



## Health Literacy Among Patients Undergoing Hemodialysis: A Descriptive Study

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### ABSTRACT

**Objective(s):** The study aims to assess the level of health literacy among patients undergoing hemodialysis.

**Methods:** A descriptive study using Convenience sampling was conducted among (171) patients undergoing hemodialysis in Al Najaf Al-Ashraf, from September 19<sup>th</sup>, 2022, to January 1<sup>st</sup>, 2023. Health literacy was measured using the European Health Literacy Questionnaire (HL-EU-Q47). The collected data were analyzed using SPSS 21.0 and Fisher's exact test.

**Results:** The results revealed that (60.8%) of participants had inadequate health literacy, the participants reported difficulty in understanding health literacy (health care, disease prevention and health promotion), (66.7%) of participants faced challenges in understanding and engaging in health promoting behaviors. Additionally, there was a statistically significant relationship between health literacy and the participants Level of education.

**Conclusions:** Participants have inadequate health literacy and difficulties in assessing, understanding, judging, and using health information, which led to unfollowing dietary restrictions, adhering to complex medication regimens, and miss out dialysis sessions. Recommendation: Healthcare providers should consider tailoring patient education and communication strategies based on individual health literacy levels to support hemodialysis patients effectively.

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## الثقافة الصحية بين مرضى غسيل الكلى: دراسة وصفية

### المستخلص

**الأهداف:** تهدف الدراسة إلى تقييم مستوى الثقافة الصحية للمرضى الخاضعين لغسيل الكلى.

**منهجية البحث:** أجريت دراسة وصفية (عينة ملائمة) على (١٧١) مريضاً خاضعين لغسيل الكلى في النجف الأشرف من ١٩ أيلول ٢٠٢٢ إلى ١ كانون الثاني ٢٠٢٣. تم قياس الثقافة الصحية باستخدام استبيان الثقافة الصحية الأوروبي (47HL-EU-Q). تم تحليل البيانات المجمعة باستخدام برنامج SPSS 21.0 واختبار فيشر الدقيق.

**النتائج:** كشفت النتائج أن (٦٠.٨%) من المشاركين ليس لديهم معرفة صحية. وجد المشاركون في هذه الدراسة صعوبة في فهم الثقافة الصحية (الرعاية الصحية، الوقاية من الأمراض وتعزيز الصحة) حيث واجه (٦٦.٧%) منهم تحديات في الفهم، والاستجابة للسلوكيات المعززة للصحة. بالإضافة إلى ذلك، تم إيجاد علاقة ذات دلالة إحصائية بين الثقافة الصحية والمستوى التعليمي للمشاركين.

**الاستنتاجات:** في هذه الدراسة، وجد أن المشاركين ليس لديهم معرفة كافية بالثقافة الصحية. وأفادوا بوجود صعوبات في تقييم المعلومات الصحية وفهمها والحكم عليها واستخدامها، مما أدى إلى عدم اتباع القيود الغذائية والالتزام بأنظمة الأدوية المعقدة وتغيب عن جلسات غسيل الكلى.

**التوصيات:** يجب على مقدمي الرعاية الصحية أن يأخذوا في اعتبارهم تخصيص استراتيجيات التثقيف والتواصل للمرضى بناءً على مستويات ثقافة الصحة الفردية لدعم مرضى غسيل الكلى بشكل فعال.

**كلمات مفتاحية:** ثقافة صحية، المرضى المصابين بأمراض كلى، غسيل كلوي

### Introduction

The late progression of Chronic Kidney Disease, patients may eventually require renal replacement therapy such as hemodialysis to maintain their quality of life and prolong survival<sup>(1)</sup>. Hemodialysis is a life-saving treatment used to filter waste products and excess substances from the blood when the kidneys are unable to perform this function adequately<sup>(2)</sup>.

In the United States, nearly 786,000 people, or 2 in every 1,000 people, are currently living with End Stage Renal Disease(ESRD): 71% are on dialysis and 29% are living with a kidney transplant. Regarding gender For every two women who develop End Stage renal disease equal to three men develop (ESRD)<sup>(3)</sup>. The lowest prevalence of ESRD, (117–540 pmp), were reported by Iraq in 2021 <sup>(4)</sup>.

One critical factor that significantly influences a patient's ability to manage their condition effectively is their level of health literacy<sup>(5)</sup>.

"Health" and "literacy" are two crucial concepts that influence how patients make decisions about their health care, these two terms have combined to form the important concept of "health literacy," which has grown into a focus of nursing research<sup>(6)</sup>.

Health literacy define as the ability of hemodialysis individuals to access, understand, appraise, and apply health information in order to make judgments and decisions in everyday life<sup>(7)</sup>.

