

Knowledge, attitude and practices of patients receiving maintenance haemodialysis about nutritional management in Sana'a, Yemen

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ABSTRACT

considering the role of appropriate nutrition for CKD, there is a dire need to assess the Knowledge, attitude and practices of renal adult patients about that. The current cross-sectional study aimed at highlighting gaps in nutritional management of stage 5 CKD adult patients in tertiary care hospital of Sana'a. A KAP survey, based on a self-administrated questionnaire containing 34 questions, was distributed among 79 stage 5 CKD adult patients in 4 randomly selected hospitals. The level of knowledge of the research sample of the nutritional management of the fifth stage of chronic kidney disease (average) was (67) percentage (84.8%). It was noted that the level of knowledge of the participants about foods containing high amounts of potassium, sodium, calcium and phosphorous was moderate. Position scores of the CKD stage 5 nutritional management overall approval scores were (negative) at (63.3%), while they were (positive) at (36.7). The practice scores on the nutritional management of the fifth stage of chronic kidney disease on the nutritional management of the chronic kidney disease of the fifth stage was (good) with a percentage (84.8). The researchers made several recommendations as meals guideline developed, frequent and consistent nutritional education, restricting or modifying dietary regiment not just identifying foods as minerals, proteins or fluids.

Index Terms— *attitude, Chronic, Knowledge, practices,*

INTRODUCTION

Chronic kidney disease (CKD) is a worldwide epidemic health problem of increasing prevalence and costing an enormous burden on healthcare systems (McCullough PA, 2011). The global increase in CKD needs a well-organized preventive strategy mainly by detecting the risk factors (Gebrie MH, 2019). According to the American Heart Association (AHA) statement released in 2013, CKD mentioned as a significant risk factor for coronary disease (Coresh J, 2004). Earlier-stage CKD can also lead to several complications related to anemia and bone mineral metabolism disorders (Snyder S, 2005). Despite these known adverse consequences of CKD, the vast majority of the people remain unaware of the disease (Plantinga LC, 2008). Kidney disease (KD) can be diagnosed with simple laboratory procedures. However, people's practice toward testing (screening) themselves to know the status of CKD is exceptionally very low. Chronic kidney disease (CKD) has been categorized as one of the diseases of public health concern globally (Samar et al., 2018). The disease progresses through various stages resulting in the fifth and last stage when a patient depends on dialysis or transplant for survival (Barnet et al. 2008). Stage 5 CKD has been identified as the end stage of kidney performance increasing morbidity and mortality rates of patients. Globally 4.9-9 million people need renal replacement therapy (RRT) and out of these, only 2.6 million are on dialysis with at least 2.3 million dying prematurely due to inadequate access to RRT (Garcia et al., 2015).

In Brazil, between 2000 and 2012, a study indicated an increase in incidence and prevalence rates among stage 5 CKD patients. Prevalence rates: ranged between 3.2% - 4.0%/year and incidence rate 1.1% - 2.5%/year. The incidence rate was noted to increase in both sexes, especially among the older age groups (Lenildo et al., 2014). Increase in prevalence and incidence rates could be attributed to inadequate knowledge on co-morbidities leading to CKD and progression to subsequent stages. The incidence and prevalence rates are based on estimates due to lack of national or regional registries on stage 5 CKD in most developing countries (Naiket et al., 2003) Further, awareness of CKD remains unacceptably low among care providers (Levey AS, 2007). Earlier recognition of CKD by nephrologists can slow the progression of the disease (Levey AS, 2007). However, the late evaluation of CKD patients by nephrologists would increase renal failure (Jungers P, 2001). A non-nephrologist mostly sees most patients with CKD seeking treatment in tertiary hospitals. The Nephrologist has relatively sufficient awareness related to CKD diagnosis than non-nephrologist (Plantinga LC, 2008). because of the poor infrastructure, inadequate laboratory facility, and shortage of human resources in the area, physicians frequently use urine and serum creatinine as a means of CKD diagnosis and its severity. However, serum creatinine may not indeed indicate the different stage of CKD, because creatinine level might increase in the blood after high protein ingestions, intense exercise and after taking some drugs such as Cimetidine, Trimethoprim, Pyrimethamine, Salicylates, Phenacemide, Corticosteroids, and Vitamin D derivatives (Choukem SP, 2016). Increasing evidence indicates that the CKD burden is growing in developing countries because of

increased risk factors such as high blood pressure and diabetes mellitus (Samra M,2012). According to the unpublished study, renal disease covers 1.2–6% of adult hospital medical. Additionally, besides the low number of nephrologists in the country, a deficient level of awareness about kidney diseases, risk factors, diagnosis, and management among care providers is believed to be very low. Thus, the aim of the study was to determine nutrition knowledge, attitude, and practices in management of stage 5 CKD by renal adult patients at science and technology hospital And the Republican Hospital in Sana'a

