

Do fathers matter? Paternal contributions to birth outcomes and racial disparities

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Studies have rarely considered the impact of paternal factors on perinatal outcomes generally or on racial differences therein. Shah et al¹ have produced a literature review that begins to delve into the contribution of fathers to the risk of adverse birth outcomes. Paternal exposures that were selected for inclusion in their database search were father's age, anthropometry (eg, height, weight), self birthweight, occupational exposures, and education. After a systematic search of the literature, the authors identified the father's age, current weight, and his own birthweight as risk factors for low birthweight and suggest that paternal occupation and education may be important but have not consistently been reported to increase the risk of adverse birth outcomes.

Although the authors are to be commended for bringing attention to the role of fathers, the literature review represents a rather narrow examination of the potential contributions of fathers to birth outcomes. Paternal factors may influence birth outcomes through a number of pathways that include factors that act indirectly through maternal factors on birth outcomes. Indirect paternal influences may be as important to understand as those paternal factors that act directly on birth outcomes. Although Shah et al¹ take an important first step by highlighting the most frequently examined paternal risk factors that are associated directly with adverse birth outcomes, the potential indirect effects are not fully realized.

As shown in the [Figure](#), multiple domains are pertinent to an examination of paternal factors in birth outcomes, which include their intersection with maternal factors that represent potential mediating and moderating pathways. However, the Shah et al¹ review gives little attention to paternal factors in the psychosocial domain that reflects this research. This includes fathers' attitudes regarding the pregnancy, fathers' behaviors during the prenatal period, and the relationship between fathers and mothers. Evidence is emerging that such factors may indirectly influence risk for adverse birth outcomes, with im-

plications for potentially explaining racial disparities in this area. One such indirect paternal psychosocial pathway may operate through maternal stress because higher levels of maternal stress have been associated with increased risk of preterm births.² Another pathway could be through the effect of fathers on maternal health behaviors that include the use of prenatal care, maternal smoking and drug use during pregnancy, and maternal health behaviors that have been linked to adverse birth outcomes.^{3,4} For example, findings from the Pregnancy Risk Assessment Monitoring System 2000-2003 data show that early prenatal care was less likely when fathers were reportedly ambivalent or did not want the pregnancy.³ Further, the Fragile Families study found that prenatal financial and in-kind financial contributions by fathers were associated with higher rates of prenatal care and lower rates of maternal alcohol use. Early prenatal care rates also were highest for married mothers, followed by those cohabiting, with rates lowest for mothers in romantic but noncohabiting relationships; similarly, mothers' smoking and drug use were significantly lower for married women.⁴ Furthermore, risk of low birthweight was highest among mothers in romantic noncohabiting relationships, compared with mothers who were married, cohabiting, or those uninvolved with the father.⁴ Paternal factors could also amplify or diminish effects of maternal factors. In a study that examined joint effects, fathers' smoking amplified the effect of mothers' smoking on birthweight.⁵

Finally, an examination of paternal effects may be particularly salient to consider with regard to persistent and substantial black-white disparities in birth outcomes in the United States. The literature review by Shah et al¹ is silent on the role of race. Racial differences in birth outcomes have remained a perplexing problem for clinicians, researchers, and policy makers. We hypothesize that a failure to consider the contributions of fathers as support or obstacles to successful birth outcomes has constrained our understanding of how to improve birth outcomes for black and other families of color. Of interest in this regard, an evaluation of a program that provides comprehensive prenatal services to black and white adolescent fathers found that fathers' participation was associated with higher birthweights, a narrowing of racial differences, and a stronger effect on birthweight for the black infants.⁶ Although paternal race clearly is linked closely with maternal race, the socioeconomic and cultural landscape of black fatherhood suggests that the contribution and role of paternal factors may be different for black families. High school and college graduation rates for black women in the United States have now surpassed black men by a wide margin.⁷ Since the 1970s, there has been a steady decline in the rates of cohabitation with partners and children for black men without a high school diploma.⁸ Black male job-

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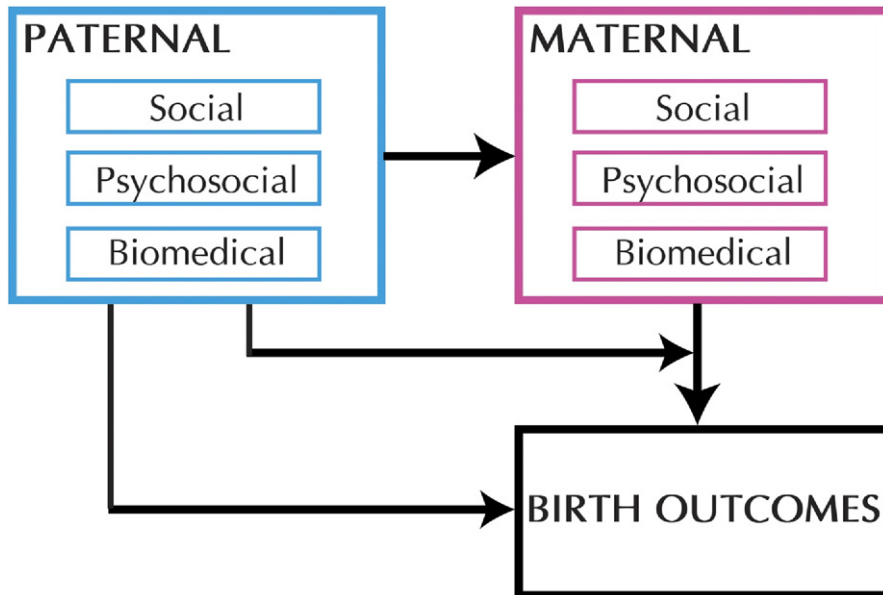
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FIGURE
Conceptual framework



