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Adverse Birth Outcomes in African American Women: The Social Context of Persistent Reproductive Disadvantage

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African Americans have the highest rates of infant mortality and adverse birth outcomes of all major racial/ethnic groups in the United States. The long-standing nature of this disparity suggests the need to shift epidemiologic focus from individual-level risk factors to the larger social forces that shape disease risk in populations. In this article, the African American reproductive disadvantage is discussed within the context of American race relations. The review of the literature focuses on racism as a social determinant of race-based disparities in adverse birth outcomes with specific attention to the viability of genetic explanations, the role of socioeconomic factors, the multidimensional nature of racism, and the stress-induced physiologic pathways by which racism may negatively affect pregnancy. Implications for social work research and practice also are discussed.

KEYWORDS Infant mortality, low birthweight, preterm delivery, health disparities, racism, stress, African American, pregnancy

INTRODUCTION

Whether an infant survives its initial year of life is one of the most widely accepted indicators of population health (Reidpath & Allotey, 2003). The risk of infant death, however, is not evenly distributed across the major racial/ethnic subgroups of the U.S. population (Figure 1). African Americans

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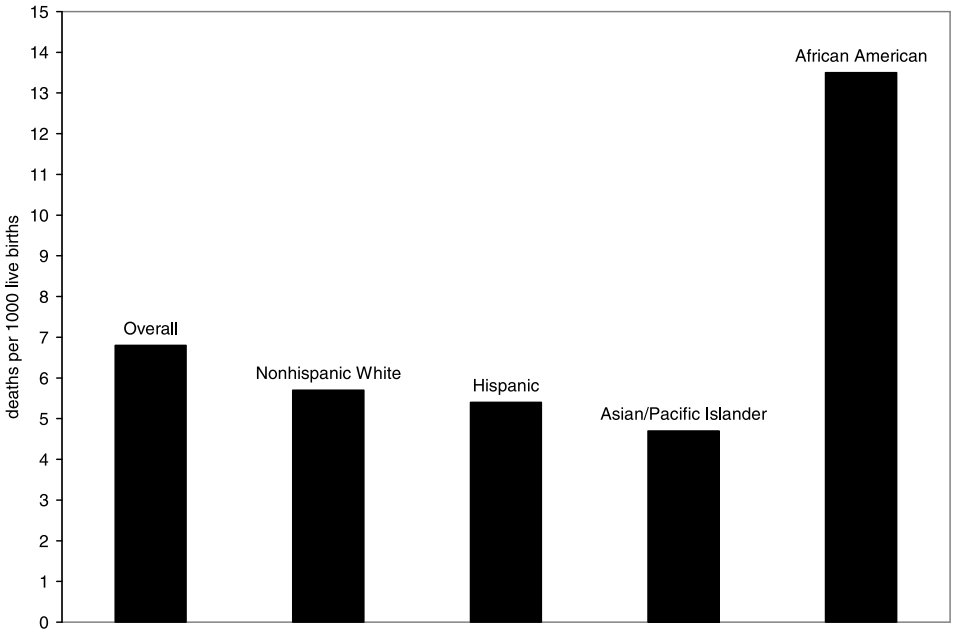

FIGURE 1 Racial/Ethnic Comparison of Infant Mortality. *Note.* Data from T. J. Mathews, F. Menacker, & M. F. MacDorman. (2004). Infant mortality statistics from the 2002 period linked birth/infant death data set. *National Vital Statistics Reports*, *53*(10). Copyright 2004 by the National Center for Health Statistics.

are more than twice as likely as other groups to die in infancy (Mathews, Menacker, & MacDorman, 2004). Despite dramatic overall and within-group improvements in maternal and child health over the last century, the racial gap in infant mortality has not appreciably changed (Centers for Disease Control [CDC], 1999).

Babies delivered preterm (preterm delivery, PTD; <37 of 40 completed weeks gestation) and/or at low birthweight (LBW; <2,500 grams or 5 lb, 8 oz) are at greatest risk of dying before their first birthday (Mathews et al., 2004). Given that African Americans have the highest incidence of infant death, it is not surprising that they also have the highest rates of PTD and LBW (Martin et al., 2005; Figs. 2 and 3). Preterm and LBW infants who survive the perinatal period are quite vulnerable to a host of childhood morbidities (e.g., Stewart et al., 1999) and to chronic health problems in adulthood (e.g., Rich-Edwards et al., 1999). Furthermore, significant links between a mother's own birth outcomes and those of her infant suggest that LBW and PTD and the negative health sequelae that may follow, can be perpetuated across generations (e.g., Porter, Fraser, Hunter, Ward, & Varna, 1997).

