Explaining the link between paternal socioeconomic position and small for gestational age birth: The effect of maternal unhealthy behaviors.

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Background: An expanding published literature shows that father's low socioeconomic position (SEP) is risk factor for adverse birth outcome independent of maternal demographic characteristics. Most pertinent, a recent population-based study found that father's low (compared to high) SEP was associated with an increased risk of small for gestational age (weight < 10th percentile, SGA) births (Collins et al, Ethn Dis, in press). The mechanisms underlying this relationship are incompletely understood.

Objective: To determine the proportion of the excess SGA births among low (compared to high) SEP fathers attributable to White and African-American women's unhealthy pregnancy-related behaviors.

Methods: Oaxaca-Blinder decomposition methods were conducted on the Illinois transgenerational dataset of infants (1989-1991) and their Chicago-born parents (1956-1976) with appended U.S. census income data. The neighborhood income of father's place of residence at the time of his birth and at the time of his infant's birth were used to measure lifetime SEP. Maternal unhealthy behaviors were defined as maternal cigarette smoking, inadequate prenatal care, or low weight gain during pregnancy.

Results: Among White women, births (n=1,430) to fathers with a lifetime low SEP has an SGA rate of 9.8% compared to 6.2% for those (n=9,141) born to fathers with a lifetime high SEP. Among African-American women, births (n= 4,426) to fathers with a lifetime low SEP has an SGA rate of 14.8% compared to 12.0% for those (n=365) born to fathers with a lifetime high SEP. White women's unhealthy behaviors accounted for 36.5% of the explained disparity between SGA rates for low compared to high SEP fathers (Table). The influence was minimally changed when all adjustment factors (age, marital status, education, parity, maternal unhealth behaviors) were taken into account (32.7%). African-American women's unhealthy behaviors accounted for 28.2% of the explained disparity between SGA rates for low compared to high SEP fathers (Table). The influence was similar when all adjustment factors were taken into account (24.8%).

Conclusions: Maternal unhealthy behaviors account for a significant percentage of the disparity in SGA rates among infants born to fathers of low (compared to high) SEP. This intriguing finding has public health implications.

	Paternal SEP and maternal unhealthy behaviors*		Paternal SEP and all maternal adjustment factors[a]	
	Adjusted linear parameter estimates, (95% CI)	Disparity explained by covariate distibutional difference, %	Adjusted linear parameter estimates, (95% CI)	Disparity explained by covariate distibutional difference, %
Maternal Race				
African-American	0.0756 (0.055, 0.096)	28.24	0.0665 (0.064, 0.069)	28.84
White	0.0612 (0.048, 0.074)	36.48	0.0548 (0.041, 0.069)	32.71

* Includes maternal smoking, inadequate prenatal care, or low weight gain during pregnancy.

[a] Includes maternal unhealthy behaviors* and all adjustment factors (age, marital status, education, parity)