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Assessment of Hemodialysis Patients' knowledge Concerning Uremic Pruritus

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ABSTRACT

Objective(s): This study aims to assess the knowledge of hemodialysis patients about uremic pruritus and to determine whether there is a relationship between the demographic and clinical characteristics of hemodialysis patients with their level of knowledge about uremic pruritus.

Method: A descriptive study was conducted to assess the knowledge of hemodialysis patients about uremic pruritus. The study was conducted at the Al-Hussein Center for hemodialysis at Al-Hussein Teaching Hospital in Thi-Qar Governorate, for the period from 29th December, 2022 to 29th April, 2023. A non-probability purposive sample of 30 patients was selected from hemodialysis patients, their ages ranged from 20 to 70 years. The research tool consisted of three parts. The first part consisted of demographic information, the second part consisted of clinical information of the hemodialysis patients, and the third part consisted of a questionnaire to assess the knowledge of hemodialysis patients about uremic pruritus (including items and domains).

Results: The results of the study showed that the knowledge of hemodialysis patients about uremic pruritus was at a weak and their knowledge was not affected by their demographic and clinical characteristics**.**

Conclusion: This study concluded the hemodialysis patients has a poor level and little of knowledge about uremic pruritus.

Recommendations: Educational courses should be established to manage uremic pruritus, and the hemodialysis patients should be motivated to participate in health education programs for the purpose of increasing their knowledge and information about uremic pruritus.

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تقييم معارف مرضى الانفاذ الدموي حول الحكة اليوريمية

المستخلص

الاهدف: تهدف هذه الدراسة الى تقييم معارف مرضى الانفاذ الدموي حول الحكة اليوريمية وتحديد ما إذا كانت هناك علاقة بين الخصائص الديموغرافية والسريرية لمرضى الانفاذ الدموي مع مستوى معارفهم حول الحكة اليوريمية.

المنهجية: اجريت دراسة وصفية لتقييم معارف مرضى الانفاذ الدموي حول الحكة اليوريمية، حيث تم اجراء الدراسة في مركز الحسين للأنفاذ الدموي في مستشفى الحسين التعليمي في محافظة ذي قار، للفترة من ٢٩كانون الاول ٢٠٢٢ الى ٢٩نيسان ٢٠٢٣، وتم اختيار عينة غير احتمالية غرضية تكونت من ٣٠ مريض من مرضى الانفاذ الدموي وتراوحت أعمارهم بين ٢٠ الى ٧٠ سنة. تكونت اداة البحث من ثلاث أجزاء، الجزء الأول يتكون من المعلومات الديموغرافية لمرضى الانفاذ الدموي والجزء الثاني يتكون من المعلومات السريرية وتكون الجزء الثالث من استبيان لتقييم معارف مرضى الانفاذ الدموي حول الحكة اليوريمية (عبارات ومحاور حول الحكة اليوريمية).

النتائج: اضهرت نتائج الدراسة الى ان معارف مرضى الانفاذ الدموي حول الحكة اليوريمية كانت ذات مستوى ضعيف ولم يتاثر مستوى معارفهم بخصائصهم الديموغرافية والسريرية.

الاستنتاج: استنتجت هذه الدراسة الى ان غالبية مرضى الانفاذ الدموي كان لديهم مستوى معارف ضعيف و قليل حول الحكة اليوريمية.

التوصيات: يجب انشاء دورات تثقيفية لإدارة الحكة اليوريمية وتحفيز مرضى الانفاذ الدموي على المشاركة في برامج التثقيف الصحي لغرض زيادة معارفهم ومعلوماتهم حول الحكة اليوريمية.

الكلمات المفتاحية: التقييم، مرضى الانفاذ الدموي، الحكة اليوريمية، معارف.

Introduction

Hemodialysis (HD) is a major therapeutic approach for those with end-stage renal failure. It eliminates the harmful substances including creatinine, urea, and other substances and surplus fluid from the body [(1)]. HD is one of the most important and successful treatment alternatives that can support a patient with end-stage renal failure and maintain their quality of life. Increased blood levels of harmful compounds (such as urea, creatinine, phosphorous, and other substances) lead to cause a uremic pruritus (UP) in many HD patients [(2)]. UP is one of the most unpleasant effects that caused by renal failure, UP sometimes referred to as Chronic Kidney Disease associated Pruritus (CKD- aP), that affect about 65% to 85% of patients who receiving HD. It negatively affects patients' physical, social, and mental health, which has major repercussions for their entire lifestyle and quality of life and raises their mortality rate among patients [(3)]. Assess the hemodialysis patients' knowledge about all aspects, signs, symptoms and complications of renal failure is very important [(4)]. Patients on permanent HD will get a treatment from a team of specialists, including a renal dietitian, nephrologists, psychologists, nurses, and other dialysis personnel [(5)].

