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Research Article

**ANALYSIS OF CHRONIC KIDNEY DISEASE AND
ASSOCIATED FACTORS AMONG PATIENTS WITH KIDNEY
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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 Government Tehsil Headquarter Hospital Manawan, Lahore during January 2019 to August 2019. 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 cost¹.

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 treatment².

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 out³. 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 endstage 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 glomerulonephritis⁵. 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 Government Tehsil Headquarter Hospital Manawan, Lahore during January 2019 to August 2019. 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.

STATISTICAL ANALYSIS:

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 Americans⁷. 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 equation⁸. 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 respectively¹⁰.

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.

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