

# Addressing gastric cancer risks *via* general infection rate of *Helicobacter pylori* in an urban Chinese population



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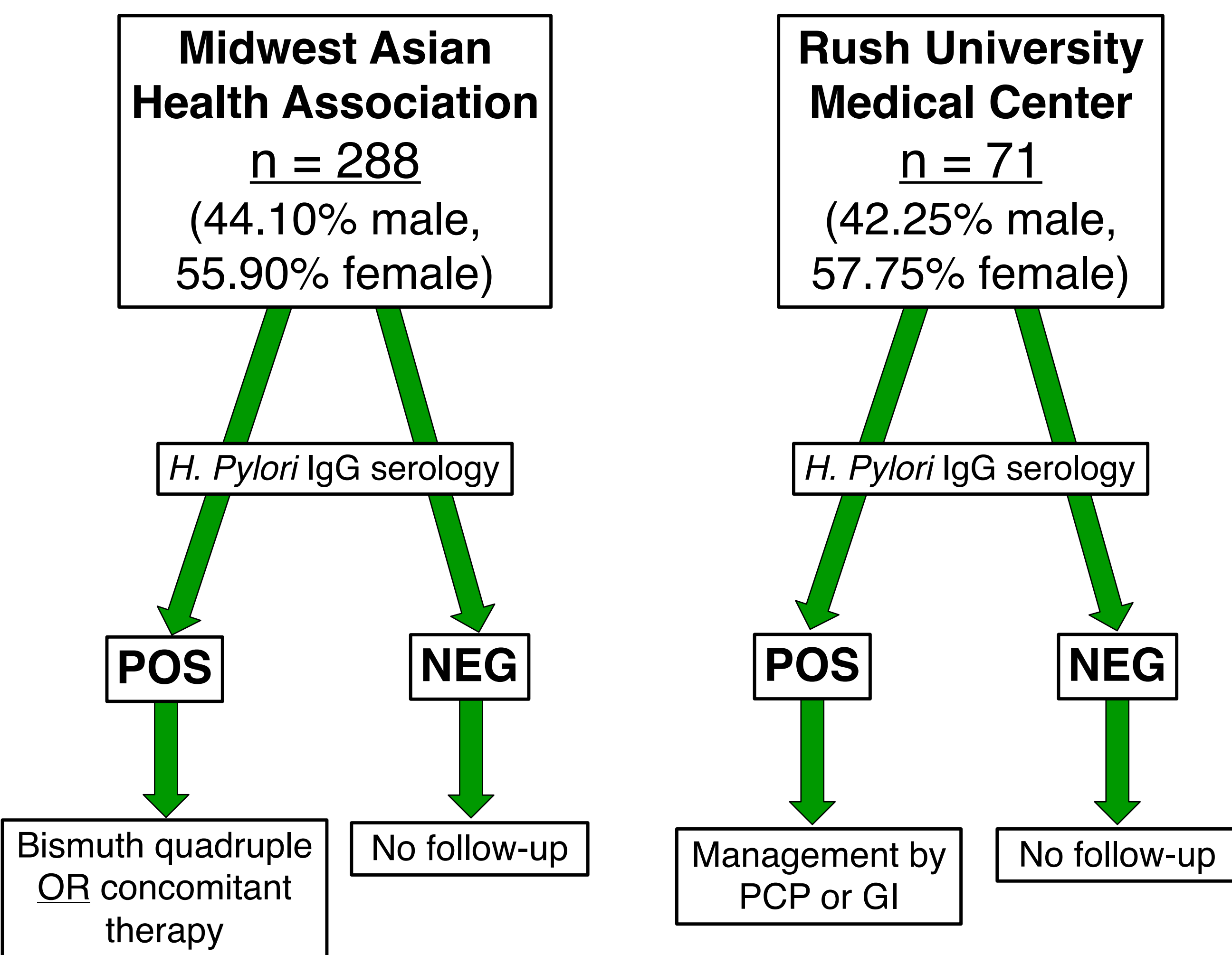
## Introduction

- Despite a lower incidence rate in the United States, gastric cancer (GC) affects a disproportionate number of patients from high-risk populations such as those of East Asian descent.
- The prevalence of *Helicobacter pylori*, a class I carcinogen highly associated with gastric cancer, is also increased in certain ethnic groups (Figure 2).<sup>1-3</sup>
- With a growing Asian population in urban areas, there is an increasing need to address this health disparity in primary GC prevention.

