

Review

Reducing Inequities in Adverse Birth Outcomes among African American Women in the United States: A Focus on the Life Course Perspective

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Abstract

Adverse birth outcomes are the leading cause of death among infants globally, and the second leading cause of infant deaths in the United States. African-American women have disproportionately higher rates of preterm birth, low birth weight, and infant mortality compared to other racial groups. This is due in part to social inequities, as well as differential exposures to and experience of risk and protective factors before, during, and after pregnancy. The life course perspective framework posits that adverse birth outcomes are not primarily due to experiences during pregnancy, but experiences (environmental exposures, biological, social and behavioral factors, as well as life experiences) across the life course. These experiences negatively affect birth outcomes in current and future generations. Reducing the adverse birth outcome gap between African Americans and other racial groups requires not only increasing access to prenatal care, but also addressing the differential cumulative impact of social inequities and early life disadvantages experienced by the former. It is therefore critically important to focus on the life course perspective when framing solutions to bridge racial disparities in adverse birth outcomes.

Keywords

Health inequity, health disparity, adverse birth outcome, life course perspective, African American Women, preterm birth, low birth weight

1. Introduction

Health inequities are systematic differences in the health outcomes of population groups that are avoidable, unfair, and unjust (Whitehead & Dahlgren, 2006). These inequities create disparities in

health, which prevent racially disadvantaged populations from reaching their full health potential. While global birth outcomes have improved considerably in the past 40 years, huge disparities still exist between developing and developed countries and also among some populations in the United States (US) (Bale, Stoll, & Adetokunbo, 2003). In the US, African American women experience significant inequities that affect their health and birth outcomes. Thus, this population has the highest rate of adverse birth outcomes compared to other racial groups, particularly white women (Martin, 2017). The disparities in adverse birth outcomes are rooted in systematic social inequities including poverty, structural racism in healthcare, discrimination (Martin, 2017), cumulative stress, exposure to adverse environmental conditions, and differential exposures to risk factors such as lack of access to prenatal care, food insecurity, and cultural incompetence of the health workforce (Lu & Halfon, 2003). Adverse birth outcomes include preterm birth (less than 37 weeks of gestation), low birth weight (less than 5 pounds 8 ounces at birth), and infant mortality (infant dying before its first birthday) (Centers for Disease Control and Prevention, 2019). Preterm birth and low birth weight are risk factors for increased rates of illness and infection among newborns, as well as long-term neurological and developmental problems related to psychological adjustment, and intellectual functioning (Cepeda et al., 2007). According to the life-course perspective (LCP), early-life experiences shape health across an entire lifetime and potentially across generations. Per the perspective, disparities in maternal health and birth outcomes are determined by the synergistic interaction of risk and protective factors over one's life course, which are also influenced by one's family. This article discusses race, inequities, and adverse birth outcomes among African American women in the US. It examines how experiences across the life course influence adverse birth outcomes among African American women, and proposes the utilization of strategies that employ the life course approach to address and reduce the disparities. The utilization of a life course approach will address social issues (such as race and racism, discrimination, and stress) that contribute to the persistent and significant disparities (Alhusen, Bower, Epstein, & Sharps, 2016).

2. Adverse Birth Outcomes by Race in the US

There are significant disparities in adverse birth outcomes among the racial groups in the US. Infants born to African American women have a 50 percent risk of being born preterm, are almost twice as likely to have low birth weight, and are twice as likely to die in the first year of life. These disparities often result in negative lifetime consequences for the health and well-being of African American infants.

2.1 Preterm Births

Preterm birth is currently a public health issue in the US. On an annual basis, about 380,000 infants are born preterm (Centers for Disease Control and Prevention, 2015). Since 1981, the US preterm rate has increased by over 30 percent; from 9.4 to 9.8 percent (Centers for Disease Control and Prevention, 2015). After almost a decade of decline, preterm birth rates have begun to soar again in the US. Between 2015 and 2016, rates increased for two consecutive years (March of Dimes, 2019) and worsened for a

third year in 2017. Babies who survive preterm birth often experience a number of long-term health conditions, including cerebral palsy, intellectual disabilities, chronic lung disease, blindness, and hearing loss (Glass, Costarino, Stayer, Brett, Cladis, & Davis, 2015).

