Cardiovascular Kidney Metabolic Syndrome Stages Among Asian Americans

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BACKGROUND

- **Cardiovascular-Kidney-Metabolic Syndrome (CKM):** newly coined term in 2023 by American Heart Association
- Involves cardiovascular, renal, and metabolic dysregulation, leading to multiorgan failure and death
- Categorized into stages with no risk factors in Stage 0 to established cardiovascular disease in Stage 4
- 15% of Americans have advanced CKM
- Aggregated data shows Asian Americans have a lower prevalence of advanced CKM, but there is a lack of data by Asian subgroups
- **We examined prevalence of CKM stages in three Asian American subgroups: Indian, Chinese, Filipino**

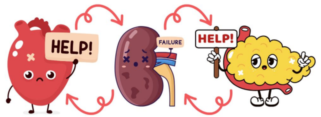

Figure 1: Cycle of CKM involving cardiovascular, renal, and metabolic systems

METHODS

351,921 Participants
Data from National Health Interview Survey (NHIS) pooled 351,921 participants from 2015-2018.

107,815 Participants
BMIs 0 and 99.9, representing missing/unknown data, were excluded

86,762 Participants
Races other than Non-Hispanic White, Asian Indians, Chinese, and Filipino were excluded

17 Variables Analyzed
Variables, including BMI with Asian cutoffs, were considered.

CKM STAGES

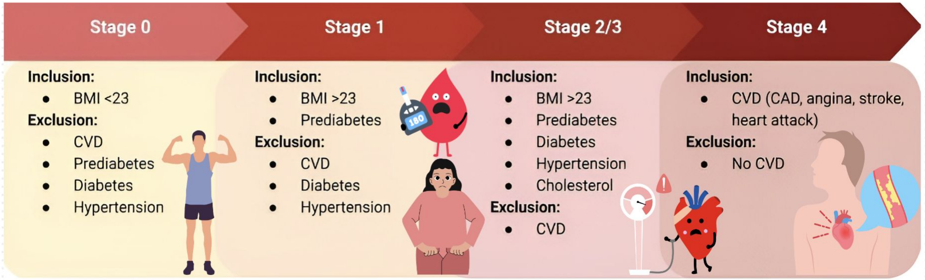

Figure 2: CKM Stages categorization with inclusion and exclusion criteria. Severity of CKM increases with advancing stages.

RESULTS

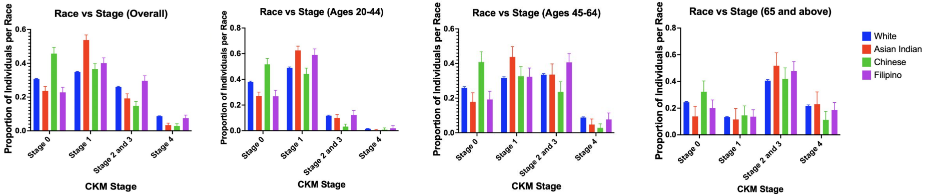

Figure 3: Bar graphs representing proportions of surveyed races plotted against CKM Stages: (a) overall population, and age groups (b) 20-44, (c) 45-64, and (d) ≥65

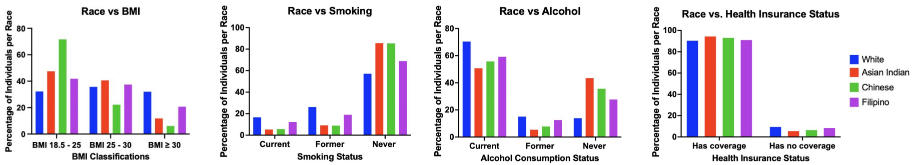

Figure 4: Bar graphs representing percentage of individuals per race against (a) BMI classifications, (b) smoking status, (c) alcohol consumption status, and (d) health insurance status

CONCLUSIONS

Major Findings

- Chinese Americans had lowest rates of advanced CKM stage compared to other Asian subgroups
- Asian Indians had the highest rates of early-stage CKM in comparison to other Asian subgroups
- Asian Indians aged ≥65 had the highest rates of Stage 4 compared to other Asian subgroups
- Chinese Americans had the lowest mean BMI while Non-Hispanic Whites had the highest.
- Race had significant associations with stages, access to care, socioeconomic factors and lifestyle behaviours (alcohol, smoking, and physical activity)

Limitations

- Variable construction was influenced by a lack of renal and metabolic biomarkers (LDL, HDL, GFR, Systolic Blood Pressure, subclinical CVD markers)
- Self-reported NHIS data does not account for undiagnosed disease and may be influenced by social desirability and recall bias
- Sample representativeness may have been affected by missing BMI index

Future Directions

- Need for culturally appropriate interventions to address racial disparities in CKM burden, particularly among ages 65 and above
- Further research to explore the impact of demographic, socioeconomic, and behavioural factors on CKM in Asian Americans

ABSTRACT AND REFERENCES