



Neighborhood context and reproductive health

Jennifer F. Culhane, PhD, MPH,^{a,*} Irma T. Elo, PhD, MPA^b

*Department of Obstetrics and Gynecology, Drexel University College of Medicine, Philadelphia, Pa,^a
and Department of Sociology, University of Pennsylvania, Philadelphia, Pa^b*

KEY WORDS

Race
Reproductive health
Birth outcome
Neighborhood context

Racial and social class differences in rates of preterm birth and other adverse outcomes are among the most widely recognized and least well-understood phenomena in the study of reproductive health. Individual-level characteristics have failed to account for such gradients. Recently, researchers have begun to argue that health in general and reproductive outcomes specifically are rooted in social inequalities. One area of such inequality may be residential segregation and the associated race/ethnic differences in exposure to adverse neighborhood conditions. We review the empiric data that examine the association between neighborhood conditions and reproductive health. We also review the major challenges that researchers face when trying to incorporate neighborhood-level variables into studies of health outcomes. Our goal is to stimulate further research that simultaneously considers social, economic, and biologic determinants of reproductive health.

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Racial and social class differences in rates of preterm birth (PTB) and other adverse outcomes are among the most widely recognized and least well-understood phenomena in the study of reproductive health. Black infants are twice as likely as white infants to be born low birth weight and 3 times as likely to be very low birth weight. Similarly, black women are twice as likely as white women to deliver before term, and this gap has been remarkably constant over the past 40 years.^{1–3} These racial disparities in birth outcomes are also largely responsible for the > 2-fold excess in infant mortality rates among black infants.⁴ It is also well known that lower class women, independent of their race/ethnicity, have about a two-fold greater risk

of preterm delivery compared with women in higher social classes.⁵ Yet, despite disparities in socioeconomic status between black and white women, socioeconomic status has failed to account for the entire racial gap.⁶ It further appears that benefits of income and education are not conferred equally to black and white women. Infants who are born to college-educated black women are at a much greater risk of PTB,⁷ low birth weight,⁷ and infant death,⁸ compared with infants born to college-educated white women.

In addition, other individual-level attributes (such as health behaviors and psychosocial characteristics) have not fully explained either the racial difference or the social class gradient in reproductive outcomes.^{6,9} In recent years, the failure of individual-level characteristics to account fully for these differentials has focused renewed attention on the possible role of the broader social context, which includes neighborhood conditions, in producing adverse birth outcomes.¹⁰ We review potential mechanisms through which neighborhood context may influence reproductive outcomes, including plausible

Supported by grants HD36462 from the National Institute of Child Health and Human Development, and TS-626 from the Centers of Disease Control and Prevention.

* Reprint requests: Jennifer F. Culhane, PhD, MPH, Department of Obstetrics and Gynecology, Drexel University College of Medicine, 245 N 15th St, 17th Floor, Philadelphia, PA 19107.

