants in the form of Likert-type as (1 very difficult , 2 difficult, 3 easy, and 4 very easy). to measure the perceived difficulty of selected health-relevant tasks. After the validity and reliability of the study instrument is ensured, the researcher use face-to-face interview to collect the data regarding the demographic data, and health literacy scale. The data collection process has taken two weeks, starting from 19th Des. , 2022 to 30 Des , 2022 to completed data

collection. The study data were analysed statistically using the Statistical Package of Social Sciences (SPSS) program version 20 an Microsoft Excel (2016). The Perform the analysis after confirming that no data have been missed. The statistical include using of descriptive and inferential statistical analysis approaches

RESULT

Table 1: Distribution of the observed frequencies and percent of Socio-Demographical Characteristics for Study Sample

Variables	Categories	Frequency	Percent
Age Group	<= 20	9	5.3
	21 - 29	13	7.6
	30 - 38	28	16.4
	39 - 47	37	21.6
	48 - 56	34	19.9
	57 - 65	31	18.1
	66+	19	11.1
Mean + SD	<= 20	9	5.3
	21 - 29	13	7.6
	Total	171	100.0
	Mean + SD	46.6±14.72	
Gender	Female	80	46.8
	Male	91	53.2
	Total	171	100.0
Marital Status	single	21	12.3
	Married	143	83.6
	Widowed	4	2.3
	Divorced	3	1.8
	Total	171	100.0
level of Education	Doesn't Read and Write	61	35.7
	Read and Write	12	7.0
	Primary School Graduate	52	30.4
	Preparatory School Graduate	18	10.5
	Intermediate School Graduate	14	8.2
	Diploma Graduate	7	4.1
	College Graduate	7	4.1
	Total	171	100.0
Residency	Urban	129	75.4
	Rural	42	24.6
	Total	171	100.0
Occupation	Retired	11	6.4
	Housewife	77	45.0
	Employee	20	11.7
	Jobless	30	17.5
	Worker	33	19.3
	Total	171	100.0
Sources of information regarding hemodialysis	Physician	86	50.3
	Nurse staff	83	48.5
	Internet	1	0.6
	Radio/television	1	0.6
	Total	171	100.0
Number of Dialysis sessions / week	1	4	2.3
	2 - 3	165	96.5
	4 - 5	2	1.2
	Total	171	100.0
Duration of hemodialysis(years)	Less than or 1	64	37.4
	2 - 8	84	49.1
	9 - 14	23	13.5
	Total	171	100.0
	Mean + SD	3.47±3.03	

SD=Standard Deviation Table (1) : is related to the statistical distribution of the participants according to their socio-demographic data. A total of 171 End-stage renal disease patients who participated in the current study. (21.9 %) of them are in the age group (39 - 47) years. Male are dominant by (53.2%) as compared to females. With regard to Marital Status, it showed that (83.6%) of them are married. Concerning to Level of Education it has been revealed that (35.7%) of patients Doesn't Read and Write. Regarding the residency, it has been revealed that the majority of patients (75.4%) live in urban regions. With regards to the occupational status,(45.0%) of the study subjects are housewives. In addition the study result shown that source of information are from physician (50.3%) as compared to other categories. Finally, most of patients come to hemodialysis unit(2-3) days a week (96.5%) since (2-8) years (49.1%) .

Table 2: Total Assessment for Health Literacy among End Stage Renal Disease patients

of Health Literacy Assessment	Responses	Freq.	%	Mean of Total Score	SD.	Assessment
	Inadequate	104	60.8	20.98	13.4	Inadequate
	Problematic	35	20.5			
	Sufficient	18	10.5			
	Excellent	14	8.2			
	Total	171	100.0			

SD=Standard Four levels based on total score: "inadequate", 0–25 points; "problematic" 25–33 points; "sufficient", 33–42 points; and "excellent", 42 points or more Deviation

Table 2 shows that the overall assessment about patient health literacy is Inadequate at mean of score (20.98)

Table 3: Assessment for Health Literacy Domains among End Stage renal Disease patient