## Hypotheses

1. *H. pylori* prevalence in Chicago's Chinese population is significantly higher than that of Chicago's general population.<sup>1-3</sup>
2. *H. pylori* prevalence in Chicago's Chinese population is consistent with previously reported prevalence in China (63.4%).<sup>4</sup>

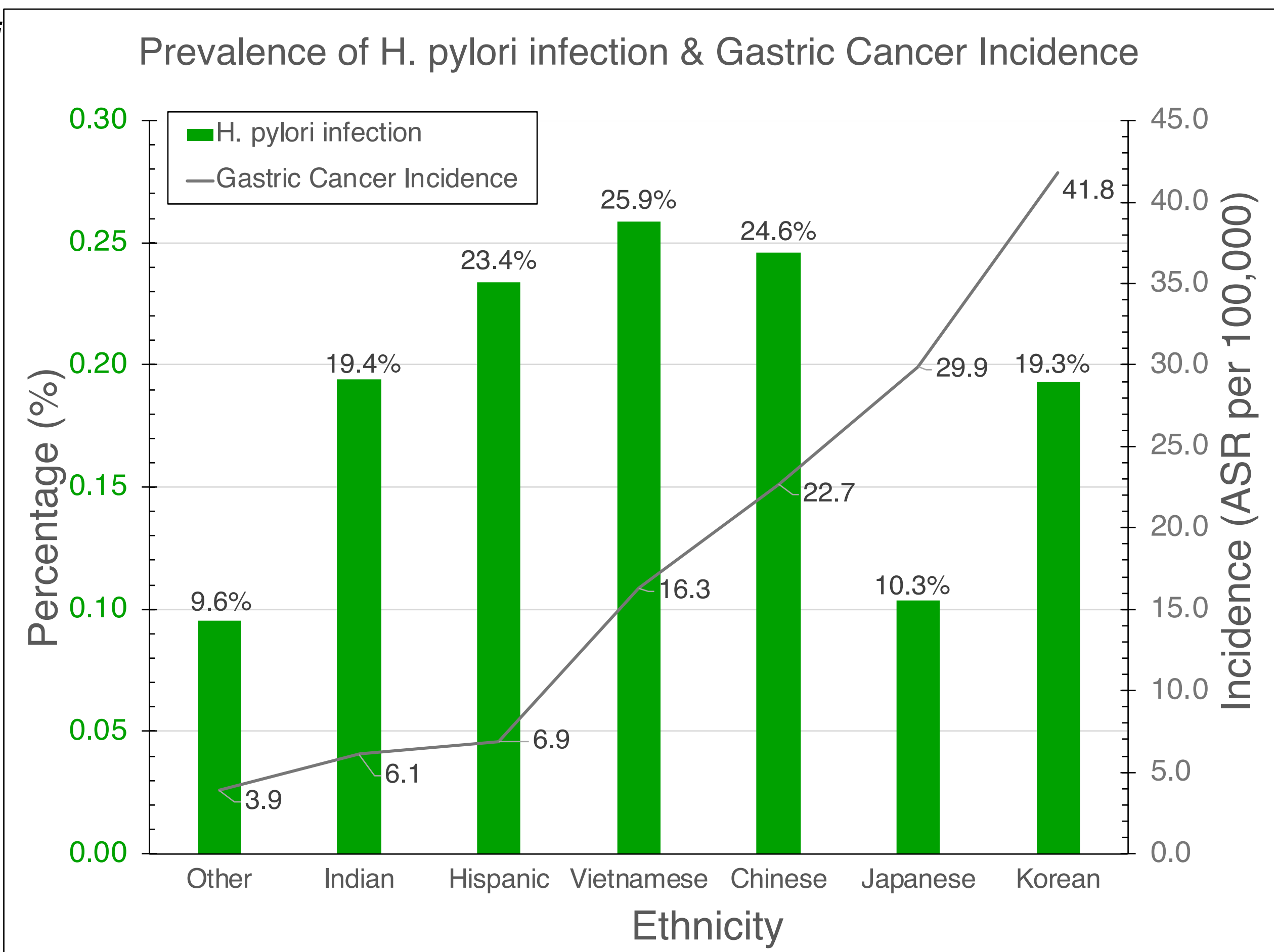
## Methods



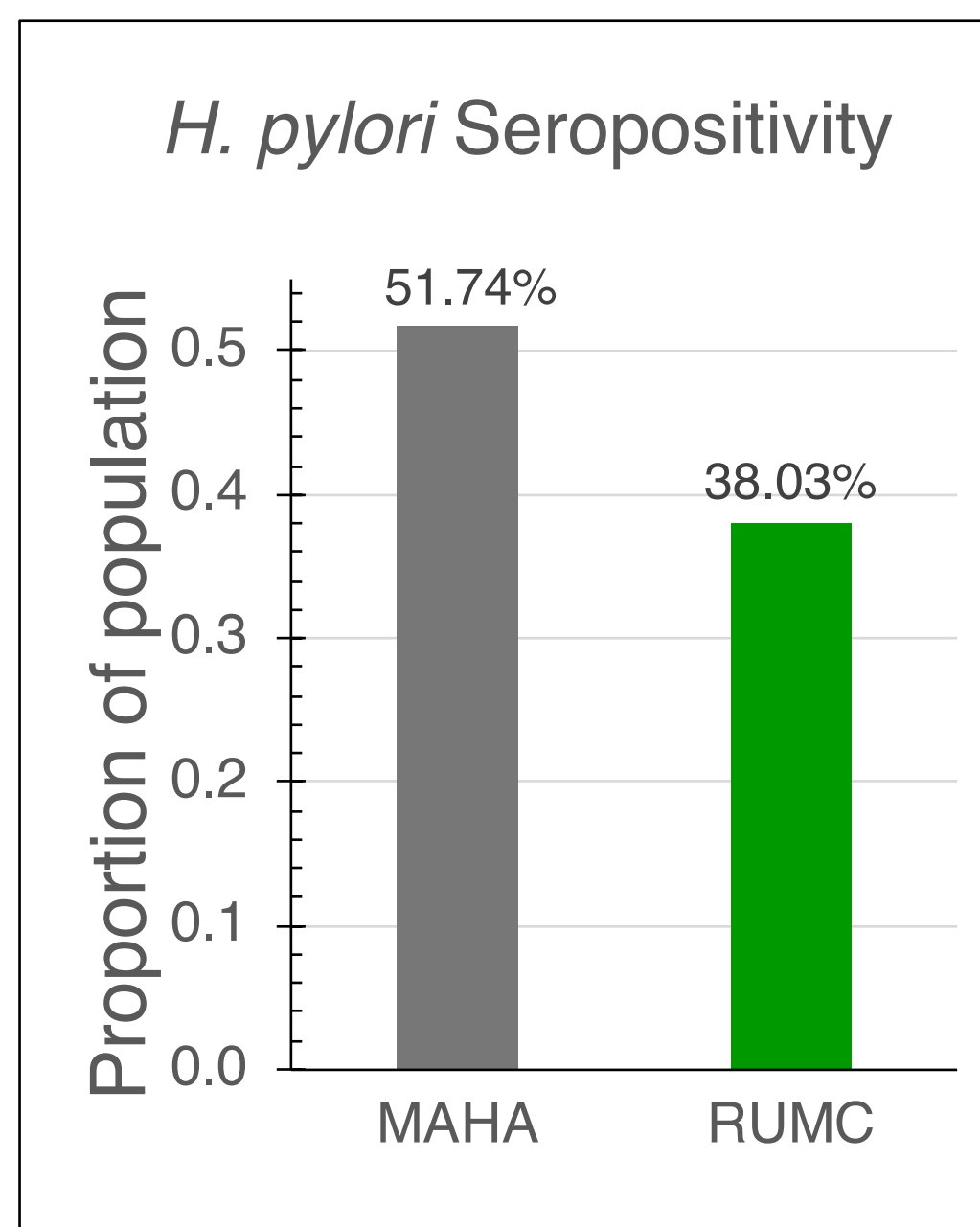
**Figure 1.** 288 Chinese patients were tested for *H. pylori* at MAHA Gastroenterology Clinic from June 2016 to June 2017 using *H. pylori* IgG serology. Positive patients (>1.0 U/mL) were treated with bismuth quadruple therapy or concomitant therapy. Demographics & GC risk factors were collected from MAHA patients and a group of 71 patients seen at RUMC. The results were compared to determine differences between a Chinese population and the general population of an urban university medical center.