African American women in the US generally deliver babies either too small in weight or prematurely, compared to Hispanic and white women (Martin, Brady, Hamilton, & Osterman, 2015). At present, the preterm birth rate for African American women is 1.6 times higher than that of white women (Matthews, MacDorman, & Thoma, 2015), and the preterm birth-related infant mortality rate is three times higher among African American women compared to white women (Matthews, MacDorman, & Thoma, 2015). In 2005, African American infants were 40 percent more likely than white infants to be born preterm (12.4 percent versus 8.8 percent), and in 2014, after healthcare reform, the situation did not improve—African American infants were still 18 percent more likely to be born preterm compared to white infants (10 percent versus 8.5 percent) (James, West, & Cáceres, 2007). In 2013, when the US preterm birth rate was 11.4 percent, African American women accounted for 16.3 percent of preterm births, compared to 11.3 percent among Hispanic women and 10.2 percent among white women (Kramer & Hogue, 2009). Between 2014 and 2016, the preterm birth rate for African American infants was 13.4 percent, 9.2 percent for Hispanic infants, and 8.9 percent for white infants (March of Dimes, 2019).

While research on the causes of disparities in preterm birth in the US is limited, reported causes from available studies include social factors such as differences in socioeconomic status, prenatal care, maternal risk behaviors, infection, and nutrition among socially disadvantaged groups, particularly among African American women (Alhusen, Bower, Epstein, & Sharps, 2016). Additional factors identified include suboptimal education, poverty, residential segregation, environment, and a lifetime exposure to racism, stress, and discrimination (Kramer & Hogue, 2009).

2.2 Low Birth Weight

Low birth weight is one of the main causes of infant mortality in the US. According to available vital statistics data, women of low socioeconomic status in the US, irrespective of their race, are at greater risk of having low birth weight infants (Foster, Thomas, Semanya, & Thomas, 1993). Current data also show that African American women with the same socioeconomic status as white women, are at twice the risk of giving birth to infants with low weight, and three times the risk of delivering very low birth weight infants (less than 3 pounds, 3 ounces) (Foster, Thomas, Semanya, & Thomas, 1993).

In 2009, 3.1 percent of the infants born to African American women had low birth weight compared to 1.2 percent of white and Hispanic women, 1.3 percent of American Indian/Alaska Native women, and 1.1 percent of Asian/Pacific Islander women (Hamilton, Martin, & Ventura, 2010). In 2015, low birth weight rates were twice as prevalent among African American infants (13.2 percent) than among white infants (6.9 percent) (Mehra, Boyd, & Ickovics, 2017). Low birth weight infants who survive, are at increased risk of health and developmental problems including physical and sensory difficulties, developmental delays, and cognitive impairment (March of Dimes, 2019).

2.3 Infant Mortality

The current US infant mortality rate (IMR) is 5.96 infant deaths per 1000 live births and that for African Americans alone is 11.11 infant deaths per 1000 live births (Matthews, MacDorman, & Thoma, 2015). Although IMR declined by about 16 percent among all racial groups in the US between 2000 and 2014, that for African Americans remained high. From 2011-2013, African American IMR was 10.9 percent, compared to 8.1 percent among American Indian/Alaska Natives and 5.1 percent among whites (Mathews & MacDorman, 2010). African American infants are 3.2 times more likely to die from low birth weight-related complications than white infants. For example, in 2014, African Americans had over twice the rate of sudden infant death syndrome rates than whites, and African American mothers were 2.2 times more likely than white mothers to receive late or no prenatal care. Although IMR is only one of the indicators of birth outcomes, it is an important indicator of the health status of a country, as it reflects the impact of social and structural factors on health (Reidpath & Allotey, 2003).

3. The Life Course Perspective, Health Inequities, and Adverse Birth Outcomes

The life course perspective (LCP) is a theoretical framework that was developed in the 1960s to explain racial disparities and inequities in maternal and child health. The life course perspective states that early-life experiences influence health outcomes of populations across their life span and generations. Per the LCP, birth outcomes are not only the product of 10 months of pregnancy, but also the result of the entire life course experiences of a woman before her pregnancy (Lu & Halfon, 2003), differential exposures to protective and risk factors during pregnancy, and differential developmental trajectories across the life span (Lu, Kotelchuck, Hogan, Jones, Wright, & Halfon, 2010). Intrauterine environment, early childhood experiences, political factors, and environmental exposures continuously, interact, intersect, cumulate, and transform health outcomes across the life course. This section focuses on the key components of the LCP (timeline, timing, environment, and equity) and shows how occurrences within each, create disparities and inequities that predispose African American women to adverse birth outcomes.