A constellation of risk factors have been unable to fully account for the disproportionate rates of adverse birth outcomes in African Americans (Goldenberg et al., 1996), prompting a reexamination of conventional explanatory

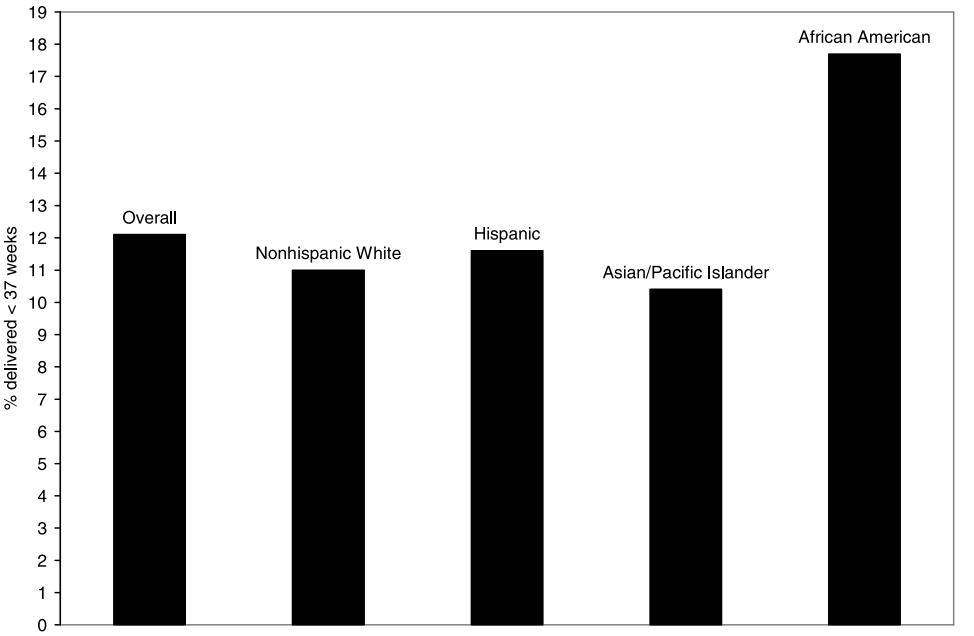

FIGURE 2 Racial/Ethnic Differences in the Incidence of Preterm Delivery. *Note.* Data from J. A. Martin, B. E. Hamilton, P. D. Sutton, S. J. Ventura, F. Menacker, & M. L. Munson. (2005). Births: Final data for 2003, *National Vital Statistics Reports*, *54*(2). Copyright 2005 by the National Center for Health Statistics.

models. Attention has been shifting from individual-level factors, such as health behaviors, to the larger social forces that shape the context within which individuals function (Hogan et al., 2001). Several researchers have posited that racism and the social inequality that it breeds are fundamental contributors to racial differentials in health (e.g., James, 2003; Krieger, 2003).

The purpose of this article is to critically examine the persistent reproductive disadvantage of African Americans within the broader context of American race relations. To this end, the article focuses on racism as a social determinant of racial disparities in adverse birth outcomes by discussing (1) the viability of genetic explanations, (2) the role of socioeconomic factors, (3) the multidimensional nature of racism, and (4) the stress-induced physiologic pathways by which racism may negatively affect pregnancy. Suggestions for ways in which social work practitioners and researchers can actively engage in efforts to address this public health problem then are presented.

METHODS

A review of the literature was conducted, with particular attention to racism and health more generally and racial disparities in adverse birth outcomes

