Nurses' Knowledge Regarding Biochemical Parameter & Dietary Assessment For Patient Undergoing Hemodi Alysis

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Abstract

Objective: To Assess of nurses' knowledge regarding biochemical parameter and dietary assessment of nutritional status for patient undergoing hemodialysis and to find out relationship between nurses' knowledge and their demographic data.

Methodology: A descriptive study was carried out in order to achieve the stated objective, The study starting from March 2^{ed} ,2022 until the April 1st,2022.The study was conducted in AL-Najaf AL-Ashraf Hospital,in Hemodialysis Centers of Al-Sadder Medical City; Al-Hakeem General Hospital and Al-Najaf-Teaching-Hospital. Non probability (purposive) sample was selected (80) of nurses those who work in Hemodialysis Centers. The sample have been selected according to the following criteria(Both gender of nurses, All level of education. Nurse work in Hemodialysis Centers at least 6month). A Questionnaire was designed and constructed by researcher to assess the nurses' knowledge regarding biochemical parameter and dietary assessment. the questionnaire was prepared and constructed of two parts, PartI:Demographic Data:wich composed of (6) items which include age,gender,level of education, years of experience, participate in training course related to nutritional status assessment, developed self independently and **PartII:**Nurse's Knowledge regarding Biochemical parameter assessment which include (25) items, which include question about the normal and abnormal result indicator of some tests related to nutritional status of dialysis patient **D-**Dietary assessment which consist from (15) items, which include questions about the common ways to assess the dietary intake for patient . Data was analyzed by using of descriptive data analysis (frequencies, percentages, mean, standard deviation, and graphical presentation) and by using of inferential analysis, ANOVA test).

Results: According to the study's findings, the majority of the study sample had poor knowledge of Biochemical parameter and Dietary assessment. Additionally, there was a highly significant difference between nurses' knowledge and their age group and years of experience at a p-value of less than 0.05. Additionally, there are no significant differences in nurses' knowledge based on their gender, level of education, participation

in training courses, or develop themselves independently. According to the study's findings, (36.3%) of the population is between the ages of 26 and 30. The study sample reveals that women make up (62.5 %) of the sample gender, while men make up 37.5%. About (38.8%)% and (35%)% of the study sample's participants, respectively, had nursing institute degree.

Conclusions: According to the study's findings, nurses who work in hemodialysis centers had poor scores on both the biochemical parameter knowledge test and Dietary assessment test. Additionally, a large percentage of nurses who work in hemodialysis centers revealed poor staff nurses knowledge on nutritional status assessment.

Recommendation: We suggest that Training and Development Agencies be Oriented for Educational Program (Specially Nutritional Status Assessment for Hemodialysis Patient Educational Program for All New and Old Nurses Work in Hemodialysis Center. Additionally, hospital policy should serve as a standardized instrument for periodic evaluations of nurses' knowledge of and attitudes toward the practice of nutritional status assessment in hemodialysis centers. Nurses are unable to identify the patient's nutritional issues and to design efficient nutritional nursing care without this knowledge.

Introduction

One of the main duties of nurses in any hospital is to provide patients with dietary treatment. The main determinant in reducing practice impurity and achieving nutritional goals is nursing's capacity to recognize nutritional failure early [1,2]. Many nurses lacked the in-depth information necessary to provide their patients with the right dietary care. Due to time limits and problems with multitasking, many nurses found it difficult to prioritize nutritional care above other nursing tasks, even though they recognized its importance [3,4] The quality of life of patients with chronic renal failure who are receiving hemodialysis is adversely affected by morbidity brought on by malnutrition, which is one of the most major risk factors for rising mortality rates in these patients [5] . A significant risk factor for poor prognosis in dialysis patients is malnutrition. Therefore, in the follow-up of these patients, simple and trustworthy assessments of nutritional status may show to be of special importance.[6,7,8] Patients on maintenance dialysis frequently have protein-calorie malnutrition. About 33% of continuous dialysis patients have mild to moderate malnutrition, and about 6% to 8% have severe malnutrition. The three main causes of protein-calorie malnutrition in maintenance dialysis patients are presumably inadequate dietary intakes, ongoing or underlying diseases, and the dialysis method itself. Protein-calorie malnutrition has various origins [9,10,11] .For a better overall result, proper diet is crucial for dialysis patients. In dialysis patients, protein energy malnutrition is very common (25–50%) and is linked to higher morbidity and mortality rates. Anorexia (inadequate intake of calories or protein), metabolic acidosis (activation of amino acid and protein breakdown), and infection/inflammation are the main

