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Oppressed in the Womb: Black Women and Racial Disparities in Birth Outcomes

Despite being the richest country and spending more of its wealth on healthcare than any other country in the world, the United States ranks 30th in infant mortality – a critical indicator of population health (MacDormand, 2005). Based on a wide variety of indicators, such as low birth weight, pre-term delivery, stillbirth, spontaneous abortion, and congenital malformations, an estimated 1% of births in the United States result in adverse birth outcomes, which equates to 6.75 deaths per 1,000 live births (CDC, 2010). Children who survive adverse birth outcomes typically go on to have poor health and development, which then continues into adulthood, manifesting in problems such as ADHD, learning disabilities, cardiovascular disease, and hypertension (Dominguez, 2008).

The adverse birth outcome rates for African American women are higher than those of any other racial or ethnic group in the United States (Lobel & Rosenthal, 2011). Compared to all other groups, African Americans are more than twice as likely to die in infancy (Dominguez, 2011). There are several known factors which increase the risk for these outcomes. These risk factors include, but are not limited to: vitamin deficiency during pregnancy such as low levels of folic acid, cigarette smoking during pregnancy, drug and alcohol use during pregnancy, chronic illnesses such as diabetes, and inadequate prenatal care (CDC 2012). However, exposure to these risk factors does not fully explain racial and ethnic disparities in childbirth outcomes (Halfon & Lu, 2003).

Despite an increase in public health education, and despite improved access to health care (Murray & Bernfield, 1988), race-ethnic disparities in childbirth outcomes persist (CDC, 1999). As a result, there has been an increasing amount of research on the ways in which racial discrimination, gendered racism, and stress levels may explain racial and ethnic disparities in childbirth outcomes (Dominguez, 2011).

For this paper, I reviewed only peer-reviewed studies. I gathered references from such databases as Jstor, PubMed, and PsychInfo. I also utilized article cross-referencing. I used the studies to outline the current body of knowledge on race-ethnic disparities on infant health and the fundamental causes that drive these disparities, as well as highlight the key limitations to prior research and discuss future research directions.

Genetic Explanations for Adverse Birth Outcome Disparities

Previous research on racial disparities in adverse birth outcomes focused on genetics as a possible explanation (Dougherty & Jones, 1982). For example, a study of twins found that up to 69% of the variance in birth-weight of the studied population could be explained by fetal genes (Magnus, 1984). Another study found that among low income black and white women, black infants weighed approximately 148g less than white infants, even though 70% of the white women in the study reported regular smoking, which is a known risk factor for low birth weight. The researchers posited that intrinsic and extrinsic factors associated with race may explain the difference (Goldenberg et al., 1991).

Similarly, a study of rates of low birth weight found that SES was only able to explain 1% of the variance in birth weight 18,000 newborns, which led researchers to conclude that race affected birth weight (David & Collins, 1997). In one of the more comprehensive studies, data

taken from 60,000 participants indicated that maternal race was among the risk factors (Amini et al., 1994). Little & Sing (1987) found that genetics influence birth weight, but the relationship is moderated by environmental conditions.

More recent studies have focused not on race as a moderating variable, but on the social factors that are driven by race. This distinction is important because we know, and have known for a long time, that race is not biological (Livingstone & Dobzhansky, 1962). The first step toward this new trend in the research was comparing American born and African born black women in order to test the race hypothesis. We know that the vast majority of African Americans have origins in West Africa (Parra et al., 1998). If race explains disparities in birth outcomes, then we would see similar birth outcomes in the two groups. Instead, African born black women had birth outcomes that were similar to American white women.

Babies born to foreign-born black women were found to have higher birth weights than those born to American-born black women. Foreign-born black women were also less likely to have given birth to a low birth weight baby (Valanis & Rush, 1979). The gap persisted even after controlling for age, marital status, education, and the use of cigarettes or drugs during pregnancy (Cabral et al., 1990). Additionally, African-born black women had birth weights comparable to those of U.S.-born white women, even after controlling for the mother's age, marital status, educational attainment, and prior fetal loss (David & Collins, 1997). Although foreign-born black women were less likely to report engagement in substance abuse (Elo, 2010), the gap still persisted after controlling for risk factors that contribute to low birth weight (Raab, 1998).