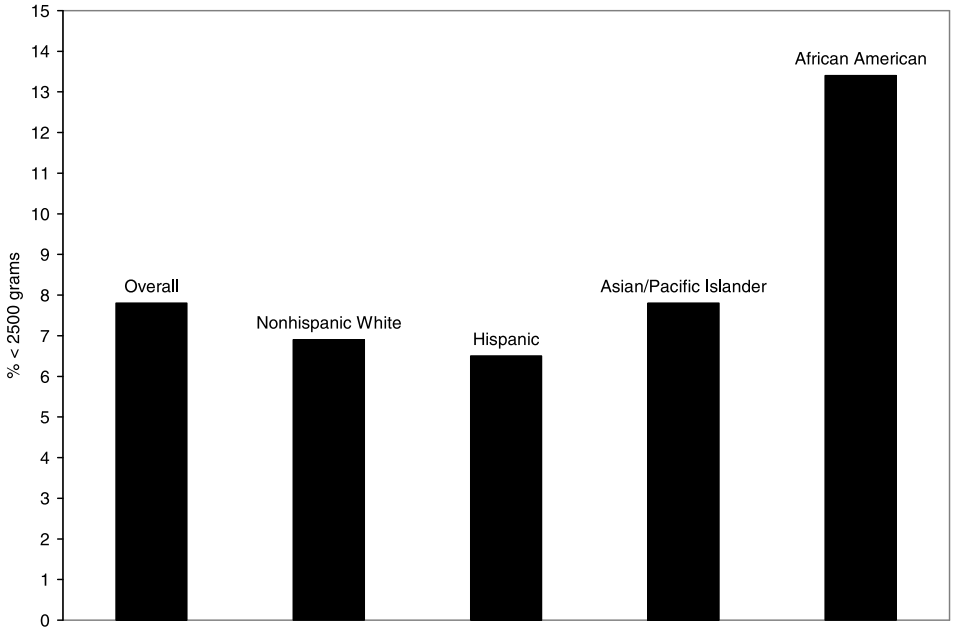

FIGURE 3 Racial/Ethnic Differences in the Incidence of Low Birth Weight. *Note.* Data from J. A. Martin, B. E. Hamilton, P. D. Sutton, S. J. Ventura, F. Menacker, & M. L. Munson. (2005). Births: Final data for 2003. *National Vital Statistics Reports*, *54*(2). Copyright 2005 by the National Center for Health Statistics.

more specifically. Several keywords, including *race*, *racism*, *racial disparities*, *health disparities*, *infant mortality*, *low birthweight*, *preterm delivery*, *stress*, *pregnancy*, and *African American*, were used to search the PsycInfo and Ovid-Medline computerized databases for relevant articles. Comprehensive reviews already have been published of the racism and health literature (see Williams, Neighbors, & Jackson, 2003) and the stress and pregnancy literature as it pertains to African Americans' disproportionate rates of adverse birth outcomes (see Giscombe & Lobel, 2005). Therefore, this article synthesizes and distills this large, multidisciplinary, and ever-growing literature with respect to some of the key issues related to racism's role in race-based health disparities rather than providing a detailed inventory of specific studies.

RESULTS

The Genetics Debate

Some researchers assume Black race is a genetic factor that places African American women at higher risk during pregnancy (e.g., Amini, Catalano, Hirsch, & Mann, 1994). Black immigrant women, however, tend to exhibit significantly better pregnancy outcomes than their American counterparts, even when stratifying by risk status (e.g., David & Collins, 1997). Given the

degree of European genetic admixture in the African American population, this trend is the exact opposite of what the genetic hypothesis would predict (David & Collins). Moreover, there is evidence that the U.S.-born daughters of Black immigrant women deliver a significantly higher percentage of LBW infants than did their foreign-born mothers of the previous generation (Collins, Wu, & David, 2002). These nativity patterns suggest that the reproductive disadvantage of African American women is likely a function of their experiences in the American social system rather than an expression of genetic vulnerability.

Whether racial group classifications reflect innate biological differences that fundamentally distinguish subgroups of the human species is a highly contentious issue in medical and public health research (Fine, Ibrahim, & Thomas, 2005). On the one hand, genetic clustering of population groups by geographic origin, the existence of rare variant alleles in particular subgroups (e.g., Ashkenazi Jews), and distinctions in external phenotype (e.g., skin color) seem to support a biologic conceptualization of race (Burchard et al., 2003). On the other hand, the vast majority of genetic variation occurs within geographic populations rather than between them; predominant racial taxonomies do not adequately capture human biodiversity; and genetic disease is relatively rare and affects specific subgroups within, and sometimes across, geographic populations (Cooper, Kaufman, & Ward, 2003).

Those who view race as primarily a social construct argue that race is a marker of differential social privilege (e.g., Krieger, 2003). Race-based health disparities, then, may be understood as the "biological expression of race relations" whereby social inequality gets "embodied" through adaptational responses that negatively impact biological function and contribute to population differences in disease burden (Krieger). In this age of rapidly growing interest in genomics, purely biological conceptions of race may lead to further prejudice and discrimination against historically oppressed groups, a de-emphasis of the contextual factors that shape disease risk, and a resurgence of eugenics-based thinking (Fine et al., 2005).

Money Matters

Perhaps nowhere is race more profoundly a marker of differential privilege and social inequality than in the ways in which socioeconomic resources are distributed across the population. African Americans rank behind all major racial/ethnic groups in annual household earnings (DeNavas-Walt, Proctor, & Lee, 2005). Compared to non-Hispanic Whites, the most common referent group, African Americans also have lower levels of education (Newburger & Curry, 2000), and they are three times as likely to be poor (U.S. Bureau of the Census, 1998). Race and class are so closely aligned in the United States that many argue that racial disparities in health are primarily attributable to socioeconomic inequalities (e.g., Nazroo, 2003).

