

Health Disparities in Autoimmune Hepatitis

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BACKGROUND

- Autoimmune Hepatitis (AIH) is a chronic inflammatory condition that can lead to liver transplant and death.
- There are racial and ethnic disparities in patients with AIH, particularly in patients of African descent and Latinx Americans.
- Social determinants of health (SDOH) contribute to many health inequities, but they have not been studied in patients with AIH.
- Identifying SDOH linked to AIH and its severity may inform future interventions that seek to reduce health disparities.

METHODS

- Participants with and without AIH completed an SDOH questionnaire comprised of validated instruments from the PhenX tool kit and other studies.
- A diagnosis of AIH was analyzed in a multivariable model including SDOH (modeled with composite score and individual domains).
- AIH disease severity (measured as cirrhosis at time of survey) was analyzed in a multivariable model including SDOH domains.

RESULTS

- The Wilcoxon rank-sum test for composite SDOH scores between AIH and non-AIH participants had a W statistic of 1499 with a p-value of = 0.001444.
- On multivariate analysis, there was no significant difference in having an AIH diagnosis based on the composite SDOH score.
- In patients with AIH, major experiences of discrimination and lower education levels of AA/trade/technical school and high school were significantly associated with higher odds of cirrhosis.

DISCUSSION

- Major experiences of discrimination and lower education levels are associated with increased disease severity of AIH.
- It is plausible that discrimination causes increased stress, which alters immune function and can worsen hepatic inflammation and fibrosis. Discrimination may also be related to systemic racism which makes adherence to treatment plans more difficult.
- Age, sex, and ethnicity and race were not significantly associated with increased disease severity, perhaps indicating that social factors may play a larger role than demographics.
- Further study is needed to compare SDOH in AIH & non-AIH patients.
- Discrimination and education level in AIH should be further studied to explain their mechanisms, and ultimately, to design future interventions to reduce AIH disease severity.

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Patients with **autoimmune hepatitis** experiencing **major discrimination** and **lower education levels** had significantly **higher odds of cirrhosis**.

Table 1. Demographics of AIH & Non-AIH Participants

Characteristic	AIH (n=136)	Non-AIH (n = 34)
Male / Female	6/130	15/19
Median Age (range)	56 (10 - 78)	49.8 (28- 83)
Ethnicity by Race		
Non-Hispanic White	107	10
Non-Hispanic Black/African American	2	3
Non-Hispanic Asian	2	4
Hispanic, Other		1
Hispanic White	15	12
Hispanic Asian	1	
Unknown Hispanic, White	2	
Prefer not to answer	7	4

Table 2. SDOH variables in AIH patients with and without cirrhosis

SDOH Variable	Cirrhosis (n = 35)	No cirrhosis (n = 88)
Highest Education Level		
- Less than High School	4 (12%)	4 (5%)
- High School	8 (23%)	11 (13%)
- Associate Degree/ Technical/Trade School	6 (17%)	8 (9%)
- College	12 (34%)	39 (44%)
- Graduate School or above	5 (14%)	26 (30%)
# of participants with unmet health needs	7 (20%)	8 (9%)
Average number of Household Exposures	0.25	0.22
Average number of major discrimination experienced	1.34	0.63
# of participants with low job security	3 (9%)	8 (9%)

