22 Communication and Linguistic Barriers and Perinatal Outcomes Amongst Women with and without Diabetes

Jhenette R. Lauder[1], Michelle P. Debbink[1], Amanda A. Allshouse[1], Lauren Theilen[1], David M. Haas[2], Hyagriv Simhan[3], William A. Grobman[4], Lynn M. Yee[4], Judith H. Chung[5], Brian M. Mercer[6], George R. Saade[7], Ronald J. Wapner[8], Uma M. Reddy[9], Robert M. Silver[1]

[1]University of Utah Health, Salt Lake City, UT, [2]Indiana University, Indianapolis, Indiana, Indianapolis, IN, [3]University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, Pittsburgh, PA, [4]Northwestern University Feinberg School of Medicine, Chicago, IL, [5]University of California, Irvine, Orange, CA, [6]CWRU- MetroHealth Medical Center, Cleveland, OH, [7]University of Texas Medical Branch, Galveston, TX, [8]Columbia University Irving Medical Center, New York, NY, [9]Yale University School of Medicine, New Haven, CT

OBJECTIVE: Communication and linguistic barriers (CLB) in clinical care inhibit the relationship between provider and patient. CLB may be a risk factor for adverse perinatal outcomes (APO), especially when counseling is a critical part of care. We examined whether the relationship between CLB and APO differed between women with and without diabetes mellitus (DM).

STUDY DESIGN: Secondary analysis of 10,038 women in a multi-site prospective cohort study. Excluded women had missing data on key variables, demise <20 weeks' gestation, or fetal anomaly/aneuploidy. CLB was defined as any of: Rapid Estimate Adult Literacy in Medicine-Short Form score <7, self-defined poor English proficiency, or study interview in Spanish. Outcomes were a composite for obsteric morbidity (preterm birth, cesarean delivery, and hypertensive disorder of pregnancy) and neonatal morbidity (small or large for gestational age, 5-minute Apgar <7, NICU admission, neonatal hypoglycemia, or stillbirth). Difference in association of CLB with obstetric and neonatal outcomes for women with and without DM were estimated with adjusted logistic regression, including a term to assess the interaction between CLB and DM. Covariate selection was based on univariable analyses and clinical relevance.

RESULTS: Of 8,511 women included, 20.8% had CLB. Women with CLB were more likely to be younger, self-identify as Black or Hispanic, have government insurance, use tobacco, and have a poorer diet. The association between CLB and obstetric morbidity differed by DM status (interaction p < 0 .001, Figure). Among women with DM, CLB was associated with a higher odds of maternal morbidity (aOR 2.52, 95% CI 1.50-4.23) although this association was not present among women without DM (aOR 0.99, 95% CI 0.87-1.13). CLB was significantly associated with neonatal morbidity, but there was no difference between women with and without DM (interaction p > 0.05, Figure).

CONCLUSION: CLB were associated with higher obstetric morbidity among women with DM, and with poor neonatal outcomes regardless of DM status. Addressing CLB may improve APO, particularly among women with DM.

Table: Obstetric and neonatal outcomes for women with and without risk for communication and linguistic barriers

Variable	Value	CLB N=1772	No CLB N=6739	p
Obstetric Composite	Yes	713 (40.24)	2599 (38.57)	0.199
Gestational age at delivery	Preterm birth (<37 weeks)	183 (10.33)	496 (7.36)	<.001
	Term (> 37 weeks)	1589 (89.67)	6243 (92.64)	
Mode of Delivery	Cesarean	474 (26.76)	1819 (27.00)	0.84
	Vaginal	1297 (73.24)	4917 (73.00)	
Preeclampsia/Gestational Hypertension	Hypertensive Disorder of Pregnancy	253 (14.31)	869 (12.90)	0.119
Neonatal Composite	Yes	413 (23.31)	1240 (18.40)	<.001
Neonatal diagnoses	SGA*	71 (4.01)	199 (2.95)	0.024
	LGA*	37 (2.09)	183 (2.72)	0.139
	Neonatal hypoglycemia**	48 (2.71)	161 (2.39)	0.439
	5 minute Apgar < 7	45 (2.54)	131 (1.94)	0.117
	NICU*	286 (16.14)	845 (12.54)	<.001
Stillbirth	No	1760 (99.32)	6714 (99.63)	0.081
	Yes	12 (0.68)	25 (0.37)	

*SGA- Small for gestational age, LGA- Large for gestational age, NICU- neonatal intensive care unit
** Neonatal hypoglycemia requiring treatment

Figure: Odds ratio for morbidity associated with communication and linguistic barriers

