

# Black and White Social Gradients in Obesity and Diabetes: Evidence from the 2014/15 Healthy Chicago Survey

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## Research Question

- How does the social gradient differ for black and white adults in obesity and diabetes in Chicago?

## Introduction

- Previous literature has noted that a social gradient exists in a variety of health outcomes.
- However, less is known about the income-health relationship in cities like Chicago, and even less is known about how the social gradient may vary by race/ethnicity.
- In Chicago, the city's new public health plan, *Healthy Chicago 2.0*, prioritizes obesity reduction.
- Healthy Chicago 2.0* suggested reduction in obesity can be accomplished by increasing fruit and vegetables consumption, promoting healthy food access, implement mass-reach health communication interventions through television and radio, and expanding healthy retail options through retailers.
- Healthy Chicago 2.0* also described potential improvements in diabetes related health risks such as the national diabetes prevention program.
- The Healthy Chicago Survey (HCS) report provided evidence that disparities are influenced by a combination of socioeconomics, unequal access to health care, and differences in exposure to environmental pollutants (Laflamme, Bocskay, Reina, Weaver and Prachand 2015)
- The HCS analyzed how much the social gradient differs in blacks and whites.
- Within Chicago, the social gradient of health is seen steeper in blacks than in whites.
- Noting this income gradient of health for different races suggests that racial discrimination is present within Chicago

