

Representation of patients of minority race and ethnicity in real-world databases and tumor registries of patients with breast cancer



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Disclosures

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Background

- Disparities in breast cancer screening, diagnosis, treatment, and outcomes by race and ethnicity have been studied extensively^{1,2} and under-representation of patients of minority race/ethnicity in cancer clinical trials is well known.³
 - Stringent inclusion and exclusion criteria inadvertently exclude certain groups of patients (e.g., patients with comorbidities, less access to certain treatments, or who reside in certain geographic areas).
 - Lack of sufficiently representative data regarding treatment efficacy and clinical outcomes in patients of minority race and ethnicity.
- Real-world data (RWD) studies are valuable to a wide range of stakeholders:
 - RWD sources generally perceived as being more representative of geographically, racially and ethnically diverse populations.
 - Ability to generate information about screening, diagnosis, treatment, and outcomes in typically under-represented populations on a large scale.
- Less is known about representation of minority groups in RWD sources related to tumor or cancer registries.
 - Unknown if eligibility criteria leads to disproportionate loss of patients in minority race/ethnicity and age groups
 - More information is needed about the representativeness of these RWD sources to best inform future studies.

Objectives

- Evaluate patient attrition across race & ethnicity in a large, population-based data registry of women undergoing routine mammographic screenings in the United States, when applying cohort eligibility criteria typical to the RWE setting.
- Compare race & ethnicity characteristics of the total screened population (i.e., patients meeting eligibility criteria) with respect to missing and non-missing data in an aggregated tumor registry.

Methods

Study Design

- Retrospective observational study utilizing an integrated electronic medical record, radiology information system, and tumor registry database sourced from 5 large healthcare organizations (sites), representative of a geographically diverse population of women in the United States.

Eligibility Criteria

- At least two mammographic screenings from January 2014 - February 2020, at least 11 but not more than 27 months, apart, meeting the following criteria:
 - Age 40-79 at second screening
 - No history of breast cancer at any time prior to or on date of first screen

Conference

Presented at the International Conference on Pharmacoepidemiology & Therapeutic Risk Management, August 23-27, 2023. Halifax, Nova Scotia, Canada.

References

¹Alsheik N, Blount L, Qiong Q, et al. Outcomes by Race in Breast Cancer Screening With Digital Breast Tomosynthesis Versus Digital Mammography. *J Am Coll Radiol*. 2021 Jul;18(7):906-918. doi: 10.1016/j.jacr.2020.12.033.

²Zavala VA, Bracci PM, Carethers JM, et al. Cancer health disparities in racial/ethnic minorities in the United States. *Br J Cancer*. 2021;124(2):315-332.

³Javier-DesLoges J, Nelson TJ, Murphy JD, et al. Disparities and trends in the participation of minorities, women, and the elderly in breast, colorectal, lung, and prostate cancer clinical trials. *Cancer*. 2022;128(4):770-777.

Methods (cont.)

Eligibility Criteria (cont.)

- For inclusion in assessment of race/ethnicity characteristics in tumor registry data, patients must have had at least one tumor registry data element.

Analyses

- Cohort Eligibility
 - Unadjusted differences in race/ethnicity characteristics were described among total starting population and total final population after application of the cohort eligibility criteria.
- Tumor Registry
 - Unadjusted and adjusted differences in race/ethnicity characteristics were described by tumor stage availability status among those patients included in the final population.

Results

Cohort Eligibility (Figures 1a and 1b)

- A total of 1,945,461 mammographic screenings identified as the starting population and after applying cohort eligibility criteria, 998,650 mammographic screenings remained in the final population.
- Race/ethnicity groups similarly represented in both the starting and final populations.
- Proportion of White and non-Hispanic women increased slightly from the starting to final populations (70% to 73% and 73% to 76%, respectively).
- A corresponding decrease in the proportion of non-White and Hispanic women was also observed.

Tumor Registry (Figures 2a and 2b)

- A total of 28,586 patients in the final population had at least one tumor registry data element.
- More white (74%) and non-Hispanic (86%) patients had non-missing tumor stage data.
- When adjusting for site, patient race ($p < 0.0001$) significantly related to tumor stage availability, with Asian and other race more likely to have missing stage data than White patients.
- Differences in tumor stage missingness were not observed for ethnicity ($p = 0.23$).