Figure: Odds ratio for morbidity associated with communication and linguistic barriers
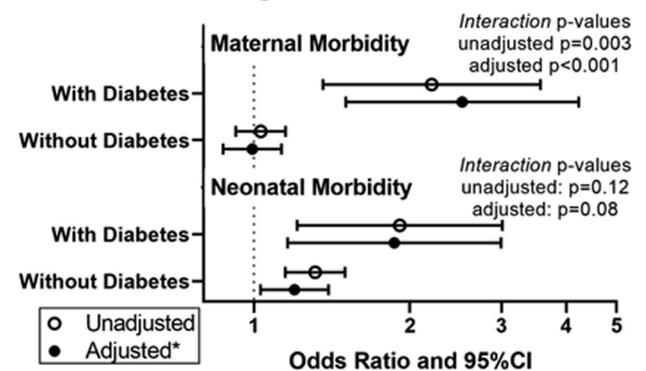
Interaction testing whether difference in association between CLB and morbidity differed between women with and without DM
*Adjusted for Age (35+ vs. <35), Race (White, non-Hispanic black, Hispanic, other), Tobacco use, BMI (continuous variable)

23 Race Matters: Maternal Morbidity in the Military Health System

Jameaka L. Hamilton[1], Diane Shumbusho[1], Devin Cooper[2], Larissa Weir[3], Erin Keyser[1]

[1]SAUSHEC, SAUSHEC, TX, [2]Tsehootsooi Medical Center, Fort Defiance, AZ, [3]SAUSHEC/Brooke Army Medical Center, SAUSHEC, TX

OBJECTIVE: In the United States, Black women are 3-4 times more likely to die from childbirth, and have a twofold greater risk of maternal morbidity than their White counterparts. This disparity is theorized to be due to differences in access to health care and/or socioeconomic status. Military service members and their dependents are a diverse community and have equal access to healthcare and similar socioeconomic statuses. We hypothesize that universal access to health care, as seen in the military health care system, leads to similar rates of maternal morbidity regardless of race.

STUDY DESIGN: We reviewed data from the Neonatal Perinatal Information Center special report from April 1 2018 through March

31 2019 on severe maternal morbidity by race in participating military treatment facilities (MTFs) that performed more than 1000 deliveries per year for our retrospective cohort study. Chi squared tests compared the percentages of cesarean deliveries, adult ICU admissions, and severe maternal morbidity between Black and White patients.

RESULTS: There were a total of 23,728 deliveries with 15,305 encompassing self-identified Black and White women (23 vs. 77%). A total of 282 women experienced SMM with 38 adult ICU admissions and 190 postpartum hemorrhages. Black women were more likely to have a delivery via cesarean section (31.68% vs 23.58%, P value <0.0001), be admitted to an adult ICU (0.49% vs 0.18%, P value 0.0026), and experience overall SMM (2.66% vs 1.66%, P value 0.0001) compared to their White counterparts. Additionally, Black women were more likely to experience SMM when excluding blood transfusion (0.64% vs 0.32%, P value 0.0139). There was no significant difference between races in overall SMM among postpartum hemorrhage cases or when excluding blood transfusion.

CONCLUSION: Equal access to care and socioeconomic status do not explain the healthcare disparities encountered by Black women having children in the United States. Further studies to assess causes such as systemic racism (including implicit and explicit medical biases) and physiologic factors are warranted.

Severe Maternal Morbidity by Race

Cesarean Section Rates by Race
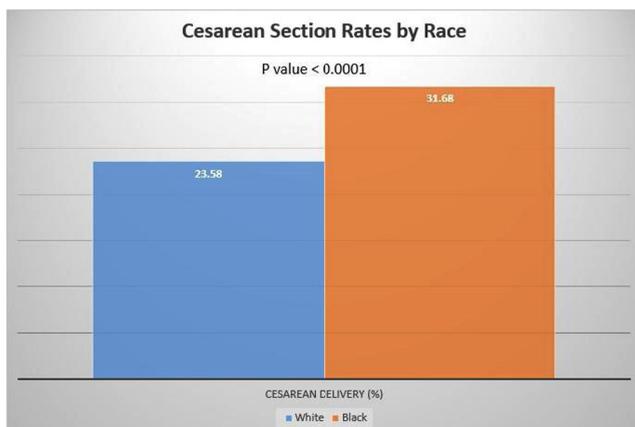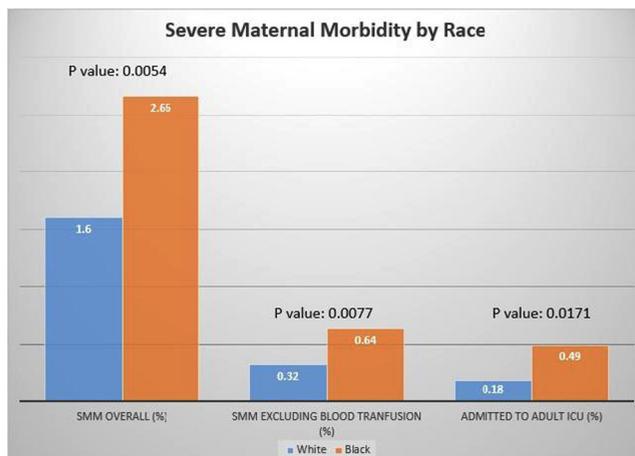
24 Maternal Psychosocial Factors associated with Postpartum Pain

