

THE EPIDEMIOLOGY OF END STAGE RENAL DISEASE IN PATIENTS AT THE DIALYSIS CENTER OF THE ERIC WILLIAMS MEDICAL SCIENCES COMPLEX

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INTRODUCTION

Studies ^(1, 2) relate hypertension, diabetes mellitus type 2 and CKD. In Trinidad and Tobago, noncommunicable diseases (NCDs) account for 60% of all deaths ⁽³⁾. From 2009 to 2018, mortality from chronic renal disease increased by 41.5% ⁽⁴⁾. Even though CKD is responsible for many deaths in the country, there is no specific figure for its prevalence. The epidemiology of these diseases at the national level is critical to designing preventative policies and treatments for a rising and NCD-prone society, where over 50% of the population is at risk of getting NCDs ⁽³⁾. It's also crucial to recognize the risk factors for CKD.

OBJECTIVES

1. To determine the prevalence and demographical distribution of patients with renal disease.
2. To assess for a possible correlation between CKD and other systemic diseases.

METHODOLOGY

1. Study Design - Retrospective cohort study of the epidemiology of renal disease and its correlation with diabetes mellitus type 2 and hypertension.

6. Data Protection - No personally identifying data was recorded. The patient data was coded using 8 randomly chosen letters and digits. Materials were password-protected and only investigators could access them.

2. Study Population - Patients at the EWMSC dialysis clinic from January 2016 to January 2021.

5. Data Analysis - IBM SPSS Ver. 27- Pearson's Chi Squared, Independent t-tests, Fisher's exact test, and ANOVA.

3. Study Sample - 76 patients diagnosed with CKD.

4. Data Collection -The EWMSC Dialysis Center patient list from January 2016 to January 2021 was collected and taken to the Medical Records Center. Their files were retrieved, and data collected.

DISCUSSION

- The highest prevalence of ESRD was in the age group 51-60 (23.7%), congruent with previous national and regional reports ^(5, 6). Disparity in mean ESRD patient age between Trinidad (51-60 years) and the US (60-65 years) data is due to an unhealthy local diet (too much sodium, sugary drinks, and red meat)⁽⁷⁾, which increases NCD and ESRD risk factors ⁽⁸⁾.
- A new demographic trend emerged within the younger population where 14.5% of those aged 21-30, 7.9% of those aged 31-40, and 15.8% of those aged 41-50 had CKD. A possible cause may be a declining oil and gas economy and changing socioeconomic landscape culminating in psychosocial factors (job losses, job stress, low socioeconomic position, reduced millennial home ownership rates) inducing chronic stress, leading to hypertension ^(9, 10) and increasing CKD risk factors.
- Our study demonstrated an 81.6% link between hypertension and CKD. In women, 93.1 % had hypertension, in men 74.5%.
- Although our study found 50% of ESRD patients had type 2 diabetes, similar to the 40.7% of Mungrue *et al* ⁽⁵⁾, no statistically significant link between diabetes and kidney failure was found which may be attributed to the reduced sample size.
- More men have CKD than women; the M:F ratio in our study (1.6:1) was higher than Mungrue *et al* ⁽⁵⁾ (1.2:1).
- Hyperparathyroidism and anaemia had no statistically significant connection to Stages 4-5. African, East Indian, and mixed ancestry suffer from renal disease equally. The fact that all races in our sample had renal illness could be related to comparable diet and stresses.

