

## BACKGROUND

- Cultural and social support mitigative factors between English-speaking and Spanish-speaking pregnant women have been extensively described; however, a complex interplay between substance use, psychosocial stress, mental health, and socio-economic factors warrant further investigation.
- The term “Latina paradox” refers to favorable perinatal outcomes despite social disadvantages in Latina women.
- Operationalization of prenatal maternal stress in previous studies includes:
  - Perceived stress
  - Adverse experiences as a child or adult
  - Anxiety
  - Lack of social support
  - Unplanned pregnancy
  - Socioeconomic status
  - History of mental health disorders
- Socioeconomic factors and social support are important effect modifiers associated with prenatal distress

## RESEARCH OBJECTIVES

**Differences between English-speaking and Spanish-speaking pregnant women in a prospective cohort study characterize:**

- Prevalence of maternal distress, psychopathology, and social support
- Association of these factors with alcohol use in pregnancy
- Association with effect modifiers

## METHODS

*Data source:*

- Prospective cohort “ENRICH-2: Stress-Reactivity and Self-Regulation in Infants with PAE”
- Data from eligibility screening questionnaire and the first two study visits:
  - N=311 screened to date: 275 English-speaking, 36 Spanish-speaking, and 98 enrolled
  - Pre-pregnancy and perinatal periods (Screening questionnaire)
  - Second trimester visit (V); (V1)
  - Third trimester (V2)

Measures of maternal psychosocial distress :

- Perceived Stress Scale (PSS)
- Adverse Childhood Experience (ACE)
- Generalized Anxiety Disorder-7 (GAD-7)
- Edinburgh Postnatal Depression Scale (EPDS)

Self-reported alcohol use:

- The Alcohol Use Disorders Identification Test-Concise (AUDIT-C) questionnaire, and questions about binge episodes ( $\geq 4$  drinks/occasion)
- Repeated Timeline Follow-back (TLFB) interviews

## METHODS Cont.

used to estimate daily alcohol intake over a given time period.

- TLFB<sub>1</sub> - 1 month around Last Menstrual Period (LMP)
- TLFB<sub>2</sub> - 30 days prior to V1 (2<sup>nd</sup> trim.)
- TLFB<sub>3</sub> - 30 days prior to V2 (early 3<sup>rd</sup> trim.)

## ANALYSES

- Differences in self-reported alcohol use and PSS/GAD-7/EPDS scores among speakers assessed using T-Test Fisher’s exact/Chi-square and Mann-Whitney U-tests.
- Associations between PSS scores and language-group, prenatal alcohol use and language-group, and interactions were examined using ANOVA

## RESULTS

**Table 1: ENRICH 2 Alcohol Use Reported in Eligibility screener between Spanish/English speaking groups (N=311)**

	English speaking (N=275)	Spanish speaking (N=36)
	n (%)	n (%)
Binge episode around LMP $\geq 1$ <sup>b</sup>	69 (25.1%)	6 (16.7%)
Number of binge episodes around LMP (mean (SD)) <sup>c</sup>	2.49 (3.77)	1.67 (0.82)
<b>Audit-C summary score <math>\geq 2</math><sup>*b</sup></b>	<b>159 (57.8%)</b>	<b>7 (19.4%)</b>
Drinks greater than 14 in month surrounding LMP <sup>a</sup>	29 (10.5%)	3 (8.3%)
<b>Education<sup>**b</sup></b>		
High school or less	78 (28.4%)	29 (80.6%)
Some college or vocational school	78 (28.4%)	3 (8.3%)
College degree or higher	119 (43.3%)	4 (11.1%)

<sup>a</sup> Fisher’s exact test; <sup>b</sup> Chi-square test; <sup>c</sup> Wilcoxon rank sum test; \* $p < 0.01$ , \*\* $p < 0.001$

Groups demonstrated similar binge or heavy drinking around LMP. Among enrolled participants (N=98), mean age was higher for Spanish-speakers.