However, patients undergoing hemodialysis most have inadequate health literacy to make increasingly complicated decisions during their treatment path. Some of these include decisions on food intake, medicines, clinic treatment options<sup>(8)(9)</sup>.

Patients undergoing hemodialysis with inadequate health literacy visit hospital frequency, have a poor grasp of the illness process, poor memory and comprehension of medical staff advice and instructions, and poor problem-solving abilities<sup>(10)</sup>.

Inadequate health literacy is a significant issue among ESRD patients, with a prevalence ranging from 18% to 27<sup>(11)</sup>.

There is little research characterizing health literacy, and examining health literacy among end-stage renal disease, as low health literacy is prevalent among patients commencing hemodialysis treatment<sup>(12)</sup>.

## Methods

### Study design and setting

A descriptive study design was employed to assess Health literacy of patient with ESRF who receiving hemodialysis treatment. The study was conducted, in Al Sader Medical City / The Specialized Center for Kidney Disease and Transplantation in Al Najaf Al-Ashraf from September 19<sup>th</sup>, 2022 to January 1<sup>st</sup>, 2023.

### Samples and sampling

A convenience sample consisting of one hundred and seventy-one patients with ESRF when attended the Hemodialysis Center were chosen. Patients were eligible for this study who underwent treatment for end-stage renal disease for a one year to ensure they have sufficient exposure to the healthcare system and relevant health information. Also, patient who are age 20 years and older, able to read and write and those who have the cognitive ability to understand and respond to the health literacy assessment adequately.

### Data collection and study instrument

A questionnaire was adopted from review of relevant literatures<sup>(13)</sup>. The questionnaire consists of two parts; the first part includes socio-demographic data which include: age, gender, level of education, marital states, residence, occupation, and number of dialysis session per week, the second part include European Health Literacy (HL-EU-Q47) scale to assess health literacy. The scale include (47) items concerning in the three health domains healthcare, disease

Notably, there has been a lack of research in Iraq addressing health literacy among both end-stage renal disease patients and those with chronic kidney disease. To address this gap in nursing research, the current study prioritizes a crucial topic within nursing studies.

prevention and health promotion<sup>(14)</sup>. The total scores were categorized into 4 levels "inadequate", 0-25 points; "problematic" 25-33 points; "sufficient", 33-42 points; and "excellent", 42 points or more. The data have been collected through Self-report method in the hemodialysis unit. (10-15) minutes is the time that each participant spent answering all the questions.

### Validity and Reliability of the study

#### Instrument

The expert consultation method was used to ensure the content validity of the study instruments. It is determined by a panel of (15) experts in the Nursing and Medicine fields. Reliability According to the relevant literature review The Cronbach's Alpha coefficient for the total HLS-EU-Q47 scale was 0.94<sup>(15)</sup>.

#### Ethical consideration

Ethical approval has been secured from the Ethics Committee of the College of Medicine/Kufa University. The researcher is committed to maintaining patient record confidentiality, and the collected data will be strictly used for the designated analysis. Participants' verbal consent is sought only after a clear explanation of the purpose of their involvement.

#### Data analysis

The study data were analyzed statistically using the (SPSS) program version 21. A descriptive and inferential data statistical approaches were used including frequency, percentage, mean, standard deviation, Fisher's exact test.

**Results**

**Table 1.** Socio-Demographical Characteristics for Study Sample (N 171)

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age Group</b>	20-29	22	12.9
	30 – 39	28	16.4
	40 – 49	37	21.6
	50 – 59	34	19.9
	60 -69	50	29.2
	<b>Total</b>	171	100.0
<b>Mean + SD</b>		<b>46.6±14.72</b>	
<b>Sex</b>	Female	80	46.8
	Male	<b>91</b>	<b>53.2</b>
	Total	171	100.0
<b>Marital Status</b>	Single	21	12.3
	Married	<b>143</b>	<b>83.6</b>
	Windowed	4	2.3
	Divorced	3	1.8
<b>level of Education</b>	Read and Write	64	37.4
	Primary School Graduate	61	35.7
	Preparatory School Graduate	18	10.5
	Intermediate School Graduate	14	8.2
	Diploma Graduate	7	4.1
	College Graduate	7	4.1
<b>Residency</b>	Urban	129	75.4
	Rural	42	24.6
<b>Occupation</b>	Housewife	77	45.0
	Retired	11	6.4
	Employee	20	11.7
	Jobless	30	17.5
	Worker	33	19.3
<b>Number of Dialysis sessions/week</b>	1	4	2.3
	2 - 3	165	96.5
	4 - 5	2	1.2
	<b>Mean + SD (2.31±0.5)</b>		
<b>Duration of hemodialysis(years)</b>	1	64	37.4
	2 - 8	84	49.1
	9 - 14	23	13.5
	<b>Mean + SD (3.47±3.03)</b>		

**SD**=Standard deviation, **N**= number.

Table 1 shows that the majority of patients are between 60-69 years old (29.2%). (83.6%) of patient were married, males are constituted the higher percentage (53.2%), (37.4%) of the sample in level of education read and write and (45%) of them were housewife. The table shows that (96.5%) of patients were attended the hemodialysis unit (2 to 3 days) a week for a duration of (2-8) years (49.1%).