causes of malnutrition in dialysis patients (stimulation of protein degradation). The most significant factor is certainly anorexia, which results in decreased consumption [12,13,14] Biochemical (chemical) measures frequently do not reflect a nutrient's current consumption but rather the alterations brought about by a long-term deficiency in that nutrient. They may be useful in identifying the presence of insufficient food intake before the onset of a biochemical lesion or a later clinical lesion that occurs from a tissue or organ's functional impairment [15] .The goals of biochemical nutritional assessment are to pinpoint those who will profit from nutritional therapy, to spot and address micronutrient deficiencies, and to set reference points for evaluating the success of nutritional intervention. In detecting recent changes in nutritional status, biochemical techniques are more sensitive than other techniques [16,17] For use with paper-based dietary records and FFQ, Hankins and Wilkens used images of typical foods in ranges of three different portion sizes identified systematically from dietary research as early as the 1980s [18,19,20].The establishment of nutrition policy and dietary recommendations (such as foods and diet patterns) for individuals, groups, and communities is made possible by an accurate assessment of dietary intake. Self-reported dietary exposures, however, are notoriously challenging to assess precisely and consistently. Food frequency questionnaires, 24-hour recalls, and food records are among the classic techniques for nutritional assessment . Digital and mobile techniques that make use of technology are also available for the traditional techniques, and this area is rapidly developing [21,22,23,24,25].

Methodology

In order to find, select, process, and analyze data regarding a study topic, a research method must describe the methods utilized to collect the data. For the purpose of achieving the stated goal, a descriptive study was conducted. Dec. 14, 2021, through July 30, 2022: Study period. in AL-Najaf AL-Ashraf Hospital,in Hemodialysis Centers of Al-Sadder Medical City; Al-Hakeem General Hospital and Al-Najaf-Teaching-Hospital. An 80-nurse nonprobability (purposive) sample from the Al-Sadder Medical City's, Al-Hakeem General Hospital, and Al-Najaf Teaching Hospital /hemodialysis center was chosen. The sample was chosen based on the following criteria: All levels of education, both genders of nurses a nurse with at least six months' experience working in hemodialysis centers; Al-Najaf Teaching Hospital and Al-Hakeem General Hospital**.** In order to assess the nurses' knowledge of nutritional status assessment (Biochemical parameter and Dietary assessment) (ABCD) assessment multiple choice questionnaire, a questionnaire was prepared and constructed by the researcher. The questionnaire was prepared and constructed of two partsI:

Demographic Data It consists of six components: age, gender, education level, years of experience, participation in a course on nutritional status assessment, independent

development, and nurse's knowledge of nutritional status assessment (ABCD),

PartII: Nurse's Knowledge regarding Biochemical parameter assessment which include (25) items, which include question about the normal and abnormal result indicator of some tests related to nutritional status of dialysis patient **D-**Dietary assessment which consist from (15) items, which include questions about the common ways to assess the dietary intake for patient. A According to the following patterns, the items have been rated and scored: When determining whether an answer is true or correct, the scale uses a rating of (2). For items with a false or wrong response, the scale reads as (1). Twelve experts were shown a draft of the questionnaire that had been created.