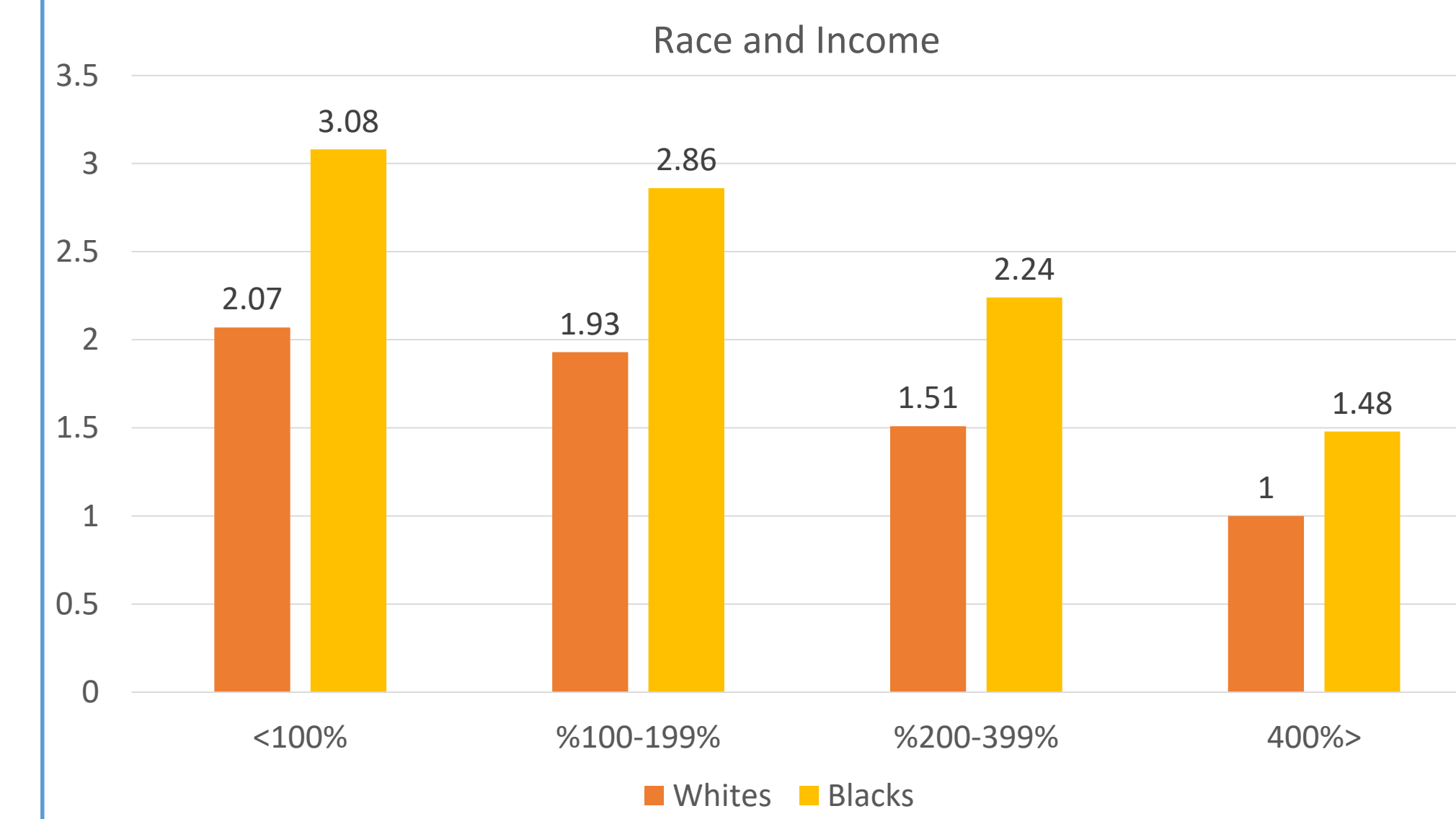
## Methods

- Secondary data analysis of the 2014/2015 Healthy Chicago Survey (N =4,917).
- Independent variables: race, income, age, gender, and education.
- Dependent variables: obesity and diabetes.
- Logistic regression analyses
- All analyses were conducted using Stata.

