Black, White and Hispanic pregnancies: Clues to the social etiology of low birth weight and infant mortality

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Abstract

Introduction: The large racial/ethnic disparities in low birth weight babies and infant mortality rates (IMR) are not explained by differences in demographic and socioeconomic variables. These disparities are so great that infant mortality is higher among college educated Black mothers than among non-college educated, uninsured and unemployed White mothers.

Objective: The present study was designed to determine if contextual differences among racial groups during their pregnancies might explain the disparate racial/ethnic birth outcomes, elucidate possible solutions for the disparities, and illuminate avenues for further research.

Methods: Data from the four most recent National Health and Nutritional Examination Surveys (NHANES) (1999-2000 through 2005-06) were combined and analyzed to develop a snapshot of the social and environmental contexts of pregnant White, Black, and Hispanic women.

Results: Compared to White pregnant women, Black pregnant women were significantly: younger; unmarried; less educated; living in lower-income households; more likely to be on Medicaid and less likely to have private insurance; more likely to have serum cotinine levels reflective of passive and active smoking; and more likely to report poorer health status. However, compared to Hispanic pregnant women in this study, Blacks were: better educated; more likely to have some form of health insurance; more likely to report better health status; and more likely to report better household food security. This might suggest that Blacks have better birth outcomes than Hispanics, but research consistently shows IMRs among Hispanics that are comparable to or better than those for Blacks and Whites.

Conclusion: The discordance between individual predictors and actual birth outcomes argues for research into the experiences that differentiate Black, White and Hispanic pregnancies. Fruitful areas for this research include the greater social support that Hispanic women enjoy ("familialism"), and the cumulative stress of racism experienced by Blacks (the "weathering" hypothesis).

Table 1: Distribution of Socio-demographic Variables of Currently Pregnant[*] Women by Race/Ethnicity: NHANES 1999-2006

Race/Ethnicity		NH-White (N= 562)	NH-Black (N= 202)	Hispanic (N=436)	Other (N=74)	All Race/ Ethnicity (N=1274)	*p*-value for racial difference
		Proportion in all pregnant women (%[¶])					
		55.2	15.8	20.4	8.6	100.0	-
		Proportion within each race/ethnicity (%)					
Age	<18 yrs	1.4	4.2	3.7	0.5	2.2	0.02
	18-19 yrs	5.4	9.8	7.1	1.2	6.0	
	20-24 yrs	21.7	36.0	28.8	29.0	26.0	
	25 -29 yrs	31.6	24.2	28.9	20.5	28.9	
	30-34 yrs	22.9	18.2	18.5	40.1	22.7	
	35 yrs and above	17.1	7.7	13.1	8.5	14.1	
Education	< High School	12.1	30.4	46.8	24.9	23.3	< 0.0001
	High School Grad	17.6	28.0	21.7	10.9	19.5	
	> High School	70.2	41.4	31.5	64.2	57.1	
	Refused/ Don't Know	0.1	0.2	0.0	0.0	0.1	
Marital Status	Married[§]	80.3	37.7	71.9	76.6	71.5	< 0.0001
	Single	15.8	55.2	21.1	23.1	23.7	
	Unknown[†]	3.9	7.2	7.0	0.4	4.8	
Annual HH Income[‡]	<20K	8.9	32.0	26.7	10.0	16.3	< 0.0001
	20-54K	40.9	38.8	42.6	45.3	41.3	
	55K and above	43.6	16.3	16.2	34.4	32.9	
	Refused/Don't know/Missing	6.3	10.5	13.5	9.8	8.7	
Pregnancy Trimester	1st	22.4	13.7	18.0	9.7	19.1	0.50
	2nd	30.9	33.5	29.3	42.4	32.0	
	3rd	28.3	25.7	33.4	28.5	28.9	
	Don't know but know pregnant	0.0	0.2	0.3	0.0	0.1	
	Not self-reporting pregnancy	18.4	26.9	19.0	19.3	19.9	
		Mean (SD)					
Age		28.2 (6.3)	25.6 (5.5)	27.0 (6.5)	27.7 (5.7)	27.5 (6.2)	0.02

[*] Pregnancy status based on positive laboratory test or self-report.

[¶] Proportions weighted by sampling weights (inverse of sampling probability) based on the combined 8-year survey sample.