All of the experts were invited to assess the questionnaire; their average years of experience were 18.666 and their Standard Deviation (S.D.) was 8.835.. The researcher conducted in-person interviews with every nurse. Each interview aims to inform the nurse about the study and how to complete the questionnaire in order to gain their acceptance for participation. Each nurse answered all of the questions in between 15 and 20 minutes. In the hemodialysis center, data were gathered from nurses working the morning shift and those working the nighttime shift. While the nurse was resting and not interfering with him at work, the interview was being performed. From March 2nd, 2022, through April 1st, 2022, data was collected.

Result

Table (1): Distribution of the observed frequencies and percent of Demographical Characteristics for Study Sample

Variables	Rating	Frequency	Percent
Age Group	<= 25.00	28	35.0
	26.00 - 30.00	29	36.3
	31.00 - 35.00	9	11.3
	36.00 - 40.00	9	11.3
	41.00 - 45.00	2	2.5
	46.00+	3	3.8

Mean + S.D		29.18±6.49	
Gender	Male	30	37.5
	Female	50	62.5
Educational Level	S. school	21	26.3
	Institute	31	38.8
	College	28	35.0
Years of Services	<= 1.00	12	15.0
	2.00 - 8.00	46	57.5
	9.00 - 15.00	15	18.8
	16.00 - 22.00	4	5.0
	23.00 - 29.00	3	3.8
Mean + S.D		6.80±5.96	
Training course	Yes	23	28.8
	No	57	71.3
Developed	No	13	16.3
	Internet	48	60.0
	Library	3	3.8
	Colleagues	16	20.0

The distribution of the study sample (nurses) is shown in table (1) based on demographic data, with a high percentage of age group (approximately 36.3%) of age group being from (26-30)years. According to the study

sample, females make up 62.5 percent of the sample population while men make up 37.5%. About 38.8% of the study sample's participants had a nursing institute degree, and 35% had a nursing college degree. For the study sample, there were about (57.5%) of years of service ranging from (2 to 8) years. 71.3 percent of the sample's participants in the training course responded "no" to the question. The nurse who developed self-knowledge independent was(60%) by internet. 60% of the nurses who independently developed their own expertise did it internet.

Table (2): Summary Statistics for Nurses' Knowledge toward Nutritional Status and Initial assessment for the Studied Biochemical Assessment.

Items	Respons-es	Frequenc-y	Percent	M.S	S.D	R.S.	Asses.
Q1: The Biochemical assessment component include	False	24	30.0	1.70	0.46	85.0	Pass
	True	56	70.0				
Q2: Use for assess iron status or indicate anemia	False	40	50.0	1.50	0.50	75.0	Pass
	True	40	50.0				
Q3: The normal value of hemoglobin in men	False	29	36.3	1.63	0.48	81.5	Pass
	True	51	63.8				
Q4:The normal value of hemoglobin in women	False	35	43.8	1.56	0.49	78.0	Pass
	True	45	56.3				
Q5: The low level of Albumin may indicate the presence **of**	False	61	76.3	1.23	0.42	61.5	Fail
	True	19	23.8				
Q6: The normal range of Albumin is	False	31	38.8	1.61	0.49	80.5	Pass
	True	49	61.3				
Q7: Is widely used to define the nutritional status especially in dialysis patients	False	52	65.0	1.35	0.47	67.5	Fail
	True	28	35.0				
Q8: The Protein Catabolic Rate is calculated using **the**	False	74	92.5	1.07	0.26	53.5	Fail
	True	6	7.5				
Q9: Required dietary monitoring of caloric and protein intake	False	56	70.0	1.30	0.46	65.0	Fail
	True	24	30.0				
Q10: The normal White blood cell count is	False	23	28.8	1.71	0.45	85.5	Pass
	True	57	71.3				
Q11: The White blood cell count is an immune system marker; and it increases if	False	18	22.5	1.77	0.42	88.5	Pass
	True	62	77.5				

