

# ASSOCIATION BETWEEN SOCIAL DETERMINANTS OF HEALTH AND INFLAMMATORY BOWEL DISEASE: A NATIONALLY REPRESENTATIVE ANALYSIS

Adekoya O<sup>1</sup>, Vyas A<sup>1</sup>

<sup>1</sup>University of Rhode Island, College of Pharmacy, Department of Pharmacy Practice and Clinical Research, Kingston, RI, USA

EPH55

THE UNIVERSITY OF RHODE ISLAND COLLEGE OF PHARMACY

## Background

- Inflammatory bowel disease (IBD) affects ~3 million US adults.<sup>1</sup>
- Genetic and immunological mechanisms are well characterized for IBD. However, the role of social determinants of health (SDOH) in shaping IBD risk and diagnosis remains poorly understood.<sup>2</sup>
- SDOH influence chronic disease outcomes, but population-level evidence for IBD is limited. Understanding SDOH disparities can guide targeted interventions.

## Objective

- To examine the association between social determinants of health (SDOH) and inflammatory bowel disease (IBD) in a multivariable framework, using the nationally representative data from the US.

## Methods

### Study design, Data source and Study population

- A retrospective population-based cross-sectional study using Medical Expenditure Panel Survey data for years 2018-2020; included the entire population of non-institutionalized US adults alive during the survey year.
- IBD patients were defined as those with ICD-10-CM codes K50 and K51.

### Social Determinants of Health Domains<sup>3</sup>:

- Economic Stability:** Employment Status, Poverty Level, Family Income, Use of Food Stamps
- Education:** Patient's Education Level
- Health Care Access & Quality:** Health Insurance Coverage, Access to Primary Care, Access to Health Care, Transportation Issues to Visit Primary Care, Satisfaction with the Usual Source of Care Provider
- Social & Community Context:** Social Support Status, Language Spoken, Geographic Location, Race/Ethnicity
- Neighborhood & Built Environment:** Physical Activity, Smoking Status, Psychological Distress

### Covariates

- Physical comorbidities, Mental health comorbidities

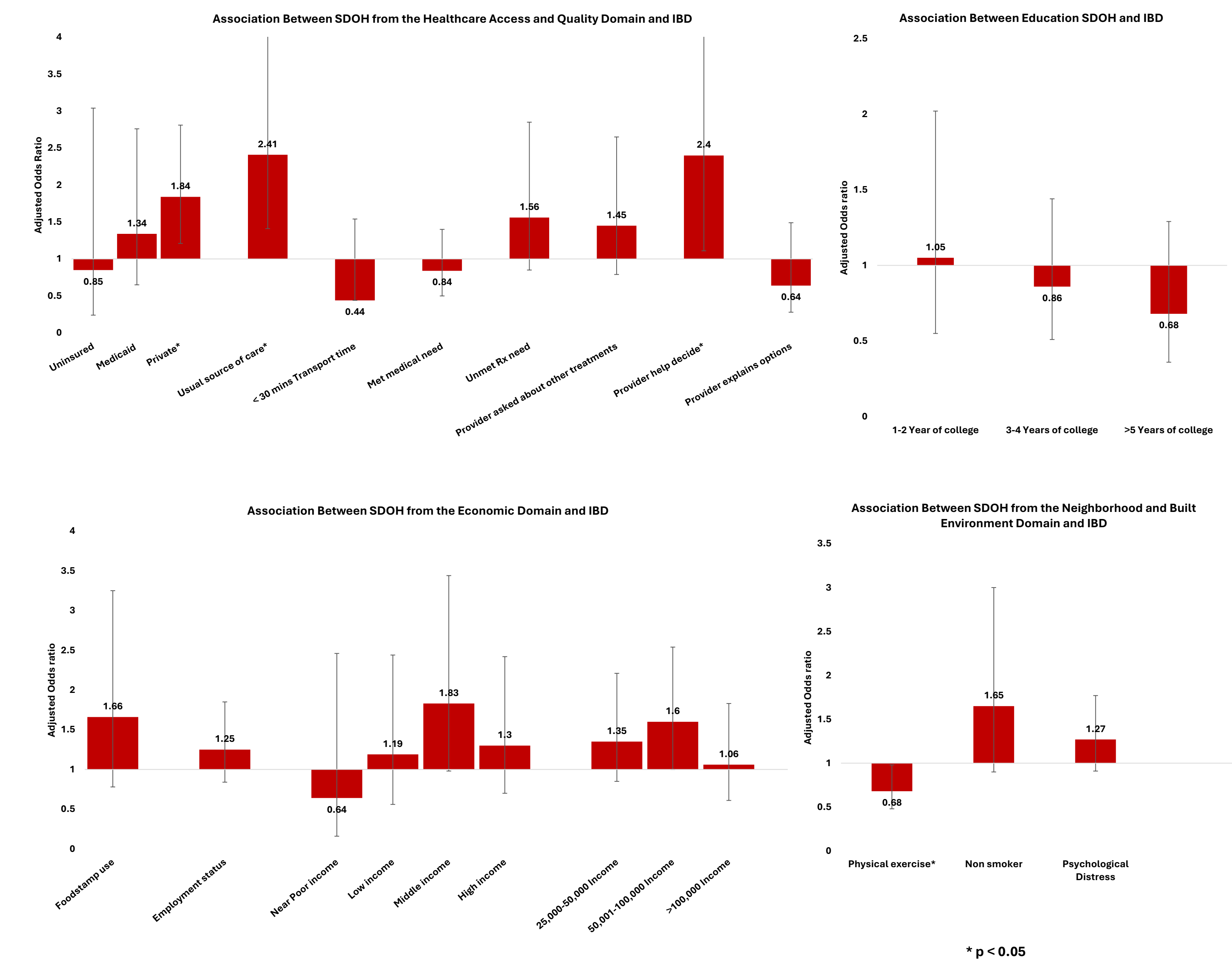
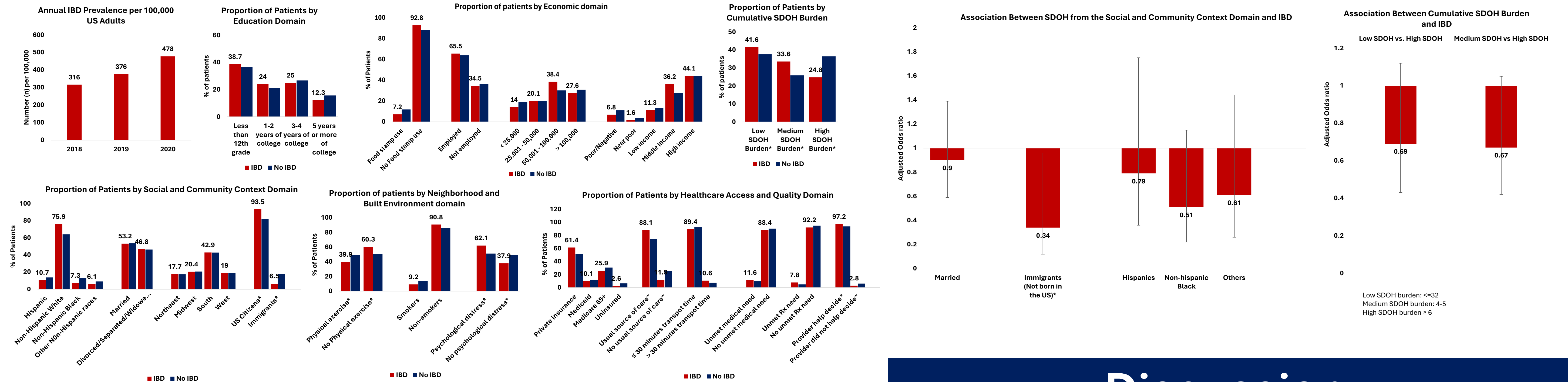
### Statistical Analysis