[§] Includes those who live with their partners.

[†] Question was not asked (13 years of age or younger) or could not be determined.

[‡] A small portion of respondents were given the choice of specifying their annual household income as <20K or >=20K (i.e., there was no further breakdown for incomes >=20K). Estimated proportions for those who reported that their annual household income is >=20K (corresponding to 0.8% of all currently pregnant women) were not included in this table. Racial difference *p*-value was calculated treating ">=20K" as a separate group.

Table 2: Distribution (%) of Health Care Measures and Health Status of Currently Pregnant Women by Race/Ethnicity: NHANES 1999-2006

Race/Ethnicity	NH-White (N= 562)	NH-Black (N= 202)	Hispanic (N=436)	Other (N=74)	All Race/ Ethnicity (N=1274)	*p*-value for racial difference
Currently has health insurance						< 0.0001
Yes	92.5	87.9	61.9	83.8	84.8	
No/Refused/Don't know	7.5	12.1	38.2	16.3	15.2	
Currently on Medicaid						0.0001
Yes	13.2	40.6	19.9	17.5	19.3	
No/Refused/Don't know	86.8	59.4	80.1	82.5	80.7	
Currently has private insurance						< 0.0001
Yes	76.4	38.6	33.4	56.3	59.9	
No/Refused/Don't know	23.6	61.5	66.7	43.7	40.1	
Current health Status						0.0002
Excellent	29.5	27.2	21.6	23.4	27.0	
Very Good	40.5	24.8	16.0	40.2	33.0	
Good	27.5	30.7	41.8	27.5	30.9	
Fair	2.4	15.0	17.4	8.4	8.0	
Poor	0.2	2.3	3.0	0.5	1.1	
Don't know	0.0	0.0	0.2	0.0	0.0	

Table 3: Distribution (%) of Food Security Categories and Serum Cotinine Levels of Currently Pregnant Women: NHANES 1999-2006

Race/Ethnicity	NH-White (N= 562)	NH-Black (N= 202)	Hispanic (N=436)	Other (N=74)	All Race/ Ethnicity (N=1274)	*p*-value for racial difference
Household food security						< 0.0001
Full food security	84.1	64.2	57.5	81.1	75.3	
Marginal food security	5.5	14.8	11.6	8.5	8.5	
Low food security	5.0	12.9	20.0	0.4	8.9	
Very low food security	2.5	4.6	5.3	9.6	4.0	
Missing	2.9	3.5	5.6	0.4	3.3	
Adult food security						0.0003
Full food security	85.5	65.1	59.0	81.1	76.4	
Marginal food security	5.4	15.6	13.5	8.5	8.9	
Low food security	3.4	11.5	16.6	5.9	7.6	
Very low food security	2.9	4.4	5.3	4.1	3.7	
Missing	2.9	3.5	5.6	0.4	3.3	
Child food security						0.0002
Full food security	53.0	59.1	56.0	65.9	55.7	
Marginal food security	4.6	3.7	5.2	0.0	4.2	
Low food security	2.3	7.9	15.6	9.5	6.6	
Very low food security	0.0	3.2	2.0	0.5	1.0	
Missing	40.1	26.1	21.3	24.1	32.7	
Serum cotinine levels[*]						< 0.0001
Below detection limit[¶]	60.5	31.0	68.2	45.4	56.5	
Low passive smoking	15.1	21.9	18.5	14.7	16.8	
Medium passive smoking	4.8	16.1	5.9	17.6	7.7	
High passive smoking	3.8	11.3	2.4	12.1	5.3	
Likely active smoking	15.9	19.6	5.0	10.3	13.7	

[*] Not all subjects participated in the Mobile Examination Center sessions where blood samples for this measurement was collected. Sample sizes for NH-white, NH-black, Hispanic, other, and all race/ethnicity were 524, 181, 409, 68, and 1182, respectively.

[¶] Ranges (ng/mL) for serum cotinine level (SCL) categories were: below detection limit, SCL< 0.05; low passive smoking, $0.05 \leq SCL < 0.2$; medium passive smoking, $0.2 \leq SCL < 1.0$; high passive smoking, $1.0 \leq SCL < 10.0$; likely active smoking, $10.0 \leq SCL$.