Associations Between Patient Preferred Language and Real-Time Reported Pain Experienced During Cesarean Delivery

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Background

- Patients with limited English proficiency experience disparities in healthcare, particularly in communication and care quality.
- Pain may contribute to maternal distress during and post-delivery.
- Real-time patient communication is crucial for recognizing maternal pain and intervening.
- Patient language preference is often excluded from pain and delivery experience research.
- Objective: Evaluate the association between **language preference** and **intraoperative pain**

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Study Design & Methods

- Retrospective chart review of patients who underwent cesarean delivery with neuraxial anesthesia at the University of Illinois Hospital (UIH).
- Study period: March 2025 – December 2025
- Patient demographics collected from EMR: language preference, delivery characteristics, maximum pain score during the procedure.
    - At UIH it is standard of practice for anesthesia providers to query patient pain scores every 15 minutes.
- Maximum pain score was grouped into none (0/10), mild (1-3/10), moderate (4-6/10), and severe (7-10/10).
- Descriptive and bivariate analyses were conducted.

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Results

Sample (N = 445)

- Mean maternal age: 29.8 ± 5.93 years

Preferred language:

- English: 86.14%
- Spanish: 10.68%
- Arabic: 1.82%
- Other: 1.36%

Preoperative Characteristic	Full sample, n(%) or mean(sd)
Total	445
Maternal age at delivery (years)	29.84 (5.93)
BMI (kg/m^2)	36.94 (8.39)
Gestational age (weeks)	38.01 (2.51)
Length of hospital stay (days)	3.97 (2.69)
Race	
Black	257 (57.75)
White	159 (35.73)
Asian	20 (4.49)
Other	9 (2.02)
Ethnicity	
Non-Hispanic	290 (65.17)
Hispanic	155 (34.83)
Insurance	
Public	327 (73.48)
Private	114 (25.62)
Self-pay or other	4 (0.90)
Preferred language	
English	379 (86.14)
Spanish	47 (10.68)
Arabic	8 (1.82)
Other	6 (1.36)
Primiparous	173 (38.88)

Table 1. Demographic and Obstetric Preoperative Characteristics

Characteristic	Full sample, n(%) or mean(sd)
Total	445
Repeat C-section	
No	237 (53.62)
Yes	205 (46.38)
Type of Neuraxial Anesthesia	
Epidural	99 (22.25)
Spinal	91 (20.45)
Combined spinal epidural	255 (57.30)
Switch to General Anesthesia	
No	430 (96.63)
Yes	15 (3.37)
C-section complication	
No	437 (99.09)
Yes	4 (0.91)

Table 2. Obstetric and Anesthetic Characteristics of the Study Population

Factor	Full sample, n(%) or mean(sd)	Non-English, n(%) or mean(sd)	English, n(%) or mean(sd)	X^2 or t (df), p
Pain				
None (0)	286 (66.67)	37 (64.91)	246 (67.03)	1.50 (3), .68
Mild (1-3)	53 (12.35)	6 (10.53)	46 (12.53)	
Moderate (4-6)	61 (14.22)	8 (14.04)	52 (14.17)	
Max (7-10)	29 (6.76)	6 (10.53)	23 (6.27)	
C-section type				
Routine	198 (40.57)	38 (57.58)	160 (37.91)	9.77 (2), .0076
Urgent	236 (48.36)	21 (31.82)	215 (50.95)	
Emergent	54 (11.07)	7 (10.61)	47 (11.14)	

Table 3. Pain Scores and Cesarean Delivery Type by Language Preference

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Key Findings

- When grouped as English versus other languages, no differences in max pain scores were observed [X^2 (3)=1.51, p=.68].
- Preferred language was associated with cesarean delivery type [X^2 (2)=9.77, p < .01].
  - Patients who preferred English had a higher proportion of urgent cesarean deliveries compared to those who preferred a non-English language (51.0% vs 31.8%), while non-English speakers had higher proportion of routine cesarean deliveries (57.6% vs 37.9%).

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Conclusions

- Language preference was not associated with intraoperative maximum pain scores for women undergoing cesarean delivery under neuraxial anesthesia.
  - Translation phone allowing for equal communication as English speaking patients.
- Further research is needed to understand relation between language preference and degree of urgency in cesarean delivery.