Although health improves in a stepwise fashion as socioeconomic resources increase, racial disparities persist at each rung of the socioeconomic ladder (e.g., Lin, Rogot, Johnson, Sorlie, & Arias, 2003). In the case of infant mortality, the gap actually widens as socioeconomic status (SES) improves (Williams, 2002). One explanation for the persistence of racial differences after SES has been taken into account is that specified levels of SES are not equivalent across racial groups, given historical obstacles to minority social advancement (Kaufman, Cooper, & McGee, 1997). For example, at every level of education, African Americans have lower earnings and less accumulated wealth than Whites (Oliver & Shapiro, 1995). They also face higher average costs for such basics as housing, food, and insurance, and they tend to have more people dependent on their income. Therefore, African Americans and Whites at a given level of SES may not be directly comparable.

Another important factor to consider is that middle-class status was not an attainable goal for many African Americans until the passage of the Civil Rights Act (Oliver & Shapiro, 1995). As such, they are more likely to be newly arrived into, rather than generationally established in, the middle class. A considerable number of higher SES African American women, therefore, are likely to have experienced some degree of socioeconomic deprivation as children (Williams, 2002). Achieved gains in socioeconomic position as an adult may not completely offset vulnerabilities to poor health outcomes that are carried forward from poorer childhood living conditions (Lu & Halfon, 2003). Even second-generation high SES African American mothers have been reported to have two times the rate of LBW and three times the rate of PTD as similar Whites (Foster et al., 2000). Thus, the relatively recent socioeconomic gains of the past few decades appear to be insufficient to compensate for the centuries of socioeconomic subjugation African Americans have experienced.

Similar to the issue of the biological validity of race, the question of whether racial disparities in socioeconomic resources are primarily responsible for racial disparities in health is the subject of much debate (Krieger, 2003). Though there are large racial gaps in SES and overwhelming evidence that socioeconomic factors play a central role in determining health outcomes, the social significance of race extends well beyond group differences in education and earnings. In a society that has historically, and continues to the present-day, to condone, reinforce, and perpetuate racism, explaining racial disparities in health also requires a serious consideration of the "non-economic" ramifications of living in a color-conscious society (Krieger).

The Varied Shades of Racism

Racism entails the oppression and denigration of others based on skin color or racial/ethnic group affiliation, as manifested through prejudiced beliefs

and attitudes, and discriminatory behaviors, institutional practices, and structural arrangements (Clark, Anderson, Clark, & Williams, 1999). Researchers have typically conceptualized racism as an individual-level psychosocial stressor when studying its relationship to health (Williams et al., 2003). Though results are somewhat mixed, perceived racism has been related to a variety of mental and physical health outcomes, including LBW, and PTD (see reviews by Giscombe & Lobel, 2005; Williams et al.). Although institutionalized racism's impact on health is studied less frequently (Gee, 2002), societal institutions provide the infrastructure that supports and directs all social life. Therefore, the racism embedded in them at the macro-level will produce social disadvantages that threaten health quite independently of personal perceptions of unfair treatment.

Institutionalized racism may not be readily perceived as a personal threat to health because of its more hidden integration into the ways in which systems function (Meyer, 2003). For example, racist ideologies codified in zoning laws and lending policies throughout the post-Civil War era severely limited the housing choices of African Americans and shifted them into the worst residential areas (Massey & Denton, 1993). De facto housing and mortgage discrimination persists to the present day, with African Americans remaining highly segregated from Whites, even after accounting for SES and residential preferences (Acevedo-Garcia, Lochner, Osypuk, & Subramanian, 2003). Macro-level barriers to residential integration may indirectly harm health via risky living environments and restricted access to resources. Segregated communities often are characterized by more crime, greater pollution, higher population densities, more poverty, fewer and lower quality services, and restricted educational and employment opportunities (Acevedo-Garcia et al.). Empirical studies have linked residential segregation to the incidence of both infant mortality (Polednak, 1996) and LBW (Roberts, 1997).

Differential treatment in the health care system is another way in which racial bias is institutionalized at the macro-level. Racial/ethnic minorities receive less intensive and poorer-quality health care services than do Whites (Smedley, Stith, & Nelson, 2003). African American pregnant women are less likely to be given medical advice, to be informed of medical complications or risks (Kogan, Kotelchuk, Alexander, & Johnson, 1994), and to receive such prenatal therapies as tocolytics and antenatal steroids (Paul et al., 2006). Even though many factors likely contribute to the racial bias evident in the health care system, providers' conscious or unconscious prejudices and acceptance of negative racial stereotypes are thought to be central contributors (Smedley et al.).