Foreign-born status was associated with low birth weight for minority (black, Hispanic, and Asian) women (Singh & Yu, 1996; Fuentes-Afflick, Hessol, & Pérez-Stable, 1998), but it

had the strongest association for black women, reducing their risk by 20-25% (Kleinman, Fingerhut, & Prager, 1991; Acevedo-Garcia, Soobader, & Berkman, 2005).

These findings are important because they speak to the importance of ethnicity and culture as a demographic factor in the study of racial disparities in adverse birth outcomes. The findings in studies that compared black and white women may have masked variations within the former group, and the aforementioned studies that compared foreign born African women to American born black women teased out those distinctions (Fang, J., Madhavan, S., & Alderman, M. H., 1999; Ghazal & Emerson, 2005). Furthermore, they challenged the genetic concept of race as a factor in adverse birth outcomes, particularly in relationship to birth weight. We now know that people of African descent do not carry genes which cause them to be predisposed to adverse birth outcomes.

There are limitations to these studies. First, some known risk factors, such as alcohol consumption, smoking, and drug use, were self-reported. It is possible that these behaviors were underreported. Additionally, none of the studies explained why foreign-born status is associated with adverse birth outcomes, nor did they explain why the association was strongest for black women. Finally, the studies did not account for the amount of time the foreign-born women spent of the United States. In other words, to what degree does acculturation moderate the relationship between foreign-born status and adverse birth outcomes? More research is needed to answer these questions.

Social Explanations for Adverse Birth Outcome Disparities

We now know that there is no biological explanation for racial disparities in birth outcomes. We also know that medical and behavioral risk factors do not explain the disparities

(Goldenberg et al., 1996). Thus, the current trend in research is to examine the ways in which social factors that are influenced by race may affect birth outcomes.

Research indicates that there is an association between perceived racial discrimination and very low birth weight (Collins et al., 2000). One study found that black women had substantially higher incidences of low birth weight, substantially greater reporting of racial discrimination, and fewer economic resources than their white counterparts. Furthermore, those black women who reported racial discrimination in 3 or more situations had 3.1 times the risk for preterm delivery (Mustillo et al., 2004).

In a comparison of black and white women of similar education and income levels (which were higher than the general populations of their respective groups), perceived racism over the life course and vicarious racism during childhood predicted low birth weight for African American women (Dominguez et al., 2008). For black women, childhood experiences with racism were particularly significant, and the memories of such events were enduring (Nuru-Jeter et al., 2009). Interestingly, although one-third of the white participants reported perceived racial discrimination, the researchers did not find a similar predictor of low birth weight among the white women who had experienced the discrimination (Dominguez et al., 2008). Similarly, black women who reported higher levels of perceived discrimination (Dole, et al., 2004) and those who had directly experienced racism (Rosenberg et al., 2002) were at greater risk for preterm birth than those who reported lower levels.

One study found that weathering, or deterioration of physical health due to social inequalities, was associated with low birth weight for black women, particularly those of low socioeconomic status (Geronimus, 1999). However, even among college educated black women,

low birth weight and infant mortality were more common than for their white counterparts (Schoendorf, Hogue, Kleinman, & Rowley, 1992). This is not surprising, as college educated black women reported experiencing racism in the workplace (Jackson et al., 2001) which the authors hypothesized may be a risk factor for adverse birth outcomes.

The aforementioned studies were limited in that they did not examine perceived racism over the life course. Collins et al. (2004) addressed this in their study, and found that the cumulative lifelong experience of perceived racial discrimination was a risk factor for preterm labor and low birth weight. These findings were consistent across maternal socio-demographic, biomedical, and behavioral characteristics. Lifetime experience of racial discrimination was also associated with depressive symptoms during pregnancy (Renee et al., 2008). Murrell's 1996 study did not find any association between racism and birth weight or preterm delivery, but there was a significant positive relationship between racism and stress. This does not necessarily negate the findings in the previous studies conducted by Collins and Renee. Stress, which is associated with adverse birth outcomes (Stancil et al., 2000), could mediate the relationship between racism and adverse birth outcomes. Further research is needed to understand this model (Hogue & Brenner, 2005).

