

**ASSESSMENT OF CHRONIC KIDNEY FAILURE PATIENTS'
AWARENESS ABOUT DISEASE AND HEMODIALYSIS
COMPLICATIONS IN ALHASA REGION OF SAUDI ARABIA**

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ABSTRACT

Chronic kidney disease (CKD) defined as abnormalities of kidney structure or function, present for more than three months, with implications for health. Therefore, if this happen, it will leading to complications as electrolytes imbalance, increase blood pressure, anemia, renal osteodystrophy and dialysis at end stage renal disease (ESRD). The primary purpose for this study is to evaluate the patients' awareness for CKD, hemodialysis and their complications. This study is questionnaire-based survey. A total of fifty patients are conducted to evaluate their awareness about the disease and possible complications of chronic kidney disease and hemodialysis between 23 November 2014 to 25 December 2014. The evaluation of the patients awareness was performed by distributing the designed questionnaire in one center

(King Fahad Hospital) in AlHasa. Fifty patients completed the questionnaires and included in the analysis by using excel program. Therefore, those patients had a higher awareness with 46% about hemodialysis complications but low awareness with 46% in the chronic renal disease complications. Our study found that the patients' awareness about their complications related to chronic kidney disease was higher than their awareness about complications related to hemodialysis due to deficiency in patient counseling program and low availability of medical information sources.

KEYWORDS: Awareness, Chronic kidney disease, Hemolysis and complications.

1. INTRODUCTION

Chronic kidney disease (CKD) defined as abnormalities of kidney structure or function, present for more than three months, with implications for health.^[1] However, the CKD is a common and growing problem worldwide; in the United States, >10% of adults showing some evidence of kidney damage and/or reduced kidney function.^[2]

Therefore, the identification of CKD requires a recognition of individual risks and appropriate laboratory testing (serum creatinine and/or urinary protein),^[3] since the symptoms generally do not manifest in earlier stages of CKD.

However, earlier-stage CKD can lead to several complications, such as anemia and bone mineral metabolism disorders and poor outcomes, including cardiovascular events, morbidity, and mortality,^[4] in addition to progression to end-stage renal disease (ESRD), requiring dialysis or transplant for survival. Despite these known adverse consequences of CKD, the majority of persons with the disease, especially prior to ESRD, remain unaware of their disease.^[5,6,7]

There are no available data about the prevalence of chronic kidney disease (CKD) and its risk factors in the general population of the kingdom of Saudi Arabia. The estimated prevalence of CKD in the young Saudi population is around 5.7%.^[8]

The awareness of CKD remains unacceptably low, despite recent attempts to increase awareness through dissemination of clinical practice guidelines and recommendations for patients with CKD or its risk factors to providers^[8-10] and by increase the community awareness by attending related events such as World Kidney Day.^[11,12] Therefore, the patients' awareness about their disease and its complications make them realized and responsible "why do they use numerous medications" (indications to use) and more compliance to them (using medications to avoid complications). The main goal for this study to assess patients' awareness about their complications of CKD and hemodialysis.

2. METHOD

2.1 Study design

This study is questionnaire-based survey. A total of fifty patients are conducted to evaluate their awareness about the possible complications of chronic kidney disease and hemodialysis between 23 November 2014 to 25 December 2014. The evaluation of the patients awareness

was performed by distributing the designed questionnaire in one center (King Fahad Hospital) in Alhasa.

2.2 Data analysis

During this study, the data collected from the filled questionnaires and entered to Microsoft Excel Program to analyze the results as percentage parameter.

3. RESULTS

Fifty patients completed the questionnaires and included in the analysis by using excel program. Therefore, those patients had a higher awareness with 46% about hemodialysis complications but low awareness with 46% in the chronic renal disease complications.

Table (1): Demographic Data.

Characteristic	Patients
Age — Years (means ± SD)	(52.94 ± 12.84)
Gender: Male— no. (%)	38 (76)
Female— no. (%)	12 (24)
Social Status: Married — no. (%)	41 (82)
Single — no. (%)	6 (12)
Divorced — no. (%)	3 (6)
Nationality (Saudi) — no. (%)	50 (100)
Academic Level:	
Uneducated — no. (%)	7 (14)
Before secondary school — no. (%)	11 (22)
Secondary school — no. (%)	11 (22)
Diploma — no. (%)	7 (14)
Bachelor — no. (%)	13 (26)
Higher education — no. (%)	1 (2)

Table (2): The risk factors of CKD.

