

# Associations of Structural Position and HIV Testing with Guideline-concordant Cervical Cancer Screening Among U.S. Women at High Risk of HIV Infection

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## Background

- Women living with HIV (WLWH) experience cervical cancer incidence about four times higher than the general population.<sup>1</sup>
- Certain demographics, including White race, higher income, and urban residence, have been associated with protective effects against incidence and mortality.<sup>2</sup>
- Barriers such as inadequate education regarding screening, limited access to care, and fear or mistrust of examinations may impede screening participation.<sup>3</sup>
- While screening adherence rates for many cancers have rebounded after the COVID-19 pandemic, cervical cancer screening has not returned to pre-pandemic levels.<sup>4</sup>

## Objective

- To evaluate associations of structural position and HIV testing with guideline-concordant cervical cancer screening among U.S. women with high HIV risk

## Methods

### Study Design

- Cross-sectional retrospective survey pooling Behavioral Risk Factor Surveillance System (BRFSS) data (2020, 2022, 2024)

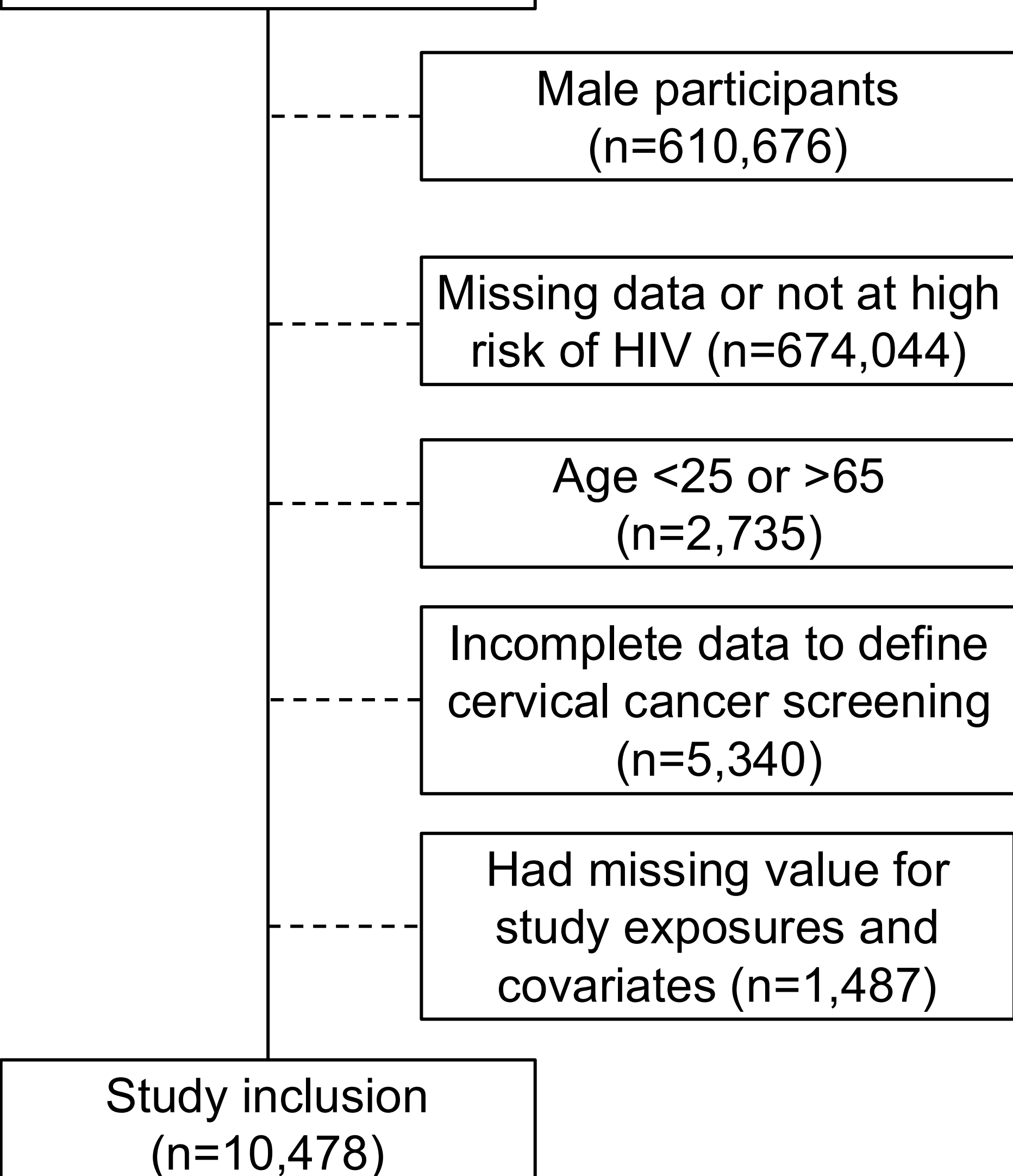
### Definitions

- **Guideline-concordant cervical cancer screening:**
  - **Age 21-29 years:** cervical cytology every 3 years
  - **Age 30-65 years:** cervical cytology every 3 years **OR** HPV testing every 5 years **OR** cervical cytology + HPV testing (co-testing) every 5 years
- **High risk of HIV infection** (one or more of the following): Illicit IV drug use (IVDU), sexually transmitted infection (STI) treatment in the past year, given or received money or drugs in exchange for sex in the past year

### Data Analysis

- Multivariable logistic regression adjusted for sociodemographic, healthcare access and utilization, and behavioral and health status covariates, with effect modification by age group
- Data analyzed using SPSS (v29)