**Table 2: ENRICH-2 Demographic information between Spanish/English speaking groups**

Variable	English speaking (N=83)	Spanish speaking (N=15)
Maternal age at enrollment (yr) <sup>*1</sup>	28.2 $\pm$ 5.4	32.4 $\pm$ 4.5
Education (yr) <sup>*1</sup>	14.7 $\pm$ 3.0	11.9 $\pm$ 3.3
Ethnicity(Hispanic/Latina/of Spanish descent) <sup>**2</sup>	39 (47.0%)	15 (100.0%)
Married/Cohabiting <sup>2</sup>	62 (74.7%)	10 (66.7%)
Maternal Education <sup>*2</sup>		
High school or less	26 (31.3%)	11 (73.3%)
Some college or vocational school	26 (31.3%)	1 (6.7%)
College degree or higher	31 (37.3%)	3 (20.0%)
Family Income Under 30,000 <sup>**2</sup>	26 (31.3%)	13 (86.7%)
Currently Employed <sup>*2</sup>	57 (68.7%)	4 (26.7%)
Insurance <sup>**2</sup>		
Self-purchased	2 (2.4%)	0 (0.0%)
Medicaid	39 (47.0%)	2 (13.3%)
Other	2 (2.4%)	1 (6.7%)

<sup>1</sup> based on Mann-Whitney test; <sup>2</sup> based on Fisher’s exact test

\* $p < 0.01$ , \*\* $p < 0.001$

A higher percentage of Spanish speakers reported family income  $< \$30,000$ , had a high school education or less while a lower percentage had an AUDIT-C score  $> 2$ . A  $\geq 2$  score indicates hazardous drinking or have active alcohol use disorder.

## RESULTS Cont.

**Table 3: ENRICH2 Maternal Stress by Language**

Variable	English speaking N=83	Spanish Speaking N=15
V1 Perceived stress (PSS) <sup>*0</sup>	13.7 (6.9)	6.2 (5.1)
V2 Perceived stress (PSS) <sup>**0</sup>	14.5 (7.0)	7.4 (6.5)
V2 Anxiety (GAD-7) <sup>**1</sup>	5.9 (5.2)	2.2 (3.1)
V2 Depression (EPDS) <sup>***1</sup>	7.0 (5.4)	2.9 (3.2)
V2 Post-traumatic stress (PCL-5) <sup>****1</sup>	15.9 (17.7)	5.6 (8.2)

<sup>0</sup> based on pooled variances T-test; <sup>1</sup> based on Mann-Whitney test; \*\*\* $p < 0.05$ , \*\* $p < 0.01$ , \* $p < 0.001$ ,

V2 measurements PSS/ GAD-7/ EPDS/ PCL-5 (English speaking  $n=72$ , Spanish speaking  $n=11$ )

**Table 4: ENRICH2 Maternal Stress by patient status and Language**

Variable	English Speaking HC N=53	English Speaking Alc Exp N=30	Spanish Speaking HC N=12	Spanish Speaking Alc Exp N=3	Overall P-Value
V1 Perceived stress (PSS)	12.5 $\pm$ 0.9	15.9 $\pm$ 1.2	6.2 $\pm$ 1.7	8.00 (3.79)	$< 0.001^*$
V2 Perceived stress (PSS)	13.0 $\pm$ 1.0	17.5 $\pm$ 1.4	7.4 $\pm$ 2.0	10.67 (3.90)	$< 0.001^*$

\*ANOVA model

Healthy Control (HC)- No drinking or binge drinking of alcohol during pre-pregnancy perinatal period.

Alcohol Exposed (Alc Exp)- Binge or heavy drinking during pre-pregnancy perinatal period.

V2 measurements (PSS)

(English Speaking (HC)  $n=49$ , English Speaking (Alc Exp)  $n=23$ ) (Spanish Speaking (HC)  $n=12$ , Spanish Speaking (Alc Exp)  $n=3$ )

## CONCLUSIONS & DISCUSSION

- In ANOVA models, Spanish-speaking was associated with lower PSS scores ( $p=0.001$ ); while alcohol-use and interactions between the two were not significant.
  - Spanish-speaking pregnant women exhibited reduced psychological distress, symptoms of depression and anxiety, and lower prevalence of hazardous alcohol use compared to English-speaking counterparts despite disadvantaged socioeconomic factors, such as reduced family income and education.
- Limitations: limited sample size to date (recruitment is ongoing)
- Strengths:
    - Alcohol use ascertained using multiple TLFB interviews
    - Comprehensive assessment of maternal distress, psychopathology, and potential effect modifiers
  - Next steps include examination of alcohol use, psychological stress, and mental health in the prenatal and postnatal period of Spanish- and English-speaking pregnant women.

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