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Knowledge attitude and practice towards prevention and early detection of chronic kidney disease among high risk patients

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***Abstract*---**Background: It is well recognized that chronic kidney disease (CKD), if left, untreated would slowly progress to end-stage renal disease (ESRD)., A targeted approach is to enhance the knowledge of CKD among the public, especially in high risk population, and encourage them to practice a healthy attitude and

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practice that may help in early detection and thereby better management of CKD. Such a study to assess the baseline data has not been done in India. Aims and Objectives: To inculcate the knowledge attitude and practice towards prevention and early detection of CKD among high risk patients attending a tertiary care centre. This Observational study was carried out on all patients with diabetes and/or hypertension attending General medicine out-patient or in-patient in a given period of time. Patients more than 18 years of age with diabetes and/or hypertension were included while patients with chronic kidney disease were excluded. Methodology: A standard questionnaire obtained from an author of similar study is given to patients fulfilling the inclusion criteria. Is this National Kidney Foundation's Kidney Disease Outcome Quality Initiative (KDOQI)? If so mention it. Results: The majority of the study population (82%) had poor knowledge regarding etiology, symptoms and management of CKD whereas 74% had good attitude and 69% had good practice towards risks of CKD.

***Keywords*---**diabetes mellitus, chronic renal failure, knowledge attitude, practice, hypertension.

Introduction

India is deemed to be the diabetic capital of the world[1]. Paralleling this, the prevalence of chronic kidney disease (CKD) is also increasing in India and is associated with an increased risk of cardiovascular events, end-stage renal disease and mortality[2]. Early identification of CKD is vital to delay progression to end stage renal disease and thereby decreases morbidity and burden on health care system[3]. Yet, the level of CKD awareness is low in both the general population and among high risk patients[4]. The National Kidney Foundation's Kidney Disease Outcome Quality Initiative (KDOQI) evidence-based clinical practice guideline for CKD recommends periodic screening of high risk individuals like diabetics and hypertensive for CKD[5]. This should include a detailed clinical examination, and laboratory evaluation (eg. serum creatinine, protein-to-creatinine ratio, imaging of the kidneys)[6]. Routine screening of patients to rule out other micro-vascular complications like retinopathy by detailed fundus examination by an ophthalmologist is also recommended[7]. Despite these recommendations, evidence from national population surveys showed that high risk patients like diabetes and hypertensive are often not screened for CKD[8]. Earlier recognition of CKD could slow the progression, prevent complications, and reduce cardiovascular-related outcomes; additionally, early referral to a nephrologist has been shown to improve outcomes for those who progress to end-stage renal disease[8].Many of the factors that are possibly associated with CKD awareness, which could help guide implementation of awareness efforts, have yet to be fully examined. Also, little is known regarding whether increased patient or provider awareness improves clinical outcomes.

Research Methodology

Aims and Objectives

To inculcate the knowledge attitude and practice towards prevention and early detection of CKD among high risk patients attending a tertiary care centre. This Observational study was carried out on 200 patients with diabetes and/or hypertension attending General medicine out-patient or in-patient from September 2019 to October 2019. Patients more than 18 years of age with diabetes and/or hypertension were included while patients with chronic kidney disease were excluded

Methodology

A standard questionnaire obtained from an author of similar study (KAP Jordan .pdf[9]) was given to patients fulfilling the inclusion criteria. Questionnaire consisted of two main parts; Part A and B. Part A consisted of socio-demographic data (e.g., age, gender, education and occupation), while Part B comprised of the CKD Screening Index Questionnaires (Khalil et al., 2014). This questionnaire had three subscales used to assess the respondents' knowledge, attitude and practice towards the risks of getting CKD. The knowledge scale had 24 items, attitude scale had 18 items and practice scale had 11 items. The level was measured through the answers ''Strongly agree', 'Agree', 'Neutral', 'Disagree' and 'Strongly disagree. Scores of more than 70% were classified into good knowledge/attitude/practice (Khalil et al, 2014). Patient's privacy was protected.

