

# Living in a low socioeconomic status county predicts increased posttraumatic stress symptoms after motor vehicle collision: results of a prospective cohort study

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## Introduction

- Millions of African Americans present to US emergency departments (EDs) each year after traumatic events such as motor vehicle collision (MVC). The great majority of these individuals are discharged to home after ED evaluation.<sup>1</sup>
- Living in a low socioeconomic status area has been associated with increased incidence of stress-related disorders following trauma.<sup>2</sup>
- To our knowledge, no previous studies have evaluated the influence of socioeconomic environment on rates of adverse posttraumatic sequelae among African Americans presenting to the ED after an index trauma.

## Methods

- African Americans ≥18 years of age presenting to one of 14 EDs in six states within 24 hours of MVC who did not require hospital admission were enrolled.
- Baseline ED assessment included collection of participant sociodemographic characteristics and home address.
- Six-month follow-up assessment included an assessment for clinically significant posttraumatic stress symptoms (IES-R ≥33) and clinically significant depressive symptoms (CES-D ≥26).
- Participant addresses were geocoded and matched with 2010 U.S. Census Bureau's Small Area Income & Poverty Estimates (SAIPE) data at the county level.
- County SES was calculated by averaging the standardized scores of the following measures: percent unemployed, percent with less than a high school education, median household income, and percent living below the poverty line.
- County SES was then split into quartiles (Q1=lowest SES, Q4=highest SES). Counties in Q1 or Q2 were defined as the lower SES counties.
- Binomial logistic regression was used to assess the influence of SES on the presence of clinically significant posttraumatic symptoms and depressive symptoms six months after MVC, adjusting for individual level factors (age, sex, education, income, and employment).

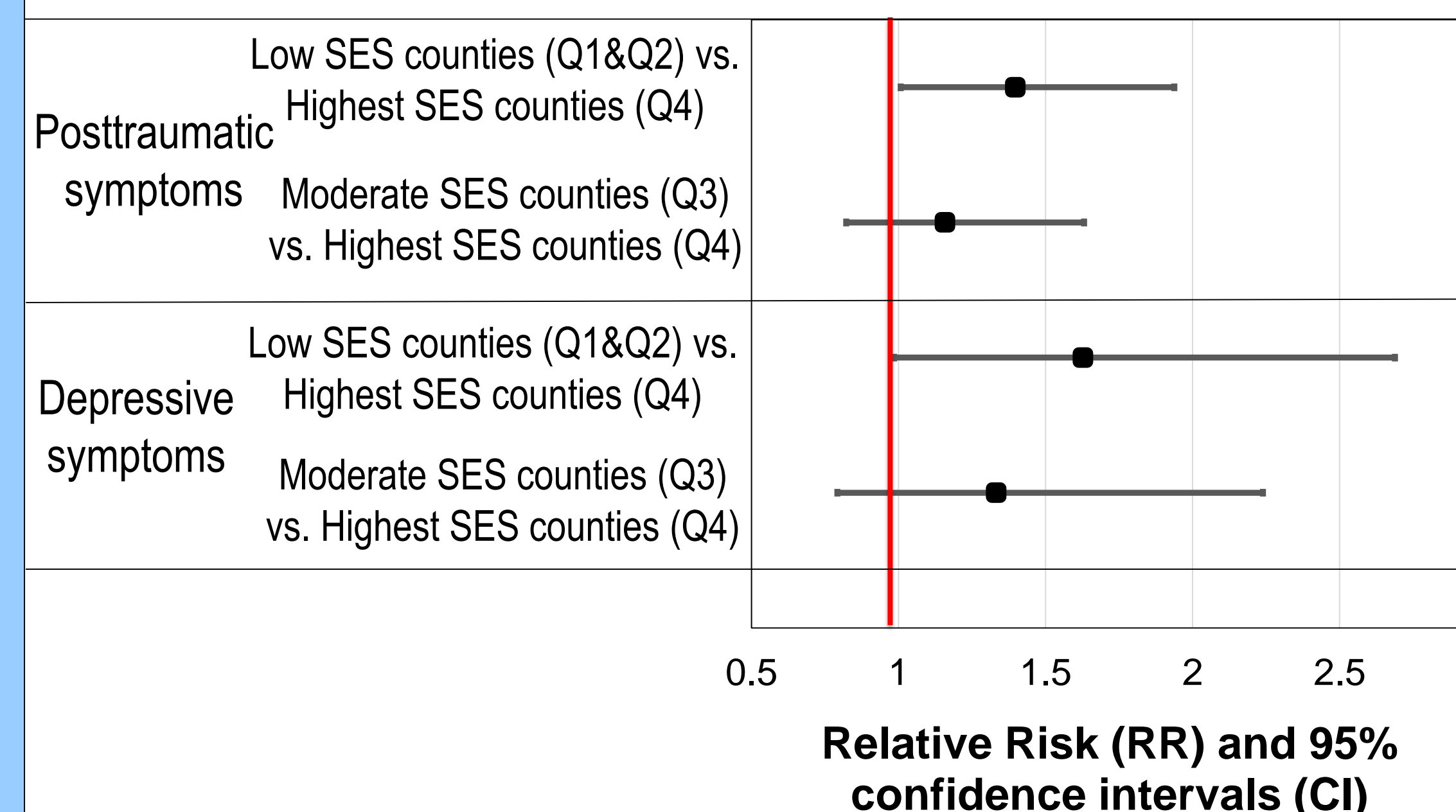
**Table 1. Cohort characteristics (n=907)**