1,304,760 pooled participants in 2020, 2022, and 2024 BRFSS

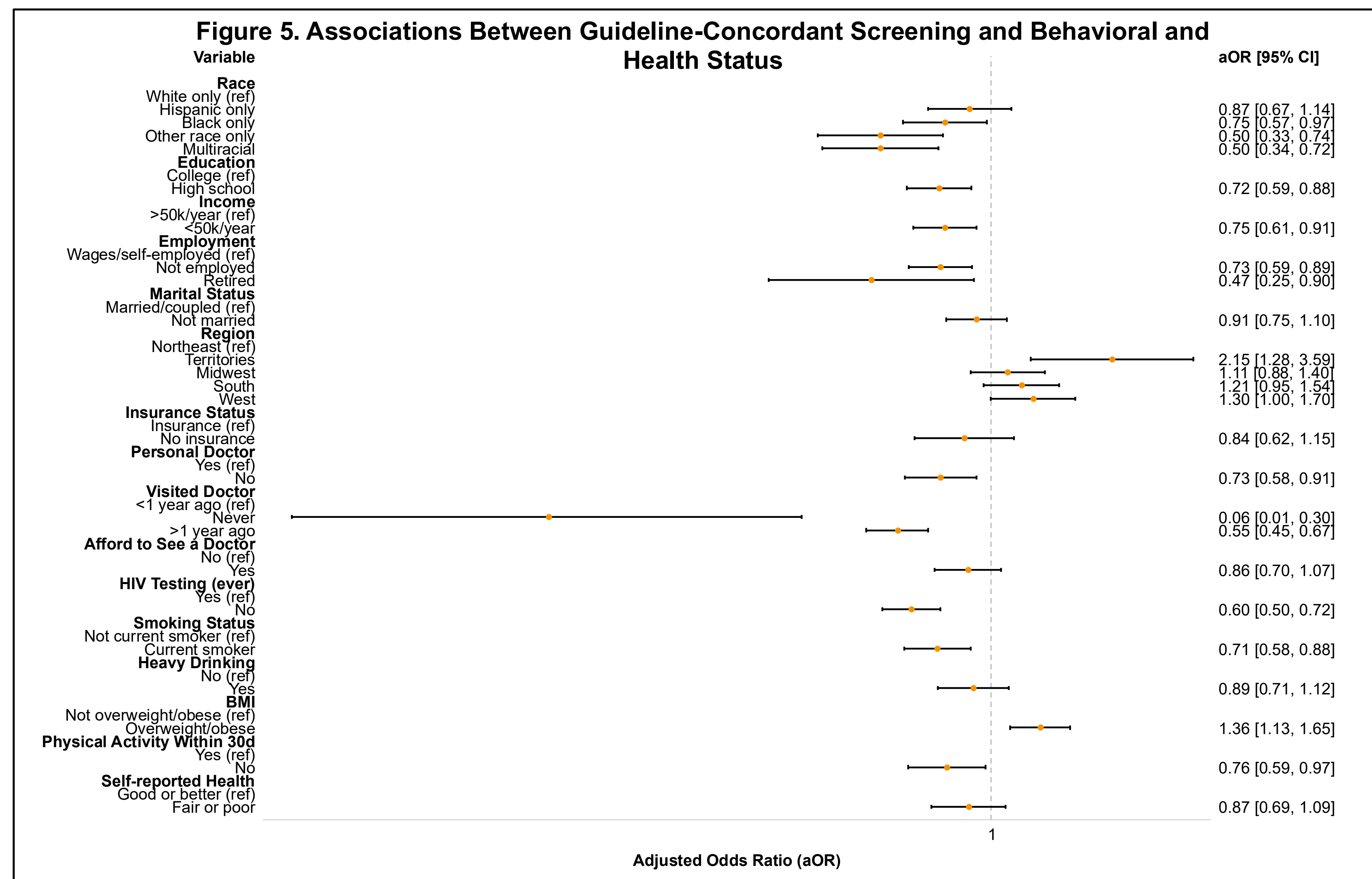
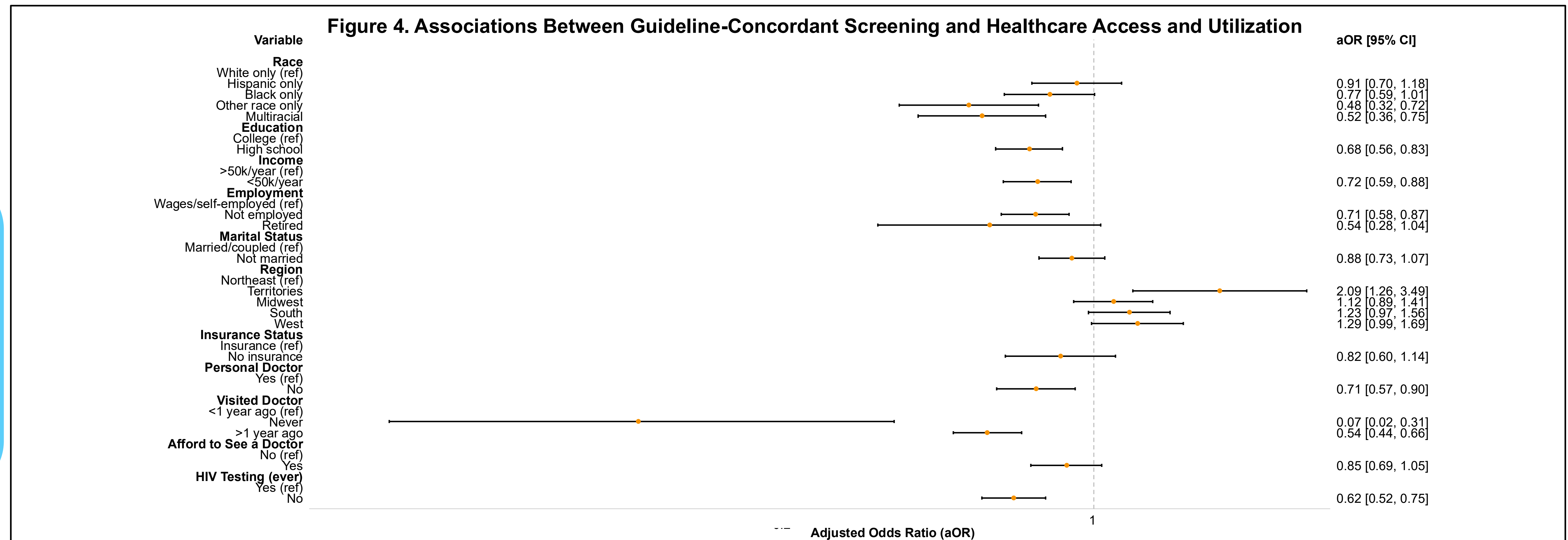