Statistical Analysis

All the data collected were coded and entered in Microsoft Excel sheet which was re-checked and analysed using SPSS statistical software version 18. Quantitative variables were presented as mean and standard deviation (SD) if the data were normally distributed and by using median and interquartile range if data showed skewed distribution. Categorical variables were represented using frequency and percentage. Statistical testing of association of various factors were done using Pearson chi-square test and independent sample t test in case of normally distributed data and using Mann-Whitney test in case of skewed distribution of data. A p value of <0.05 was considered statistically significant.

Results

200 patients were interviewed, out of which 52.5% were females and 47.5% males. The mean age of the study population was 55.4±11.8 years. 174 (87%) of the study population were older than 40 years, of which 72 (36 %) were older than 60years. 66 (33%) of the study population were illiterate or had only primary school education, whereas 67 (33.5%) were graduates and above. 77(38.5%) were having a stable income in the form of either salary or pension whereas 68(34%) were dependent on spouse or children. The mean duration of hypertension in the study population was 64.1±56.6 months, and that of diabetes was 73.3±68.6 months.

Respondent's knowledge, attitude, and practice towards the risk for CKD

Data of these three domains were analyzed and presented as frequency and percentage (table 2). The majority of the study population ie 164 (82%) had poor knowledge regarding etiology, symptoms and management of CKD whereas 148 (74%) had a good attitude and 138 (69%) had good practices towards prevention of CKD.

Association between different variables and knowledge towards the risk of CKD

Table 3 shows no significant association of age and gender with knowledge towards the risk of CKD. The education and occupation showed significant association with knowledge towards the risk of CKD. 45 (67.2%) with graduate and above education had good knowledge regarding the risk factors and symptoms of chronic kidney disease.

Association between different variables and attitude towards the risk of CKD

There is no significant association of age and gender with attitude towards the risk of CKD as shown in Table 3. The education and occupation showed significant association with attitude towards the risk of CKD. 62 (92.5%) with graduate and above education and 42(63.6%) illiterate had good attitude regarding chronic kidney disease.

Association between different variables and practice towards the risk of CKD

As shown in table 3 there is no significant association of age, gender, education and occupation with practices towards the risk of CKD. In our study, no association was found between the duration of hypertension or diabetes with knowledge, attitude or practice towards prevention of CKD.

Association between different domains

Table 4 shows significant association between knowledge and attitude regarding CKD, which says good knowledge regarding the risk factors, symptoms and management of chronic kidney disease is translated as good attitude. Table 4 shows no significant association between knowledge and practice in CKD. Table 4 shows significant association between attitude and practice in CKD.

Table 1
Characteristics of study subjects (N=200)

Age-years	
Mean	55.37±11.83
Median	55(47.25-65)
Age-no(%)	
≤40 years	26(13)
41-50 years	50(25)
51-60 years	52(26)

61-70 years	56(28)
>70 years	16(8)
Sex-no(%)	
Female	105(52.5)
Male	95(47.5)
Education-no(%)	
Illiterate/Primary school	66(33)
High school	67(33.5)
Graduate and above	67(33.5)
Occupation-no(%)	
Unemployed/homemaker	68(34)
Manual labourer	55(27.5)
Employed or retired	77(38.5)
Duration of hypertension-months(N=105)	
Mean	64.09±56.64
Median	48(24-108)
Duration of hypertension-no(%)(N=105)	
<1 year	16(15.2)
1-5 years	52(49.5)
6-10 years	26(24.8)
>10 years	11(10.5)
Duration of diabetes mellitus-months(N=163)	
Mean	73.25±68.62
Median	60(24-120)
Duration of diabetes mellitus-no(%)(N=163)	
<1 year	25(15.3)
1-5 years	65(39.9)
6-10 years	49(30.1)
>10 years	24(14.7)

Table 2
Respondents' knowledge, attitude, and practices towards the risk for CKD (n=200)

Knowledge-no(%)	
Good	36(18)
Poor	164(82)
Attitude-no(%)	
Good	148(74)
Poor	52(26)
Practice-no(%)	
Good	138(69)
Poor	62(31)

Table 3
Association between different variables and knowledge, attitude and practice towards the risk of CKD