Risk Factors	1	2	3	4	5
Risk Factors of CKD	Older age (more than 60 years)	Low birth Weight	High cholesterol level	High blood pressure	Smoking
Total	31	0	15	23	15
Percentage	62 %	0 %	30 %	44 %	28 %
Order of CKD causes	6	7	8	9	10
Risk factors induced CKD	Decreased Kidneys Weight	Family history	Diabetes Mellitus	Glomerulonephritis	Obesity
Total	0	20	14	0	15
Percentage	0 %	40 %	28 %	0 %	30 %

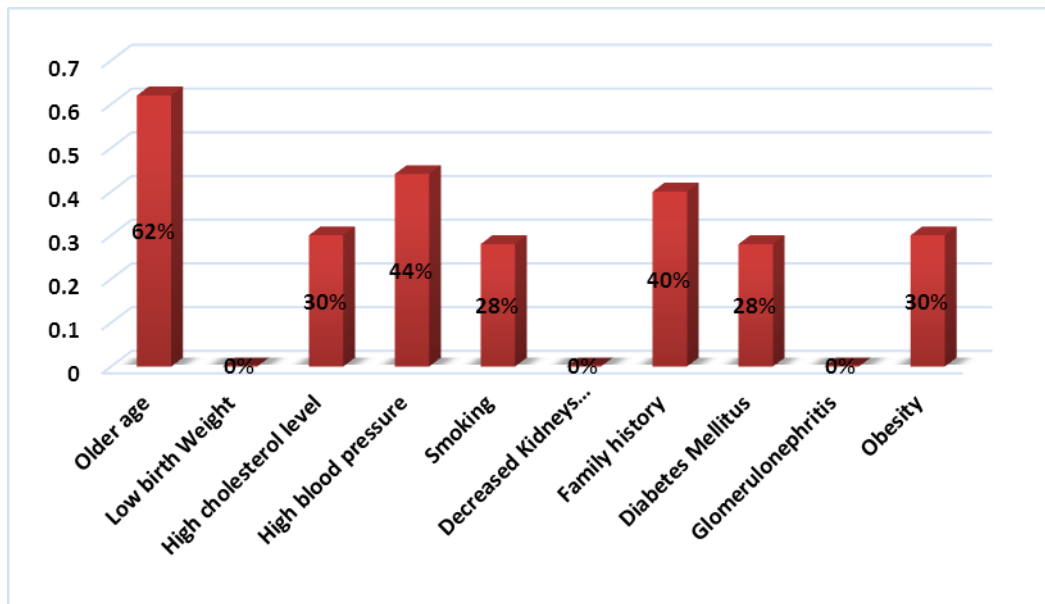


Figure (1): The risk factors of CKD.

Table (3): The complications induced by CKD.

Complications	1	2	3	4	5	6
CKD Complications	High blood pressure	Osteodystrophy	High Uric Acid	Anemia	Acute kidney injury	Metabolic acidosis
Total	20	12	8	15	2	5
Percentage	40 %	24 %	16 %	30 %	4 %	10 %

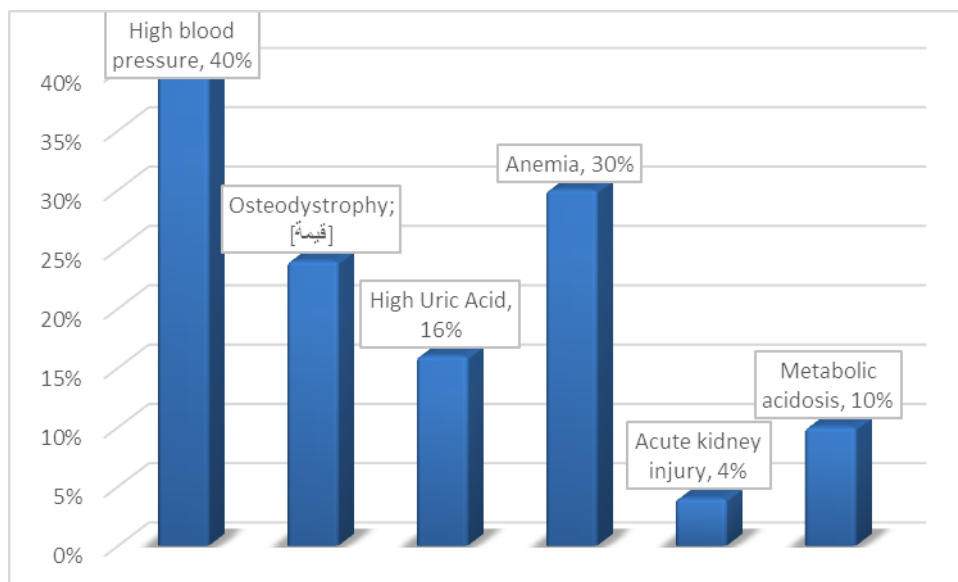


Figure (2): The complications induced by CKD.