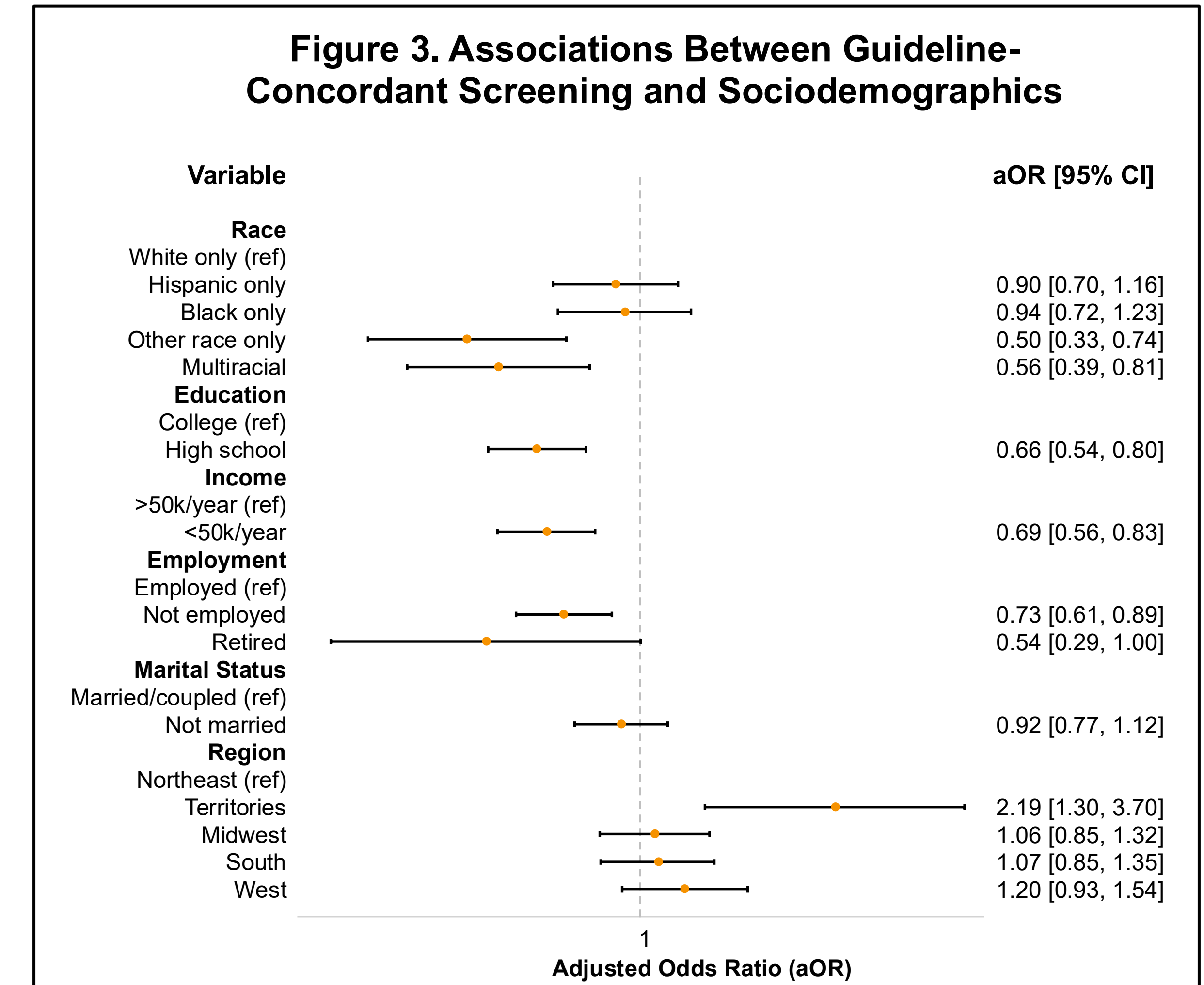
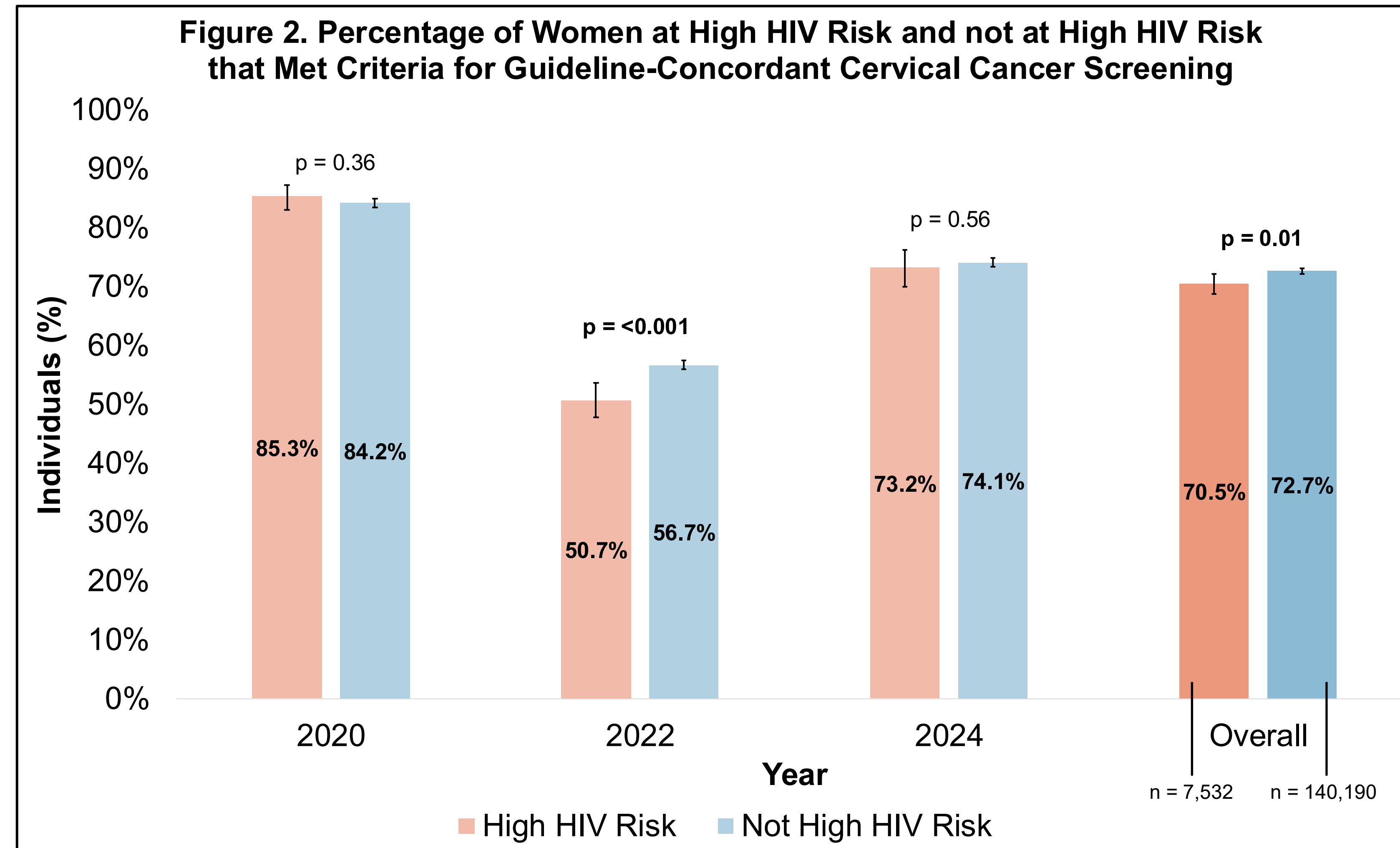