Methods

Study Design and setting

From 29th December, 2022 to 29th April, 2023, a descriptive study was conducted in the hemodialysis unit at Al-Hussein Teaching Hospital in Thi-Qar.

Study Sample

In this study, 30 patients on maintenance hemodialysis were used as a non-probability purposive sample.

Study Instrument

The instrument of the study consists of three-parts that was developed by analysis

of relevant literature and related tools. The first part presents the demographic data, the second part shows the clinical information, and the third part that designed to assess the hemodialysis patients' knowledge regarding uremic pruritus, which consists of five domains (causes, signs and symptoms, behaviors, medications, and dietary guidelines of uremic pruritus). The answers are either true or false, and the right response earns one point, while the wrong answer receives none.

Validity and Reliability of Study instrument

The tool's content validity is being evaluated by a panel of 15 specialists, 12 of them from University of Baghdad /College of Nursing and the remaining are three experts are from the Thi-Qar Health Directorate. Through use of Cronbach's alpha approach, the internal consistency reliability has been applied to the research instrument. The Cronbach's alpha was (0.82), the outcome demonstrated as a good reliability**.**

Data Collection

Data of participants have been collected to accomplish objectives of study; the researcher conducted interviews with each patient from 29th December, 2022 to 29th April, 2023. It took about 20 to 30 minutes to conduct the assessment for each participant, which included gathering information about their clinical and demographic data and assessing their knowledge about uremic pruritus.

Ethical Considerations

Ethical Committee of the scientific research at the University of Baghdad, College of Nursing has approved the study to be conducted. Additionally, a formal letter was acquired from the hospital's administrative authorities, and patients' signature consent was also gained.

Data Analysis

The Statistical Package for Social Sciences (SPSS) version 26 was utilized for analyzing and evaluating the data.

Results

Table 1. Demographic Characteristics of Hemodialysis Patients (n=30).

Demographic Variables	Groups	F.	%
1. Sex	Male	17	56.7
	Female	13	43.3
2. Age	20-29	1	3.3
	30-39	6	20.0
	40-49	6	20.0
	50-59	12	40.0
	60 and above	5	16.7
	MS±SD = 48±12.37		
3. Marital status	Single	1	3.3
	Married	24	80.0
	Widow	5	16.7
4. Level of educational	Illiterates	5	16.7
	read & write	9	30.0
	primary school	6	20.0

	Middle school	3	10.0
	preparatory school	2	6.7
	Diploma	3	10.0
	Bachelor	1	3.3
	Master's or Ph.D.	1	3.3
5. Occupation	Employee	5	16.7
	Retired	7	23.3
	Unemployed	10	33.3
	free business	1	3.3
	Housewife	7	23.3
	Student	0	0.0

F= frequency**, %=** percent.

Table (1) reveals the majority of the sample (n=17; 56.7%) are male sex. Most prevalent age group was (50-59) years, and accounting for (n=12; 40%), that had a mean and standard deviation of (48±12.37) years, respectively. In respect to marital status, a large portion of the participants (n=24; 80.0%) are married. Most of the sample (n=9; 30.0%) can read & write, which is reflected in their educational level. When it comes to employment status, a lot of participants (n=10; 33.3%) are without employment.

Table 2. Clinical Characteristics of the Hemodialysis Patients (n=30)

Clinical variables	Groups	F.	%
1. Family history with Renal Failure	Not Present	23	76.7
	Present	7	23.3
2. Causes of Renal Failure	Hypertension	15	50.0
	Diabetes	2	6.7
	HTN + DM	6	20.0
	kidney diseases	7	23.3
3. Number of hemodialysis session per week	Two sessions	9	30.0
	Three sessions	21	70.0
4. Duration of each hemodialysis session	Three hours	5	16.7
	Four hours	25	83.3

F= frequency**, %=** percent.

Based on the result of Table (2), the bulk of the samples (n=23; 76.7%) don't have a family history with renal failure. The majority of the participants (n=15; 50.0%) are suffering from a renal failure as a result of hypertension. The majority of participants (n=21; 70.0%) have 3 hemodialysis sessions each week, which accounts for the majority of the sample. Considering the length of each hemodialysis session, nearly all of the samples (n=25; 83.3%) had sessions that lasted 4 hours.