Question		Count	%	M.S	S.D	R.S	Assess.
Q12 :The Glycated Hemoglobin(HbA1c) indicates.**:**	**False**	34	42.5	1.57	0.49	78.5	Pass
	True	46	57.5				
Q13: The value of Glycated Hemoglobin(HBA1c) Ideally is	**False**	47	58.8	1.41	0.49	70.5	Fail
	True	33	41.3				
Q14: An increasing sodium level may indicate	**False**	38	47.5	1.52	0.50	76.0	Pass
	True	42	52.5				
Q15: Sodium (Na)normal range is	**False**	35	43.8	1.56	0.49	78.0	Pass
	True	45	56.3				
Q16: The level of Urea is used to assess	**False**	35	43.8	1.56	0.49	78.0	Pass
	True	45	56.3				
Q17: The normal range urea is	**False**	63	78.8	1.21	0.41	60.5	Fail
	True	17	21.3				
Q18 :The Creatinine normal range is	**False**	57	71.3	1.28	0.45	64.0	Fail
	True	23	28.8				
Q19: IF creatinine high mean there is	**False**	16	20.0	1.80	0.40	90.0	Pass
	True	64	80.0				
Q20: The normal range of the adjusted Calcium is	**False**	65	81.3	1.18	0.39	59.0	Fail
	True	15	18.8				
Q21: The Normal range of Magnesium is	**False**	58	72.5	1.27	0.44	63.5	Fail
	True	22	27.5				
Q22: The Magnesium is likely to be low if there are	**False**	29	36.3	1.63	0.48	81.5	Pass
	True	51	63.8				
Q23: Is one mineral that plays an important role in controlling the amount of fluid in the body	**False**	32	40.0	1.60	0.49	80.0	Pass
	True	48	60.0				
Q24: A body should maintain a specific amount of potassium in the blood, ranging from	**False**	46	57.5	1.42	0.49	71.0	Fail
	True	34	42.5				
Q25: if potassium level is high a condition called	**False**	26	32.5	1.67	0.47	83.5	Pass
	True	54	67.5				

M.S= Mean of score, S.D= standard deviation, R.S. = relative sufficiency, Assess. = Assessment, Fail= less than (1.5), Pass = (1.5) and more.

Table (2) displays the results of the studied biochemical assessment, with the assessment failing if the mean score is less than 1.5 in questions (Q5, Q7, Q8, Q9, Q13, Q17, Q18, Q20, Q21, and Q24), and passing if the mean score is 1.5   or

greater.

Table (3): Final Assessment for Nurses' Knowledge toward Nutritional Status regarding (Biochemical Assessment).

Biochemical Final Assessment	Response	Frequency	Percent	M. S	S.D	Assessment
	False	41	51.3			
	True	39	48.8	1.48	0.13	Poor
	Total	80	100.0			

M.S= Mean of score, S.D= standard deviation, R.S. = relative sufficiency, Poor= less than (1.5), Good = (1.5) and more.

This table demonstrates that the mean score for the final Biochemical Assessment is below 1.5, which is poor.

Table (4): Summary Statistics for Nurses' Knowledge toward Nutritional Status and Initial assessment for the Studied Dietary Assessment.

Items	Respons-es	Freque-ncy	Perce-nt	M.S	S.D	R.S.	Asse ss.
Q1:During dietary assessment you should asking the patient or their family	False	40	50.0	1.50	0.50	75.0	Pass
	True	40	50.0				
Q2: There are several common ways to assess the dietary intake are	False	52	65.0	1.35	0.47	67.5	Fail
	True	28	35.0				
Q3: A patient is asked to remember in detail every food and drink consumed during the previous 24 hours	False	27	33.8	1.66	0.47	83.0	Pass
	True	53	66.3				
Q4:The patient is given a list of around 100 food items to indicate intake (frequency and quality) per day, per week and per month	False	64	80.0	1.20	0.40	60.0	Fail
	True	16	20.0				
Q5: Food intake(types and amount) should be recorded by the patient at the time of consumption at a period of time between 1-7 days	False	34	42.5	1.57	0.49	78.5	Pass
	True	46	57.5				
Q6: In observed food consumption assessment the meal eaten by the patient is weighed and content are exactly calculated	False	40	50.0	1.50	0.50	75.0	Pass
	True	40	50.0				
Q7: Estimating the Basal Metabolic Rate (BMR) based on	False	47	58.8	1.41	0.49	70.5	Fail
	True	33	41.3				
Q8: The fluid requirement Aged more than 60 years is	False	56	70.0	1.30	0.46	65.0	Fail
	True	24	30.0				