METHODOLOGY

Study design

This was a facility based cross-sectional analytical study that assessed nutrition knowledge attitude and practices in management of stage 5 CKD among renal adult patients. A cross-sectional analytical design was used to facilitate collection of qualitative and quantitative data and enable identification of associations between variables Units, By Simple random technique was used to select 79 patients and quantitative data was analyzed using Statistical Package of Social Sciences (SPSS) version 26.

Questionnaire design and grading method

A research administered questionnaire with closed ended questions was used to collect information. Section A had 9 questions on socio-demographic factors of the patients (Gender, age, marital status, education level, distance from dialysis center, income level, occupation, source of dialysis support and duration on dialysis). Section B comprised 14 questions that assessed level of nutrition knowledge of the participants on Proteins, fluids, and minerals. Identification of food types, regulation of intake, food quantities and problems brought about by too much or deficiency in consumption of each nutrient, supplements, comorbidities and nutrition support obtained for every individual was assessed. Section C comprised 6 questions that elicited information on the patients' attitudes and perceptions towards nutrition management practices. A Likert-scale was used to assess the participants' attitudes (taking weight, watching type of food taken, poor appetite level, to weight loss, food supplements provided, controlling salt intake, following dietary recommendations and frequency). Section D comprised 5 questions assessing participants' ability to practice the nutritional recommendation prescribed or learnt.

Data collection and analysis

This was a facility based cross-sectional analytical study that assessed nutrition knowledge attitude and practices in management of stage 5 CKD among renal adult patients. A cross-sectional analytical design was used to facilitate collection of qualitative and quantitative data and enable identification of associations between variables UNITS, the study was carried out at Alaskary, Aljmhory, Azal, sciences and technology Hospital in Sanaa city. The facility is well equipped with modern dialysis equipment with well-trained health care workers specialized in managing renal

insufficiency among patients undergoing dialysis in the hospital. The Hospital is a teaching and referral facility attracting many patients who are seeking for quality health care services. Patients are referred to the KNH from other smaller level facilities for specialized screening, assessment, treatment and management. The study targeted stage 5 Chronic Kidney Disease adult patients attending renal unit for hemodialysis. Inclusion criteria: All patients in renal unit at stage 5 of Chronic Kidney Disease who were present at the time of data collection and willing to participate in the study. Simple random technique was used to select 79 patients. Quantitative data was analyzed using Statistical Package of Social Sciences (SPSS) version 26.

RESULTS

Demographics

The sample was able to represent males and females in a close proportion, as well as different age groups well. It was also able to represent different educational qualifications and social status, (Table 1).

Knowledge about CKD.

It is noticed from the Fig.1 that the Use of fluids in the research sample was (Decrease) by 30 by 38%, and it is also noticed from the respondents' answers about (Problems from excess fluid intake) that was (Loss of breath) with 47 by 59.5%, as for the love sample answers about (Expected fluid intake 500-1000ml / day), the (Strongly disagree) number was 38 with a ratio of 48.1%. (Fig.1)

Table 1 Demographic characteristics of participants

<i>Variables</i>	<i>Demographics</i>	<i>Number (percentage)</i>
<i>Gander</i>	<i>Male</i>	43 (54%)
	<i>Female</i>	36 (46%)
<i>Age</i>	<i><=20</i>	4(5%)
	<i>21-34</i>	26(33%)
	<i>35-44</i>	11(14%)
	<i>45-54</i>	14(18%)
	<i>55-64</i>	18(23%)
	<i>>=65</i>	6(8%)
<i>Marital status</i>	<i>Married</i>	54(68%)
	<i>Single</i>	19(24%)
	<i>Divorced</i>	2(3%)
	<i>Widowed</i>	4(5%)
<i>Educational level</i>	<i>Primary</i>	20(25%)
	<i>Secondary</i>	15(19%)
	<i>Tertiary institution</i>	21(27%)
	<i>Post graduate</i>	2(3%)
	<i>Other</i>	21(27%)

Attitude about CKD.