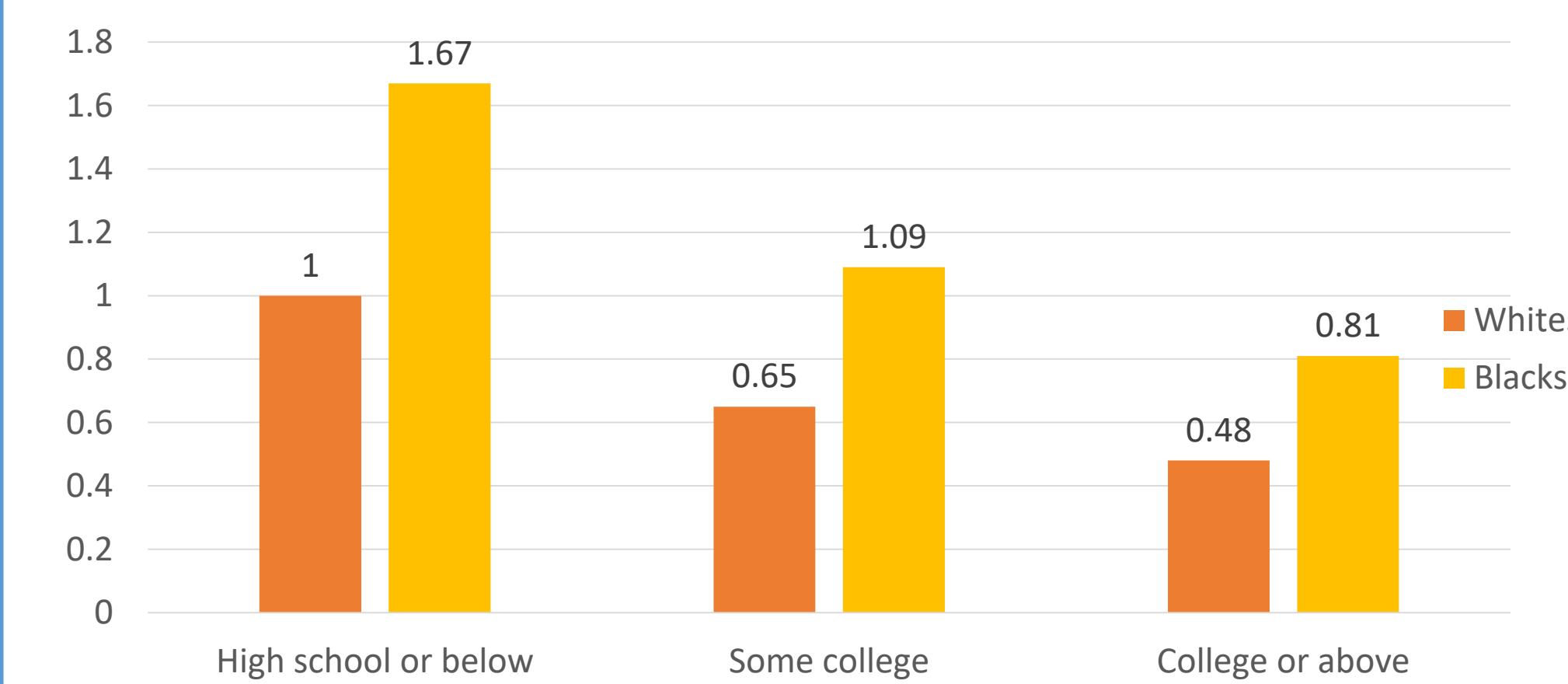
## Data

Dependent Variables	Unweighted	Weighted	Weighted %
Obese	1,580	603,258	29.1
Not obese	3,342	1,464,966	70.8
Has diabetes	669	189,213	9.1
No diabetes	4,238	1,872,213	90.8
Independent Variables			
Income			
<100%	979	432,251	26
100-199%	799	342,111	20.6
200-399%	659	273,635	16.4
400%>	1,463	612,901	36.9
Race			
Non-Hispanic White	1,791	726,836	35.1
Non-Hispanic Black	2,070	618,334	29.8
Non-Hispanic Asian	118	136,441	6.5
Non-Hispanic Other	105	31,151	1.5
Hispanic	839	556,332	26.8
Education			
High school or below	1,659	831,247	40.1
Some college	1,344	523,494	25.3
College or above	1,920	714,355	34.5
Age			
18-29	628	533,789	25.8
30-44	1,044	630,005	30.4
45-64	1,850	605,777	29.2
65+	1,401	299,523	14.4
Sex			
Male	2,005	980,900	47.4
Female	2,912	1,087,088	52.5

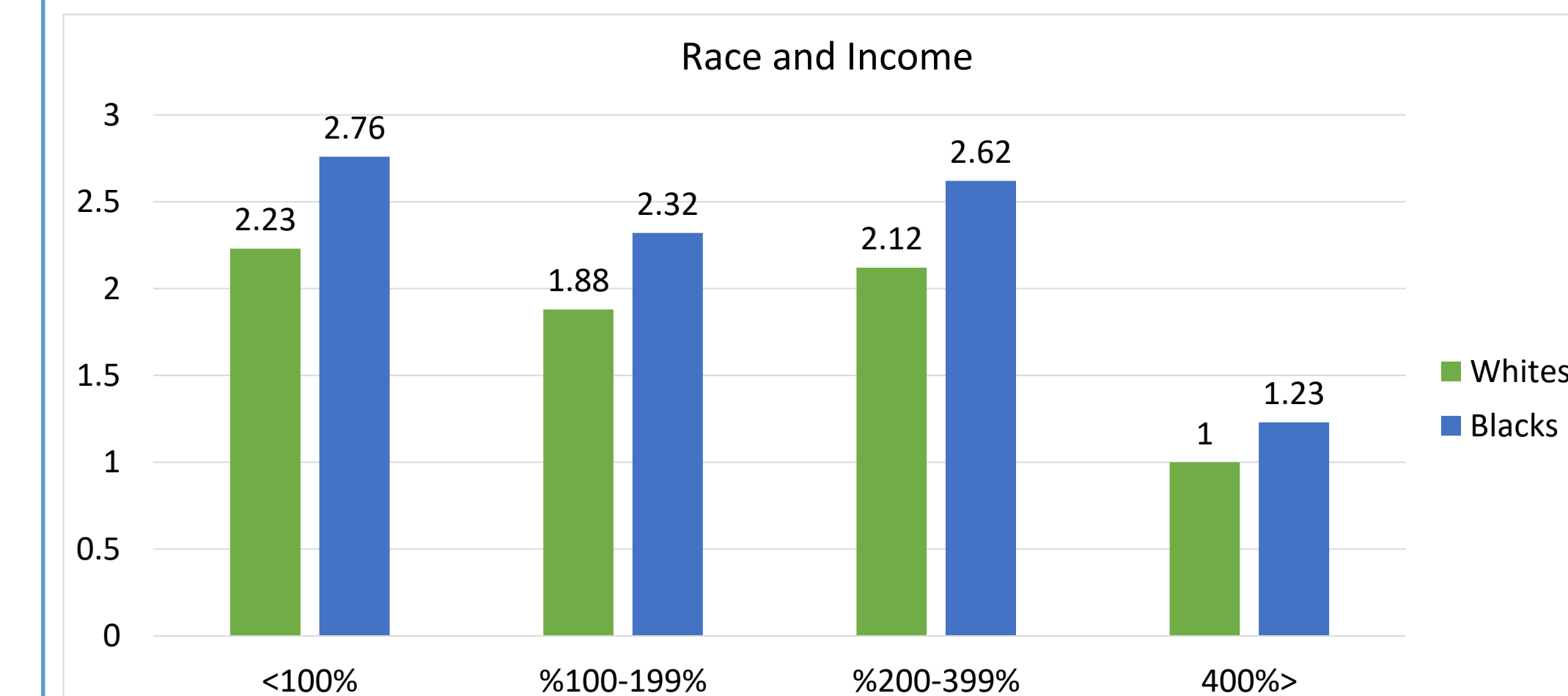
## Diabetes (odds ratio)