3.1 Timeline

The timeline component of the LCP emphasizes that experiences and exposures across the life course can influence birth outcomes adversely. The experience of racism and systematic discrimination by African American women in the areas of employment, housing, access to quality prenatal care, blatant racist behaviors (racial slurs), and other subtle forms of racism create situations of stress, which most have to endure throughout their lives (Lu, Kotelchuck, Hogan, Jones, Wright, & Halfon, 2010; Stancil, Hertz-Picciotto, Schramm, & Watt-Morse, 2000). While stress in pregnancy is not unique to African American women, reports show higher prevalence among African American women than white women. The fear of discrimination, experiences of racism and powerlessness, stress, and bad treatment from health care providers are some of the factors that contribute to African American women seeking prenatal care late in their pregnancy (Slaughter-Acey, Caldwell, & Misra, 2013). Stress that never

abates can cause the body's stress-response system to be continually engaged, compromise adaptive systems, and consequently result in reproductive health risks, including adverse birth outcomes. According to Arlene Geronimus, African American women's exposure to chronic stress linked to socioeconomic disadvantage and discrimination over the life course, causes them to "weather" faster than white women. Weathering is the process in which the body shows signs of aging, in early adulthood (Geronimus, Hicken, Pearson, Seashols, Brown, & Cruz, 2010). Per Geronimus, weathering among African American women over the life course, results in adverse birth outcomes even at a young age (Geronimus, Hicken, Pearson, Seashols, Brown, & Cruz, 2010).

Also related to the timeline component of the LCP, is the issue of access to healthy food. The continued scarcity of grocery stores that sell fresh produce in African American neighborhoods, cause women to travel long distances. When they finally find grocery stores in the zip codes closest to them, they find that the produce are highly priced (Hilmers, A., Hilmers, D., & Dave, 2012). Given their level of poverty, nearly one in five African American women cannot afford healthy foods, so they turn to cheaper and easily available options from fast-food franchises. African American women have the second highest poverty rate (21.4 percent) in the US compared to 9.1 percent among white women and 10.7 percent, among Asian women. The lack of access to grocery stores, the continued consumption of unhealthy food, and poor nutritional status over the life course can negatively affect fetal growth and development (Groth & Morrison-Beedy, 2013). Extant studies in the US show an association between poor maternal nutritional status and adverse birth outcomes (Dena et al., 2014).

3.2 Timing

The LCP component of timing asserts that, the things people experience at critical points in their life can program their health and development across their life course. Pregnancy is a critical period in a woman's life because of her increased vulnerability and body changes, increased economic pressure, and less frequent sexual relations. These circumstances often put them at risk for intimate partner violence (IPV) (Hoang, Van, Gammeltoft, Meyrowitsch, Nguyen Thay Tui, & Rasch, 2016).

According to available research, between three and nine percent of women in the US experience some form of IPV (Martin et al., 2001). Over four in ten African American women experience physical violence from an intimate partner during their lifetime compared to white, Hispanic, and Asian/Pacific Islander women (Martin et al., 2001). IPV during pregnancy is associated with a five-fold increase in low birth weight and pre-term birth. Research shows an association between inadequate prenatal care, and preterm delivery and low birth weight. Women abused during pregnancy are twice as likely to miss prenatal care appointments or seek prenatal care later than recommended (Alhusen, Ray, Sharps, & Bullock, 2014). They are also twice as likely not to begin prenatal care until the third trimester, and to miss three or more prenatal visits than their non-abused counterparts (45 percent vs. 28 percent) (Dunn & Oths, 2004).

Pregnant African American women experiencing IPV may also experience depression, anxiety, and stress. Indeed, studies show that women experiencing abuse during pregnancy are also 2.5 times more

likely to report depressive symptoms, compared to their non-abused counterparts. These conditions may be the direct consequence of trauma or the indirect consequence of domestic violence. Per other studies, pregnant women exposed to IPV may also engage in negative behaviors during pregnancy such as smoking, alcohol abuse, and substance use, all of which are risk factors for adverse birth outcomes. In their research, Lu and Halfon (2003) identified stress as a factor that creates disparities in preterm births among African American women. They found higher levels of norepinephrine and cortisol in African American women than in white women.

3.3 Environment

Where people live and the environment they are exposed to, can affect their health throughout their lifetime. In its 2006 report on *Preterm Birth: Causes, Consequences, and Prevention*, the US Institute of Medicine highlighted the contribution of environmental exposures to adverse birth outcomes. According to its findings, environmental pollutants (lead, tobacco smoke etc.), contribute to and increase the risk for preterm birth (Behrman, 2007). In the US, African American women are more likely to be exposed to air pollution than other racial groups. Those who reside in segregated neighborhoods with poor quality houses located in close proximity to industrial sources of allergens such as dust mites and pollutants such as air particulates and lead, have an increased risk of preterm birth (Burriss & Hacker, 2017). Lead is a neurotoxic metal that is able to cross the placenta. While it is a known fact that high-dose lead exposure is detrimental to reproductive functioning, several recent studies report an association between shortened gestation, decreased birth weight, and increased incidence of spontaneous abortion with maternal blood lead levels as low as 0.48 to 0.72 $\mu\text{mol/L}$ (10 to 15 micrograms/dL) (Rahman, Khan, & Abdul-Rehman, 2012). Discrimination, racism, low income, and low paying jobs, make it difficult for most African American families to afford accommodation in pollution free neighborhoods.