				M.S	S.D	R.S	Assess.
Q9:The fluid requirement Aged less than 60 years is	**False**	47	58.8	1.41	0.49	70.5	Fail
	True	33	41.3				
Q10: The patient on dialysis need to eat more	**False**	52	65.0	1.35	0.47	67.5	Fail
	True	28	35.0				
Q11: Most patients on dialysis need to limit the amount of	**False**	47	58.8	1.41	0.49	70.5	Fail
	True	33	41.3				
Q12: For stable maintenance hemodialysis patients, the recommended protein intake is	**False**	40	50.0	1.50	0.50	75.0	Pass
	True	40	50.0				
Q13: A one serving size of carbohydrate is	**False**	44	55.0	1.45	0.50	72.5	Fail
	True	36	45.0				
Q14 Carbohydrate Counting with chronic kidney disease are recommended at meals for:	**False**	50	62.5	1.37	0.48	68.5	Fail
	True	30	37.5				
Q15: Carbohydrate Counting with chronic kidney disease are recommended at each snack	**False**	42	52.5	1.47	0.50	73.5	Fail
	True	38	47.5				

M.S= Mean of score, S.D= standard deviation, R.S. = relative sufficiency, Assess. = Assessment, Fail= less than (1.5), Pass = (1.5) and more.

Table (4) presents the results of the studied dietary assessment, with assessment failing if the mean score is less than 1.5 in the questions (Q2, Q4, Q7, Q8, A9, Q10, Q11, Q13, Q14, and Q15), and passing if the mean score is 1.5 or greater.

Table (5): Summary Statistics for Nurses' Knowledge toward Nutritional Status regaring (Dietary Assessment).

	Response	Frequency	Percent	M. S	S.D	Assessment
Dietary Final Assessment	False	54	67.5			
	True	26	32.5	1.43	0.19	Poor
	Total	80	100.0			

M.S= Mean of score, S.D= standard deviation, R.S. = relative sufficiency, Poor= less than (1.5), Good = (1.5) and more.

This table demonstrates that the average score is below 1.5, which is poor for the Dietary Final Assessment.

Table (6): Final Assessment for Nurses' Knowledge toward Nutritional Status

	Response	Frequency	Percent	M. S	S.D	Assessment
Final Assessment	False	46	57.5			
	True	34	42.5	1.45	0.11	Poor
	Total	80	100.0			

M.S= Mean of score, S.D= standard deviation, R.S. = relative sufficiency, Poor= less than (1.5), Good = (1.5) and more.

This table demonstrates that the final mean score for nurses' knowledge of nutritional status is below 1.5, which is poor.

Table (7) Analysis of variance (One Way ANOVA) Analysis of Variance of Nurses' Knowledge according to their demographic characteristics

Variables	F.	Sig.
Age	2.121	**0.009 HS**
Years of Services	2.769	**0.000 HS**
Gender	1.423	0.1 NS
Level of Education	0.965	0.5 NS

Participate	1.160	0.3 NS
Developed	0.606	0.9 NS

F=Fisher test , HS=Highly significant,NS=Non significant at P-value 0.05and less

Table (7): shows Analysis of Variance of Nurses' Knowledge according to their demographic characteristics. There is highly significant different between nurses' knowledge and age ,years of services at a p-value less than 0.05.there are no significant between nurses'knowledge and gender, level of education ,participate in training course , and developed self independently .