It is noteworthy that for poor white women, an increase in family income resulted in a decrease in the probability of having a low birth weight baby (48% for 1 unit increase). For poor black women with similar increases in family income, the decrease was statistically insignificant (Colen, Geronimus, Bound, & James, 2006). This is further evidence that for black women, improving social conditions such as socioeconomic status will not reduce the risk for some adverse birth outcomes.

Interestingly, the risk of low birth weight and preterm delivery among black women in high SES areas was higher for those whose neighborhoods were predominately white, suggesting that the reduction in adverse birth outcome rates attributed to improved SES was countered by the adverse effects of racism and racial stigma (Pickett, Collins, Masi, & Wilkinson, 2005). These findings are consistent with an earlier study (Roberts, 1997) which found that while community economic hardship has a positive relationship to the rate of low birth weight for black women, crowded housing and high numbers of black residents had a negative relationship to the rate of low birth weight.

In keeping with Roberts' findings, another study found that risk of preterm birth for black women increased as the proportion of black residents in their neighborhood decreased (Pickett, Ahern, Selvin, & Abrams, 2002). A subsequent study showed consistent findings, as higher levels of segregation or isolation from other blacks increased the risk of preterm birth and restricted fetal growth, while higher clustering was associated with better birth outcomes (Bell, Zimmerman, Almgren, Mayer, & Huebner, 2006).

The findings in these studies are important for several reasons. They enable us to see that perceived racial discrimination affects black women differently than it does for white women. Further research is needed to understand why. The researchers suggest black women's unique socio-political history in America may be a factor.

The findings also indicate that racial density may be a buffer against the effects of racial discrimination on birth outcomes. This is important because it is possible to form racially dense social support networks, which may provide some protection against the risk of adverse birth outcomes.

There are some limitations of these studies. There was no consistent, reliable measure for perceived racism, which was an important independent variable in many of the studies. Some of the instruments consisted of questions about discrimination at certain places, such as restaurants, schools, and at work, while other instruments contained questions about racism in childhood or throughout the life course. Additionally, some instruments elicited categorical responses (yes/no), which may not had adequately captured the degree to which racism was experienced or perceived. As such, the development of a reliable measure of the cumulative effect of racism is needed.

Another limitation of the studies was the small sample sizes. In order to generalize the findings, there needs to be more comprehensive research on larger populations of black women.

Directions for Future Research

Fortunately, there have been some positive developments in the study of racial disparities in birth outcomes. Fry-Johnson et al. (2010) found that some African American communities have seen a rate reduction in or elimination of infant mortality. Using data from the Compressed Mortality File from the NCHS, the researchers found that the black communities in Essex and Plymouth Counties, Mass.; Bronx County, N.Y.; and Multnomah County, Ore were found to be resilient. What is notable about these results is that the blacks in these counties had lower educational attainment and income than White Americans.

These findings are important because they show that national trends in adverse birth outcomes do not tell the entire story, as they may be masking regional success stories. They also give us a starting point to examine populations and communities in which adverse birth

outcomes have been reduced or eliminated. However, further research is needed to determine the causes of the reductions and whether or not they were medically or sociologically based.

Another study had promising results; the researchers found that interventions can be effective in reducing stress in pregnant black women, which may result in lower instances of preterm birth (Wesley, 2005). The participants in the study received three 45-minute stress reduction sessions with a trained health professional, and the researcher found that there was a significant reduction in stress (measured by cortisol levels) from pre-intervention to post-intervention. Furthermore, the women who received the interventions gave birth to babies with higher birth weights and gestational ages.

These findings are very important, as they indicate the possibility of adverse birth outcome rate reduction through specific interventions. More research is needed, particularly because these findings have public policy implications.

