HEALTH EQUITY AND DISPARITIES
Abstracts 18-26

18 Neighborhood police complaints associated with increased preterm delivery among black individuals

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OBJECTIVE: Stress is associated with adverse perinatal outcomes. Police misconduct is a reported stressor for some Americans, particularly those living in lower-income communities of color. We examined whether reports of excessive use of force by police in a person's neighborhood are associated with preterm birth (PTB).

STUDY DESIGN: The study sample includes singleton live births at a single Chicago hospital between March 2008 and March 2018. Parental age, race/ethnicity, parity, gestational age at delivery, and billing address were obtained from medical records. Individuals were considered exposed to excessive use of force by police if at least one complaint was filed in their block group in the year leading up to delivery. Marginal models were used to estimate PTB (<37 weeks) as a function of exposure to a complaint about police use of force. Models included interaction between exposure and race/ethnicity and adjustment for parental age, parity, a composite measure of the block group's socioeconomic status (SES) and the block group's population size. Exposure to a homicide in the block group during the same period was also included to control for crime.

RESULTS: Of the 71,007 individuals in the sample, 56.2% were white and 11.1% were Black (Table 1). A complaint about police use of force was filed in the block group of 15.9% of the sample and 8.1% delivered preterm. In an adjusted model, the association between exposure to a complaint about police use of force and PTB varied by race/ethnicity (p=0.02). Exposed Black individuals were 1.3 times as likely to deliver preterm as unexposed Black individuals (95% CI: 1.1, 1.5, Table 2), even after adjustment for homicide exposure and block group SES. Associations were not observed among white, Hispanic, or Asian individuals. Findings were consistent in a sensitivity analysis evaluating PTB defined as <34 weeks.

CONCLUSION: Our results suggest that among Black individuals, complaints about excessive use of force by police in the neighborhood are associated with increased odds of PTB, even after controlling for individual and community characteristics.

Table 1. Descriptive characteristics of study sample.

Mean (SD) or n (%)	Full sample (n=71,007)	Unexposed (n=59,743)	Exposed (n=11,264)
Age	31.6 (5.3)	31.7 (5.2)	30.9 (5.6)
Race/ethnicity			
White	39,933 (56.2)	34,411 (57.6)	5,522 (49.0)
Black	7,851 (11.1)	5,681 (9.5)	2,170 (19.3)
Hispanic	13,589 (19.1)	11,683 (19.6)	1,906 (16.9)
Asian	5,714 (8.1)	4,696 (7.9)	1,018 (9.0)
Other	3,920 (5.5)	3,272 (5.5)	648 (5.8)
Nulliparous	39,591 (55.8)	33,153 (55.5)	6,438 (57.6)
Preterm birth	5,773 (8.1)	4,714 (7.9)	1,059 (9.4)
Homicide exposure[a]	15,648 (22.0)	5,440 (9.1)	1,851 (16.4)
Block group SES composite[b]	0.0 (0.8)	0.0 (0.8)	-0.1 (0.8)

Abbreviations: SD – standard deviation; SES – socioeconomic status

[a] Homicide exposure defined as ≥1 homicide occurring within the block group in the year leading up to delivery.

[b] Block group SES composite determined from averaging standardized block group median income, median home value, percentage employed, and percentage with a high school diploma from the 2011-2015 American Community Survey.

Table 2. Associations between exposure to a use of force complaint and preterm birth, by race/ethnicity using marginal models to account for correlations within the block group.

	Preterm birth, <37				Preterm birth, <34			
	Unadjusted		Adjusted[a]		Unadjusted		Adjusted[a]	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
White	1.08	0.96, 1.22	1.07	0.95, 1.20	1.04	0.85, 1.29	1.02	0.83, 1.26
Black	1.32	1.15, 1.51	1.29	1.12, 1.48	1.33	1.11, 1.61	1.29	1.07, 1.55
Hispanic	0.92	0.76, 1.10	0.90	0.75, 1.08	0.95	0.72, 1.25	0.93	0.71, 1.22
Asian	0.94	0.71, 1.24	0.94	0.71, 1.24	1.16	0.77, 1.75	1.15	0.77, 1.73
Other	1.32	1.01, 1.71	1.29	0.99, 1.67	1.16	0.75, 1.78	1.12	0.73, 1.73

Abbreviations: OR – odds ratio; CI – confidence interval

[a] Adjusted for parental age, parity, exposure to a homicide, and block group socioeconomic status and population size (American Community Survey).

19 Social determinants of health in preterm birth of non-Hispanic black women

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OBJECTIVE: Examine differences in social determinants of health (SDH) between non-Hispanic black women who delivered a preterm birth compared to those with a term birth.

STUDY DESIGN: Nested case-control study from a prospective cohort analyzing SDH in 261 postpartum Black women at the University of Cincinnati Medical Center, 2011-2020. Sociodemographic, pregnancy and infant outcome data were collected from participants' medical records. Structured interviews measured participants' health, physical environment, social support and structural drivers. χ^2 quantified differences between Black women with term (≥37 week) and preterm (<37 week) births (PTB). Multivariable logistic regression was used to assess the influence of social determinants on PTB with adjustment for unmarried status, education less than a high school diploma, and Medicaid insurance.