Stress and the Physiologic Cost of Racial Inequality

A stress and health paradigm may be particularly useful in delineating potential pathways by which racism contributes to persistent disparities in health

because it can accommodate the integration of socioenvironmental, psychological, and biological determinants into a multi-level explanatory model of differential health risk (Williams et al., 2003). Stress involves environmental demands that strain or overwhelm one's ability to adapt (Cohen, Kessler, & Gordon, 1995). It directly and indirectly (via emotional responses) influences physiologic function in the neuroendocrine, immune, and cardiovascular systems, which are all involved in the process of parturition (Wadhwa, Culhane, Rauh, & Barve, 2001).

Racism is not only a unique stressor with which racial/ethnic minorities must contend, it also heightens exposure to and impact of other types of stressors (Williams et al., 2003). Chronic exposure to racism and the social inequality it produces is hypothesized to prematurely age the female reproductive system via stress-induced pathways that render a woman vulnerable to an adverse birth outcome long before she ever becomes pregnant (Hogue & Bremner, 2005). Such a view is supported by evidence that African American women exhibit a steeper increase in their age-related risk for LBW than non-Hispanic White women (e.g., Rich-Edwards, Buka, Brennan, & Earls, 2003). This accelerated decline in the reproductive health status of African American women has been attributed to the cumulative effects of social disadvantage and racial discrimination (Hogue & Bremner).

DISCUSSION

The primary focus of the nation's public health agenda is the reduction and eventual elimination of racial/ethnic differences in health (U.S. Department of Health and Human Services [DHHS], 2000). One of the most persistent of these disparities is the long-standing racial gap in infant mortality and adverse birth outcomes. For well over a century, the health of African American infants has lagged far behind that of their White counterparts, despite steady improvements in maternal and child health overall. A shift in epidemiologic focus from micro- to macro-level determinants may help to elucidate contextual factors that underlie persistent racial disparities in health. Regardless of any biological underpinnings, race is a socially meaningful construct that shapes virtually all aspects of American social life. Race-based socioeconomic differentials are pervasive and deeply-rooted, but race and class are not synonymous. Therefore, a vital part of explaining the African American reproductive disadvantage is understanding the manner in which racism, both interpersonally and institutionally manifested, impacts African American women throughout their lives and across generations. Racism presents unique adaptational challenges. Applying a stress and health framework may facilitate the exploration of the mechanisms that link the psychosocial experience of racism with the biological processes that result in a poor pregnancy outcome.

Implications for Social Work

With social justice as a key tenet of the profession, social workers are uniquely positioned to lead efforts to investigate, expose, and ameliorate the racism and social inequality that contribute to persistent racial disparities in reproductive health. Results of recent large-scale surveys indicate that there is a considerable lack of knowledge about racial health disparities among physicians and the general public (e.g., Lillie-Blanton, Brodie, Rowland, Altman, & McIntosh, 2000). Social workers in health care and community settings can coordinate health disparities presentations during staff meetings, lunch breaks, and grand rounds by partnering with hospital and clinic administrators, local public health officials, researchers, and grass-roots organizations to ensure that the information presented is current, accurate, pertinent to the setting, and highlights local efforts to address the problem. Town hall meetings may also be effective in bringing together the lay public and community and political leaders to learn about and discuss the relevant issues.

A key aim of these educational efforts should be to frame racial health disparities as a problem for all Americans, not just the minority populations who suffer from them, by highlighting the implications for society at large. For example, there are exorbitant costs associated with caring for preterm and LBW infants. Mean inpatient charges for these infants, who remain hospitalized an average of 22 days, is $50,000, with Medicaid covering nearly one-third of this total (Elixhauser, Yu, Steiner, & Bierman, 2000). The March of Dimes estimates the total societal cost of PTD, which includes medical and educational costs, and costs associated with lost productivity, to be at least $26 billion a year (March of Dimes, 2006).

Though it is imperative that the lay public, the medical community, and political leaders are educated about the problem of racial disparities in adverse birth outcomes to cultivate support from multiple constituencies, education alone is not sufficient for addressing the social determinants of this public health problem. Social workers must actively engage in advocacy efforts designed to promote health equity. Improving access to health care should be a foremost priority. The United States is the only industrialized country without a universal system of health care (Vladeck, 2003). The National Center for Health Statistics (2005) reports 42 million people were uninsured in 2003, a disproportionate percentage of whom were African American. A recent study of ecological contributors to racial differences in LBW found that African American women who were uninsured were significantly more likely to deliver a LBW infant than those with health insurance (Jaffee & Perloff, 2003).

