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Research Article

**ANALYSIS OF CHRONIC KIDNEY DISEASE AND
ASSOCIATED FACTORS AMONG PATIENTS WITH KIDNEY
PROBLEMS IN PUBLIC HOSPITALS OF PAKISTAN**¹Dr. Ayesha Tasneem, ²Dr. Syeda Anam Ali Rizwi, ³Dr. Maheen Fatima,¹Mayo Hospital, Lahore²Women Medical Officer at RHC Kotli Nijabat, Shujabad, Multan³Women Medical Officer at RHC Vehova. Taunsa, Dera Ghazi Khan**Abstract:**

Introduction: Chronic kidney disease (CKD) has taken on the status of public health concern in recent years, due to its increased prevalence among the world's population and its impact on morbidity and mortality in affected patients. **Objectives of the study:** The basic aim of the study is analysis of chronic kidney disease and associated factors among patients with kidney problems in public hospitals of Pakistan. **Material and methods:** This study was conducted at Mayo hospital Lahore which is basically a very famous public hospital of Lahore. The study was a hospital based quantitative cross-sectional study. This cross-sectional study was conducted for a period of two months from May to July, 2018. All Patients with kidney disease was seen in and out patients in nephrology department. Individuals were selected by the sampling technique in the nephrology department at Hospital during the study period. The data was collected from study participants by interview method questionnaire and secondary data. **Results:** The data was collected from 200 participants (from OPD, medical wards, dialysis center and kidney transplant OPD). The analysis of the demographic data found reveals the following results regarding age, sex, educational and marital status of the respondents: The mean (SD) age of the participants is 43.95 (1.68) years among the participants. **Conclusion:** The prevalence of CKD would have been much higher than the result obtained by this study, had the research used current level of creatinine. Third, some questions had not been filled by the respondents and that in turn affects the analysis and the result of the study.

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INTRODUCTION:

Chronic kidney disease (CKD) has taken on the status of public health concern in recent years, due to its increased prevalence among the world's population and its impact on morbidity and mortality in affected patients. Mainly a result of the growing epidemic of cardiovascular risk factors, chronic kidney disease causes frequent hospitalizations and high socioeconomic cost [1].

In 2011, there were 91,314 individuals on dialysis in Brazil, corresponding to a prevalence of 475 pmp. We have less patients on renal replacement therapy when compared to developed countries. One explanation for this discrepancy may be the low participation of dialysis centers in the census; however, the most alarming hypothesis rests on the poor access to healthcare services. It is believed that 50-70% of Brazilians who have chronic kidney disease die without being submitted to any kind of treatment [2].

Data on morbidity and mortality of chronic renal failure patients in Brazil is still very restricted to the dialysis population. In fact, kidney failure treated with dialysis or transplantation is the outcome of chronic kidney disease that most stands out [3]. However, cardiovascular diseases are often associated with chronic kidney disease, which is of great importance when we consider that chronic kidney patients are more likely to die of cardiovascular disease than evolving into kidney failure

Kidney disease is a silent killer. Kidney failure is also called end stage renal disease (ESRD) or Stage 5 Chronic Kidney Disease. When people have ESRD they need dialysis or a kidney transplant to survive⁴. Chronic Kidney Disease (CKD) is a worldwide public health problem. The endemic occurrence of chronic kidney disease of unknown etiology (CKDu) (sometimes referred to as chronic renal failure [CRF]) was first observed in the 1990s, and over the past 15 years the prevalence of the disease within certain geographical locations has increased dramatically. The unique feature of the disease is that, it has no association with the well-known risk factors such as diabetes, hypertension or chronic glomerulonephritis [5]. The onset of the disease appears to be asymptomatic, and by the time patients seek treatment, the kidneys have reached a stage of irreversible damage. End-stage renal disease, also called established renal failure, is chronic kidney disease which has progressed so far that the patient's kidneys no longer function sufficiently and dialysis

or transplantation become necessary to maintain life⁶.

Objectives of the study

The basic aim of the study is analysis of chronic kidney disease and associated factors among patients with kidney problems in public hospitals of Pakistan.

MATERIAL AND METHODS:

This study was conducted at Mayo hospital Lahore which is basically a very famous public hospital of Lahore. The study was a hospital based quantitative cross-sectional study. This cross-sectional study was conducted for a period of two months from May to July, 2018. All Patients with kidney disease was seen in and out patients in nephrology department. Individuals were selected by the sampling technique in the nephrology department at Hospital during the study period. The data was collected from study participants by interview method questionnaire and secondary data.

