

# Negative Effects of Economic Insecurity on Mental Health and How Health Literacy Attenuates This Relationship

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## BACKGROUND

The Fresno County Department of Public Health developed and implemented the Advancing Health Literacy program with funding from the Office of Minority Health. The goal of the program was to reach vulnerable rural populations by engaging community members with linguistically and culturally appropriate education materials, to assess their social, economic, and health needs, and to refer them to needed services. The Central Valley Health Policy Institute supported these efforts by training the Department of Public Health on using National Standards for Culturally and Linguistically Appropriate Services (CLAS), developing the baseline assessment tool, cleaning and analyzing the data, and helping to develop dissemination tools. The goal of the assessment was to understand the baseline levels of health literacy, social need, and mental health status among vulnerable rural populations within Fresno County.

The objective of this study was to explore the association between mental health status, social needs, and health literacy.

## METHODS

A cross-sectional design was used to examine the relationship between health literacy, economic insecurity, and self-reported mental health. Internal Review Board (IRB) approval was obtained from the California State University, Fresno Committee on the Protection of Human Subjects (CPHS). Data collection occurred between June 2022 and May 2023. Participants were recruited through two Federally Qualified Healthcare Clinics serving individuals living in rural areas of Fresno County. Only participants who identified as Hispanic/Latinx were included in the analysis. Statistical analysis was performed using STATA 15 and involved multivariate ordinary least squares regression predicting positive mental health.

### Outcome of Interest

Positive mental health was the primary outcome of interest. There were a total of 5 items measuring mental health, and exploratory factor analysis was used to identify the items that significantly loaded onto the factor by 0.4 and greater. The three items that were used to compute the composite score were 1: "Over the last 2 weeks, how often have you been bothered by feeling frustrated or unable to control your anger?", "Over the last 2 weeks, how often have you been bothered by feeling nervous, anxious or on edge?", and "Over the last 2 weeks, how often have you been bothered by having little interest or pleasure in doing things?" Participants could respond using a four-point scale with the following categories: 1: "not at all", 2: "several days" 3: "more than half the days", 4: "nearly every day". We reverse coded the values and summed the three items, which formed an internal consistency scale (Cronbach's alpha = 0.78).