Another possible direction for future research is to examine the social and cultural contexts of black women's lives in order to find unique sources of stress. Rosenthal and Lobel (2011) argue that black women face a unique stressor in gendered racism. They cite stereotypes about black women's sexuality and usefulness in society, as well as pressure on black women to eschew motherhood (particularly among low-income black women) which stands in opposition to American societal pressures on women to embrace motherhood. In other words, black women are penalized not only for being women, but also for being black.

The idea of interlocking systems of oppression is not new. Double Jeopardy, or "having low status on two different dimensions of stratification" (Henslin, 2007, p. 193), has been discussed in the field of sociology for several decades. More recently, black feminists like

Patricia Hill Collins and bell hooks have examined the ways in which race, class, and gender work together to form unique sources of oppression for black women. Coined by Kimberle Crenshaw, this idea is known as "intersectionality" (Crenshaw, 1991) and it examines the multiple identities of black women and the ways in which various mechanisms interact and intersect in their lives. Rosenthal and Lobel argue that researchers must take an intersectional approach to understanding the relationship between race related stress and adverse birth outcomes in black women.

In conclusion, we know that adverse birth outcomes are not inevitable for black women, but we do not yet know how or why reductions or eliminations in adverse outcomes have occurred in certain areas. Furthermore, we know that the relationship between perceived discrimination and adverse birth outcomes is different among black and white women. If, as the researchers posited, black women's socio-political history is indeed a moderating variable in the relationship between perceived discrimination and adverse birth outcomes, is there an intervention that could lessen the effect? Additionally, how do culture and ethnicity moderate the relationship? What can be learned from studying birth outcomes among foreign-born black women? A review of literature suggests that future obstetric disparity work should go beyond quantifying differences between groups and move toward explaining disparities and identifying target populations who need the most help (Allyson et al, 2009).

There are many questions and many potential research questions. An interdisciplinary approach would certainly be appropriate (Giscombe & Lobel, 2005) as sociology, psychology, medicine, public health, epidemiology, and even history are relevant to the research topic.

References

Acevedo-Garcia, D., Soobader, M., & Berkman, L. F. (2005). The Differential Effect of Foreign-Born Status on Low Birth Weight by Race/Ethnicity and Education. *Pediatrics*, *115*(1), e20-e30.

Allison S., B., Ayaba, W., Aaron B., C., & A. Eugene, W. (2009). Review: Racial/ethnic disparities in obstetric outcomes and care: prevalence and determinants. *American Journal Of Obstetrics And Gynecology*, *202*335-343.

Amini, S. B., Catalano, P. M., Hirsch, V. & Mann, L. I. (1994) An analysis of birth weight by gestational age using a computerized perinatal data base, 1975-1992. *Obstetrics and Gynecology, 83*(3), 342-532.

Bécares, L., Nazroo, J., & Stafford, M. (2009). The buffering effects of ethnic density on experienced racism and health. *Health & Place*, *15*(3), 700-708.

Bell, J., Zimmerman, F., Almgren, G., Mayer, J., & Huebner, C. (2006). Birth outcomes among urban African-American women: a multilevel analysis of the role of racial residential segregation. *Social Science & Medicine*, *63*(12), 3030-3045.

Cabral, H., Fried, L. E., Levenson, S., Amaro, H., & Zuckerman, B. (1990). Foreign-Born and U.S.-Born Black Women: Differences in Health Behaviors and Birth Outcomes. *American Journal Of Public Health*, *80*(1), 70-72.

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.

Centers for Disease Control. (2012). Reproductive and Birth Outcomes. Retrieved from http://ephtracking.cdc.gov/showRbExpRisk.action.

Colen, C., Geronimus, A., Bound, J., & James, S. (2006). Maternal upward socioeconomic mobility and black-white disparities in infant birth weight. *American Journal Of Public Health*, *96*(11), 2032-2039.

Collins, J. r., David, R. J., Symons, R., Handler, A., Wall, S. N., & Dwyer, L. (2000). Low-Income African-American Mothers' Perception of Exposure to Racial Discrimination and Infant Birth Weight. *Epidemiology*, *11*(3), 337-339.