Variable	Knowledge		P value
	Good	Poor	
Age-years			
Mean	53.06±12.24	55.87±11.72	0.197
Sex-no(%)			
Female	15(14.3)	90(85.7)	0.151
Male	21(22.1)	74(77.9)	
Education-no(%)			
Illiterate/Primary school	5(7.6)	61(92.4)	<0.001*
High school	9(13.4)	58(86.6)	
Graduate and above	22(32.8)	45(67.2)	
Occupation-no(%)			
Unemployed/homemaker	6(8.8)	62(91.2)	0.001*
Manual labourer	6(10.9)	49(89.1)	
Employed or retired	24(31.2)	53(68.8)	
Duration of hypertension-months			
Mean	47.17±36.02	69.10±60.71	0.221
Duration of hypertension-no(%)			
<1 year	4(25)	12(75)	0.208
1-5 years	15(28.8)	37(71.2)	
6-10 years	5(19.2)	21(80.8)	
>10 years	0	11(100)	
Duration of diabetes mellitus-months			
Mean	61.03±72.06	75.78±67.89	0.160
Duration of diabetes mellitus-no(%)			
<1 year	4(16)	21(84)	0.213
1-5 years	15(23.1)	50(76.9)	
6-10 years	8(16.3)	41(83.7)	
>10 years	1(4.2)	23(95.8)	
Variable	Attitude	P value	
	Good	Poor	
Age-years			
Mean	54.85±11.69	56.83±12.24	0.302
Sex-no(%)			
Female	80(76.2)	25(23.8)	0.458
Male	68(71.6)	27(28.4)	
Education-no(%)			
Illiterate/Primary school	42(63.6)	24(36.4)	<0.001*
High school	44(65.7)	23(34.3)	
Graduate and above	62(92.5)	5(7.5)	
Occupation-no(%)			
Unemployed/homemaker	48(70.6)	20(29.4)	0.006*

Manual labourer	34(61.8)	21(38.2)	
Employed or retired	66(85.7)	11(14.3)	
Duration of hypertension-months			
Mean	61±55.67	76.43±60.14	0.279
Duration of hypertension-no(%)			
<1 year	14(87.5)	2(12.5)	0.166
1-5 years	43(82.7)	9(17.3)	
6-10 years	17(65.4)	9(34.6)	
>10 years	10(90.9)	1(9.1)	
Duration of diabetes mellitus-months			
Mean	71.43±63.75	78.02±80.60	0.710
Duration of diabetes mellitus-no(%)			
<1 year	18(72)	7(28)	0.989
1-5 years	48(73.8)	17(26.2)	
6-10 years	35(71.4)	14(28.6)	
>10 years	17(70.8)	7(29.2)	
Variable	Practice	P value	
	Good	Poor	
Age-years			
Mean	56.06±12.04	53.82±11.31	0.218
Sex-no(%)			
Female	75(71.4)	30(28.6)	0.435
Male	63(66.3)	32(33.7)	
Education-no(%)			
Illiterate/Primary school	48(72.7)	18(27.3)	0.388
High school	42(62.7)	25(37.3)	
Graduate and above	48(71.6)	19(28.4)	
Occupation-no(%)			
Unemployed/homemaker	52(76.5)	16(23.5)	0.089
Manual labourer	32(58.2)	23(41.8)	
Employed or retired	54(70.1)	23(29.9)	
Duration of hypertension-months			
Mean	63.12±54.54	66.62±62.74	0.837
Duration of hypertension-no(%)			
<1 year	10(62.5)	6(37.5)	0.490
1-5 years	41(78.8)	11(21.2)	
6-10 years	18(69.2)	8(30.8)	
>10 years	7(63.6)	4(36.4)	
Duration of diabetes mellitus-months			
Mean	76.26±73.47	66.82±57.03	0.561
Duration of diabetes mellitus-no(%)			
<1 year	18(72)	7(28)	0.944
1-5 years	43(66.2)	22(33.8)	
6-10 years	33(67.3)	16(32.7)	
>10 years	17(70.8)	7(29.2)	