RESULTS

Figure 1 showing distribution of ESRD amongst races

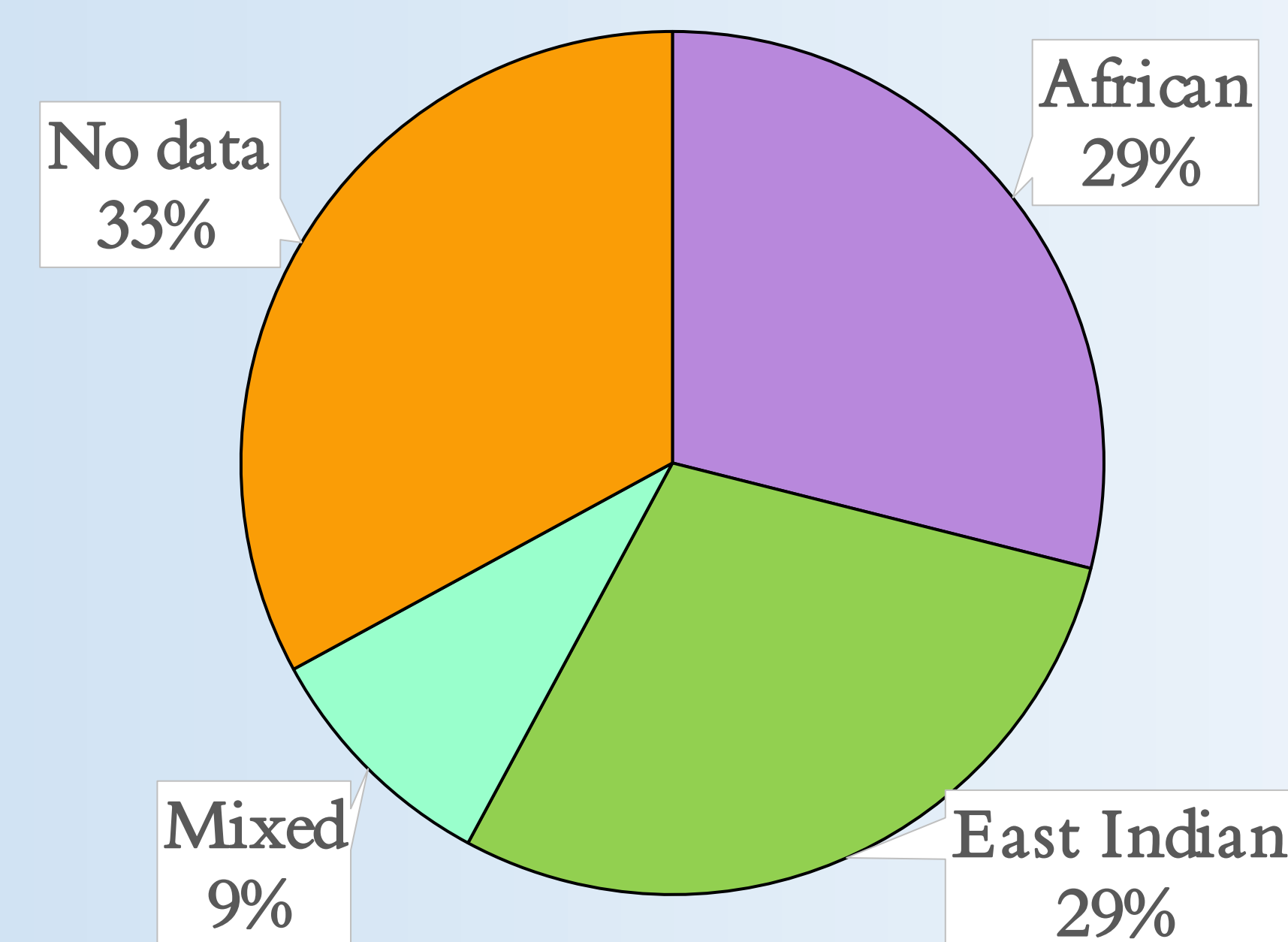


Figure 2 Distribution of ESRD amongst genders.