Nevert Badreldin, William A. Grobman, Lynn M. Yee
Northwestern University Feinberg School of Medicine, Chicago, IL

OBJECTIVE: The experience of pain is shaped by a host of psychological, cultural, and social factors. Our objective was to examine the relationship between self-reported postpartum (PP) pain and psychosocial factors including relationship status, pregnancy intendedness, employment, education, and mood disorder.

STUDY DESIGN: This was a prospective observational study of PP patients at one institution (5/2017-7/2019) who utilized an oral opioid at least once during their PP hospitalization. Enrolled participants completed a survey which included questions regarding their social situation (including relationship status), psychiatric diagnoses, and perceptions of pain control during their PP hospitalization. The primary outcome for this analysis was self-reported overall pain during the PP hospitalization (score of 0-100). Multivariable analyses accounted for age, BMI, nulliparity and mode of delivery. Self-identified race and insurance status were not included given their collinearity with other exposures.

RESULTS: In this cohort of 428 PP patients, the majority (84.0%) underwent cesarean delivery and 42.0% were nulliparous. Participants reported a median pain score of 40 out of 100 (IQR 30-60). On bivariable analyses, there was no significant difference in pain score between patients with and without an unplanned pregnancy or a mood disorder. Patients who were un-partnered, those without a college education, and those who were unemployed reported significantly higher pain scores (57.5 vs. 44.8, p<0.001; 52.6 vs 44.6, p<0.001; and 53.6 vs. 44.6; p<0.001, respectively). On multivariable analyses, patients who were un-partnered (aβ 8.3, 95% CI 2.0-14.7) and unemployed (aβ 7.5, 95% CI 2.5-12.6) remained significantly more likely to report a higher pain score (Table).

CONCLUSION: Psychosocial factors such as relationship and employment status, which are indicators of social support, may contribute to the experience of pain PP. These findings suggest that addressing social support —such as via enhanced support from the health care team—warrants exploration as a non-pharmacologic means of improving PP pain experience.

Table: Psychosocial factors and postpartum pain score

	N (%) N=428	Pain score (1-100) Exposed	Unexposed	p-value	aβ[1] (95% CI)
Un-partnered	50 (11.7)	57.5 ± 24.6	44.8 ± 17.8	<0.01	8.35 (2.02-14.67)
Unintended pregnancy	88 (20.6)	49.7 ± 21.9	45.3 ± 18.2	0.05	2.77 (-1.41-6.95)
Unemployed	72 (16.8)	53.6 ± 20.9	44.6 ± 18.4	<0.01	7.54 (2.52-12.58)
Less than college education	88 (20.6)	52.6 ± 24.1	44.6 ± 17.3	<0.01	3.76 (-8.90-1.38)
Mood disorder	74 (17.3)	45.4 ± 18.8	46.3 ± 19.0	0.72	-1.04 (-5.88-3.79)

Data displayed as N (%) and mean ± SD
aβ, adjusted beta coefficient; CI, confidence interval
1. Multivariable logistic regression accounting for age, body mass index, nulliparity, cesarean delivery

25 The surprising paradox: higher education increases the racial/ethnic disparity in cesarean delivery rates

Yael Eliner[1], Frank Chervenak[2], Moti Gulersen[3], Amos Grunebaum[2], Erez Lenchner[4], Adi Katz[2], Liron Bar-El[2], Eran Bornstein[5]
[1]Boston University, School of Public Health, Somerville, MA, [2]Zucker School of Medicine at Hofstra/Northwell, Department of OBGYN, Lenox Hill Hospital, New York, NY, [3]Zucker School of Medicine at Hofstra/Northwell, Department of OBGYN, North Shore University Hospital, New York, NY, [4]CUNY John Jay College, AP for Institutional Effectiveness, CUNY John Jay College, NY, [5]Zucker School of Medicine at Hofstra/Northwell, New York, NY