Health Literacy	Responses	Frequ ency	Percent	MS	S.D	Assess
Health Care	inadequate	92	53.8	22.970	15.580	Inadequate
	problematic	22	12.9			
	sufficient	33	19.3			
	excellent	24	14.0			
Disease Prevention	inadequate	98	57.3	21.440	15.180	Inadequate
	problematic	22	12.9			
	sufficient	29	17.0			
	excellent	22	12.9			
Health Promotion	inadequate	114	66.7	18.560	14.470	Inadequate
	problematic	20	11.7			
	sufficient	21	12.3			
	excellent	16	9.4			

Four levels based on total score: "inadequate", 0–25 points; "problematic" 25–33 points; "sufficient", 33–42 points; and "excellent", 42 points or more

Table (3) is relate to assessing of patient health literacy level according to the three domain (health care , disease prevention and health promotion) . We found that all assessment are Inadequate among the three dimension, and the result shows the lowest mean index at health promotion (18.560) with high percentage in difficulty of responses (66.7%).

DISCUSSION

The patient should find a necessity of accessing, appraising and utilizing health related information during his management. This is affected by the level of health literacy of the patient. Different populations of patients with ESRD have different level of health literacy during the course and duration of treatment which affects the uptake of health services (15). To our knowledge this was the first study to assess health literacy level in hemodialysis patients in Iraq, and that added challenges to conduct the research. The current study results show A total of 171 End-stage renal disease patients who participated in the current study. (21.6 %) of them are in the age group (39 - 47) years. Male are dominant by (53.2%) , most of patients (83.6%) married , majority of patients (75.4%) live in urban regions,(45.0%) of the study subjects are housewives. In addition the study result shown that source of information are from physician (50.3%) as compared to other categories. most of patients come to hemodialysis unit(2-3) days a week (96.5%) since (2-8) years (49.1%) Concerning to Level of Education it has been revealed that (35.7%) of patients Doesn't Read and Write. This result liner with study conduct in Iran (16) and Taiwanese (17). found that most of participant are illiterate. Our study results reveal that the general assessment of patient's health literacy level in hemodialysis unit are Inadequate at the mean score (20.98), also , result shows the lowest mean index at health promotion (18.560) with high percentage in difficulty of responses (66.7%). This result agree with studies published in the American Journal of Kidney Diseases (18,19), studies found that hemodialysis patient have inadequate health literacy and its associated with poorer knowledge of kidney disease, factors affecting kidney function, medication management, and adherence to dietary restrictions among patients with ESRD. Contrary to our results, a Study done by (20) in Australia about (813) hemodialysis patients , researchers found that people receiving dialysis feel better supported and informed about their health but are less active in managing it. And found that patient have higher information about health promotion. In research of (21), it was revealed that the health literacy

of 53.8% of the patients was inadequate, 26.2% did not have enough health literacy, 13.8% had adequate literacy, which is consistent with the findings of current study. Patients with lower health literacy levels were also less likely to participate in shared decision-making with their healthcare providers and had less confidence in managing their own health⁽²²⁾. Moreover, study in Iran which is consistent with our result by⁽²³⁾ indicated that 65.2% of his participants had trouble understanding and interpreting the information, also report that lack of understanding and confidence in self-care management can lead to poorer health outcomes and increased healthcare costs. Similar study in Iran by⁽²²⁾ indicated that majority of participants (30.86%) were inadequately literate. Therefore, interventions that improve health literacy among patients with ESRD may also improve their ability to manage their condition and ultimately improve their health outcomes⁽¹³⁾. According to health literacy domains, our study finding that hemodialysis patients have inadequate health promotion information, result shows the lowest mean index at health promotion (18.560) with high percentage in difficulty of responses (66.7%), they have difficulty to access, understand, appraise and apply information of health promotion that affect quality of life, this finding supported by study in Norway⁽²⁴⁻²⁶⁾ revealed challenges in understanding health information may cause stress and anxiety, which may also affect QoL of dialysis patient. Study by⁽²⁷⁾ pointed out that nurse play key roles in promoting health behaviors among Hemodialysis patient, causes significant changes in the lives of patients and affects their health promoting behaviors.

CONCLUSION

End-stage renal disease Patients undergoing hemodialysis have an inadequate level of health literacy. They reflecting difficulties in understanding and processing health information, which may interfere with therapeutic management and self-care decisions making about their health. Patients undergoing hemodialysis have inadequate access to, understanding, and use health promotion information. Hence they have limited access to resources such as healthy food options, healthcare services, or transportation, which may limit their ability to engage in healthy behaviors.

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