Table (4): The complications induced by the hemodialysis.

HD Complications	1	2	3	4	5	6	7
HD Complications	Nausea	Turnover	Headache	Local Infection	Itching	Shortness of Breath	Confusion
Total	11	18	21	0	17	1	13
Percentage	22 %	36 %	42 %	0 %	34 %	2 %	26 %
Order of HD Complications	8	9	10	11	12	13	14
HD Complications	Vomiting	Muscle Cramps	Hypotension	Anemia	Diarrhea	Chill	bacteremia and Sepsis
Total	6	15	21	0	0	8	9
Percentage	12 %	30 %	42 %	0 %	0 %	6 %	18 %

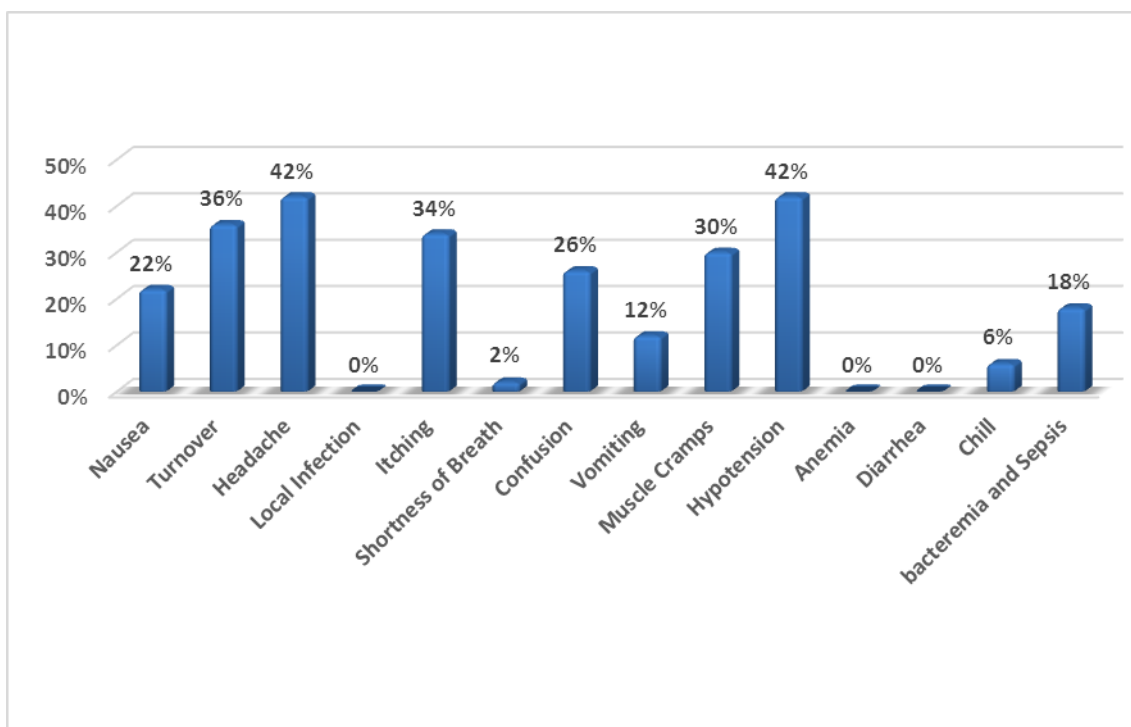


Figure (3): The complications induced by the hemodialysis.

Table (5): The time of administration for medications used by HD patients.

Drug Time	Aspirin	Gliclazide	Glyburide	Glargine	Aspart	Perindopril	Multivitamin	Enalapril
	2*	1,2	1,2	1,2	1,2	2	1,2	2
	Captopril	Lisinopril	Irbesartan	Amlodipine	Nifedipine	Felodipine	Verapamil	Atenolol
	2	2	1,2	1,2	1,2	1,2	1,2	2
Bisoprolol	Carvedilol	Spirolactone	Calcium acetate	Alfacalcidol	Folic acid	Ferrous sulfate	Epoetin alfa	
1#,2	1,2	1,2	1,2	1,2	2	1,2	1,2	

* (1): Before hemodialysis.

(2): After hemodialysis.

Table (6): The number of HD patients who aware about the best time of medications administration.