**Figure 1.** Flowchart of selection of analyzed study population. A total of 10,478 women at high risk of HIV infection were included.

## Figures and Results

**Table 1: Baseline Characteristics of Analyzed Study Population (n = 10,478)**

Variable	Screening	No screening	p-value	Variable	Screening	No screening	p-value
<b>Age</b>			<b>&lt;0.001</b>	<b>Smoker</b>			<b>&lt;0.001</b>
Mean (SE)	36.11 years (± 0.12)	33.61 years (± 0.20)		Current	19.6% [18.1% - 21.2%]	26.2% [23.4% - 29.2%]	
21 - 29 years	60.6% [58.4% - 62.7%]	43.1% [39.8% - 46.4%]		Former	80.4% [78.8% - 81.9%]	73.8% [70.8% - 76.6%]	
30 - 65 years	39.4% [37.3% - 41.6%]	56.9% [53.6% - 60.2%]		<b>Heavy drinker</b>			0.202
<b>Education</b>			<b>&lt;0.001</b>	Yes	17.1% [15.4% - 18.8%]	18.9% [16.7% - 21.4%]	
High school	29.2% [27.0% - 31.5%]	40.6% [37.3% - 43.9%]		No	82.9% [81.2% - 84.6%]	81.1% [78.6% - 83.3%]	
College	70.8% [68.5% - 73.0%]	59.4% [56.1% - 62.7%]		<b>BMI</b>			<b>0.004</b>
<b>Income</b>			<b>&lt;0.001</b>	Mean (SE)	29.3 kg/m <sup>2</sup> (± .09)	28.9 kg/m <sup>2</sup> (± .15)	
<50k/year	50.5% [48.3% - 52.7%]	62.0% [58.9% - 65.1%]		Overweight/obese	64.8% [62.6% - 66.9%]	59.0% [55.6% - 62.4%]	
>50k/year	49.5% [47.3% - 51.7%]	38.0% [34.9% - 41.1%]		Not overweight/obese	35.2% [33.1% - 37.4%]	41.0% [37.6% - 44.4%]	
<b>Employment</b>			<b>&lt;0.001</b>	<b>Physical activity/exercise</b>			<b>0.008</b>
Not employed	25.8% [24.0% - 27.7%]	33.5% [30.5% - 36.7%]		No	18.0% [16.5% - 19.7%]	22.6% [19.6% - 25.9%]	
Retired	0.8% [0.6% - 1.3%]	0.7% [0.4% - 1.2%]		Yes	82.0% [80.3% - 83.5%]	77.4% [74.1% - 80.4%]	
Self-employed	73.3% [71.4% - 75.2%]	65.8% [62.6% - 68.8%]		<b>Self-reported health</b>			<b>0.025</b>
<b>Marital status</b>			<b>0.011</b>	Fair or poor	17.5% [15.7% - 19.3%]	21.1% [18.5% - 23.8%]	
Not married	64.1% [62.0% - 66.2%]	69.1% [65.9% - 72.1%]		Good or better	82.5% [80.7% - 84.3%]	78.9% [76.2% - 81.5%]	
Married or unmarried couple	35.9% [33.8% - 38.0%]	30.9% [27.9% - 34.1%]		<b>Insurance</b>			<b>&lt;0.001</b>
<b>Race</b>			<b>&lt;0.001</b>	No	9.2% [8.0% - 10.4%]	14.1% [11.6% - 17.0%]	