Table 3. The differences in the of Hemodialysis Patients' Knowledge about Uremic Pruritus

Knowledge items	M	SD	Assess
1. uremic pruritus as a result from hypernatremia and hypomagnesaemia	0.57	.504	F
2. the uremic pruritus decreased by decrease the hemodialysis	0.43	.504	P

sessions			
3. Dry skin reduces the intensity of uremic pruritus:	0.47	.507	P
4. Uremic pruritus is more severe during the night than at day	0.23	.430	P
5. sweating and hot weather lead to decrease the uremic pruritus intensity	0.37	.490	P
6. hypercalcemia and hyperphosphatemia lead to increase the pruritus intensity	0.40	.498	P
7. Increasing severity of uremic pruritus (itching of the skin) leads to daily fatigue, depression and sleep problems	.40	.498	P
8. using a cold shower leads to an increase in the severity of uremic itching	.43	.504	P
9. The use of hot water and soap while swimming helps to reduce the severity of uremic pruritus	.27	.450	P
10. The use of hot water and soap while swimming helps to reduce the severity of uremic pruritus	.23	.430	P
11. The use of clove oil bath and baby oil (baby oil) leads to exacerbation of uremic itching	.23	.430	P
12. Body massage using olive oil and mint helps to reduce the incidence of uremic pruritus	.33	.479	P
13. Frequent sitting at home reduces the occurrence of uremic itching (skin)	.27	.450	P
14. An increase in psychological stress leads to an increase in uremic itching (skin)	.37	.490	P
15. Exposure to detergents and perfumes leads to exacerbation of uremic itching (skin)	.37	.490	P
16. Wearing thick clothes and woolen clothes reduce the severity of uremic pruritus	.20	.407	P
17. Wearing cotton and light clothes leads to an increase in the severity of uremic itching	.23	.430	P
18. Washing mattresses and covers periodically and exposing them to sunlight helps reduce uremic itching (skin)	.40	.498	P
19. use of Lyrica (Pregabalin) leads to increase the severity of uremic pruritus(skin)	.13	.346	P
20. Neurona (Gabapentin) is used to relieve uremic itching	.20	.407	P
21. Aspirin and amoxicillin are used to relieve uremic pruritus (skin)	.13	.346	P
22. The use of antihistamines and steroids leads to an exacerbation of uremic pruritus (skin)	.50	.509	F
23. Increase intake of proteins in the daily food leads to a decrease in the incidence of uremic pruritus (skin)	.40	.498	P
24. Eating lettuce vegetables leads to an increase in the severity of uremic itching	.27	.450	P
25. Intake of plant foods leads to an increase in the severity of uremic itching (skin)	.23	.430	P
26. The use of olive oil and sunflower oil helps reduce uremic	.30	.466	P

itching (skin)			
27. Eating fresh fruits helps reduce uremic itching (skin)	.27	.450	P
28. Excessive consumption of eggs leads to reduce intensity of uremic itching (skin)	.23	.430	P
29. Excessive consumption of cow's milk helps to relieve the severity of uremic itching (skin)	.13	.346	P
30. Eating peanuts, soybean oil, and canned food helps relieve the severity of uremic pruritus	.50	.509	F
Overall mean score of knowledge	0.31	0.11	P

M.S = mean of score (average score)**, SD=**standard of deviation**, Asses. =** assessment level, mean of score < 0.5= poor level, 0.5-0.75= fair level, ≥ 0.76 = as a good level

Table (3) shows that the knowledge regarding uremic pruritus for hemodialysis patients was at a poor level in all items except the items (1,22,30) that show a fair level of knowledge. The total mean sore of knowledge of hemodialysis patients about uremic pruritus was at poor level (0.31±0.11).

Table 4. The differences in the level of knowledge of sample members about domains of uremic pruritus.

Knowledge domains	M.S	SD	Ass.
1. The nature of uremic pruritus	0.44	0.07	P
2. Bathing	0,25	0.04	P
3. everyday habits	0.30	0.08	P
4. Treatment	0.24	0.17	P
5. nutritional pattern	0.29	0.11	P

MS = mean of score (average score), **SD=**standard deviation**, Assess. =**Level of assessment**,** if mean of score < 0.5= poor level; 0.5-0.75= fair level; ≥ 0.76 = good level

Table (4) represents that the knowledge of hemodialysis patient was at poor level in all domains of uremic pruritus (The nature of uremic pruritus, bathing, everyday habits & lifestyle, treatment, and dietary pattern) with mean of score for each domain that equal to (0.44, 0.25, 0.30, 0.24, 0.29), respectively.