Collins, J. W., David, R. J., Handler, A., Wall, S., & Andes, S. (2004) Very low birth weight in African American infants: The role of maternal exposure to interpersonal racial discrimination. *American Journal of Public Health, 94,* 2132–2138.

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 1241-1299.

David, R., & Collins, J. (1997). Differing birth weight among infants of U.S.-born blacks, African-born blacks, and U.S.-born whites. *The New England Journal Of Medicine*, *337*(17), 1209-1214.

Dole, N., Savitz, D., Siega-Riz, A., Hertz-Picciotto, I., McMahon, M., & Buekens, P. (2004). Psychosocial factors and preterm birth among African American and White women in central North Carolina. *American Journal Of Public Health*, *94*(8), 1358-1365.

Dominguez, T., Dunkel-Schetter, C., Glynn, L. M., Hobel, C., & Sandman, C. A. (2008). Racial differences in birth outcomes: The role of general, pregnancy, and racism stress. *Health Psychology*, *27*(2), 194-203.

Dominguez, T. (2008). Race, Racism, and Racial Disparities in Adverse Birth Outcomes. *Clinical Obstetrics & Gynecology*, *51*(2), 360-370.

Dominguez, T. (2011). Adverse Birth Outcomes in African American Women: The Social Context of Persistent Reproductive Disadvantage. *Social Work In Public Health*, *26*(1), 3-16.

Dougherty, C., & Jones, A. (1982). The determinants of birth weight. *American Journal Of Obstetrics And Gynecology*, *144*(2), 190-200.

Elo, I. F. (2010). Variations in Health and Health Behaviors by Nativity Among Pregnant Black Women in Philadelphia. *American Journal Of Public Health*, *100*(11), 2185.

Fang, J., Madhavan, S., & Alderman, M. H., (1999). Low birth weight: Race and maternal nativity— Impact of community income. *Pediatrics*, *103*(1), 1-8.

Fry-Johnson YW, Levine R, Rowley D, et al. (2010). United States Black: White infant mortality disparities are not inevitable: identification of community resilience independent of socioeconomic status. *Ethn Dis.*,*20*(11), S1-131-5.

Fuentes-Afflick, E., Hessol, N. A., & Pérez-Stable, E. J. (1998). Maternal Birthplace, Ethnicity, and Low Birth Weight in California. *Archives of Pediatric and Adolescent Medicine*, *152*(11), 1105-1112.

Geronimus, A. (1999). Black/white differences in the relationship of maternal age to birth weight: A population-based test of the weathering hypothesis. *Social Science & Medicine, 42*(4), 589–597.

Ghazal Read, J., & Emerson, M. O. (2005). Racial Context, Black Immigration and the U.S. Black/White Health Disparity. *Social Forces, 84*(1), 181-199.

Giscombe, C., & 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*(5), 662-683.

Goldenberg R. L., Cliver, S. P., Cutter, G. R., et al. (1991). Black-white differences in newborn anthropometric measurements. *Obstetrics and Gynecology, 78*(50), 782-788.

Goldenberg, R. L., Cliver, S. P., Mulvihill, F. X., Hickey, C. A., Hoffman, H. J., Klerman, L. V., & Johnson, M. J. (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.

Halfon, N., & Lu, M. (2003). Racial and Ethnic Disparities in Birth Outcomes: A Life-Course Perspective. *Maternal and Child Health Journal, 7*(1), 13-30.

Henslin, J. M. (2007). *Essentials of sociology : a down-to-earth approach.* Boston : Pearson/Allyn & Bacon.

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

Jackson, F., Phillips, M., Hogue, C., & Curry-Owens, T. (2001). Examining the burdens of gendered racism: implications for pregnancy outcomes among college-educated African American women. *Maternal & Child Health Journal*, *5*(2), 95-107.

Kleinman, J.C., Fingerhut, L. A., & Prager, K. (1991).Differences in Infant Mortality by Race, Nativity Status, and Other Maternal Characteristics. *Arch Pediatr Adolesc Med*.,*145*(2):194-199.