Characteristic	
Age, mean (SD)	35 (13)
Highest level of education completed, n (%)	
High school or less	360 (40)
Some college or other training	372 (41)
College grad or post-grad	169 (18)
DK/Ref	6 (1)
Relationship status, n (%)	
Not in a serious relationship	406 (45)
Serious relationship or married	492 (54)
DK/Ref	9 (1)
Female Gender, n(%)	565 (62)
Household Income, n(%)	
Below \$20,000	245 (27)
\$20,000-\$59,999	341 (38)
\$60,000-\$99,999	92 (10)
\$100,000 or higher	32 (3)
DK/Ref	197 (22)
Work full time, n(%)	490 (54)

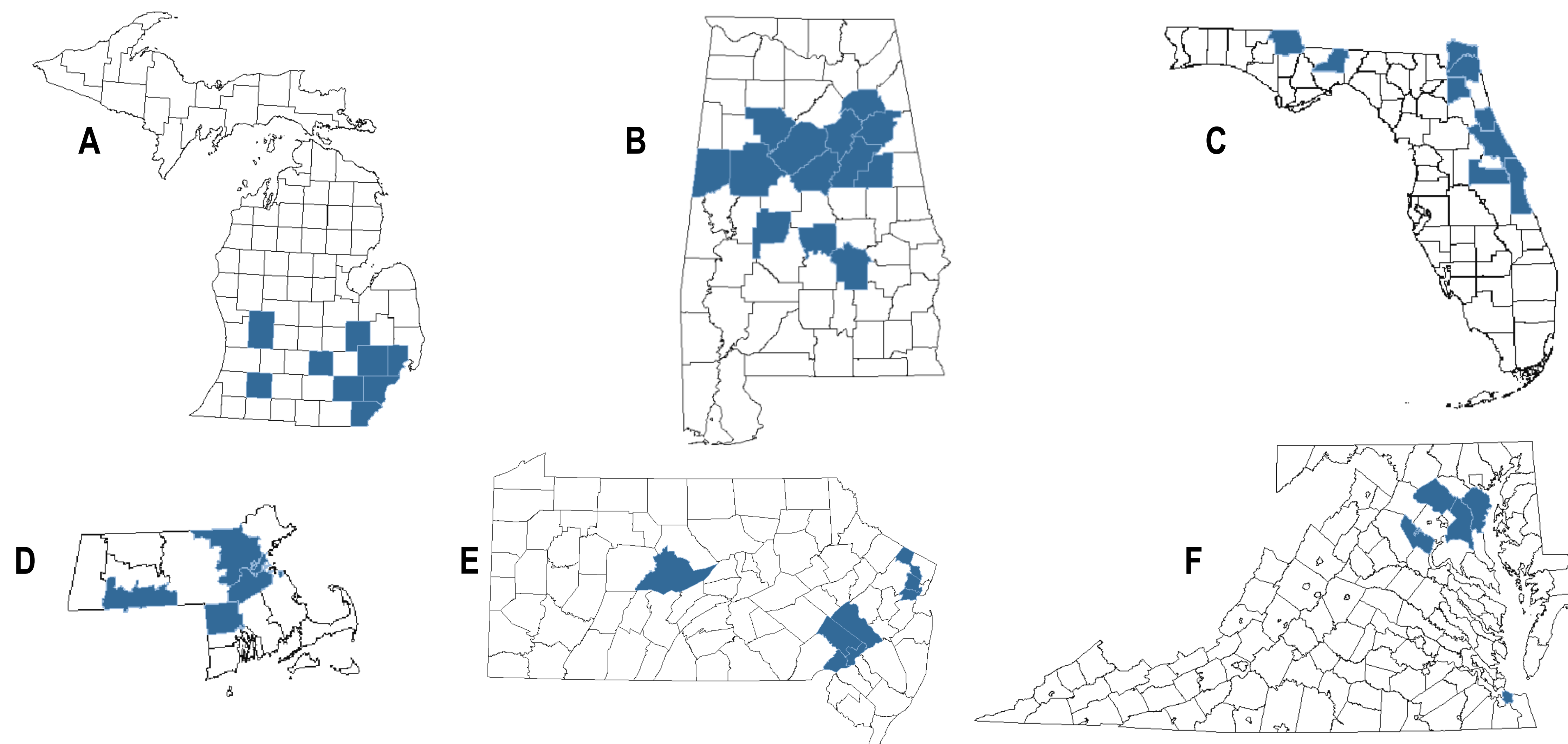
**Table 2. County-level characteristics (n=51)**

Characteristic	Mean (range)	National average <sup>3</sup>
Residents living below poverty line (%)	20% (6% - 40%)	13.5%
Median household income	\$44K (\$25K - \$91K)	\$57K
Unemployment rate	6% (3% - 12%)	5.0%
Residents with < high school education (%)	13% (6% - 29%)	12%

**Figure 2. Risk of adverse outcomes at six months by county SES**



**Figure 1. County cohort representation in A Michigan B Alabama C Florida D Massachusetts and Rhode Island E Pennsylvania and New Jersey F Maryland, Virginia, and Washington D.C.**



## Results

- 907 African American participants who presented to the ED after experiencing a MVC were enrolled.
- Most participants were women greater than 30 years of age with some education past high school and a household income of less than \$60,000 (Table 1).
- Counties of residence of study participants are shown in Figure 1; participants lived in 51 distinct counties with a range of socioeconomic characteristics (Table 2).
- 786/907 (87%) of participants completed six month follow-up.
- After controlling a range of individual-level factors, living in a lower SES county (Q1 & Q2) increased an individual's risk of developing clinically significant posttraumatic stress symptoms six months after motor vehicle collision (RR: 1.4 95%CI: 1.01, 1.94) (Figure 2).
- After controlling a range of individual-level factors, living in a lower SES county (Q1 & Q2) increased an individual's risk of developing clinically significant depressive symptoms six months after motor vehicle collision (RR: 1.63 95%CI: 0.99, 2.69) (Figure 2).

## Conclusion

After controlling for a range of individual-level factors, African Americans living in a lower SES county who experienced an MVC were at increased risk of developing clinically significant posttraumatic stress and depressive symptoms. Further studies are needed to better understand the mechanisms responsible for this association.

## References

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