Table 5. The relationship between the knowledge levels about uremic pruritus with demographic and clinical characteristics of hemodialysis patients.

Demographic & clinical variables	Contingency Coefficients	Probability value	Significance
Sex	.125	.491	NS
Marital status	.186	.585	NS
Age groups	.401	.218	NS
Educational Level	.395	.595	NS
Occupation	.278	.643	NS
Family History With CRF	.196	.273	NS
Causes of Renal Failure	.345	.255	NS

Number of hemodialysis session per week	.172	.338	NS
Duration of each hemodialysis session	.119	.513	NS

Sig.= significance level**, NS=** Non-significant**, S=**significant.

The findings in this table indicate that there are non-significant relationships between demography and clinical variables with the knowledge level concerning uremic pruritus of hemodialysis patients at $p > 0.05$.

Discussion

According to the findings of the study, the knowledge of hemodialysis patients about items of uremic pruritus was at a poor level in overwhelming majority of items. These findings consistent with the research that was done in Egypt to assess the effect of uremic pruritus educational intervention on knowledge level of hemodialysis patients that founded a hemodialysis patients have a poor level of knowledge about uremic pruritus [(6)]. Also, these results are agree with a study conducted in Iraq to assess the hemodialysis patient's knowledge toward alleviate of itching at Al-Hussein Teaching Hospital, it was found a majority of HD patients were poorly informed and have inadequate knowledge about alleviating itching [(7)] .

The current results indicates that a hemodialysis patients have a poor level of knowledge in all domains of uremic pruritus. These outcomes are in alignment with findings of quantitative study was done in Saudi Arabia to assess the effect of nutritional education on hemodialysis patients' knowledge and quality of life that revealed the patients at the hemodialysis unit had a poor knowledge concerning the participants were singles [(12)].

In relation to the educational level, most of the sample are read and write. The current findings agree with study conducted in Thi-Qar Governorate and reported that a majority of hemodialysis patients were literate in most of them [(2)].

In regard to the occupation, a major proportion of the sample was determined to be unemployed. This result in line with dietary regimen and quality of life [(8)]. Moreover, the present findings agree with results of research that study the nutritional behavior and medication adherence among patients undergoing hemodialysis, which found that most of hemodialysis patients had a low level of knowledge nutritional behavior and medication adherence [(9)].

Regarding the gender, the sample's male population was comprised of the majority. This outcome was almost similar to study that stated the number of males patients is more than number of females in hemodialysis centers, whenever they gather information from 195 different nations [(10)].

Also, the study indicates that most of the age group was (50-59 years). This finding is in line with data of research when they study "Effectiveness of an education program on hemodialysis patients, they reported the major percentage of age group of hemodialysis patients are older than 40[(11)].

Regarding the marital status, large proportion of the sample was married. These findings disagree with the study findings that conducted in Iraq and reported that majority of

research's findings conducted in Jordan and founded that most of hemodialysis patients had no occupations [13]. This is a typical result because the majority of families in Iraq are country live in poverty according to the statistics of ministry of

Based on the results of the current study, a large percentage of HD patients have no family history of kidney failure which accounted. This result is in conformity with previous study that showed the majority of hemodialysis patients (n=463, 79%) have not had family history of renal failure [14].

According to the current finding, the hypertension contributed to the majority of the reasons of renal failure which accounted. This finding is supported by study that stated the hypertension is the main cause of renal failure in HD patients[15].

The largest percentage of the participants had a hemodialysis session as 3 times every week, with each session lasting four hours. These findings are corroborated by a study that found that almost of HD patients undergo 3 sessions weekly that spanning four hours in each session [6].

The present findings revealed that there is a non-significant relationship between the hemodialysis patients' knowledge about uremic pruritus and demographic and clinical characteristics. These results disagree with several studies in which the results reflect the presence of a significant relationship between the hemodialysis patients' knowledge and demographic and clinical characteristics [11], [16].

Conclusion

The study concluded that the vast majority of hemodialysis patients had an inadequate knowledge and need to be more knowledgeable about uremic pruritus.

Recommendations

Repeat the study with a large sample size in other circumstances in order to generalize the findings. The assessment of hemodialysis patients' knowledge related to uremic pruritus must be continuously and periodically assessed. A written, illustrated guidebook with information about uremic pruritus should be offered to the HD patients.

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