

Neighborhood as a Social Determinant of Health in Liver Disease: A Scoping review



Eric Moughames MD¹, Wardah Athar MD², Alexandra T. Strauss MD PHD MIE^{1,3}

¹Division of Gastroenterology and Hepatology, Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, USA;

²Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, USA;

³Malone Center for Engineering in Healthcare, Johns Hopkins University Whiting School of Engineering, Baltimore, MD, USA;



Introduction

- Recently, interest has increased in understanding the effects of a patient's neighborhood and community on liver-related health.
- Due to the complexity of a place-based approach to studying health equity (e.g., defining/measuring the multi-faceted nature of a neighborhood), the tools and results are variable.

Aim

To define and compare measures of neighborhood-level socioeconomic status (nSES) used to study liver diseases.

Methods

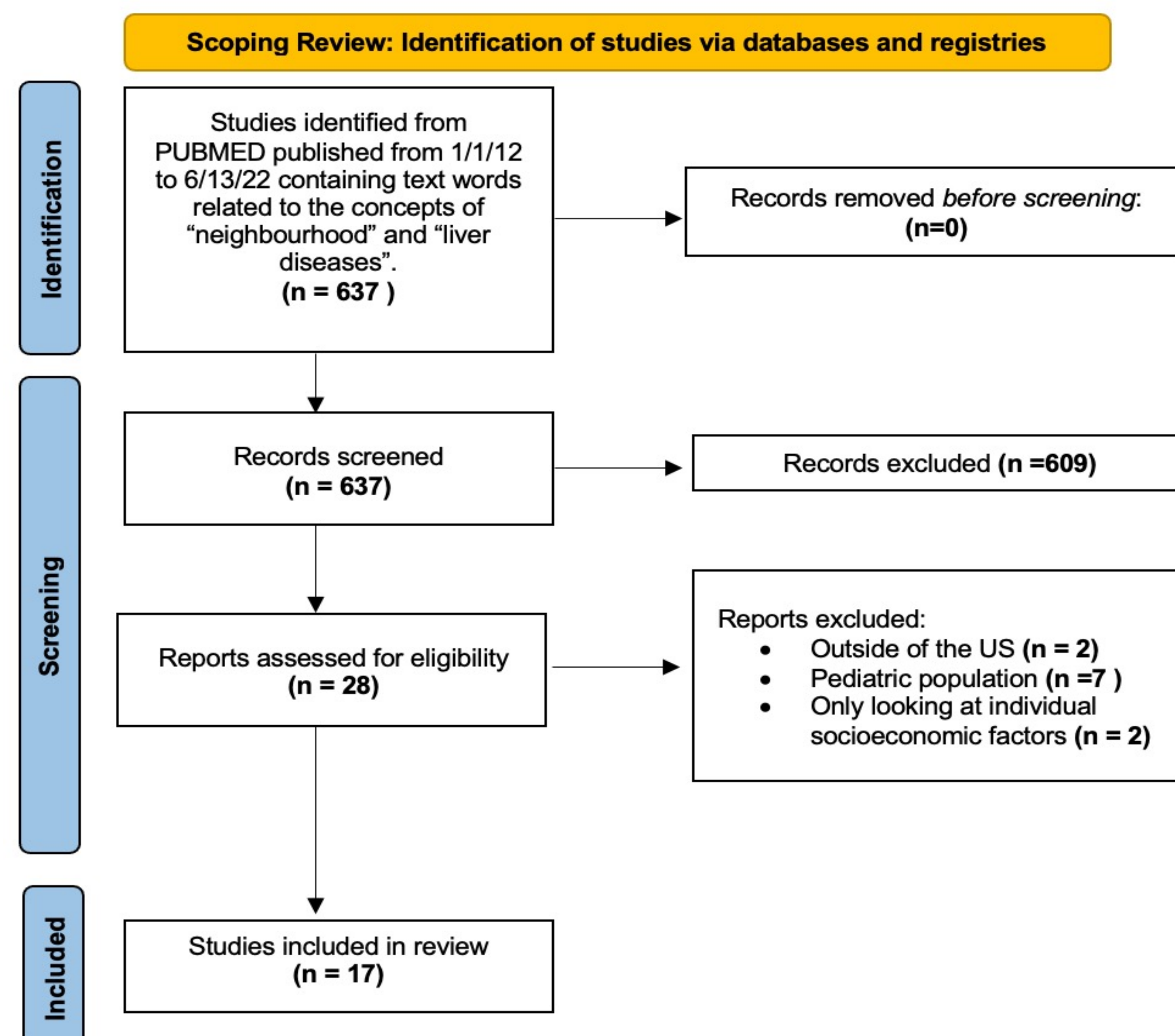


Figure 1: PRISMA 2020 flow diagram for Scoping reviews

Results

Neighborhood Index	Study	
	Author/year	Findings: Low nSES associations
Area deprivation index (ADI)	Nichols 2022	No association with liver transplant waitlist removal due to nonadherence
	Goldstein 2021	Increased HCV prevalence
Community health score	Akateh 2020	No association with survival after liver transplant
Custom index	DuPre 2020	Increased risk of Hepatitis A
Facility income quartiles (FIQ)	Uppal 2020	Lower rate of liver metastasis treatment
Multiethnic Study of atherosclerosis (MESA index)	Ortiz 2020	Increased risk of HCC
Neighborhood deprivation index (NDI)	Ortiz 2020	Increased risk of HCC
	Major 2014	<ul style="list-style-type: none"> No association with increased risk of HCC Increased CLD mortality