Table 3 The attitude of adult stage 5 chronic kidney disease (CKD) patients to nutritional management of their condition

Variables	Answers	Number (percentage)
Is it valuable to weighing oneself daily	Strongly disagree	1 (1.3%)
	disagree	8 (10.1%)
	Neutral	19 (24.1%)
	agree	18 (22.8%)
	Strongly agree	33 (41.8%)
It is Important to watch foods one eats daily	disagree	3(3.8%)
	Neutral	9 (11.4%)
	agree	19 (24.1%)
	Strongly Agree	48 (60.8%)
Poor appetite and change in taste of food can lead to wasting	Strongly disagree	1 (1.3%)
	disagree	3 (3.8%)
	Neutral	4 (5.1%)
	agree	26 (32.9%)
Food supplements provides nutrients needed in the body	disagree	8 (10.1%)
	Neutral	14 (17.3%)
	agree	25 (31.6%)
	Strongly Agree	32 (40.5%)
Food supplements provides nutrients	disagree	8 (10.1%)
	Neutral	14 (17.7%)
	agree	25 (31.6%)
needed in the body	Strongly Agree	32 (40.5%)
Controlling salt intake is important in managing stage 5 chronic kidney disease	Strongly disagree	1 (1.3%)
	Disagree	5 (6.3%)
	Neutral	6 (7.6%)
	Agree	22 (27.8%)
	Strongly agree	45 (57%)

It is noted from the previous table that all the paragraphs received a general verbal estimate (Agree, strongly agree), which are the paragraphs that state:

Is it valuable to weighing oneself daily, It is important to watch foods one eats daily, Poor appetite and change in taste of food can lead to wasting, Food supplements provides nutrients needed in the body, Controlling salt intake is important in managing stage 5 chronic kidney disease, There is difficulty on following dietary recommendations.

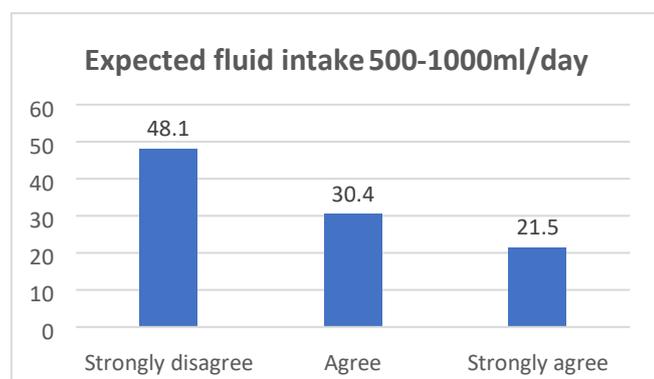
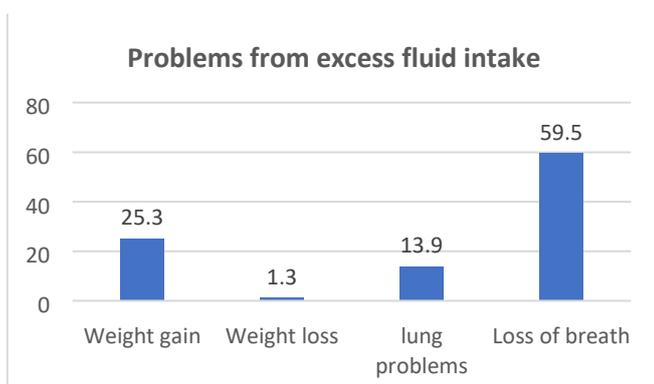
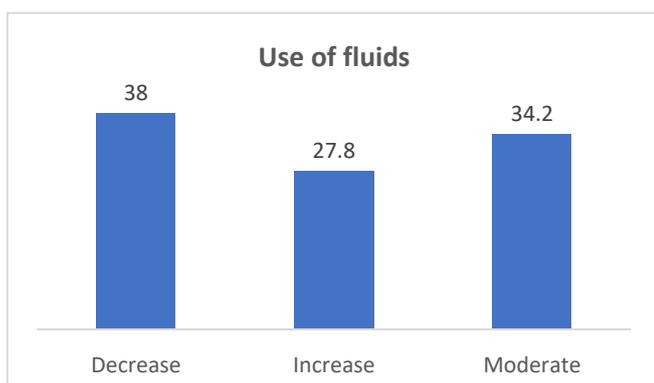


