Association of patient health literacy with the decision to pursue trial of labor after cesarean

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Objective

- To analyze the association of health literacy with electing a trial of labor (TOLAC) and having a vaginal birth after cesarean (VBAC).

Study Design

- Secondary analysis of a multicenter randomized trial of pregnant people with one prior cesarean and no prior VBAC between 2016-2019.
- Randomized at <25 weeks' gestation: usual care vs tablet-based decision support tool focused on TOLAC choice.
- Primary outcome: delivery approach (TOLAC vs scheduled repeat cesarean)
- Secondary outcome: mode of delivery (VBAC vs repeat cesarean section)
- Primary predictor: health literacy (evaluated at baseline using the *Newest Vital Sign* tool)
- Logistic regression (adjusting for primary language, age, recruitment site, and prior vaginal delivery).

Results

- 1455 participants (n=396 limited- and n=1059 adequate-health literacy) were included
- 44.6% had a TOLAC
- 71.0% of those who had a TOLAC had a VBAC
- Compared to participants with higher health literacy, those with limited health literacy had lower odds of undergoing TOLAC and VBAC:
  - TOLAC: aOR 0.69, 95% CI [0.51, 0.94], p=0.020
  - VBAC: aOR 0.54, 95% CI [0.33, 0.88], p=0.013
- Prespecified analyses examining interactions between health literacy and treatment group or recruitment site showed no significant effect modification (p>= 0.10 for all)

Conclusion

- Those with limited health literacy had lower odds of TOLAC and VBAC.
- Given low rates of VBAC in the US and morbidity associated with repeat cesarean delivery, further research is needed to inform patient- and provider-centered interventions to ensure that people of all health literacy levels have the support needed to make an informed, values concordant choice.

Among pregnant people with a prior cesarean and no prior VBAC, those with limited health literacy had lower odds of TOLAC and VBAC.

Questions?
Take a picture of this QR code to access to the poster
or email Dr. León-Martínez at daisy.leon-martinez@ucsf.edu

Table 1. Baseline participant characteristics presented by level of health literacy

Characteristics [a]	Limited health literacy [b] (n=396)	Adequate health literacy [b] (n=1059)	p-value
Age, mean (SD), y	31.9 (5.1)	34.9 (4.0)	<0.001
Race or ethnic group			<0.001
African American or Black	66 (57.4%)	49 (42.6%)	
Asian or Pacific Islander	57 (26.4%)	159 (73.6%)	
Caucasian, White or European American	83 (10.4%)	716 (89.6%)	
Latina, Latin American, or Hispanic	164 (68.3%)	76 (31.7%)	
Multi- or bi-racial/ethnic	14 (29.2%)	34 (70.8%)	
Other [c]	12 (32.4%)	25 (67.6%)	
Non-English Primary Language	164 (66.1%)	84 (33.9%)	<0.001
Opted for Spanish language interview	91 (88.4%)	12 (11.7%)	<0.001
Educational attainment			<0.001
Less than a high school degree	38 (97.4%)	1 (2.6%)	
High school graduate, GED or equivalent	88 (87.1%)	13 (12.9%)	
Some college, junior college, vocational school	87 (51.8%)	81 (48.2%)	
College graduate (BA, BS)	118 (21.5%)	432 (78.6%)	
Professional or graduate degree	65 (10.9%)	532 (89.1%)	
Relationship status			<0.001
Married or living with partner	331 (24.3%)	1032 (75.7%)	
Partnered, not living together	30 (63.8%)	17 (36.2%)	
Single/not significantly involved	35 (77.8%)	10 (22.2%)	
Yearly household income			<0.001
Under $25,000	84 (84.0%)	16 (16.0%)	
$25,000 - $50,000	99 (76.2%)	31 (23.9%)	
$50,001 - $100,000	70 (35.5%)	127 (64.5%)	
$100,001 - $200,000	67 (15.1%)	378 (84.9%)	
Over $200,000	38 (7.3%)	484 (92.7%)	
Don't know	32 (68.1%)	15 (31.9%)	
Decline to answer	6 (46.2%)	7 (53.9%)	
Insurance			<0.001
Private insurance	194 (16.5%)	985 (83.6%)	
Public insurance	200 (75.5%)	65 (24.5%)	
Other, specify	2 (20.0%)	8 (80.0%)	
Pre-pregnancy BMI, median (IQR), kg/m²	27.4 (23.4, 32.0)	24.4 (21.7, 28.1)	<0.001
Prior vaginal delivery	43 (50.6%)	42 (49.4%)	<0.001

Table 2. Primary and secondary outcomes, univariate and multivariate analysis

Outcomes	Limited health literacy (n= 394) [a, b]	Adequate health literacy (n=1051) [a,b]	Crude odds ratio (95% CI)	p-value	Adjusted odds ratio [d] (95% CI)	p-value
Primary Outcome: delivery approach						
Trial of labor after cesarean	172/394 (43.65)	473/1051 (45.00)	0.95 (0.75, 1.20)	0.646	0.69 (0.51, 0.94)	0.020
Secondary Outcome: delivery mode						
Vaginal birth after cesarean delivery among those that underwent TOLAC	112/172 (65.12)	346/473 (73.15)	0.69 (0.47, 1.00)	0.047	0.54 (0.33, 0.88)	0.013

[a] Data reported as n(%) of participants unless otherwise indicated
[b] Includes Middle Eastern, North African, South Asian, Caribbean, Turkish, non-Latina South American, and Jewish
[c] Limited health literacy (NVS score ≤4/6), adequate health literacy (NVS score ≥5/6)
[d] Adjusted for participant primary language, enrollment site location, mean-centered age, and history of prior vaginal delivery