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Reproductive Health Knowledge among African American Women Enrolled in a Clinic-Based Randomized Controlled Trial to Reduce Psychosocial and Behavioral Risk: Project DC-HOPE

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ABSTRACT

Background: Washington, DC, has among the highest rates of sexually transmitted infections and unintended pregnancy in the United States. Increasing women's reproductive health knowledge may help to address these reproductive health issues. This analysis assessed whether high-risk pregnant African American women in Washington, DC, who participated in an intervention to reduce behavioral and psychosocial risks had greater reproductive health knowledge than women receiving usual care.

Methods: Project DC-HOPE was a randomized, controlled trial that included pregnant African American women in Washington, DC, recruited during prenatal care (PNC). Women in the intervention group were provided reproductive health education and received tailored counseling sessions to address their psychosocial and behavioral risk(s) (cigarette smoking, environmental tobacco smoke exposure, depression, and intimate partner violence). Women in the control group received usual PNC. Participants completed a 10-item reproductive knowledge assessment at baseline (n = 1,044) and postpartum (n = 830). Differences in total reproductive health knowledge scores at baseline and postpartum between groups were examined via χ^2 tests. Differences in postpartum mean total score by group were assessed via multiple linear regression.

Results: Women in both groups and at both time points scored approximately 50% on the knowledge assessments. At postpartum, women in the intervention group had higher total scores compared with women receiving usual care (mean 5.40 [SD 1.60] vs. 5.03 [SD 1.53] out of 10, respectively; $p < .001$).

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Dr. Michele Kiely had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Dr. Kiely can be contacted for the full trial protocol.

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Conclusions: Although intervention participants increased reproductive health knowledge, overall scores remained low. Development of interventions designed to impart accurate, individually tailored information to women may promote reproductive health knowledge among high-risk pregnant African American women residing in Washington, DC.
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Washington, DC, has the highest rates of chlamydia and gonorrhea among adolescents and young women compared with all 50 states (Centers for Disease Control and Prevention [CDC], 2014). Young African American women in the District are disproportionately impacted by chlamydia and gonorrhea compared with other races and age groups (HIV/AIDS, Hepatitis, STDs and TB Administration Strategic Information Division, 2012). In addition, unintended pregnancies occurred at higher rates in Washington, DC, than other states (Kost, 2015) and more often among non-Hispanic African American women compared with non-Hispanic White and Hispanic women (Finer & Zolna, 2014). The infant mortality rate among African Americans in Washington, DC, is three times greater than among White infants (Mathews & MacDorman, 2013).

These adverse sexual health and pregnancy outcomes may be associated with inaccurate reproductive health knowledge. For instance, compared with White women, African American women are less likely to have accurate reproductive health knowledge regarding contraception effectiveness (Biggs & Foster, 2013). This lack of knowledge may impact women's behaviors. Frost, Lindberg, and Finer, (2012) found that low knowledge about contraception and underestimating birth control effectiveness was associated with greater odds of having unprotected sex in the next three months among women age 18 to 29 years. Further, unprotected intercourse increases women's risk for unplanned pregnancy (American Congress of Obstetricians and Gynecologists, 2009) and sexually transmitted infections (STIs; Institute of Medicine Committee on Prevention and Control of Sexually Transmitted Diseases, 1997). STIs can increase women's risk of poor pregnancy and birth outcomes, and can be transmitted from mother to baby (CDC, 2014).

Women with less accurate reproductive health knowledge may not have had medically accurate reproductive health education and what knowledge they did receive may be culturally biased. Although sex and human immunodeficiency virus education is currently mandated for all students in Washington, DC, where African American women experience reproductive health disparities, there are no requirements that education be medically accurate and culturally congruent or unbiased (Guttmacher Institute, 2016; Lu et al., 2010). Although provision of contraception information is required and ways to avoid coerced sex are taught, there are no requirements to be inclusive of sexual orientation, to discuss consequences of teen sex and pregnancy, to teach skills for healthy decision making regarding sex, or how to communicate with family about sex.

These institutional mandates on reproductive health education have the potential to impact the health of African American women in Washington, DC. However, if women are not provided with culturally appropriate and accurate reproductive health information, they may not have the knowledge and skills to prevent STIs or unintended pregnancies. Adequate, medically accurate, and culturally appropriate reproductive health knowledge can have a large beneficial impact on individuals and society (Sonfield, Hasstedt, Kavanaugh, & Anderson, 2013). To address these adverse reproductive health outcomes, scholars suggest that providing reproductive education in adolescence in addition to other strategies may help close the gap in adverse birth outcomes between African Americans and Whites (Lu et al., 2010). In addition, the CDC has recommended targeted interventions for African American women of reproductive age (CDC, 2009; CDC, 2014). It is possible that interventions designed specifically for African Americans can increase their reproductive health knowledge (Dunlop, Logue, Thorne, & Badal, 2013; Schover et al., 2011) or reduce their preconception health risks (Jack et al., 2015). However, it is unknown whether the reproductive health knowledge component included within our intervention that addresses multiple risks impacts women's and fetus' health. It is also unclear whether reproductive health knowledge actually influences a woman's behavior. Previous interventions to improve health risks typically either addressed a single risk behavior or multiple risk behaviors for general health (Prochaska et al., 2008; Prochaska & Sallis, 2004; Sorensen et al., 2003), cardiovascular disease (Hyman, Pavlik, Taylor, Goodrick, & Moye, 2007), and cancer risks. More recent interventions have addressed human immunodeficiency virus risk (Gollub, Cyrus-Cameron, Armstrong, Boney, & Chhatre, 2013) and multiple preconception health risks (Jack et al., 2015). Interventions addressing a single risk may not be as effective at tackling multilevel factors that affect reproductive health (Nigg, Allegrante, & Ory, 2002). More research is needed in this domain to assess comprehensive interventions that provide reproductive health knowledge and address psychosocial and behavioral risks among pregnant African American women residing in Washington, DC. By increasing their reproductive health knowledge, pregnant African American women in Washington, DC, may have healthier pregnancies and improvement in long-term health outcomes for themselves and their children. The objective of this study was to assess whether high-risk pregnant African American women who were residents of Washington, DC, and enrolled in an intervention to address psychosocial and behavioral health risks had greater reproductive health knowledge compared with women in the usual care group at the end of the intervention.

Material and Methods

This study is part of the National Institutes of Health–DC Initiative to Reduce Infant Mortality in Minority Populations (i.e., Project DC-HOPE), a congressionally mandated program that aimed to reduce the high mortality rates among African American infants in Washington, DC. The study was a collaboration between Children's National Medical Center, Georgetown University, George Washington University Medical Center, Howard University, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, the National Center on Minority Health and Health Disparities, and RTI International. This study was reviewed and approved by the institutional review boards of all participating institutions.

Project DC-HOPE was a randomized control trial to evaluate the efficacy of an integrated behavioral intervention delivered during prenatal care (PNC). The goals of the intervention were to 1) reduce four psychosocial and behavioral risks—cigarette