Conclusions

- Application of typical eligibility criteria to a RWD population of women receiving mammograms resulted in only modest attrition in minority race/ethnicity groups.
- In tumor registries, race and ethnicity differences more pronounced with more missingness among non-White women.
- While RWD based platforms offer gains in health equity centered research, greater attention to potential under-representation of minority groups in cancer registries is warranted.

Figure 1a. Race in Mammography Screening Cohort Before and After Application of Eligibility Criteria

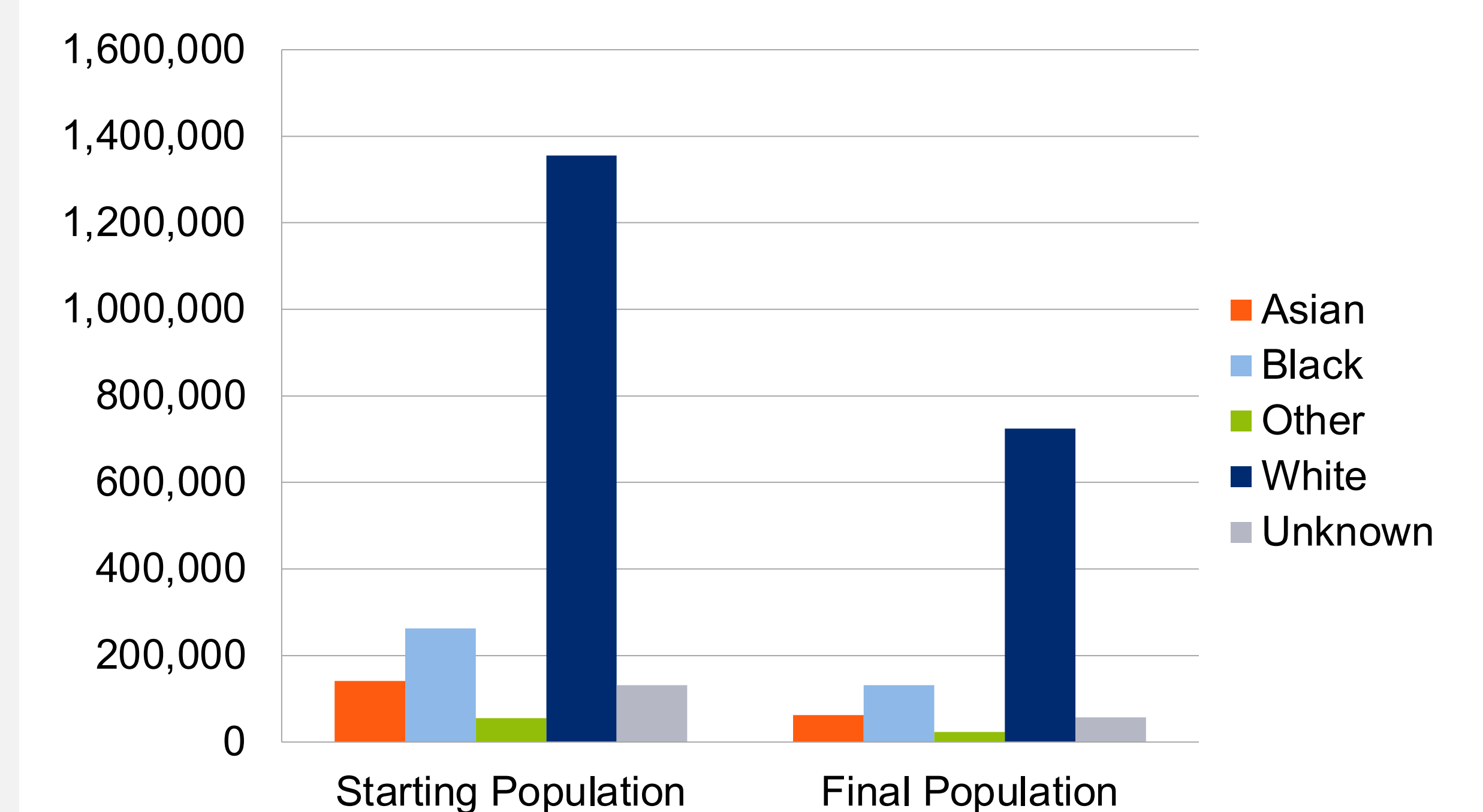


Figure 1b. Ethnicity in Mammography Screening Cohort Before and After Application of Eligibility Criteria