Livingstone, F. B., & Dobzhansky, T. (1962). On the Non-Existence of Human Races. *Current Anthropology*, *3*(3), 279-281.

Lobel, M. & Rosenthal, L. (2011). Explaining racial disparities in adverse birth outcomes: Unique sources of stress for Black American women. *Social Science & Medicine*, (*72)*, 977-983.

MacDormand, M.F.(2005). Race and Ethnic Disparities in Fetal Mortality, Preterm Birth, and Infant Mortality in the United States: An Overview. *Seminars In Perinatology*, *35*(Disparities in Perinatal Medicine: Focus on Infant Mortality, Stillbirth and Preterm Birth), 200-208.

Magnus P. (1984). Further evidence for a significant effect of fetal genes on variation in birth weight. *Clinical Genetics*, *26*(4), 289-296.

Murray, J. L. & Bernfield, M. (1988). The differential effect of prenatal care on the incidence of low birth weight among Blacks and Whites in a prepaid health care plan. *New England Journal of Medicine, 319*, 1385-1391.

Murrell, N. L. (1996). Stress, self-esteem, and racism: Relationships with low birth weight and preterm delivery in African American women. *Journal of National Black Nurses' Association, 8*, 45–53.

Mustillo, S., Krieger, N., Gunderson, E., Sidney, S., McCreath, H., & Kiefe, C. (2004). Self-reported experiences of racial discrimination and black-white differences in preterm and low-birthweight deliveries: the CARDIA Study. *American Journal Of Public Health, 94*(12), 2125-2131.

Nuru-Jeter, A., Dominguez, T., Braveman, P., et al. (2009)"It's the skin you're in": African-American women talk about their experiences of racism. An exploratory study to develop measures of racism for birth outcome studies. *Maternal & Child Health Journal, 13*(1):29-39.

Parra, E. J., Marcini, A., Akey, J., et al. (1998). Estimating African American admixture proportions by use of population-specific alleles. *American Journal of Human Genetics, 63*(6), 1839–1851.

Pickett, K., Ahern, J., Selvin, S., & Abrams, B. (2002). Neighborhood socioeconomic status, maternal race and preterm delivery. A case-control study. *Annals of Epidemiology, 12*(6), pp. 410–418

Pickett, K., Collins, J. r., Masi, C., & Wilkinson, R. (2005). The effects of racial density and income incongruity on pregnancy outcomes. *Social Science & Medicine, 60*(10), 2229-2238.

Pickett, K., & Wilkinson, R. (2008). People like us: ethnic group density effects on health. *Ethnicity & Health, 13*(4), 321-334.

Raab, M. M. (1998). Birth Weight Is Lower Among Infants of U.S.-Born Than African-Born Blacks. *Family Planning Perspectives, 30*(3), 150.

Renée B., C., Bertha L., B., Claudia, H., Clifford, B., & Yan, T. (2008). Article: Discrimination and Symptoms of Depression in Pregnancy Among African American and White Women. *Women's Health Issues, 18,* 292-300.

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

Rosenberg, L., Palmer, J. R., Wise, L. A., Horton, N. J., & Corwin, M. J. (2002). Perceptions of racial discrimination and the risk of preterm birth. *Epidemiology, 13*, 646–652.

Rosenthal, L., & Lomel, M. (2011). Explaining racial disparities in adverse birth outcomes: Unique sources of stress for Black American women. *Social Science & Medicine, 72*977-983.

Schoendorf, K. C., Hogue, C. J. R., Kleinman, J. C., & Rowley, D. R. (1992). Mortality among infants of black compared with white college-educated parents. *New England Journal of Medicine, 326*, 1522-1526.

Singh, G. K., & Yu, S. M. (1996) Adverse pregnancy outcomes: differences between US- and foreign-born women in major US racial and ethnic groups. *American Journal of Public Health, 86*(6), 837-843.

Valanis, B. M. & Rush, D. (1979) A partial explanation of superior birth weights among foreign-born women. *Biodemography and Social Biology*, *26*(3):198-210.