Fig.1 Nutrition knowledge in the management of stage 5 chronic kidney disease (CKD) among renal adult patients

Table 2 Nutrition knowledge scores management of stage 5 CKD

	N	Score	%
Low	6	0-4 Points	7.6
Moderate	67	5-9 Points	84.8
High	6	10-14 Points	7.6
Total	79		100

It is noticed from the previous table that the knowledge level of the research sample was (Moderate) with 67 percentage 84.8%. As shown in the following figure

Attitude scores to nutritional management of stage 5 CKD

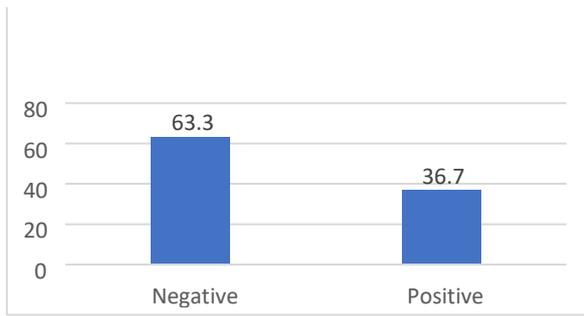


Fig.2 shown Attitude scores to nutritional management of stage 5 CKD patients.

Practices about CKD

It is noticed from the Fig.3 that shown the sample answers to the first question (Do you take Iron supplements) (yes) by 78.5%, while the answer of the research sample to the second question (When feeding, do you feel nausea, or like vomiting) (yes) By 72.2%, as for the third question (Do you reduce salt to manage blood pressure), the sample answer was (yes) by 86.1%, while the fourth question (Can one reduce potassium by eating less fruits and boiling vegetables in a lot of water) (yes) by 54.4%. As for the answer to the last question (Are you able to buy or get and take recommended food?) (yes) by 62% (Fig.3)

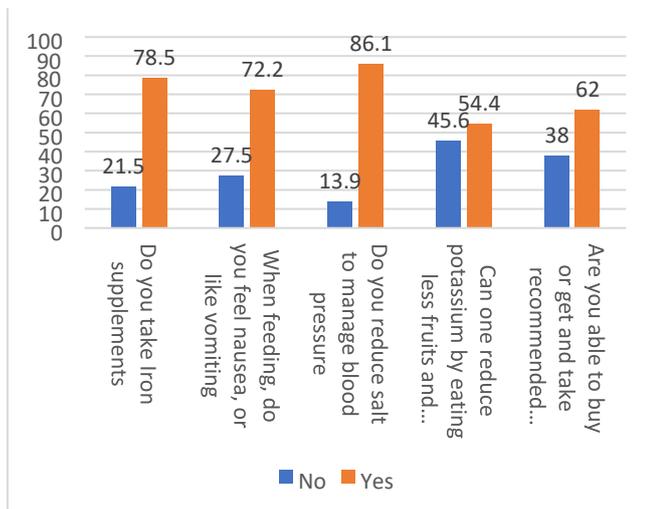


Fig.3 shown establish the practices on nutritional management among adult stage 5 chronic kidney disease (CKD) patients