**Table 2.** Assessment for Health Literacy among hemodialysis patient

Assessment of Health Literacy	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 deviation, **%**= Percentage, **Levels**: “inadequate”, 0–25 points; “problematic” 25–33 points; “sufficient”, 33–42 points; and “excellent”, 42 points or more.

Table 2 revealed that 60.8% of participants had inadequate health literacy with a mean of score (20.98). based on total score: “inadequate”, 0–25 points, (20.5) of participant had Problematic health literacy “problematic” 25–33 points, (10.5) of them had Sufficient health literacy “sufficient”, 33–42 points; and (8.2) of participant had Excellent health literacy “excellent”, 42 points or more.

**Table 3.** Relationship between patients’ health Literacy and their level of education

Variable		Statistic	Heath Literacy				P-Value
			Inadequate	Problematic	Sufficient	Excellent	
Level of Education	Read and write	F.	48	10	3	3	0.001
		%	75%	15.6%	4.6%	4.6%	
	Primary School Graduate	F	37	20	3	1	
		%	60.6%	32.7%	4.9%	1.6%	
	Preparatory School Graduate	F	8	6	3	1	
		%	44.4%	33.3%	16.7%	5.6%	
	Intermediate School Graduate	F	5	5	3	1	
		%	35.7%	35.7%	21.4%	7.1%	
	Diploma Graduate	F	2	1	3	1	
		%	28.6%	14.3%	42.9%	14.3%	
	College Graduate	Freq.	0	1	0	6	
		%	0.0%	14.3%	0.0%	85.7%	

F= Frequency, % = percentage, **P value**= 0.001.

Table 3 show there was a significant association between patient health Literacy and their level of education  $P=0.001$ . Patient who read and write had inadequate health literacy (75%).

## Discussion

During treatment, patient should recognize the importance of acquiring, evaluating, and utilizing health-related information. This is influenced by the patient's degree of health literacy. During the journey of dialysis therapy, various groups of End Stage Renal disease patients vary in their level of health literacy, which influences the consumption of health services<sup>(16)</sup>.

The present study included patients at end-stage renal failure and showed that nearly half of them were in the age group (60-69) years, live in urban regions. This findings is consistent with study carried out in Iran and founded that age ranged from 50-80 years and live in urban<sup>(17)</sup>.

In this study, most of the patients were males, which agrees with study among Taiwanese found that more than half of the participant are males<sup>(18)</sup>.

Furthermore, this study revealed that the majority of patients were able to read and write, they were housewives, and married. This result is consisted with study carried out in Iran among (297) hemodialysis patients with chronic kidney disease reported that 62% of them married ,61% housewife and most of them read and write<sup>(19)</sup>.

Most of patients attend the hemodialysis unit for two to three sessions per week, for two to eight years. This results supported by study conduct in Northern Taiwan report that HD patients had to attend sessions, two to three times a week and must comply with the rolling epidemic prevention<sup>(20)</sup>.

Regarding health literacy, the study results revealed that participants have inadequate health literacy and there were significant associations between health literacy levels and education level. They tend to have poor communication with healthcare providers, they unable to ask important questions, understand medical terms, and accurately report symptoms, this results agree with study in Iran found that hemodialysis

patient have inadequate health literacy and its associated with poorer knowledge of kidney disease<sup>(21)</sup>.

Another study conducted in Australia<sup>(22)</sup> among (813) hemodialysis patients found that people receiving dialysis felt better when supported and informed about their health, but are less active in managing it, when getting a little information about health promotion<sup>(23)</sup>.

A research conduct in Iran revealed that the health literacy of hemodialysis patient was inadequate among 53.8%, 26.2% did not have enough health literacy<sup>(24)</sup>.

## 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 behaviours.

## Recommendation

Healthcare providers should routinely assess the health literacy levels of patients undergoing hemodialysis using validated health literacy tools. This will help identify patients with inadequate health literacy and enable targeted interventions. Furthermore, implement comprehensive patient education programs that use plain language and visual aids to convey complex medical information. These educational materials should be tailored to the health literacy levels of individual patients, making it easier for them to understand and manage their condition effectively.

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