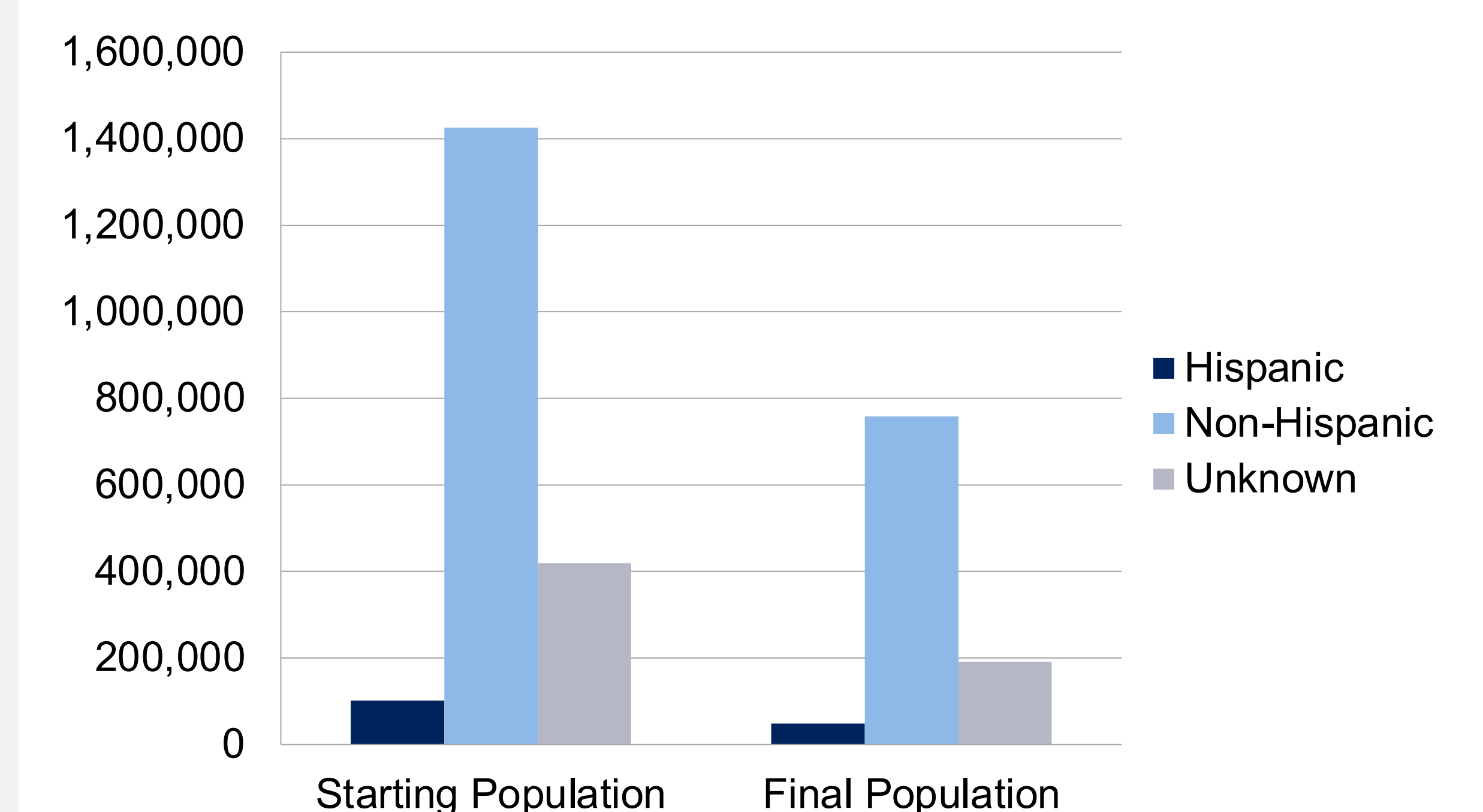


Figure 2a. Availability of Race and Tumor Stage Data in Tumor Registry Cohort