DISCUSSION

This survey demonstrated the knowledge attitude, and practices of fifth stage CKD patients about nutritional management the male participants were (54%) and they are the most, while females were by (46%), The highest percentage of the number of participants was with a percentage of (33%) and they are those whose ages range (21-35) years, while the lowest percentage of the number was (5%) and they are those whose ages range between (Less than 20 years old), the highest support the patient is got was from Family by (49%). The Use of fluids in the research sample was (Decrease) by (38%), and it is also noticed from the respondents' answers about (Problems from excess fluid intake) that was (Loss of breath) by (59.5%), as for the love sample answers about (Expected fluid intake 500-1000ml / day), the (Strongly disagree) number was with a ratio of (48.1). They also answered that the problems that may arise due to the lack of protein intake are (malnutrition) by (49%). For diseases that lead to the fifth stage of the chronic kidney disease, they answered that it is (Hypertension) by (60%). As for the participants' knowledge about foods that contain high amounts of potassium, (Green bananas) were (79%). As for the knowledge of the staff about the high level of potassium in the blood, it may cause a problem (41) Itchy skin (51%). As for the expected participants to take sodium, their answers were (Moderate) by (63%). Participants' knowledge about foodstuffs that contain sodium was (75%), as for the knowledge of the staff about the problems expected from having a high percentage of calcium in the body with (32 %), As for the knowledge of the staff about foods that contain a high amount of phosphorus, they answered (Nuts and seeds) by (63%). As for the knowledge of the staff about the problems that may result from the high level of phosphorous in the body, they answered (Bone & Joint disease) by (46%). The knowledge score was moderate (84.8) which notice that is higher than knowledge level in KAP study in patients receiving maintenance hemodialysis in Bloemfontein, South Africa (< 50%) (Spies at al.,2021) (58.2%) of participants don't weighing them self-daily, while (60.8%) said that Important to watch foods one eats daily and (57%) said that Poor appetite and change in taste of food can lead to wasting, (68.4%) said that Food supplements don't provide nutrients in the body, about controlling salt intake in managing stage 5 chronic kidney disease (57%) of participants said that important, there is difficulty on following dietary recommendations for (59.5%) of participants. The overall approval scores for positive attitude were low (36.7%) this same to result in KAP study in patients receiving maintenance hemodialysis in Bloemfontein, South Africa (Spies at al.,2021). (78.5%) of participants take Iron supplements, also (72.2%) When feeding, feel nausea, or vomiting, the majority of participants (86.1%) reduce salt to manage blood pressure , (54.4%) of participants eating less fruits and boiling vegetables in a lot of water to reduce potassium, (62%) of them are able to buy or get and take recommended foods .The practice score was positive (84.8%) that is higher than KAP study in patients receiving maintenance hemodialysis in Bloemfontein, South Africa (39.6%) (Spies at al.,2021).

CONCLUSIONS

There was a predominance for married males in this study (54% versus 46% of females), and it may also be a reflection that males are more susceptible to risk factors such as smoking, diabetes and high blood pressure that lead to CKD and ultimately CRF.

Nutrition knowledge scores management of stage 5 CKD

Respondents were asked how knowledgeable they were on nutritional management of stage 5 CKD the level of knowledge of the research sample was (average) with 67 percentage 84.8%.

Attitude scores to nutritional management of stage 5 CKD

Attitude scores to nutritional management of stage 5 CKD The overall approval scores were (negative) at 63.3%, while they were (positive) at 36.7%.

Practice scores on nutrition management of stage 5 chronic kidney disease

practice scores on the management of nutrition for CKD from the fifth stage was (good) with a ratio of 84.8%.

RECOMMENDATION

The researchers made several recommendations as follows:

- There should be a meals guideline developed to meet the needs of stage 5 CKD patients.
- The condition requires more liberal intake of proteins of high biological value unlike the prior stages that need a conservative meal plan.
- Patients' knowledge on nutrition management of their condition may be achieved through frequent and consistent nutrition education and counseling including follow ups.
- There is need to strengthen nutrition counseling by educating patients on reasons for restricting or modifying dietary regiment not just identifying foods as minerals, proteins or fluids.
- The facility should carry out regular on-job trainings for nutritionists, nurses and doctors working in the renal unit on current and up to date information pertaining to nutrition knowledge, attitude and practices This would facilitate application and dissemination of the same to renal patients
- increasing their level of awareness on the role of each and every nutrient in their bodies thus putting knowledge into practice to alleviate complications. This will further enable them understand nutrient interactions and how to regulate them through food intake and supplementation.
- The Nutrition Department of the Ministry of Health, in cooperation with other nutrition institutions, health practitioners and stakeholders concerned, should communicate specifically with policy statements, guidelines, protocols and strategies for nutrition.
- Evaluations must be approved to obtain a comprehensive evaluation that helps predict disease. This will determine the provision of basic and mandatory nutrition services.

- Management practices to mitigate complications and slow disease progression.
- Nutrition Department needs a high level of knowledge about the essential nutrients it needs the body, its role, its interaction, and its functions.
- Increased levels of knowledge influence attitudes Which may translate into good practice of the knowledge gained.
- Focusing more on motivational follow-up and practicing acquired nutrition management skills may significantly improve patients' quality of life.

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