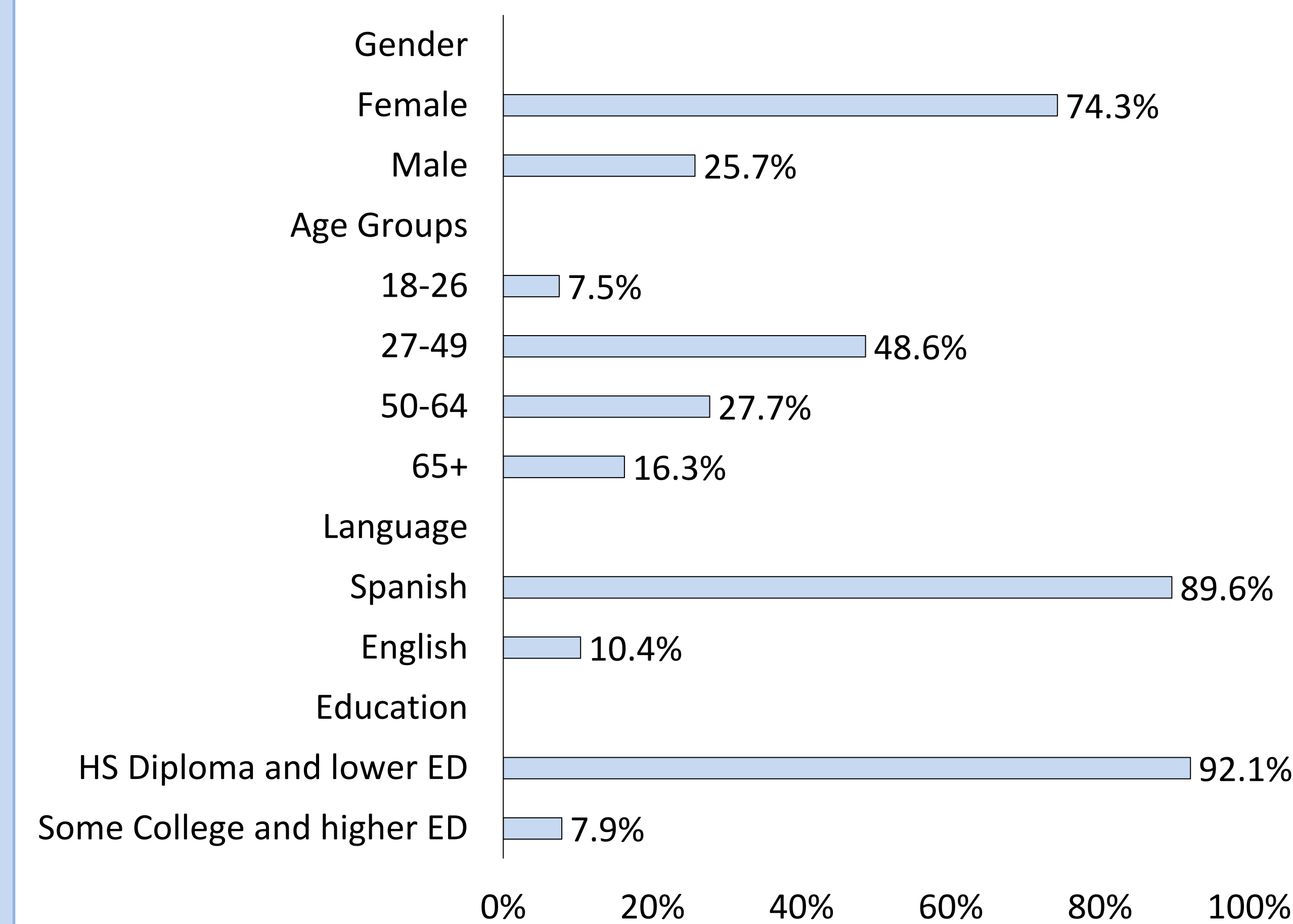
### Independent Variables of Interest

**Health Literacy:** Participants were asked "On scale of 1 to 5, how confident are you in filling out medical forms by yourself?". A selection of 1 indicated "not at all confident" and 5 indicated "completely confident". This variable was dummy-coded in multivariate analysis. Responses of 5 were recoded as a 1 equating to high health literacy (i.e., completely confident) and responses of 1-4 were recoded as zero equating to low health literacy.

**Economic Insecurity:** Economic insecurity was measured using a 2-item index. The items were "In the last 12 months, have you worried about running out of food before you have enough money to buy more?" and "In the last 12 months, have you worried about how you will pay for basic needs like food, housing, utilities, or medical care?". Participants could respond using a four-point scale: 1: "never", 2: "sometimes", 3: "usually", 4: "always". The values were averaged to compute the composite score of economic insecurity, which had high internal consistency (Cronbach's alpha = 0.69). For the multivariate analysis, economic insecurity observations were recoded into quartiles where 0% - 25% was no insecurity, 26% - 50% was low insecurity, 51% - 75% was moderate insecurity, and 76% to 100% was high economic security.