Social Determinants of Health

Figure courtesy of the CDC

* Used in simplified model assessing disease severity as predicted by SDOH



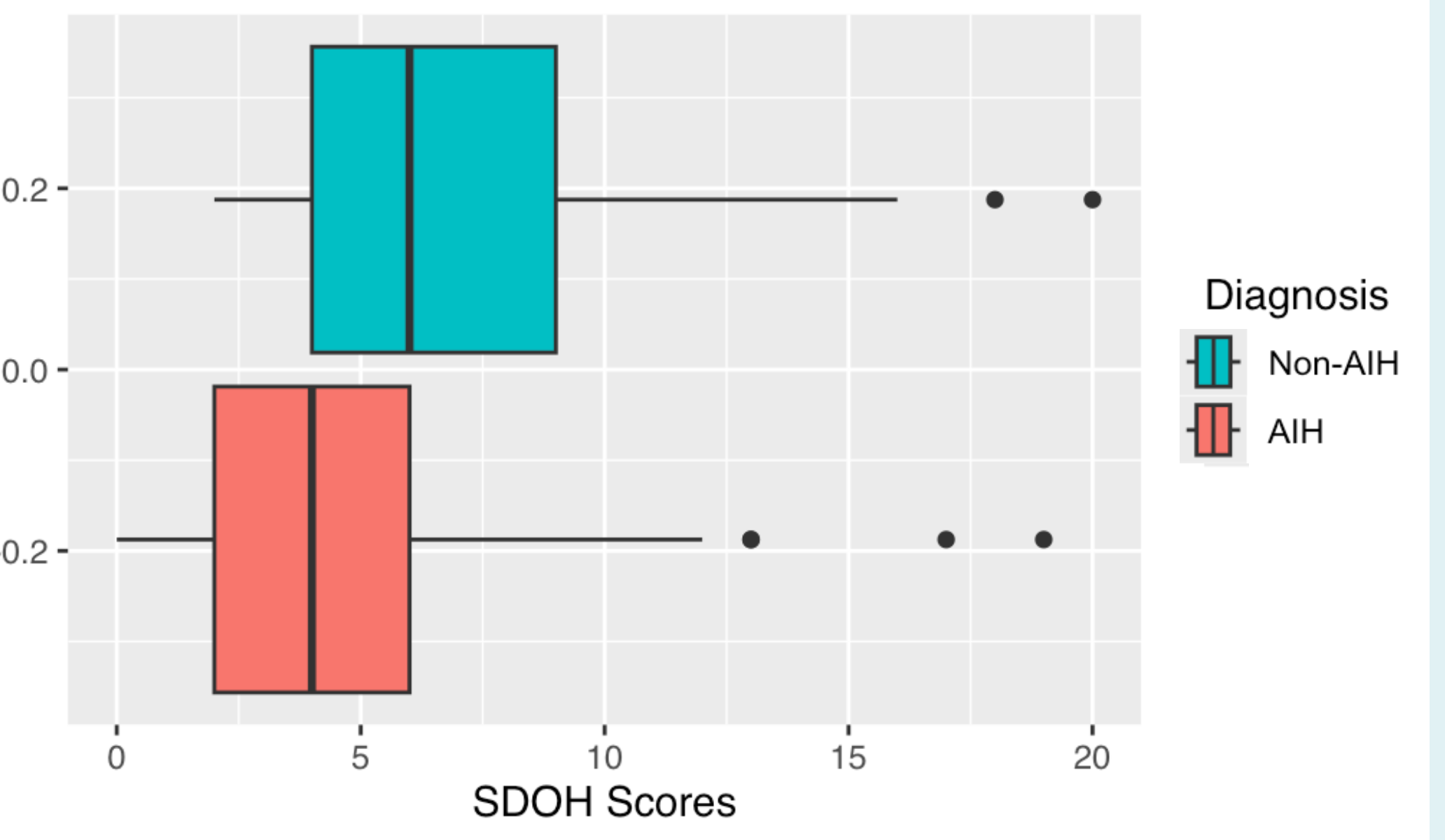
Table 3. Logistic Regression Results

Variable	Coefficient	Odds Ratio (95% CI)	P-value
Aim 1. Multivariable model of AIH diagnosis			
Composite SDOH score (Higher)	-0.111	0.895 (0.773 - 1.023)	0.117877
Sex (Male)	-2.23	0.108 (0.0240 – 0.427)	0.002084 **
Ethnicity/Race (Non-Hispanic Asians)	-2.61	0.073 (0.00706 – 0.615)	0.017962 **
Cohort (POSULD)	-2.139	0.118 (0.037 – 0.357)	0.000203 **
Aim 2. Multivariable model of cirrhosis controlling for age, sex, race & ethnicity, and time to AIH diagnosis			
Education level (High School)	2.307	10.0486 (1.633 – 90.691)	0.01948 **
Education (AA/Technical/Trade school)	2.233	9.330 (1.203 – 99.156)	0.04107 **
Major Experiences of Discrimination (Higher)	0.6342	2.19 (1.185 – 3.211)	0.01118 **

** = statistically significant with p-value < 0.05

All variables unlisted in this table were not statistically significant.

Figure 1. Five Number Summary of Composite SDOH Scores in AIH & Non-AIH Participants



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