Drug No.	4	17	19	20	32	40
Drug used in HD	Aspirin	Perindopril	Enalapril	Captopril	Atenolol	Folic acid
Number of Patients	7 out of 8	2 out of 5	2 out of 3	2 out of 3	2 out of 7	9 out of 17
Patients (%)	87.5 %	40 %	66.66 %	66.66 %	28.57 %	52.94 %

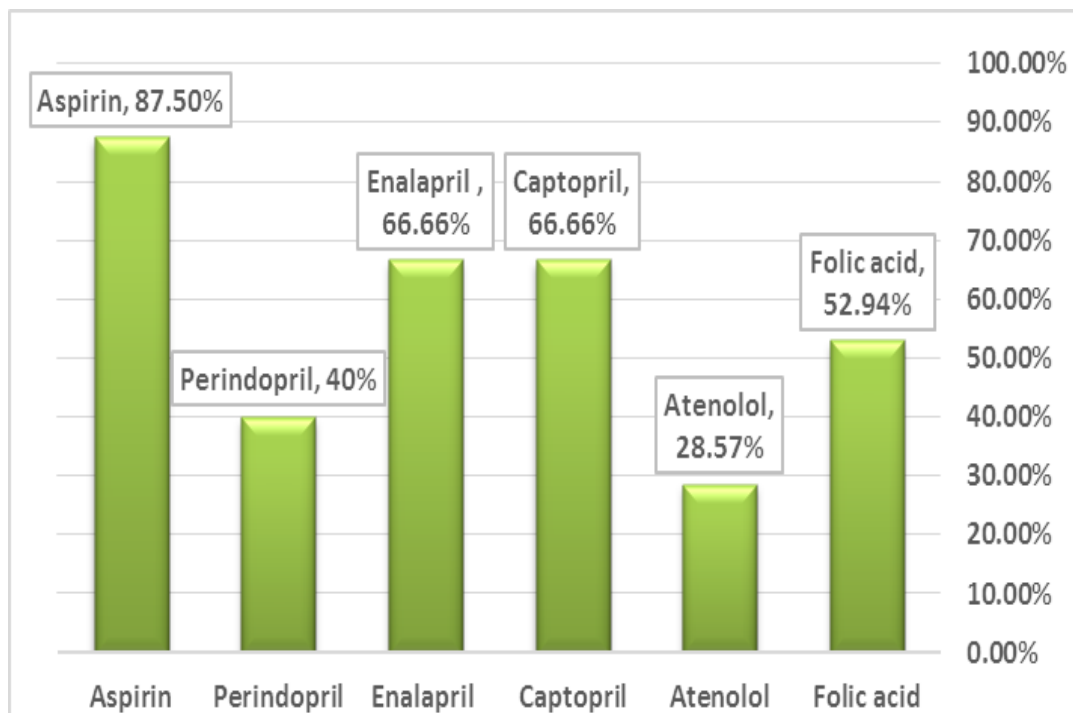


Figure (4): The percentage of patients who answered correctly for drugs used in HD.

Table (7): The patient's awareness about the CKD for each question.

	Definition of CKD (Q1)	Indication of medications use \$ (Q3)	Complications of CKD (Q4)	Compliance for medications use (Q6)	Allowed amount of protein in diet (Q7)	Allowed amount of Salt in diet (Q8)	Restricted potassium amount in food (Q9)
Patients Number	7	13	27	29	24	18	20
Patients (%)	14%	26 %	54 %	58 %	48 %	36 %	40 %

^{\$} Medications currently used by patient that have a negative effect on renal function.