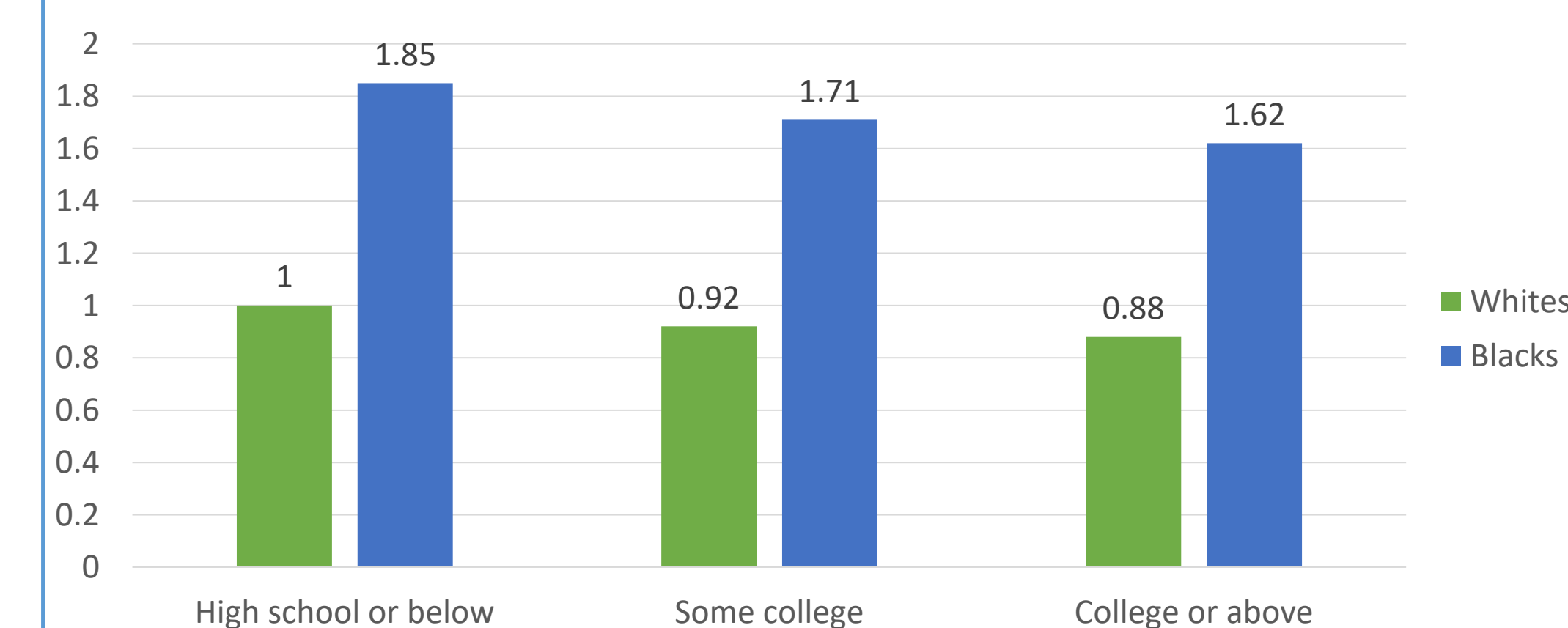
## Race and Education



## Obesity (odds ratio)



## Race and Education



## Results

- Overall, 9% of adults have diabetes and 29% are obese.
- Diabetes
  - The income gradient was steeper for those who were black and with low income.
  - Age showed increasing odds ratio in the likelihood of having diabetes. (2.6 (95% CI=.82-8.61) to 15.46 (95% CI=5.15-46.36))
  - Results also showed a less educated person had .82 (95% CI=.56-1.21) times the odds of having diabetes compared to a person with a college degree.
- Obesity
  - Blacks in the richest group reported 1.93 (95% CI=1.53-2.45) odds of more likely to be obese than whites in the richest group
  - When controlling for age, income, and education, blacks have 2.03 (95% CI=1.59-2.59) times the odds of likely being obese than whites

## Conclusion

- The income gradient varies by race and presents a story of racial disparities and how health has worsened within Chicago.
- No clear gradient was reported for blacks and whites in the likelihood of being obese. Instead, a threshold is seen between the poorest and the richest within Chicago.
- Controlling for additional variables tested the robustness of the income-health relationship.
- Overall, structural root causes are one of the many reasons this income gradient persists in present society.

## Acknowledgements

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