E-mail: JFC92@drexel.edu

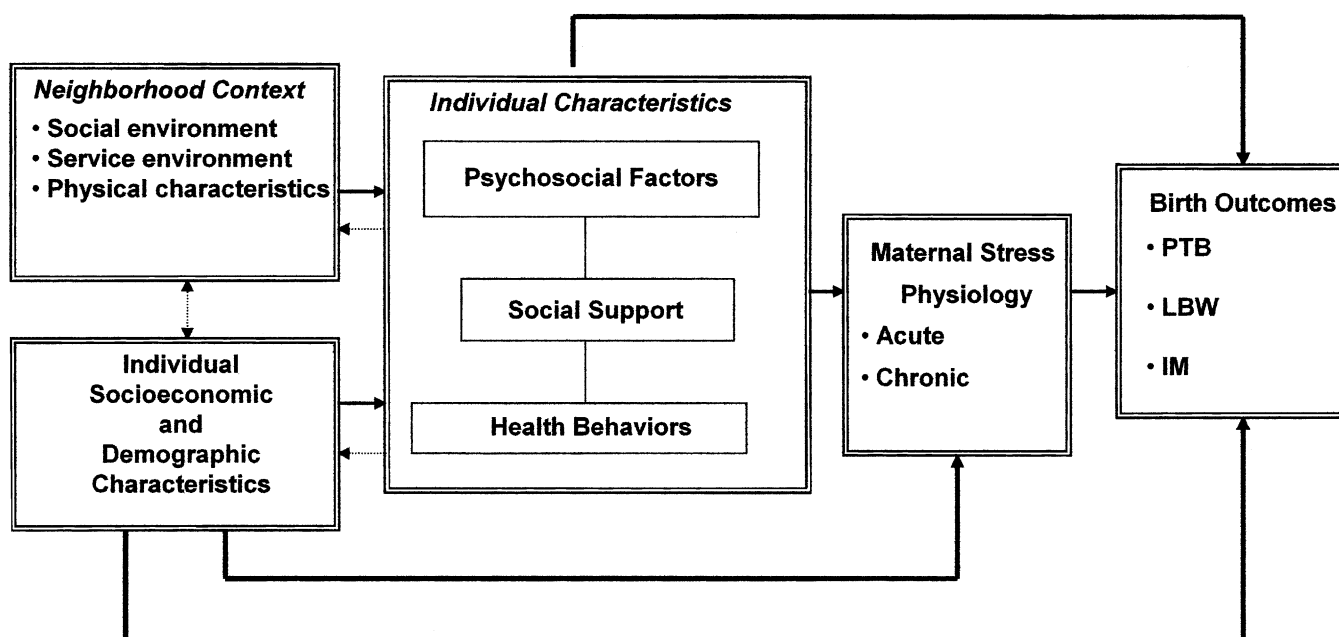


Figure Conceptual framework.

biologic mechanisms linking, neighborhood context to PTB. In addition, we discuss some of the theoretic and methodologic challenges in carrying out these types of studies. Our goal is to stimulate further research in this area and to draw attention to the importance of linking broad social and economic contexts with biologic mechanisms in future studies of reproductive health outcomes.

Conceptual framework

Neighborhood context

It has been suggested that the identification of plausible mechanisms through which neighborhood context influences health outcomes is perhaps the most pressing issue in the advancement of our understanding of how residential context translates into either good or bad health.¹¹ In the [Figure](#), drawing on previous studies, we outline a conceptual framework that links neighborhood context to adverse reproductive events highlighting important intervening variables along this pathway.¹⁰⁻¹⁴ In this model, neighborhood conditions that are hypothesized to influence health, either directly or indirectly, are features of the neighborhood's social environment, service environment, and physical characteristics.¹³ Social environment refers to the level of neighborhood cohesion or disorganization, norms of reciprocity, civic participation, crime, socioeconomic composition, residential stability, and related attributes. These characteristics are hypothesized to influence health outcomes through a number of potential pathways that include

availability of social support, adaptation of coping strategies, and exposure to chronic stress.¹⁵⁻²⁰ Previous studies have found that women who live in violent, crime-ridden, and physically decayed neighborhoods are more likely to experience pregnancy complications and adverse birth outcomes, after adjustment for a range of individual-level sociodemographic attributes and health behaviors.^{16,21} In addition, studies have further pointed to the potential importance of neighborhood-level social relations for reproductive health.^{15,16}

Characteristics of community service environment reflect the availability of goods and services, such as access to quality health care, grocery stores, recreational facilities, and police and fire protection. The availability of such services is likely to be affected by the degree of political organization that influences the residents' ability to demand public services and recruit private service providers to their neighborhoods. Poor public and private services may have a direct and indirect impact on an individual's health by making residents more susceptible to intentional and unintentional injuries; by limiting access to quality health care, healthy foods, and recreational opportunities; and by increasing crime rates.^{11-14,22,23} Finally, the quality of the physical environment, which includes exposure to toxicants, noise and air pollution, and quality of the housing stock and public space, could have direct effects on health.^{14,17} The concentration of adverse neighborhood conditions along all 3 dimensions discussed above are often closely tied to the clustering of socioeconomic disadvantage. Thus, not surprisingly, a number of studies have documented a significant association between neighborhood-level socioeconomic disadvantage and birth outcomes.²⁴⁻²⁷

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