Intervention and advocacy efforts should also be directed toward improving the responsiveness, fairness, and effectiveness of the health care system for those who do have access to it. African Americans are signifi-

cantly less likely than non-Hispanic Whites to trust their medical providers to do what is best for them, especially if they receive their care in health centers, outpatient clinics, or emergency rooms (Halbert, Armstrong, Gandy, & Shaker, 2006), and they are less satisfied with the services they do receive (Smedley et al., 2003). One factor that is particularly important for promoting trust is the relationship with the provider (Hall, Dugan, Zheng, & Mishra, 2001). Social workers can encourage better patient-provider communication in their role as patient advocates. Outside of their involvement in direct medical encounters, social workers can organize workshops that focus on cultural competence, partnership building, and effective communication skills.

Advocacy efforts should not be geared just toward the health care system itself. Promoting health equity also requires attention to the ways in which policies and practices that are seemingly unrelated to health nevertheless impact it. Social workers must challenge business, community, and political leaders to consider the health ramifications of economic, environmental, and educational initiatives. Helping to organize vulnerable communities to exercise their voting rights so that policy makers take them seriously as political stakeholders is vitally important to advancing a health and social equity agenda. Furthermore, social workers can be instrumental in launching a national dialogue on race and racism. Recent efforts to gauge racial attitudes indicate that most White Americans believe racism is a thing of the past (e.g., Bobo, 2001); however, studies of racism and health consistently show that a majority of African Americans report unfair treatment owing to race (see studies reviewed in Williams et al., 2003). The prevailing culture of political correctness often stifles any meaningful conversation about American race relations, but a national conversation is in order (Jones, 2000).

Social work researchers play a vital role in addressing racial disparities in adverse birth outcomes as well. Our understanding of this public health problem can be considerably enhanced by attending to certain methodological issues. Though the literature on racism and health is growing, very few researchers have incorporated measures of interpersonal and institutional racism, although both have been shown to independently affect health outcomes when studied concurrently (e.g., Gee, 2002). Testing multilevel models may shed much-needed light on the relative contribution of individual and socioenviromental risk factors to persistent racial disparities in adverse birth outcomes. In addition, testing interactive effects of race and SES may provide new insight into the role of socioeconomic factors in perpetuating race-based health disparities (see Kaufman et al., 1997). Taking a multigenerational, life course approach, which considers childhood socioeconomic factors, changes in SES across the lifetime, and length of time in social position, also could help to explain seeming paradoxes and capture important socioeconomic distinctions that contribute to racial variations in health (Lu & Halfon, 2003). The knowledge gained from studies employing stronger and more complex methodologies can inform the development of

innovative intervention strategies designed to promote the health of African American mothers and babies.

CONCLUSION

Racism is deeply woven into the fabric of U.S. society, and social inequality is tolerated as an unavoidable by-product of the American cultural ethos of rugged individualism (James, 2003). Eliminating the persistent racial gap will require a serious commitment to confronting racism and the social inequities that result from it. Connections must be drawn between the racial patterning of health and disease and the racial patterning of economic, educational, political, housing, and employment opportunities. Emphasizing race as a marker of differential privilege and access is critical for focusing the health disparities discourse on the broader contextual factors that underlie racial variations in health. Scientific inquiry into the health consequences of racism and social inequality may provide new insights into the myriad factors linking society to biology. Such knowledge may prove instrumental in raising public sentiment and cultivating the political will needed to enact fundamental social change.

REFERENCES

Acevedo-Garcia, D., Lochner, K. A., Osypuk, T. L., & Subramanian, S. V. (2003). Future directions in residential segregation and health research: A multilevel approach. *American Journal of Public Health*, *93*, 215–221.

Amini, S. B., Catalano, P. M., Hirsch, V., & Mann, L. I. (1994). An analysis of birthweight by gestational age using a computerized perinatal data base, 1975–1992. *Obstetrics and Gynecology*, *83*, 342–352.

Bobo, L. D. (2001). Racial attitudes and relations at the close of the twentieth century. In N. J. Smelser, W. J. Wilson, & M. Mitchell (Eds.), *America becoming: Racial trends and their consequences* (pp. 264–301). Washington, DC: National Research Council.

Burchard, E. G., Ziv, E., Coyle, N., Gomez, S. L., Tang, H., Karter, A. J., et al. (2003). The importance of race and ethnic background in biomedical research and clinical practice. *New England Journal of Medicine*, *348*, 1170–1175.

Centers for Disease Control and Prevention, Division of Reproductive Health (1999). Achievements in public health. 1900-1999: Healthier mothers and babies. *Morbidity and Mortality Weekly Report*, *48*, 849–858.

Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African-Americans: A biopsychosocial model. *American Psychologist*, *54*, 805–816.