Adapted from: Misra D, Guyer B, Allston A. Integrated perinatal health framework: a multiple determinants model with a lifespan approach. *Am J Prev Med* 2003;25:65-75.

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studies that have collected data directly from fathers rarely have included valid and reliable measures of maternal factors. The likely correlation between maternal and paternal factors renders it impossible to determine the independence of paternal effects. The collection of detailed data on both parents is crucial. Third, previous studies have seldom included paternal factors beyond the most basic measures. Studies should explicitly consider social, psychosocial, and biomedical paternal factors and collect these data with instruments that have been established as valid and reliable. Fourth, the relationship between the mother and the father should be explored explicitly. How the mother and father relate to one another is an important area of study as we endeavor to construct interventions to reduce risk and eliminate disparities in birth outcomes.

In conclusion, the literature review by Shah et al¹ highlights the need to examine influences that the father may bring to bear on the pregnancy and ultimately

lessness remains as 1 of the pivotal factors in the declining marriage rates.⁹ More specifically, the collapse of a formidable industrial employment sector has been a causal force in the reduction of job prospects for many black fathers.¹⁰ With few exceptions, black fathers have been criticized for their absence and lack of economic contribution but have not been considered as part of the solution. Rather than simplistically characterize these men as absent fathers, structural factors that are associated with socioeconomic position and discrimination that can influence relationships within black families compel us to examine critically the role of fathers with regard to birth outcomes, whether positive, negative, or both. Therefore, there may well be paternal risk factors that are relatively more frequent in black families and paternal protective factors that can be identified. Furthermore, the maternal risks to which black women are exposed may increase vulnerability to paternal factors.

Although more work clearly is needed in this little-studied area of perinatal health, a number of weaknesses of the current body of work in this field are apparent. As we endeavor to increase knowledge of the role of fathers overall and with regard to racial disparities, we must overcome these relatively pervasive limitations. First, nearly all studies on paternal factors, regardless of the domain of study, have relied on the mother as a proxy reporter. Yet there is little empiric evidence of reliability and validity for most paternal factors. In future studies, paternal data should be collected directly from the father, and validation of proxy data must be examined. Second,

birth outcomes. We recommend that future studies on fathers and birth outcomes address the issues that we have raised and that more clinicians and researchers consider how paternal factors may contribute to birth outcomes and racial disparities. ■

REFERENCES

1. Shah PS; on behalf of the Knowledge Synthesis Group on determinants of preterm/low birthweight births. Paternal factors and low birthweight, preterm, and small for gestational age births: a systematic review. *Am J Obstet Gynecol* 2010;202:103.
2. Hobel CJ, Goldstein A, Barrett ES. Psychosocial stress and pregnancy outcome. *Clin Obstet Gynecol* 2008;51:333-48.
3. Oklahoma State Department of Health. Father's intention of pregnancy. *PRAMSGRAM* 2007;11:1-4.
4. Teitler J. Father involvement, child health, and maternal health behavior. *Children and Youth Services Rev* 2001;23:403-25.
5. Haug K, Irgens LM, Skjaerven R, Markestad T, Baste V, Schreuder P. Maternal smoking and birthweight: effect modification of period, maternal age and paternal smoking. *Acta Obstet Gynecol Scand* 2000;79:485-9.
6. Barth R, Claycomb M, Loomis A. Services to adolescent fathers. *Health Soc Work* 1988;13:277-87.
7. Chaplin D, Klasik D. Gender gaps in college and high school graduation by race, combining public and private schools: the Urban Institute/Mathematica Policy Research. Fayetteville, AR. Department of Education Reform, University of Arkansas; 2006 Nov. 16, 2006.
8. Mincy R, ed. *Black males left behind*. Washington, DC. The Urban Institute Press; 2006.
9. Tucker M, Mitchell-Kernan C, eds. *The decline in marriage among African Americans: causes, consequences, and policy implications*. New York: Russell Sage; 1995.
10. Wilson W. *When work disappears*. New York: Alfred Knopf; 1996.