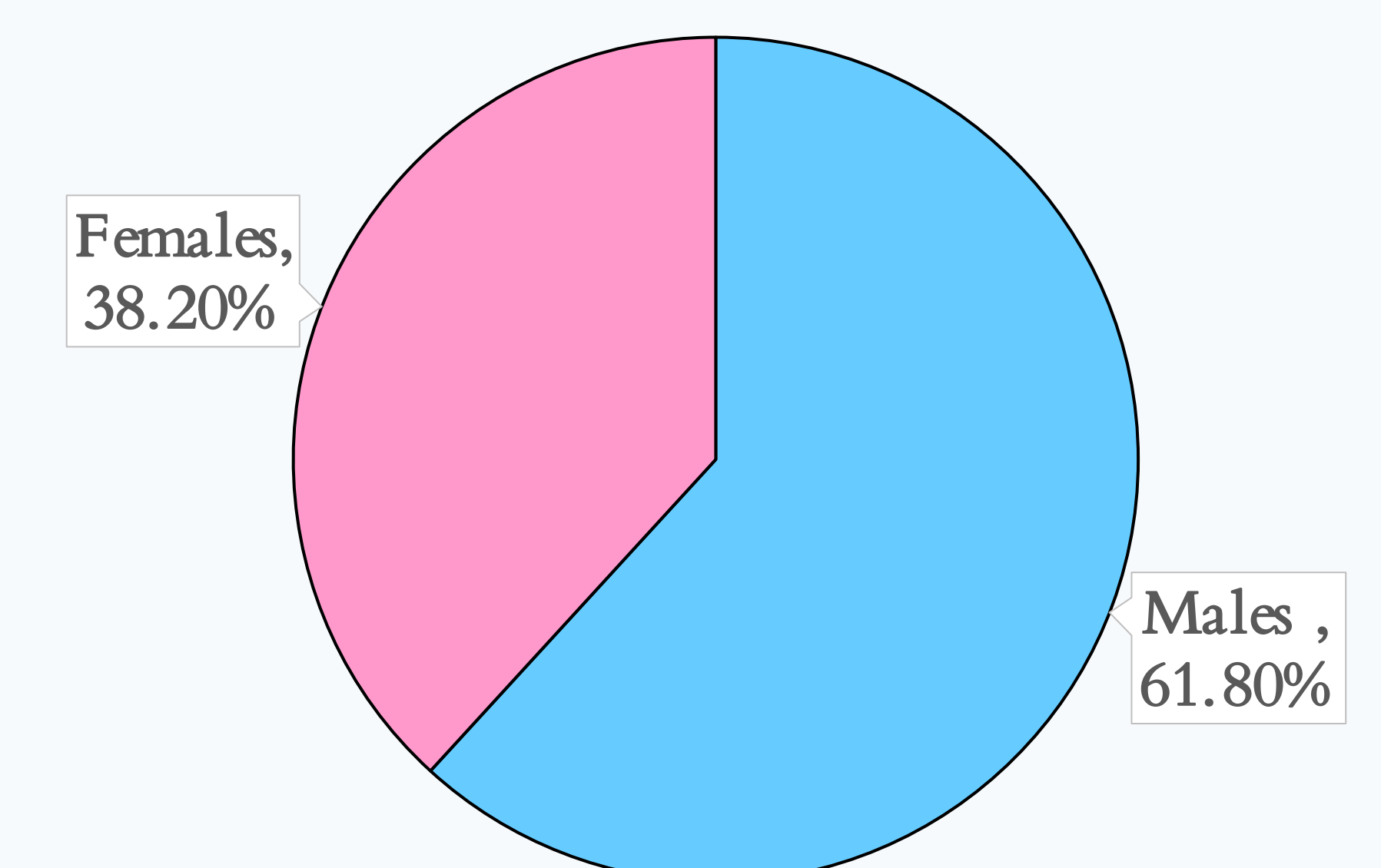


Figure 3 age categories of patients with chronic kidney disease at Eric Williams Medical Sciences Complex, from 2016-2021.