Hispanic	19.3% [17.5% - 21.2%]	21.1% [18.2% - 24.3%]		Yes	90.8% [89.6% - 92.0%]	85.9% [83.0% - 88.4%]	
Black only	17.2% [15.4% - 19.1%]	16.6% [13.9% - 19.6%]		<b>Check-up</b>			<b>&lt;0.001</b>
Other race only	5.5% [4.3% - 7.1%]	9.1% [7.2% - 11.5%]		Never visited doctor	0.1% [0.1% - 0.3%]	1.1% [0.5% - 2.7%]	
Multiracial	3.5% [2.9% - 4.2%]	6.4% [4.9% - 8.3%]		Visited >1 year ago	24.8% [22.9% - 26.7%]	40.5% [37.2% - 43.8%]	
White	54.5% [52.3% - 56.7%]	46.8% [43.6% - 50.1%]		Visited <1 year ago	75.1% [73.1% - 76.9%]	58.4% [55.1% - 61.7%]	
<b>Region</b>			0.726	<b>Personal doctor</b>			<b>&lt;0.001</b>
Territories	1.6% [1.4% - 1.9%]	1.1% [0.7% - 1.6%]		No	19.0% [17.2% - 20.8%]	30.9% [28.0% - 33.9%]	
Midwest	21.5% [20.4% - 22.6%]	22.1% [20.1% - 24.2%]		Yes	81.0% [79.2% - 82.8%]	69.1% [66.1% - 72.0%]	
South	37.9% [36.3% - 39.6%]	37.8% [34.8% - 40.9%]		<b>Could not afford to see a doctor</b>			<b>&lt;0.001</b>
West	24.5% [22.9% - 26.1%]	24.2% [21.5% - 27.0%]		Yes	23.6% [21.6% - 25.6%]	32.0% [28.9% - 35.4%]	
Northeast	14.5% [13.6% - 15.4%]	14.9% [13.2% - 16.7%]		No	76.4% [74.4% - 78.4%]	68.0% [64.6% - 71.1%]	
<b>HIV testing history</b>			<b>&lt;0.001</b>	<b>Chronic comorbidities</b>			0.147
No	28.2% [26.2% - 30.2%]	38.3% [35.1% - 41.6%]		None	35.9% [33.8% - 38.0%]	35.6% [32.6% - 38.8%]	
Yes	71.8% [69.8% - 73.8%]	61.7% [58.4% - 64.9%]		One	36.2% [34.1% - 38.5%]	39.4% [36.2% - 42.8%]	
				Two or more	27.9% [26.1% - 29.8%]	24.9% [22.4% - 27.7%]	



## Conclusions

- Many variables of structural position, including income, education, and race, are independently associated with no cervical cancer screening
- Additional variables of structural position are associated with lower odds of screening when adjusted for age
- Multiracial and other race women had lower odds than different races for screening
- Women with reduced healthcare access and utilization have lower odds of cervical cancer screening
- Women with less healthy habits, such as smoking and heavy drinking, have lower odds of cervical cancer screening

## References

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