- We used a matched cohort design by matching one IBD patient to eight patients without IBD, on age, sex and US region.
- Cumulative SDOH burden: We assigned a value of '0' if the SDOH was favorable and '1' if the SDOH was unfavorable, following which we summed the individual values of all SDOH variables to calculate cumulative SDOH burden. This variable was categorized as:
  - Low SDOH burden:** Those with a sum of <=3
  - Medium SDOH burden:** Those with a sum of 4-5, and
  - High SDOH burden:** Those with a sum of 6 and above
- We conducted separate adjusted multivariable logistic regressions to examine the association between each SDOH and IBD, controlling for confounders.
- All the analyses using survey procedures were performed with weights and clustering and all of our findings are weighted estimates of the United States population.
- All the analysis were conducted using SAS 9.4 and p value < 0.05 was considered significant

## References

- Lewis JD, Parlett LE, Jonsson Funk ML, et al. Incidence, Prevalence, and Racial and Ethnic Distribution of Inflammatory Bowel Disease in the United States. *Gastroenterology*. 2023;165(5):1197-1205.e2. doi:10.1053/j.gastro.2023.07.003
- Anyane-Yeboah A, Quezada S, Rubin DT, Balzora S. The Impact of the Social Determinants of Health on Disparities in Inflammatory Bowel Disease. *Clin Gastroenterol Hepatol*. 2022;20(11):2427-2434. doi:10.1016/j.cgh.2022.03.011
- Vyas A, Cohen S, Eisenhower C. Association between social determinants of health and systemic lupus erythematosus: a nationally representative analysis of 2017-2021 data. *Sci Rep*. 2025;15(1):29095. Published 2025 Aug 8. doi:10.1038/s41598-025-13071-7

## Results



## Discussion

- The prevalence of IBD increased steadily from 2018 through 2020.
- Higher prevalence of IBD was seen in adults born in the US, with usual source of care, with no physical activity, and who had psychological distress.
- Higher prevalence of IBD was found in patients with low or medium cumulative SDOH burden.
- In the healthcare access and quality domain, patients with private insurance coverage, had usual source of care, and had provider-facilitated decision making had significantly higher odds of IBD prevalence, likely reflecting detection bias.
- In the neighborhood and built environment domain, patients with any physical exercise had significantly lower odds of IBD prevalence compared to those with physical activity, consistent with protective biological mechanisms.
- In the social and community context domain, patients who were not born in the US had significantly lower odds of IBD.
- Numerous SDOH variables showed directionally consistent patterns but failed to reach a statistically significance level.
- In the adjusted analyses, the cumulative SDOH burden gradient (Low: 0.69, Medium: 0.67 vs. high SDOH burden) was particularly noteworthy but the associations were not significant.

## STUDY LIMITATIONS

- Limited generalizability as MEPS data survey the non-institutionalized US population only.
- Causality cannot be established due to the cross-sectional nature of the study.
- Data are self reported, thus prone to recall bias.

Presenter's email: [bolante.adekoya@uri.edu](mailto:bolante.adekoya@uri.edu)