## Supporting Figures

**Figure 2.** “*H. pylori* infection” compares infection rates amongst different ethnicities in the US. “Other” refers to “other Americans.” “Gastric Cancer Incidence” refers to incidence in the ancestral country age-standardized rate (ASR) per 100,000.<sup>1,2</sup> US East Asians (EA) have higher rates than other Americans and reflect higher GC incidence in their respective ancestral countries, further supporting EAs are at higher risk for infection.

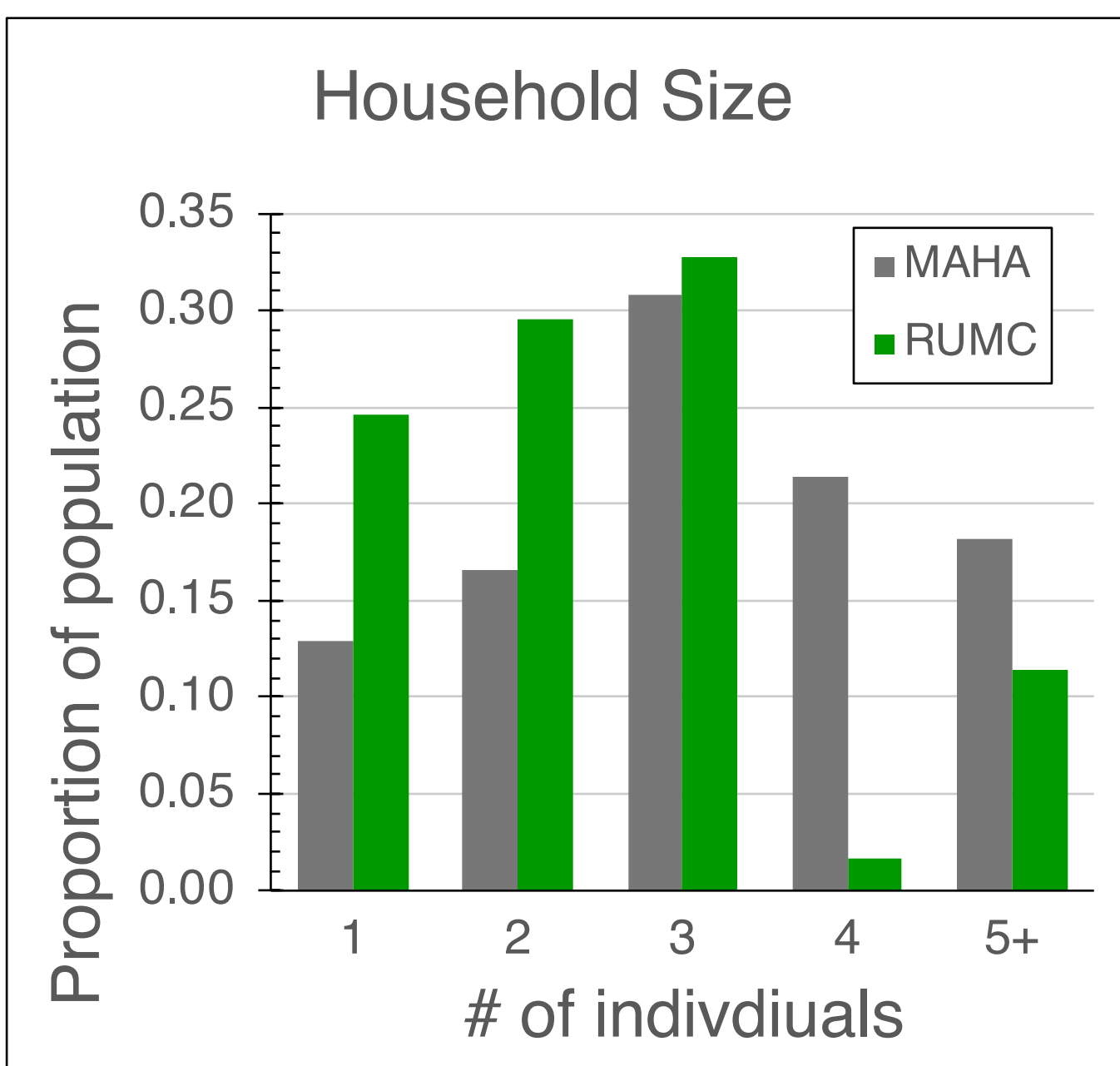


## SEROPOSITIVITY



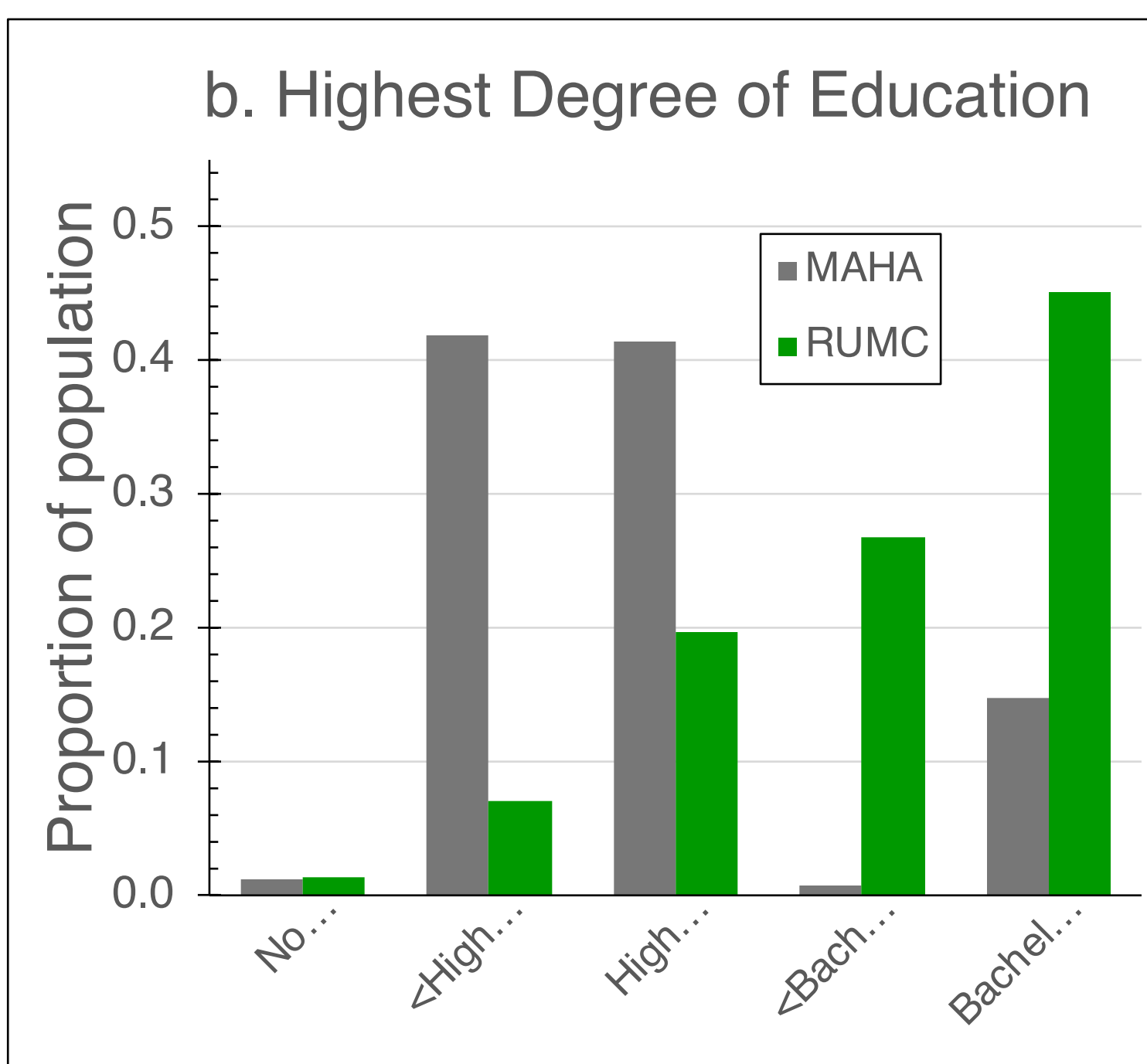
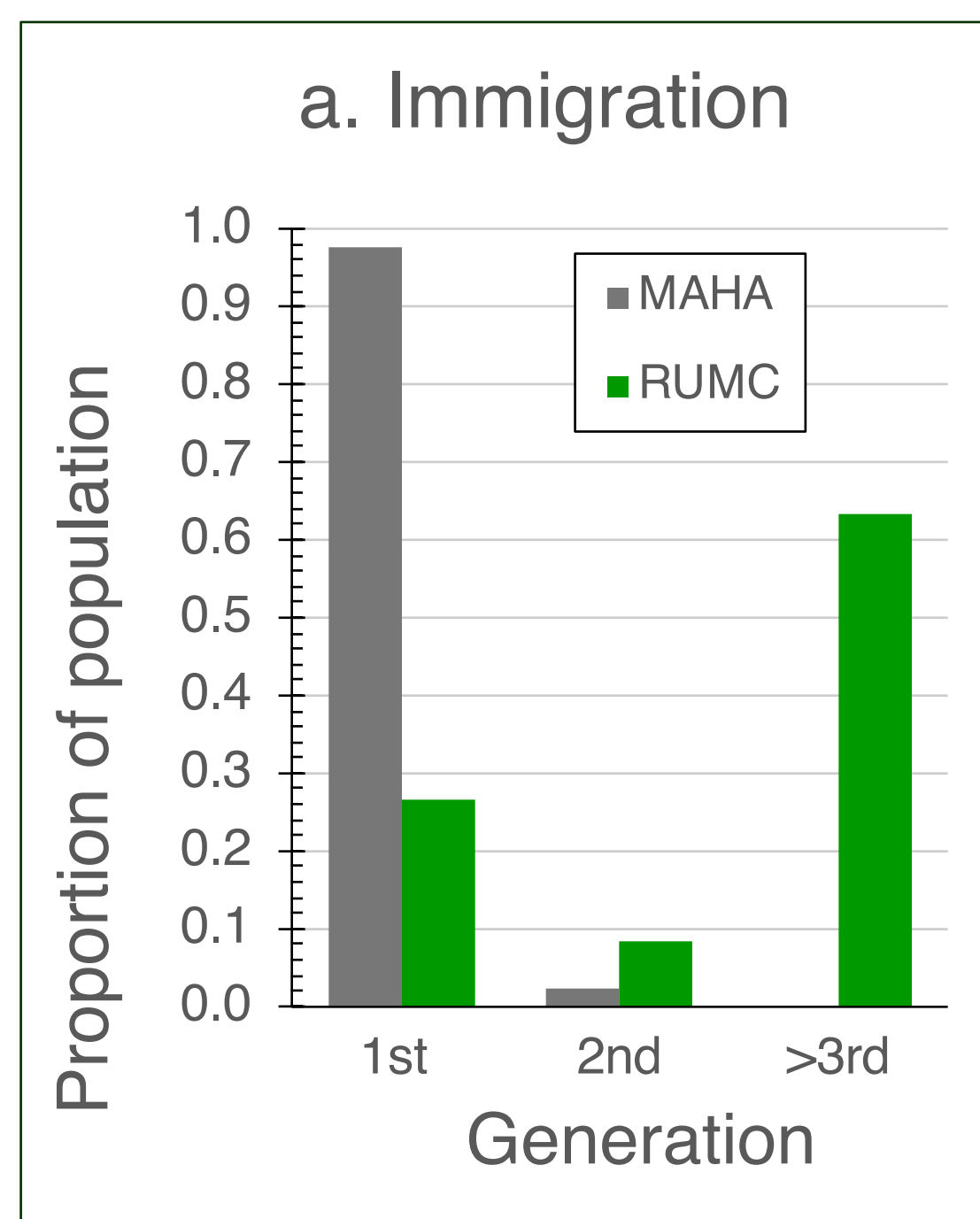
**Figure 3.** MAHA has a higher positivity rate than RUMC.