Table 4
Association between different KAP variables

Variable	Attitude		P value
	Good	Poor	
Knowledge-no(%)			
Good	32(88.9)	4(11.1)	0.025*
Poor	116(70.7)	48(29.3)	
Variable	Practice		P value
	Good	Poor	
Knowledge-no(%)			
Good	29(80.6)	7(19.4)	0.098
Poor	109(66.5)	55(33.5)	
Variable	Practice		P value
	Good	Poor	
Attitude-no(%)			
Good	109(73.6)	39(26.4)	0.016*
Poor	29(55.8)	23(44.2)	

Discussion

This study revealed the current levels of knowledge, attitude and practice towards prevention and early detection of chronic kidney disease in sub-urban population in South India. Our study showed that 164(82%) of the study population had poor knowledge regarding the risk factors, symptoms and management of CKD. This is in contrast to the study by Khalil et al[9] in 2014 involving 740 participants which showed 80±10.4 % Jordanian participants were knowledgeable about CKD prevention and early detection. 135(67.5%) patients understood kidney disease as a serious and irreversible disease. Majority of the study subjects (70.6%) had good knowledge regarding the functions of kidney and most of them (63%) recognized diabetes, hypertension and ageing as the risk factors for CKD. This is in contrast to the findings of Wolide et al in 326 care providers in Jimma town where 62% were not aware of the age-related decline in eGFR, though 91.4% had the understanding that diabetes and hypertension are possible risk factors of CKD[11]. Most of the patients failed to recognize the signs and symptoms of CKD, most common symptom recognized being swollen feet, ankles and puffiness of face.

In contrast to knowledge, 148(74%) of the study population showed good attitude towards prevention of CKD. Most of the respondents (90.5%) wanted to get diagnosed at early stages and majority (73.5%) thought they can prevent kidney disease. This is in concurrence with the data by Yosuff at al which showed 69.9 % with good attitude[10]. Khalil et al also reported similar findings in 2014[9]. Two barriers were identified from the attitude scale in our study: “Kidney disease is expensive to diagnose and treat”, “Preventing kidney disease needs money and efforts”. Our study revealed that 138(69%) of the respondents had good practice regarding CKD, majority agreed on the importance of diet, exercise, obesity, and proper management of risk factors for the prevention of CKD. This is higher compared to the study done by Asmelash et al in 432 participants in North West

Ethiopia which showed 48.4% of the study population had good practice towards CKD[12]. 173(86.5%) of the study participants were adherent to medications and 132(66%) were taking balanced diet. This is much higher compared to Jimma study by Wolide et al, and comparable to Jordan study (62.7%)[9,10,11]. We noted only 114(57%) were following regular exercise routine. Besides poor knowledge regarding symptoms and signs, most of the study subjects (65%) were not sure if they will recognize abnormal changes in their body related to CKD.

Our study showed no significant association of age and gender with knowledge or attitude towards the risk of CKD. The education and occupation showed significant association with knowledge and attitude towards the risk of CKD ($p < 0.001$). Our analysis showed no significant association of age, gender, education and occupation with practice towards the risk of CKD. This is different from the findings of Yosuff et al who reported age and occupation had significant association with good practice[10]. The data from our study showed significant association between knowledge and attitude regarding CKD, which says good knowledge regarding the risk factors, symptoms and management of chronic kidney disease is translated as good attitude among patients to prevent CKD and maintain overall health. The study also showed significant association between attitude and practice in CKD though no significant association between knowledge and practice in CKD. It shows the importance of reinforcing the knowledge, through awareness programs, counselling sessions etc to bring out good practices in this population.

Conclusion

Majority of the study participants (82%) had poor knowledge regarding the symptoms and management of CKD. Despite this majority had good attitude and practice towards CKD. Some demographic variables like education and occupation showed significant association with knowledge and attitude towards CKD. 83.5 % of the study participants expressed their interest in learning more about CKD from healthcare providers. The intensive awareness programs like distribution of pamphlets, video demonstration in the outpatient clinic etc. may help the patients to be more empowered to prevent kidney disease.

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Ethical Approval

The institutional human ethical committee approval was obtained before initiation of study. The details of the study participants were kept confidential.

Informed Consent: obtained
Conflict Of Interest: nil

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