Discussion

Summary statistics for Nurses'knowledge toward Nutritional status and initial assessment for the studied Biochemical parameter assessment that shows in table (4) our finding were most of nurse have fail in question (5, 7, 8, 9, 13, 17, 18, 20, 21, 24) with mean of score less than 1.5 .So the final assessment were shows in table (4-5) about (51.3%) of nurses' have false response will (48.8%) of nurses'have true response with M.S =1.48 and SD=0.13 that mean the nurses' knowledge toward biochemical assessment is poor. As a researcher point nurse as a holistic care must be familiar with biochemical assessment of the patient and it's so important to know the indicators of change in normal values . Given the increased interest in how diet and nutrition can affect disease patterns, the lack of information regarding how nutrients (minerals, protein, and carbohydrates) should be adjusted is particularly concerning [26,27,28].The problem of the health importance of the so-called "deficient" and "low" values for particular biochemical parameters on which such diagnoses are typically formed has been brought up by the relatively high frequency of marginal malnutrition as determined by biochemistry. In actuality, it is well recognized that many of the cut-off points proposed as the

perimeter of optimal consumption for a certain nutrient are fairly arbitrary. They are typically the result of research on the distribution of a single biochemical parameter in people with varying degrees of clinical malnutrition, and they are not intended to quantify deficient status; rather, they serve as guidelines for expressing nutrient levels. They have typically been generated by examining the distribution of a single biochemical parameter in populations with varying degrees of clinical malnutrition, and they are only intended to serve as guidelines for expressing nutritional levels—not as a way to measure deficient status. Accepting those cut-off points as diagnostic criteria for health status degradation brought on by vitamin deficiencies seems to lack much validity, in my opinion [29] For a complete comprehension of human beings and the notions of illness and disease, biochemistry knowledge is necessary [30] (Al Kalaldeh & Shahein, 2014) reveals that the SD for nurses working for the government is 3.51 (1.33) and the SD for nurses working in the private sector is 3.69 (1.09) at a p-value of 0.590. In the end, nurses' practitioners would underline the importance of training to enhance their professional expertise in light of nutritional administration in the severely ill.[31] Diet is important. Each day, the patient needs to consume the recommended amounts of protein, water, calories, vitamins, and minerals. Patients on dialysis frequently experience malnutrition, which is intimately associated to morbidity. Assessment of nutritional status and nutritional treatment of dialysis patients are therefore crucial aspects of daily life. kidney-related procedures [32] In our research The final assessment in table (4-9) shows that the majority (67.5%) of nurses have false responses to dietary assessment questions, while (32,5%) of nurses have true responses with M.S=1.43 and S.D=0.19 that indicate nurses have poor knowledge toward Dietary asse. There are 15 items of Dietary assessment question related to nutritional status, and the majority of nurses fail in question (2, 4, 7, 8, 9, 10, 11, 13, 14, 15) with mean of score less than 1.5 as shown in table(4).According to (Khalil & Frazier, 2010), patients on hemodialysis must follow to a comprehensive treatment

program that includes for regular HD sessions, stringent food restrictions, a complicated drug schedule, and prescribed exercise. Failure to adhere to this routine may have negative short- and long-term effects on survival and health. Short-term non-compliance with treatment plans can make emergency and hospital admissions more likely, Long-term effects could include the emergence of new co-morbidities like cardiovascular disease and death [33] Additionally, according to (Jafari, Mobasheri, 2014), individuals may suffer from reduced physical function, depression, acute pulmonary edema, congestive heart failure, and death as a result of poor food and a lack of fluid restriction.[34] According to the findings of (Bjerrum et al., 2012), nurses and other health care providers who work in renal units and have direct contact with ESRD patients have a greater obligation to educate and give instructions to patients who are at risk of renal failure regarding appropriate and workable dietary therapies.[35] Additionally, it was discovered by Rasheed & Younis (2018) that overall, nurses' expertise of the dietary management of renal failure was only fair. Seventy-one