3.4 Equity

Equity in health emphasizes the need for all people, regardless of their race, gender, geographic location, economic, social, educational, or environmental disadvantage to realize their full health potential (Braveman, 2004). Unfortunately, health equity continues to elude a significant proportion of African American women in the US. Too often, the vestiges of institutional and interpersonal racism affect the health outcomes of African American women and contributes to their inability to realize their full health potential.

Institutional racism creates disparities in access to quality education, safe housing, employment, health care resources, and decent environmental conditions. Interpersonal racism arises from prejudice based on the assumption about the capabilities of certain populations based on their race. It includes the differential treatment of certain populations and is often referred to as racism. Institutional and interpersonal racism, sexism, and other systemic barriers contribute to the widening income gap between African American women and white men and women (National Partnership For Women and Families, 2018). African American women who work full time, are paid less than white men and white women.

Typically, they receive 63 cents for every dollar paid to white men, while white women receive 79 cents for every dollar paid to white men. The average wage of African American women is \$36,227 per year, \$21,698 less than the median wage for white men (National Partnership for Women and Families, 2018). With these low wages, African American women are unable to support themselves and their families, and often have to choose between accessing essential resources like obstetric care, childcare, food, or health care. These circumstances influence their health and birth outcomes.

Interpersonal racism in health systems result in suboptimal care for pregnant African American women. About 50 percent of African American women who experienced preterm deliveries, and 61 percent who had low-birth weight babies, reported having experienced racial discrimination in at least three different situations at the hands of their health care providers compared to zero percent among white women (Mustillo, Krieger, Gunderson, Sidney, McCreath, & Kiefe, 2004). These practices are unethical and must be curtailed.

While higher socioeconomic status strongly correlates with better health for white women, this is not guaranteed for African American women. Like their lower-class counterparts, middle and upper-class African American women experience preterm delivery and low birth weight outcomes, with infant mortality rates much higher than those experienced by white women of similar economic standing. In fact, the disparity in adverse birth outcomes between white and African-American women is actually wider at higher socioeconomic levels. An infant born to a college educated African American woman has a higher risk of death by its first birthday than an infant born to a white mother without a high school diploma.

4. Closing the Gap

Though efforts have been made to address disparities in birth outcomes in the US, they have not been as successful. This is primarily due to the heavy focus on improving access to prenatal care and not on the risk and social factors that put African American women at risk throughout their life course. Given that many of the factors related to the disparities in birth outcomes are rooted in social inequities and experiences along the life course of African American women, it seems reasonable that efforts to reduce these disparities should focus on a comprehensive approach aimed at the causes of the inequities and the lived experiences of African American women throughout their life course, and not just on access to care (Burriss & Hacker, 2017). Situating solutions to this issue within the theoretical framework of the LCP is a reasonable approach as this framework sees the disparities in birth outcomes not as independent segmented events in the life of African American women, but as the result of cumulative and differential exposure to risk and protective factors across their life course. Additionally, the framework seeks to address the disparities by considering early life disadvantages and cumulative allostatic load over the life course (Lu, Kotelchuck, Hogan, Jones, Wright, & Halfon, 2010). Thus, to reduce the inequities in adverse birth outcomes among African American women in the US, concerted and intentional efforts need to be made to provide access to quality and affordable healthcare throughout the life course, to

address the socioeconomic inequities that underlie the disparities, improve patient-provider interaction, develop and implement life course friendly policies, and conduct continued research in this area.

4.1 Access to Quality and Affordable Health and Prenatal Care across the Life Course

Although some African American women are able to access prenatal care at some point in their pregnancy, little has been done to close the racial gap in the quality and cost of care they receive. The lack of access to affordable, quality prenatal, preventive, and primary care by low-income, uninsured African American women, delays the diagnosis and treatment of chronic diseases (hypertension) or the elimination of risk behaviors (cigarette smoking, poor nutrition), resulting in the increased risk and vulnerability to adverse health and prenatal outcomes over the life course (Lu, Kotelchuck, Hogan, Jones, Wright, & Halfon, 2010). To assume that prenatal care during the 10 months of pregnancy will undo the lifelong, cumulative impact of social inequities on the health of African American women and their birth outcomes, is to expect too much of prenatal care. While access to affordable, quality prenatal, preventive, and primary care along the life course alone will not close the gap in racial adverse birth outcomes, it is a good starting point. This is because it can stimulate positive development in early life, decrease cumulative allostatic load over the life course, and contribute to the optimal developmental programming of a baby's vital organs and systems over the life course and across generations (Lu, Kotelchuck, Hogan, Jones, Wright, & Halfon, 2010).