## RESULTS

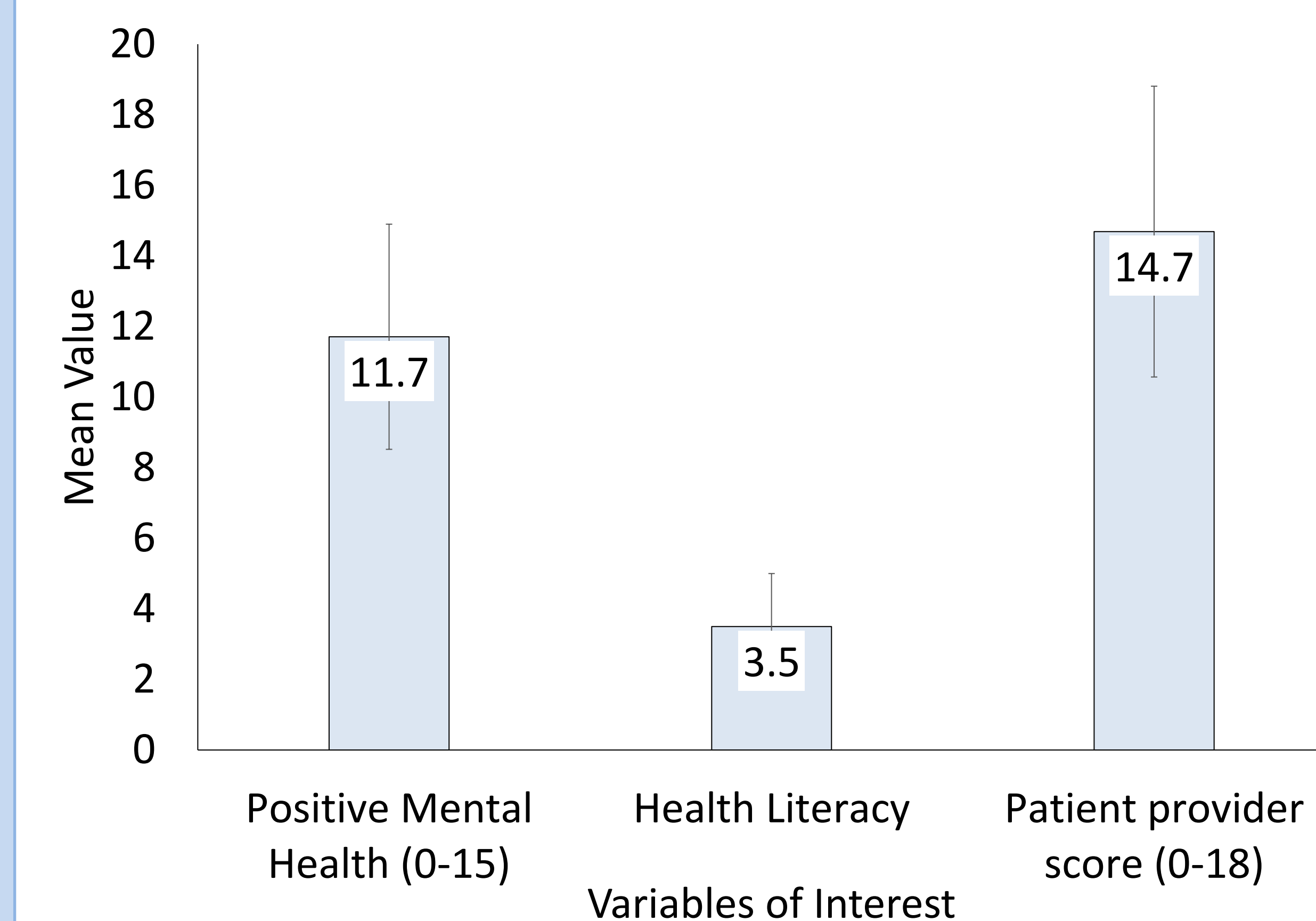
**Figure 1. Percentage of Selected Demographic Characteristics (n=560)**



**Figure 1 Results:**

- 74% were female participants.
- 89% were Spanish-speaking.
- 92% had an educational attainment of a high school diploma or lower.

**Figure 2. Mean and Standard Deviation of Variables of Interest (n=560)**



**Figure 2 Results:**

- Higher values of Positive Mental Health (M = 11.7; SD = 3.2; MIN = 0; MAX = 9) indicate less anxiety and/or depressive symptoms.
- Higher values of Health Literacy (M = 3.5; SD = 1.5; MIN = 1; MAX = 5) indicate greater health literacy.
- Higher values of Patient-Provider Score (M = 14.7; SD = 4.1; MIN = 0; MAX = 18) indicate a more positive relationship compared to lower values.