Sample size determination

The sample size was calculated based on single sample size estimation. The value of p is taken considering 95% confidence interval, 5% margin of error and the value of p taken was 50% because there is no study conducted related with CKD associated factors.

Ethical consideration

This research project was approved by "Departmental Ethics and Research committee" of the hospital. The purpose of the study was explained to the study participants accordingly. Permission was obtained from hospitals research center and nephrology clinic.

Statistical analysis

The data of respiratory function were compared between the smoker and non-smoker groups using the independent t-test for normally distributed data or the Mann-Whitney U test for other distributions. Differences were considered statistically significant at $p < 0.05$.

RESULTS:

The data was collected from 200 participants (from OPD, medical wards, dialysis center and kidney transplant OPD). The analysis of the demographic data found reveals the following results regarding age, sex, educational and marital status of the respondents: The mean (SD) age of the participants is 43.95 (1.68) years among the participants.

Almost all patients complained about long time of schedule to started dialysis before coming

complicated of their kidney. The history of diabetes, hypertension and cardiovascular disease of respondents among kidney patients in public hospital

and crude and adjusted odd ratio of factors associated with CKD of respondents among kidney patients in public hospital, Addis Ababa has been shown in data.

Table 01: Analysis of collecting data from 200 patients of Mayo hospital, Lahore

Variables	Frequency	COR (95% CI)	AOR (95% CI)	P-value
Age				
	73	1.00	1.00	1.00
18-28	137	1.29 (0.95, 1.75)	1.46 (1.05, 2.03)	0.02
29-38	50	1.62 (1.08, 2.43)	1.50 (0.95, 2.36)	0.08
39-48	57	2.11 (1.44, 3.09)	2.40 (1.59, 3.65)	0.01
49-58	59	0.91 (0.62, 1.32)	0.77 (0.49, 1.23)	0.28
59-68	38	1.02 (0.67, 1.56)	1.40 (0.85, 2.32)	0.19
>68	8	2.89 (1.29, 6.45)	3.16 (1.36, 7.35)	0.07
Sex				
Female	191	1.00	1.00	0.01
Male	231	1.52 (0.55, 0.84)	0.62 (0.50, 0.78)	
History of HTN				
No	69	1.00		0.08
Yes	353	0.78 (0.60, 1.02)	1.26 (0.97, 1.64)	
History of DM				
No	345	1.00	1.00	0.03
Yes	77	1.16 (0.94, 1.43)	0.70 (0.51, 0.96)	
History of cigarette smoking				
No	349	1.00	1.00	0.75
Yes	73	0.81 (0.62, 1.07)	1.05 (0.76, 1.45)	
History of non-steroid anti-inflammatory medicine				
No	170	1.00	1.00	0.01
Yes	252	0.65 (0.53, 0.81)	0.48 (0.37, 0.61)	
Habitual of prescribed medication				
No	75	1.00	1.00	0.01
Yes	347	1.73 (1.32, 2.27)	2.22 (1.65, 2.98)	
History of renal stone				
No	346	1.00	1.00	0.79
Yes	76	1.76 (1.34, 2.31)		

DISCUSSION:

The large disparity in prevalence among those with stage 1 CKD might be explained in part by racial/ethnic differences in micro albumin urea among non-Hispanic blacks and Mexican Americans [7]. By using CKD EPI equation, prevalence of CKD has been found to be 38.6% by the respective equations. Stage (1-2) prevalence of CKD is 27.2%, (15.6% and 11.6%) respectively. Whereas stage (3-4) prevalence of CKD is 34.1%, (19.4% and 14.7%) respectively by CKD EPI equation. Even though the difference is not statistically significant CKD EPI underestimates the prevalence compared to Cockcroft Gault. Among the 15.5% participants with CKD by MDRD equation found in the study conducted in Canada 80% had eGFR 30-60 (Stage 3 CKD) which is comparable with this research finding but over 10% had ESRD which is 5.4% in this research

finding by the same equation [8]. The different between this study and the Canadian are the population and the methodology. That's why my study higher than those. The study done in Tanzania shows the prevalence of CKD among adult diabetic patients by Cockcroft Gault equation was 24.7%⁹. The Tanzanian researcher focused on only prevalence of diabetic patients from CKD that's why higher different between this study and there. The research done in Ethiopia among diabetic patients by using similar equations with this study have found the prevalence of CKD to be 18.8% and 23.8% by MDRD and Cockcroft Gault equation respectively [10]. This study also focused in diabetic patient but I need to discuss because the populations are similar with this study. Not too many studies have reported results similar prevalence to this study because the studies found have determined the prevalence by