4.2 Address Socioeconomic Inequities That Underlie Disparities

Socioeconomic determinants have differential effects on health and birth outcomes among racial groups in the US. The racial classification of African American women follows them across their life course, and exposes them to racism and individuals and social institutions that discriminate against them (Thomas Shapiro, 1995). As mentioned earlier, owing to racism and discrimination, African American women have less accumulated wealth than white women, experience poor quality and segregated education, and higher average costs for basics such as housing, food, and insurance, and tend to have more people depending on their income. Thus, even though some African American and white women may be at the same socioeconomic level, they may not be directly comparable.

Residential and school segregation influence employment opportunities and determine health and birth outcomes. Expanding access to Medicaid for poor African American women and eliminating the gap in education will help to improve their birth outcomes. Full day, year-round early childhood programs and more schools with small class sizes, accountable teachers, and high expectations in African American communities need to be promoted. Developing quality public schools in all communities will ensure that every child has a solid educational foundation to help them succeed later in life. Reforming the education finance system will also help to narrow the education gap, as acute existing inequalities in the tax bases of African American and white communities put many schools attended by African Americans at a funding disadvantage. At present, federal assistance for low-income school systems has failed to close the education gap. The existing disparities in school quality and education produce racial disparities in employment, earnings, health, and quality of life.

Closing the employment and earnings gap will provide African American women with the security of a quality job and access to resources. Raising the minimum wage, expanding the Earned Income Tax Credit, and adopting pay equity policies will increase the income for poor African American women and families so they can meet their basic needs. Racism and discrimination unveil the actions of individuals and policies that contribute to system level institutionalized racism, which in turn contribute to poor health and adverse birth outcomes of African American women.

4.3 Improve Patient-Provider Interaction

The provision of quality health and prenatal care includes quality patient-provider interaction and communication. Unfortunately, these services are often unavailable to pregnant African American women. If adverse birth outcomes among African American women are to be reduced, then it is imperative that they are treated respectfully without bias or prejudice, and have access to culturally sensitive, safe, and high quality care just as white women. In a study conducted by Lori et al., patient-provider interaction qualities considered important to pregnant African American women include provider active listening skills, the ability to ask psychosocial questions, and the ability to clearly explain diagnoses (Lori, Chin Hwa Yi, & Martyn, 2011). Added qualities are provider respect, delivery of compassionate care, provision of continued care and health information in a clear manner, and the creation of an environment of trust (Lori, Chin Hwa Yi, & Martyn, 2011). Improved patient-provider interaction along the life course will provide women with access to preventive services, health education, and other social services that will help to improve upon their health and pregnancy outcomes.

4.4 Develop and Implement Life Course Friendly Policies

Though there are policies in the US that protect pregnant women such as the Pregnancy Discrimination Act, they are not specific to African American women. To create better birth outcomes, proactive policies that recognize the connections across all stages and domains in the life of African American women need to be developed. Health care policies and medical practices need to incentivize patient-centered care that focus both on African American women's clinical and social needs. Policies need to be developed that focus on eradicating cultural biases and discrimination in medical practice and medical education, increasing provider diversity in maternity care, and holding individual providers and hospital systems accountable if they fail to provide unbiased, high quality, evidence-based care to minority populations including African American women. Hospitals, clinics, and community centers need to embrace and implement race neutral policies.

5. Conclusion

Adverse birth outcome rates in the US are higher among African American women than among white women. While some of the disparities are due to individual choices or actions, the majority are due to exposures and experiences related to social inequities across the life course. Increased access to health care alone will not stem the tide of adverse birth outcomes among African American women. What is

also needed to stem the tide is the utilization of an approach that draws attention to the social causes of the disparities, and which provides an understanding of why the disparities exist, with a focus on the things that African American women have been exposed to or have experienced throughout their. The LCP is just this approach. It acknowledges the importance of risk and protective factors, and the effects of accumulated events, experiences, and exposures over the life course, prior to and during pregnancy. Its application to adverse birth outcomes among African American women moves the focus away from concentrating solely on access to care, to addressing the issues of race, racism, discrimination, access to quality and affordable care, and the other social factors that also influence adverse birth outcomes in the US.

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