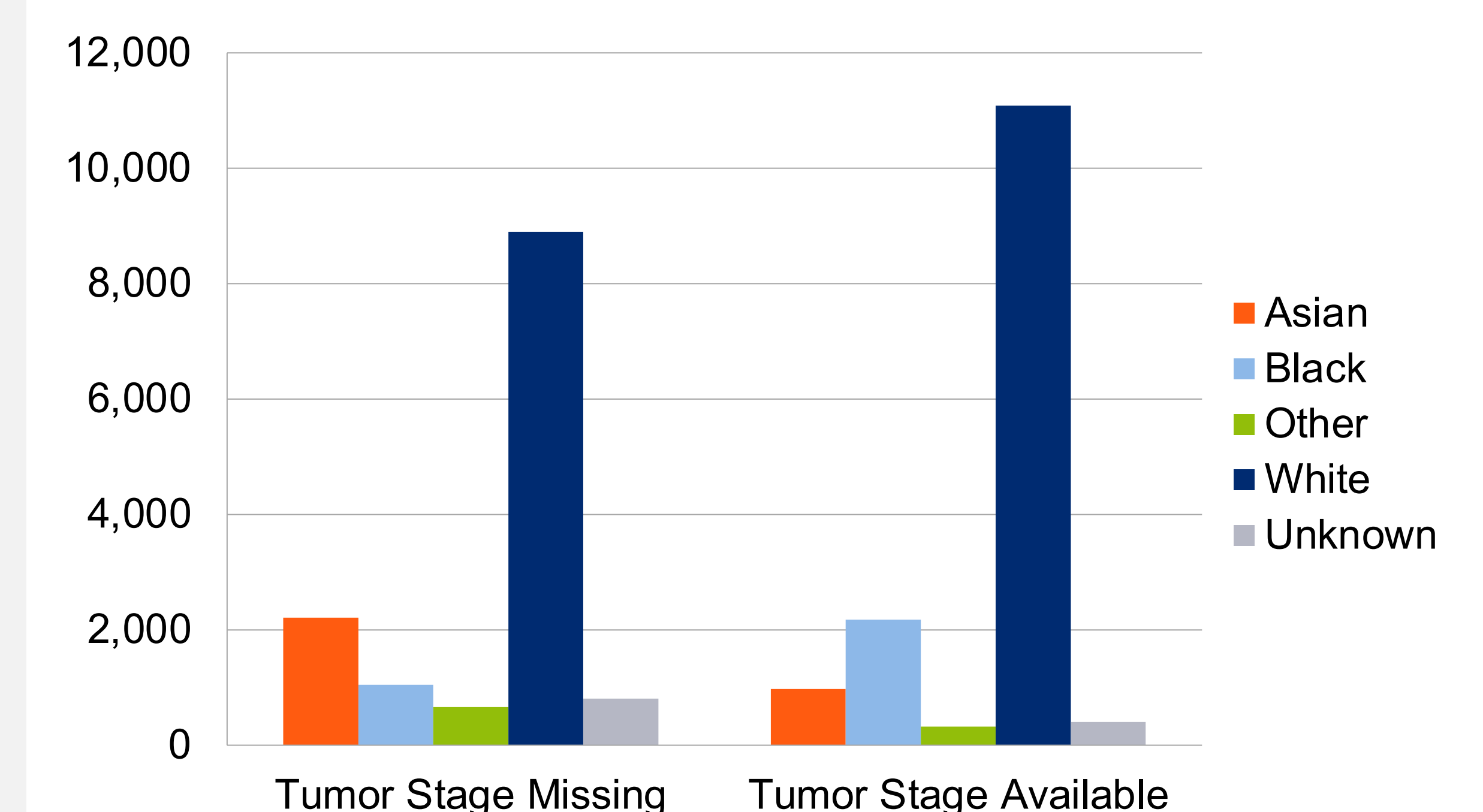


Figure 2b. Availability of Ethnicity and Tumor Stage Data in Tumor Registry Cohort