**Table 1. Results of Multivariate Ordinary Least Squares Regression on Positive Mental Health (n=560)**

| Variable                           | b        | 95 % CI        |
|------------------------------------|----------|----------------|
| Health Literacy                    | 0.98***  | (.63, 1.34)    |
| Social Need                        |          |                |
| <i>No Need</i>                     | Ref      | Ref            |
| <i>Low Need</i>                    | -0.53    | (-1.07, 0.02)  |
| <i>Moderate Need</i>               | -0.69**  | (-1.16, -0.22) |
| <i>High Need</i>                   | -1.32*** | (-1.81, -0.82) |
| High Health Literacy x Social Need |          |                |
| <i>Low Need</i>                    | -0.92*   | (-1.76, -.09)  |
| <i>Moderate Need</i>               | -1.17**  | (-1.84, -.49)  |
| <i>High Need</i>                   | -1.81*** | (-2.49, -1.12) |

Note. p<.05 is \*. p< .01 \*\*. p< .001\*\*\*. Adjusted for gender, age, language spoken, educational attainment.

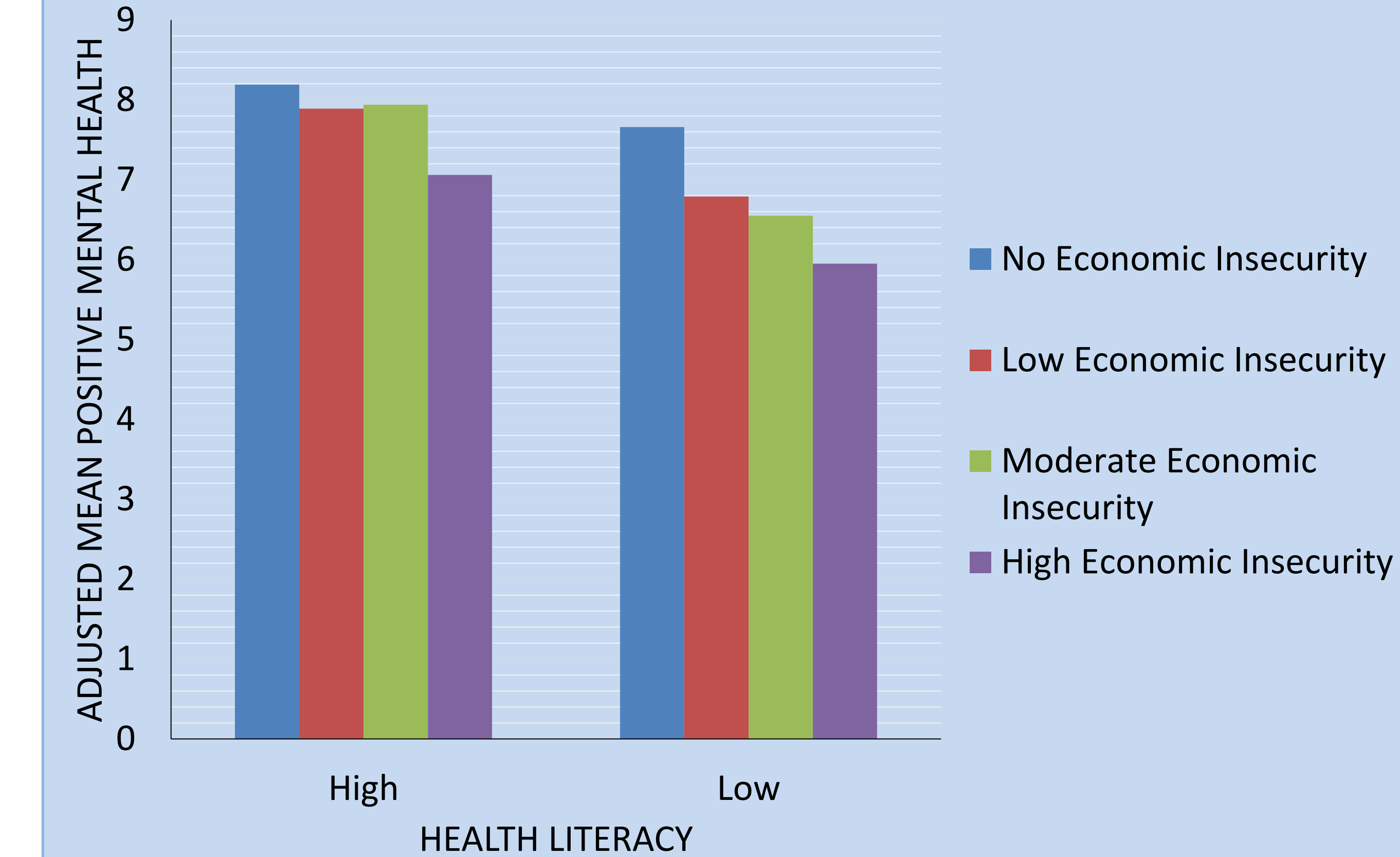
**Table 1 Results:**

- Health literacy was significant and positively associated with positive mental health (b = .98; 95% CI .63, 1.34).
- Social need was significant and negatively associated with positive mental health.
  - In comparison to participants with no need, participants who reported moderate social needs were associated with lower scores of positive mental health (b = -.69; 95% CI -1.16, -0.22).
  - In comparison to participants with no need, participants who reported high social needs were associated with lower scores of positive mental health (b = -1.32; 95% CI -1.81, -0.82).
- Among covariates, only age group 50 to 64 and patient-provider relationship were significant and positively associated with mental health (b = .44; 95% CI .05, .83; b = .13, 95% CI .07, .18 ,respectively).

**Figure 3 Interaction Results:**

- There was a significant interaction (effect modification) effect between health literacy on mental health by the levels of social need.
  - The negative effects of social needs on mental health were significantly attenuated by high levels of health literacy compared to low levels of health literacy.