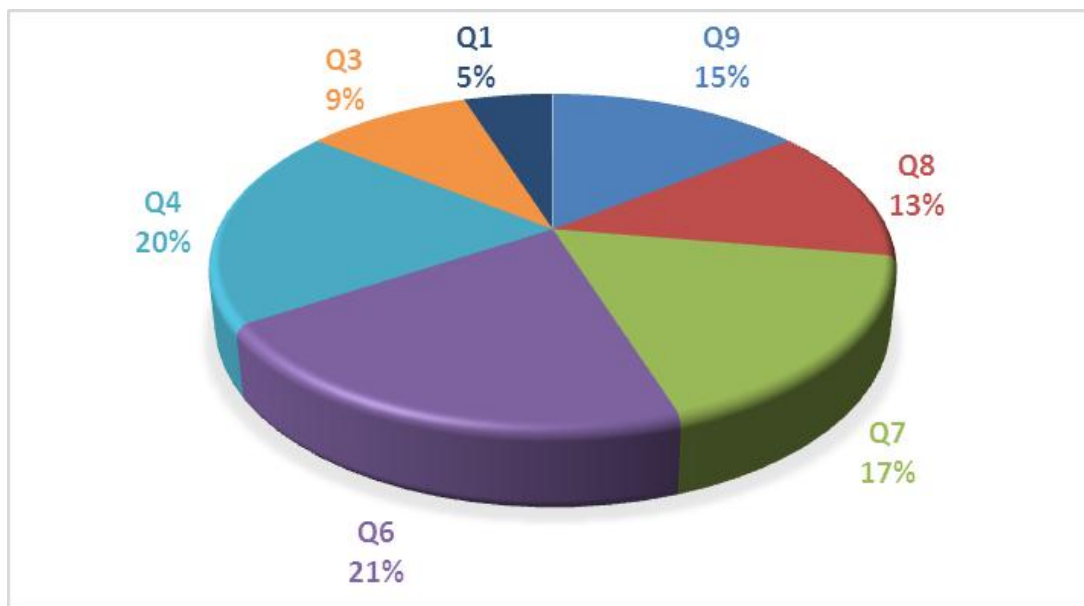


Figure (5): The patient's awareness about the CKD for each question.

Table (8): The patient's awareness about the conventional hemodialysis for each question.

	Indication of Hemodialysis (Q1)	Complications of Hemodialysis (Q3)	Eating special diet after Hemodialysis Session (Q7)	Taking a Special Food Supplements for CKD (Q8)
Number of Patients	27	39	37	24
Patients (%)	54 %	78 %	74 %	48 %

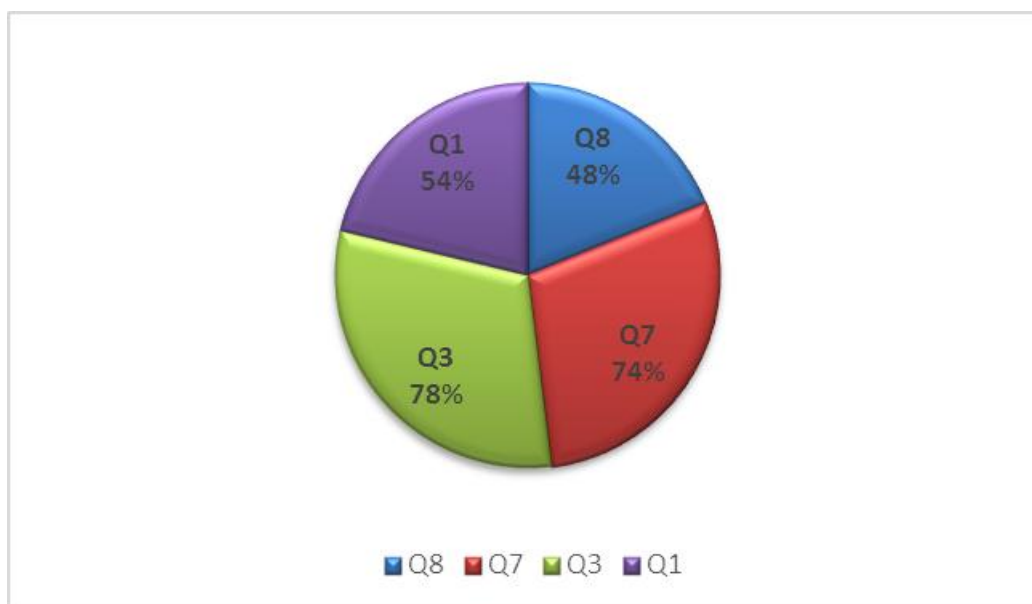


Figure (6): The patient's awareness about the conventional hemodialysis for each question.

DISSCUSION

This study, which included 50 patients with CKD and HD, showed the higher awareness of patients about the hemodialysis rather than chronic renal disease. The higher awareness aspects were shown in the definition of chronic kidney disease (14%), the restricted amount of potassium in diet (26%), the allowed amount of salt in diet (54%), the restricted amount of protein in diet (58%), the adherence of used medications (48%), the complications of CKD (36%) and the indication of used medications (40%) (Have a negative effect on renal function).

The study limitations were a small sample size, one region of Saudi Arabia, one center, and need to assess the stages of chronic kidney disease.

CONCLUSION

Our study found that the awareness of patients for evaluating awareness about the complications of chronic kidney disease and dialysis was higher awareness in hemodialysis questionnaire than chronic renal disease questionnaire. As plan, we recommend assessment the stages of chronic kidney disease and apply program for patient education. In addition, we should evaluate patients' medications that participate in worsen chronic kidney disease complications. Also, the importance role of community events that increase the awareness of patient about the disease and its complication in addition to provide mobile applications as medical information resource provided as simple and clear Arabic language.

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