	Marcus 2018	Decreased likelihood of receiving treatment for Hepatitis C
Roux index	Akateh 2020	No association with survival after liver transplant
Social deprivation index (SDI)	Giammarino 2020	Increased risk of NASH
Socioeconomic position index (SEP)	Ortiz 2020	Increased risk of HCC
Townsend index	Ortiz 2020	Increased risk of HCC
	Yost index	Increased risk of HCC
Yost index	Sangaramoorthy 2022	Increased incidence of HCC
	Ford 2017	Increased risk of HCC
Neighborhood poverty	Gabai 2020	Increased risk of HCV
	Wagle 2021	No association with HCC treatment receipt or survival
	Shebl 2012	Increased HCC prevalence
	Ford 2017	Increased mortality from HCV
	Mohamed 2022	Lower rates of liver transplant waitlisting

Table 1: Summary table of neighborhood indices identified in each study with the associations between neighborhood factors and liver disease outcomes

Abbreviations: nSES: Neighborhood-level Socioeconomic Status, HCV: Hepatitis C Virus, HCC: Hepatocellular Carcinoma, CLD: Chronic Liver Disease.

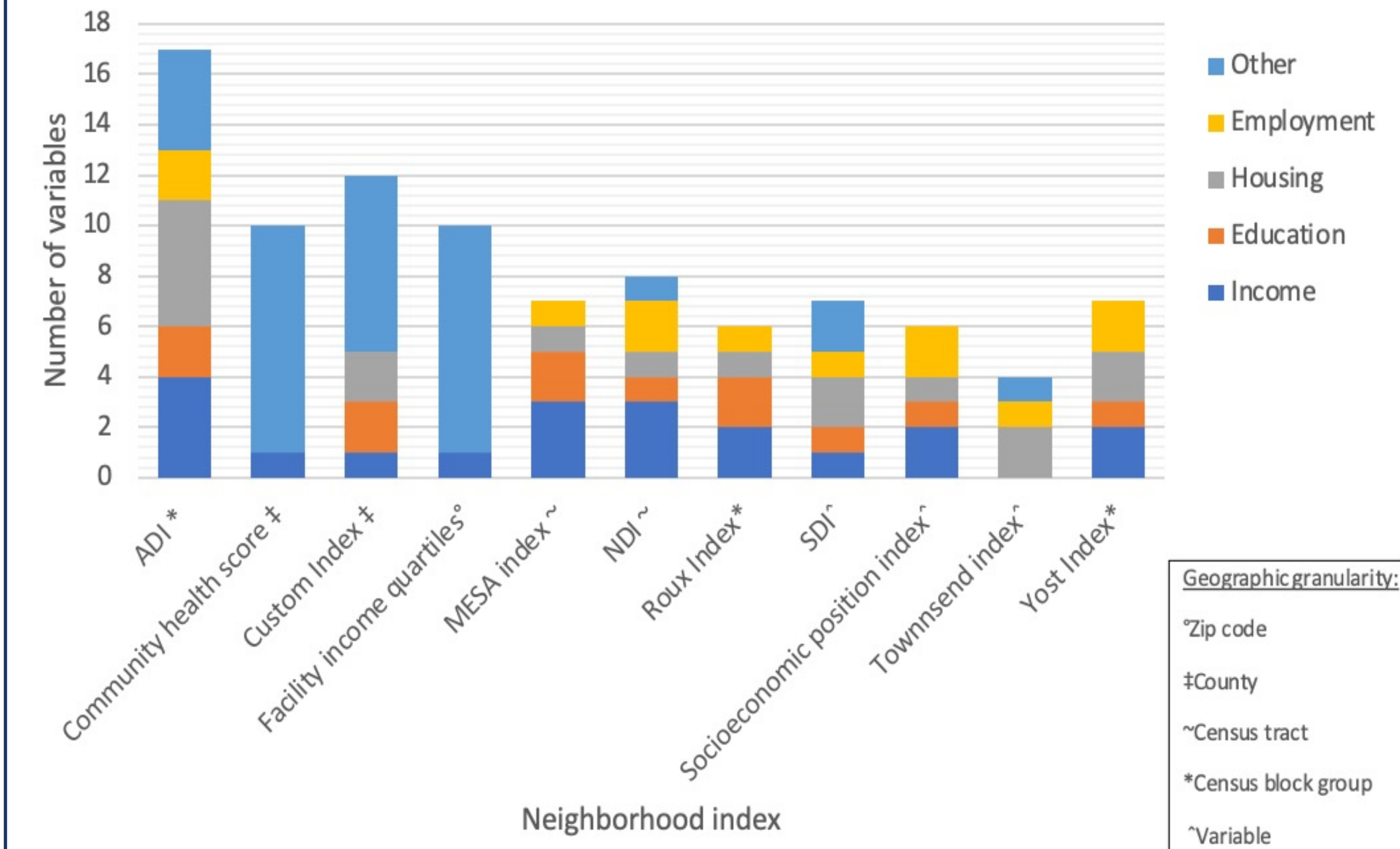


Figure 2: Neighborhood indices and number of variables categorized by domains and geographic granularity. Domains were divided into 5 categories including Income, Education, Housing, Employment and Other.

Conclusion

- This scoping review characterizes the variation, advantages, and disadvantages of several place-based indices to measure the association with liver-related outcomes.
- Despite the different domains used, 77% of the studies demonstrated an association between nSES and liver-related outcomes, which highlights the need for future research.



@Emoughames

@AlyStraussMD