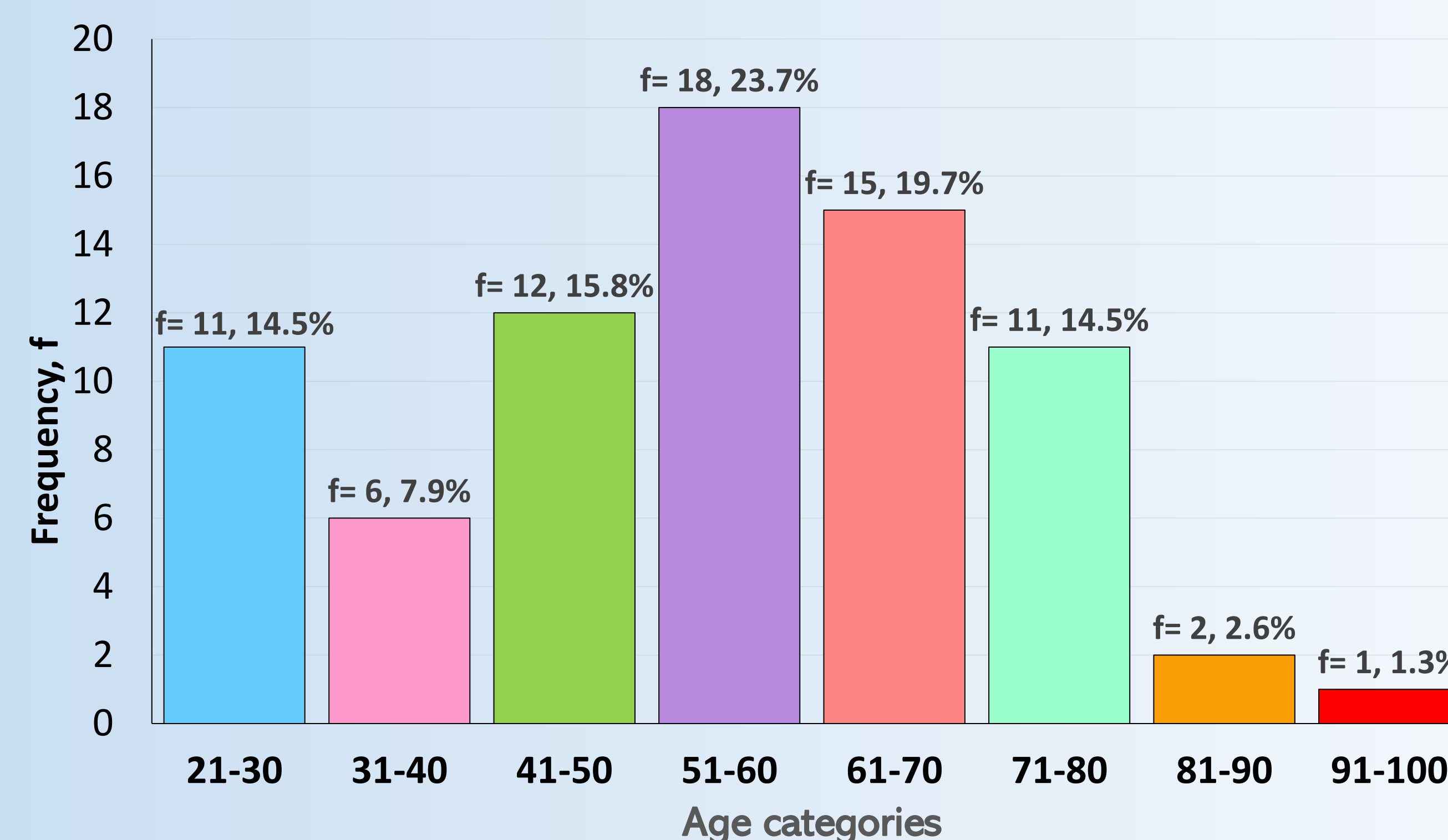
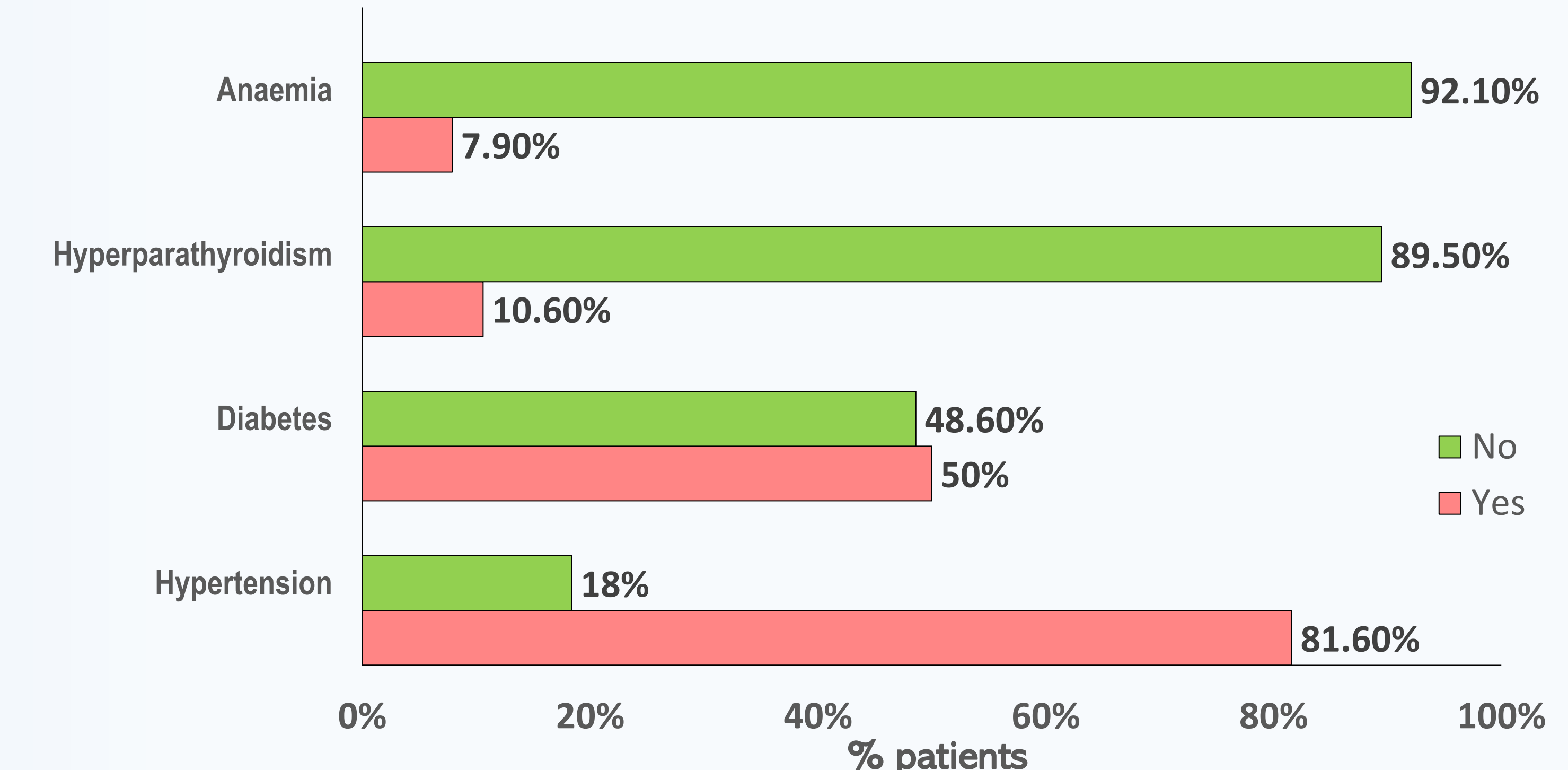


Figure 4 : The occurrence of systemic diseases in patients with chronic kidney disease at Eric Williams Medical Sciences Complex, from 2016-2021.



CONCLUSION

- Males develop stage 4-5 renal disease at a higher rate than females (m:f = 1.6:1).
- Renal disease affects people of African, East Indian, and mixed descent equally.
- Despite the fact that 50% of our patients had type 2 diabetes, our data showed no statistically significant link between diabetes and kidney failure.
- Hypertension is strongly linked to renal failure, so hypertensives are at risk of developing renal failure.
- End stage renal failure has no age association, so anyone of any age can develop it. Hyperparathyroidism and anaemia and renal failure have no statistically significant relationship.

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