  - High health literacy X low social need (b = -0.92, 95% CI -1.76, -0.09)
  - High health literacy X moderate social need (b = -1.17, 95% CI -1.84, -0.49)
  - High health literacy X high social need (b = -1.81, 95% CI -2.49, -1.12)

**Figure 3. Adjusted Mean Values of Positive Mental Health by Health Literacy and Economic Insecurity (n=560)**



## DISCUSSION

- Among a predominantly Mexican and Mexican-American population, this study found that economic insecurity is associated with poorer self-reported mental health.
- Health literacy was associated with positive mental health scores.
- Health literacy was found to significantly attenuate the negative effects that economic insecurity has on mental health. Despite these promising findings, economic security remains a significant, and strongly associated factor to mental health.
- Latinx/Hispanic populations tend to be of a low socioeconomic status which is associated with low health literacy. Furthermore, among this population, a negative stigma of mental health has been documented and there is a lack of trust between community members and healthcare service providers.
- Longitudinal data should be collected to assess the potential causal relationship of economic insecurity and mental health.

## CONCLUSIONS AND LIMITATIONS

- Incorporating evidence-based interventions has proven an effective method to improving health outcomes. However, this study suggests that more comprehensive interventions that account for economic insecurity are needed to maximize effectiveness of health literacy tools and practices
- This study is limited to using cross-sectional data; therefore, causality cannot be established
- The sample was recruited at federally qualified healthcare clinics which tend to represent a vulnerable, low-income population of color and may not be representative of a broader population.
- There was a clear stigma among the Latinx/Hispanic population on the topic of mental health. Many of the participants did not yet trust data collectors to discuss or disclose any mental health issues.

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