using point prevalence whereas this research uses period prevalence [11]. The CKD prevalence done among type 2 diabetics have found to be 27.9% in Spain, while its prevalence found in this study is 10.79% by the MDRD equation which was the equation used in both studies. Regarding associated factors, different associated factors that have been presented in similar research were assessed to see whether they are 26 associated factors in these study population or not. Due to less number of respondents who smoke currently the result obtained regarding the prevalence of CKD among current smokers (0%) may not be reliable. Older age, type 2 diabetes, family history of CKD, smoking habit, alcohol use, obesity, co-existence of hypertension have been assessed but no significant association was found. As it is the first study done in Addis Ababa, this research has its own limitations [12-14]. Primarily, due to financial reasons the period prevalence of CKD is done by using the serum creatinine level of patients which is done recently among the tests done in the last five years [15]. This in turn affects the reliability of the prevalence obtained as some patients who had a normal creatinine level before two or three years may have elevated or normal status had the test been done during the data collection [16].

CONCLUSION:

The prevalence of CKD would have been much higher than the result obtained by this study, had the research used current level of creatinine. Third, some questions had not been filled by the respondents and that in turn affects the analysis and the result of the study. Activities aimed at preventing CKD or its progression can decrease prevalence of the most severe form of CKD, stage 5 (i.e., End-Stage Renal Disease), which is associated with increased morbidity and mortality and diminished health-related quality of life. Treatments such as control of high blood pressure in the early stages of CKD can prevent progression to end-stage renal disease.

Conflict of Interest

The authors have no conflict of interest to declare for this study.

REFERENCES:

1. National Kidney Foundation (2003) K/DOQI clinical practice guidelines for bone metabolism and disease in chronic kidney disease. *Am J Kidney Dis* 42: S1-S201.
3. Oluyombo R, Akinsola A, Ayodele O, Onayade A, Arogundade F, et al. (2011) Prevalence, risk factors and patterns of chronic kidney disease in a rural community in South West Nigeria. *J*

- Epidemiol Community Health 65: P1-271.
4. Wanigasuriya KP, Peiris-John RJ, Wickremasinghe R (2011) Chronic kidney disease of unknown etiology in Sri Lanka: Is cadmium a likely cause? *BMC Nephrol* 12: 32.
5. James MT, Hemmelgarn BR, Tonelli M (2010) Early recognition and prevention of chronic kidney disease. *Lancet* 375: 1296-1309.
6. Athuraliya NT, Abeyssekera TD, Amerasinghe PH, Kumarasiri PV, Bandara P, et al. (2006) Towards understanding of chronic kidney disease of North central province. In proceedings of annual scientific sessions of Sri Lanka medical association.
7. Jayasekara JM, Dissanayake DM, Adhikari SB, Bandara P (2013) Geographical distribution of chronic kidney disease of unknown origin in north central region of Sri Lanka. *Ceylon Med J* 58: 6-10.
8. Athuraliya NT, Abeyssekera TD, Amerasinghe PH, Kumarasiri PV, Bandara P, et al. (2011) Uncertain etiologies of proteinuria-chronic kidney disease in rural Sri Lanka. *Kidney Int* 80: 1212-1221.
9. Chandrajith R, Nanayakkara S, Itai K, Aturaliya NT, Dissanayake CB, et al. (2011) Chronic kidney diseases of uncertain etiology (CKDue) in Sri Lanka: Geographic distribution and environmental implications. *Environ Geochem Health* 33: 267-278.
10. Torres C, Aragón A, González M, López I, Jakobsson K, et al. (2010) Decreased kidney function of unknown cause in Nicaragua: A community-based survey. *Am J Kidney Dis* 55: 485-496.
11. Cerdas M (2005) Chronic kidney disease in Costa Rica. *Kidney Int Suppl* 97: S31-33.
12. School werth AC, Engelgau MM, Rufo KH, Vinicor F, Hostetter TH, et al. (2006) Chronic kidney disease: A public health problem that needs a public health action plan. *Prev Chronic Dis* 3: A57.
13. Couser WG, Remuzzi G, Mendis S, Tonelli M (2011) The contribution of chronic kidney disease to the global burden of major non communicable diseases. *Kidney Int* 80: 1258-1270.
14. Jha V, Garcia-Garcia G, Iseki K, Li Z, Naicker S, et al. (2013) Chronic kidney disease: Global dimension and perspectives. *Lancet* 382: 260-272.
15. International Diabetes Federation Diabetes Atlas. Seventh edition (2015).
16. Yirsaw BD (2012) Chronic kidney disease in Sub-Saharan Africa: Hypothesis for research

demand. Ann Afr Med 11: 119-120.