Cohen, S., Kessler, R. C., & Gordon, L. U. (1995). Strategies for measuring stress in studies of psychiatric and physical disorders. In S. Cohen, R. C. Kessler, and

L. U. Gordon (Eds.), *Measuring stress: A guide for health and social scientists*. New York, NY: Oxford University Press.

Collins, J. W. Jr., Wu, S.-Y., & David, R. J. (2002). Differing intergenerational birth weights among the descendants of US-born and foreign-born Whites and African-Americans in Illinois. *American Journal of Epidemiology*, *155*, 210–216.

Cooper, R. S., Kaufman, J. S., & Ward, R. (2003). Race and genomics. *New England Journal of Medicine*, *348*, 1166–1170.

David, R. J. & Collins, J. W. Jr. (1997). Differing birthweight among infants of US-born blacks, African-born blacks, and US-born whites. *New England Journal of Medicine*, *337*, 1209–1214.

DeNavas-Walt, C., Proctor, B. D., & Lee, C. H. (2005). *Income, poverty, and health insurance coverage in the United States: 2004*. Current Population Reports, P60-229. Washington, DC: U.S. Government Printing Office.

Elixhauser, A., Yu, K., Steiner, C., & Bierman, A.S. (2000). *Hospitalization in the United States—1997*. Washington, DC: Agency for Healthcare Research and Quality. HCUP Fact Book No. 1, AHRQ Publication No. 00-0031.

Fine, M. J., Ibrahim, S. A., & Thomas, S. B. (2005). The role of race and genetics in health disparities research. *American Journal of Public Health*, *95*, 2125–2128.

Foster, H. W., Wu, L., Bracken, M. B., Semenya, K., Thomas, J., & Thomas, J. (2000). Intergenerational effects of high socioeconomic status on low birthweight and preterm birth in African-Americans. *Journal of the National Medical Association*, *92*, 213–221.

Gee, G. C. (2002). A multilevel analysis of the relationship between institutional and individual racial discrimination and health status. *American Journal of Public Health*, *92*, 615–623.

Giscombe, C. L. & Lobel, M. (2005). Explaining disproportionately high rates of adverse birth outcomes among African-Americans: The impact of stress, racism, and related factors in pregnancy. *Psychological Bulletin*, *131*, 662–683.

Goldenberg, R. L., Cliver, S. P., Mulvihill, F. X., Hickey, C. A., Hoffman, H. J., Klerman, L. V., et al. (1996). Medical, psychosocial, and behavioral risk factors do not explain the increased risk for low birth weight among black women. *American Journal of Obstetrics and Gynecology*, *175*, 1317–1324.

Halbert, C. H., Armstrong, K., Gandy, O. H., & Shaker, L. (2006). Racial differences in trust in health care providers. *Archives of Internal Medicine*, *166*, 896–901.

Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. K. (2001). Trust in physicians and medical institutions: What is it, can it be measured, and does it matter? *Milbank Quarterly*, *79*, 613–639.

Hogan, V., Ferre, C., Rowley, D., Boisseau, M., Marks, J., & Durant, T. (Eds.). (2001). The social context of pregnancy for African-American women [Special issue]. *Maternal and Child Health Journal*, *5*(2), 67–69.

Hogue, C. J. R., & Bremner, J. D. (2005). Stress model for research into preterm delivery among black women. *American Journal of Obstetrics and Gynecology*, *192*, S47–S55.

Jaffee, K. D., & Perloff, J. D. (2003). An ecological analysis of racial differences in low birthweight: Implications for maternal and child health social work. *Health & Social Work*, *28*, 9–22.

James, S. A. (2003). Confronting the moral economy of US racial/ethnic health disparities. *American Journal of Public Health*, *93*, 189.

Jones, C. P. (2000). Levels of racism: A theoretic framework and a gardener's tale. *American Journal of Public Health*, *90*, 1212–1215.

Kaufman, J. S., Cooper, R. S., & McGee, D. L. (1997). Socioeconomic status and health in Blacks and Whites: The problem of residual confounding and the resiliency of race. *Epidemiology*, *8*, 621–628.

Kogan, M. D., Kotelchuk, M., Alexander, G. R., & Johnson, W. E. (1994). Racial disparities in reported prenatal care advice from health care providers. *American Journal of Public Health*, *84*, 82–88.

Krieger, N. (2003). Does racism harm health? Did child abuse exist before 1962? On explicit questions, critical science, and current controversies: An ecosocial perspective. *American Journal of Public Health*, *93*, 194–199.

Lille-Blanton, M., Brodie, M., Rowland, D., Altman, D., & McIntosh, M. (2000). Race, ethnicity, and the health care system: Public perceptions and experiences. *Medical Care Research and Review*, *57*, 218–235.