percent of nurses (70.6%) received fair knowledge scores, and 17.5 percent had good knowledge scores. Only 11.8%, nevertheless, had a low knowledge score. 51 dialysis nurses had a mean score of 2.06 0.54 on the nutrition knowledge test. The majority of nurses were most adept at addressing dietary risk factors, foods high in potassium, and foods with high biological protein values. Less than half of nurses, however, were unable to identify vitamins, which, if taken in excessive doses repeatedly, can build up in the body to a harmful level [19]The results of the final (ABCD) assessment of nurses' nutritional status knowledge are shown in (Table 5). The majority of nurses (57.5 percent) gave inaccurate answers, while 42.5 percent gave correct answers with M.S.=1.45 and S.D=0.11. Thus, we conclude that nurses' knowledge of nutritional status assessment is poor. Additionally, (Kim & Choue, 2009) discover Most nurses had favorable opinions of their patients' nutritional health and expressed a strong desire to learn more about it. However, they had little understanding of nutrition, particularly the fundamental nutritional

assessment criteria that are used to determine a patient's nutritional status. In actual reality, nurses mishandled the nutritional assessment [33] Additionally, it was discovered by Munuo et al. (2016) that more than half (59.4%) of the participants in their study of nutritional knowledge among health care workers in slected Dar es Salaam, Tanzanian hospitals had low knowledge of nutrition. Nurse officers had a mean score of (9.51) regarding nutritional knowledge in managing chronic kidney illnesses, which was lower than the national average of 9.8 (SD 3.12)..[21] According to (Schaller & James, 2005), Australian nurses had a mean score of 60% (SD = 8.4) and had poor knowledge of nutrition [14] While the age group's highest percentage (36.3%) from (26-30) The results of the study sample are shown in Table (7), where a p-value of 0.009 less than 0.05 indicates a highly significant relationship between nurses' knowledge and their age. This result differs from that of (Irzaij & Atiyah, 2021) who conducted a study at the AlHussain Teaching Hospital for nurses in the city of Alnasiriyah. P value =.54 indicates that the relationship between age and nursing expertise

was not significant.[34] Additionally, at p-value=0.000 less than 0.05, the relationship between nurses' knowledge and years of experience is highly significant. This agrees with the findings of (Crogan & Evans, 2001) who assessed an evidence-based nutrition education program for registered nurses employed in nursing homes and who, on a pretest, had an average score of 56%. Despite the educational intervention, posttest results showed an ongoing lack of basic nutritional knowledge (66 percent on average), According to statistical analysis, more experienced nurses performed nutritional assessments more frequently than less experienced nurses, scored higher on posttests than less experienced nurses, and were more frequently charge nurses or nurses completing Minimum Data Sets. and knowledge of the nurses. Even However, not all gaps in nutrition knowledge were filled by education [35] . While there is no significant relationship between nurses' knowledge and gender at P value = 0.1, there is a highly significant relationship between nurses' knowledge and their years of service at p-value=0.000 less than 0.05. These results are in

agreement with those of (Irzaij & Atiyah, 2021), who found no significant relationship between nurses' knowledge and gender at P value =.85. [36] Additionally, there are no statistically significant differences for other demographic data (such as education level, participation in training courses, and development of self-independence) at p-values greater than 0.05.

Conclusion

Among nurses working in hemodialysis centers, the overall nutritional status assessment knowledge score was poor

Recommendation

We suggest that Training and Development Agencies be Oriented for Educational Program (Specially Nutritional Status Assessment for Hemodialysis Patient Educational Program for All New and Old Nurses Work in Hemodialysis Center. Additionally, hospital policy should serve as a standardized instrument for periodic evaluations of nurses' knowledge of and attitudes toward the practice of nutritional status assessment in hemodialysis centers. Nurses are unable to

identify the patient's nutritional issues and to design efficient nutritional nursing care without this knowledge.

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