## SIMILARITIES



**Figure 4.** Similarities were observed in regards to 1) gender (“Methods”), 2) age (not shown), and 3) household size between MAHA & RUMC.

## DIFFERENCES



**Figure 5a-b.** Differences were observed in 1) immigration status & 2) degree of education. MAHA's higher proportion of 1<sup>st</sup> gen. immigrants suggests it's more representative of a native Chinese population than an American one.

## Results

- MAHA (51.74%) had a higher seropositivity than RUMC (38.03%) (Figure 3).
- In the MAHA population, highest seropositivity was seen in ages 50-59 (55.00%) and household sizes 5 or greater (55.56%).
- Similarities between MAHA & RUMC included (Figure 4):**
  - 1) Gender (“Methods”)
  - 2) Age distribution
  - 3) Household size distribution (Figure 4).
- Differences between MAHA & RUMC included (Figure 5a-b):**
  - 1) MAHA had more East Asians than RUMC (100% vs. 2.82%).
  - 2) MAHA had more 1<sup>st</sup> gen. immigrants than RUMC (97.51% vs. 26.76%).
  - 3) MAHA had a lower median household income range (\$0–\$15k vs. \$40k–\$49k).
  - 4) MAHA had a lower median education level (High School vs. Bachelors).

## Conclusion

- 1) Within an urban setting in the United States, *H. Pylori* prevalence in the Chinese population (51.74%) is more comparable to the reported prevalence in China than to that of the general population (38.03%).<sup>4</sup>
- 2) When treating Chinese or East Asian patients in an urban setting, healthcare providers should consider screening for *H. pylori* infection.
- 3) As an urban Chinese population in the US is more representative of an overseas population, management guidelines used in Asia may be more applicable.
- 4) Further research on response to therapy and risk of gastric cancer/ premalignant lesions is needed in this special population.

## References

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- 2) Ferlay J, Soerjomataram I, Ervik M, et al. GLOBOCAN 2012, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No 11. 2013. [http://globocan.iarc.fr/Pages/fact\\_sheets\\_population.aspx](http://globocan.iarc.fr/Pages/fact_sheets_population.aspx). Accessed October 4, 2017.
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- 4) Eusebi LH, Zagari RM, Bazzoli F. Epidemiology of *Helicobacter pylori* infection. *Helicobacter* (2014) 19(suppl. 1): 1-5.