Lin, C. C., Rogot, E., Johnson, N. J., Sorlie, P. D., & Arias, E. (2003). A further study of life expectancy by socioeconomic factors in the National Longitudinal Mortality Study. *Ethnicity and Disease*, *13*, 240–247.

Lu, M. C., & Halfon, N. (2003). Racial and ethnic disparities in birth outcomes: A life-course perspective. *Maternal and Child Health Journal*, *7*, 13–30.

March of Dimes. (2006, November). *Perinatal overview of the United States*. Retrieved from http://www.marchofdimes.com/peristats/tlanding.aspx?reg=99&lev=0&top=1&slev=1&dv=qf

Martin, J. A., Hamilton, B. E., Sutton, P. D., Ventura, S. J., Menacker, F., & Munson, M. L. (2005). Births: Final data for 2003. *National Vital Statistics Reports*, *54*(2).

Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.

Mathews, T. J., Menacker, F., & MacDorman, M. F. (2004). Infant mortality statistics from the 2002 period linked birth/infant death data set. *National Vital Statistics Reports*, *53*(10).

Meyer, I. H. (2003). Prejudice as stress: Conceptual and measurement problems. *American Journal of Public Health*, *93*, 262–265.

National Center for Health Statistics (NCHS) (2005). *Health United States, 2005 with chartbook on trends in the health of Americans*. Washington, DC: U.S. Government Printing Office.

Nazroo, J. Y. (2003). The structuring of ethnic inequalities in health: Economic position, racial discrimination, and racism. *American Journal of Public Health*, *93*, 277–284.

Newburger, E. C., & Curry, A. E. (2000). Educational attainment in the US (update): Population characteristics. In Current Population Report P20-536. Washington, DC: U.S. Census Bureau, U.S. Department of Commerce.

Oliver, M., & Shapiro, T. (1995). *Black wealth/White wealth: A new perspective on racial inequality*. New York, NY: Routledge.

Paul, D. A., Locke, R., Zook, K., Leef, K. H., Stefano, J. L., & Colmorgen, G. (2006). Racial differences in prenatal care of mothers delivering very low birthweight infants. *Journal of Perinatology*, *26*, 74–78.

Polednak, A. P. (1996). Trends in US urban black infant mortality by degree of residential segregation. *American Journal of Public Health*, *86*, 723–726.

Porter, T. F., Fraser, A. M., Hunter, C. Y., Ward, R. H., & Varna, M. W. (1997). Risk of preterm birth across generations. *Obstetrics and Gynecology*, *90*, 63–67.

Reidpath, D. D., & Allotey, P. (2003). Infant mortality rate as an indicator of population health. *Journal of Epidemiology and Community Health*, *57*, 344–346.

Rich-Edwards, J. W., Buka, S. L., Brennan, R. T., & Earls, F. (2003). Diverging associations of maternal age with low birthweight for black and white mothers. *International Journal of Epidemiology*, *32*, 83–90.

Rich-Edwards, J. W., Colditz, G. A., Stampfer, M. J., Willett, W. C., Gillman, M. W., Hennekens, C. H. et al. (1999). Birthweight and the risk for type II diabetes mellitus in adult women. *Annals of Internal Medicine*, *130*, 278–284.

Roberts, E. M. (1997). Neighborhood social environments and the distribution of low birthweight in Chicago. *American Journal of Public Health*, *87*, 597–603.

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care.* Washington, DC: Institute of Medicine, National Academies Press.

Stewart, A. L., Rifkin, L., Amess, P. N., Kirkbride, V., Townsend, J. P., Miller, D. H., et al. (1999). Brain structure and neurocognitive and behavioral function in adolescents who were born very preterm. *Lancet*, *353*, 1653–1657.

U.S. Bureau of the Census. (1998). *Report on earnings and poverty rates based on 1990 census.* Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (2000). *Healthy people 2010* (2nd ed.). Washington, DC: U.S. Government Printing Office.

Vladeck, B. (2003). Universal health insurance in the United States: Reflections on the past, the present, and the future. *American Journal of Public Health*, *93*, 16–19.

Wadhwa, P. D., Culhane, J. F., Rauh, V., & Barve, S. S. (2001). Stress and preterm birth: Neuroendocrine, immune/inflammatory, and vascular mechanisms. *Maternal and Child Health Journal*, *5*, 119–125.

Williams, D. R. (2002). Racial/ethnic variations in women's health: The social embeddedness of health. *American Journal of Public Health*, *92*, 588–597.

Williams, D. R., Neighbors, H. W., & Jackson, J. S. (2003). Racial/ethnic discrimination and health: Findings from community studies. *American Journal of Public Health*, *93*, 200–208.