

GYNECOLOGY

Reducing health disparities by removing cost, access, and knowledge barriers



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BACKGROUND: While the rate of unintended pregnancy has declined in the United States in recent years, unintended pregnancy among teens in the United States is the highest among industrialized nations, and disproportionately affects minority teens.

OBJECTIVE: Our objective of this secondary analysis was to estimate the risk of unintended pregnancy for both Black and White teens age 15-19 years when barriers to access, cost, and knowledge are removed. Our hypothesis was that the Black-White disparities would be reduced when access, education, and cost barriers are removed.

STUDY DESIGN: We performed an analysis of the Contraceptive CHOICE Project database. CHOICE is a longitudinal cohort study of 9256 sexually active girls and women ages 14-45 years in the St Louis, MO, region from 2007 through 2013. Two measures of disparities were used to analyze teenage pregnancy rates and pregnancy risk from 2008 through 2013 among teens ages 15-19 years. These rates were then compared to the rates of pregnancy among all sexually active teens in the United States during the years 2008, 2009, 2010, and 2011. We estimated an absolute measure (rate difference) and a relative measure (rate ratio) to examine Black-White disparities in the rates of unintended pregnancy.

RESULTS: While national rates of unintended pregnancy are decreasing, racial disparities in these rates persist. The Black-White rate difference dropped from 158.5 per 1000 in 2008 to 120.1 per 1000 in 2011; however, the relative ratio disparity decreased only from 2.6-2.5, suggesting that Black sexually active teens in the United States have 2.5 times the rate of unintended pregnancy as White teenagers. In the CHOICE Project, there was a decreasing trend in racial disparities in unintended pregnancy rates among sexually active teens (age 15-19 years): 2008 through 2009 (rate difference, 18.2; rate ratio, 3.7), 2010 through 2011 (rate difference, 4.3; rate ratio, 1.2), and 2012 through 2013 (rate difference, -1.5; rate ratio, 1.0).

CONCLUSION: When barriers to cost, access, and knowledge were removed, such as in the Contraceptive CHOICE Project, Black-White disparities in unintended pregnancy rates among sexually active teens were reduced on both absolute and relative scales. The rate of unintended pregnancy was almost equal between Black and White teens compared to large Black-White disparities on the national level.

Key words: contraception, health disparities, teenage girls, unintended pregnancy

Introduction

Over the past several years, the US birth rate has declined steadily. However, a disproportionate number of those births occur among Black and Hispanic women. Of the 3 million unintended pregnancies that occur each year in the United States, Black women are 3 times more likely and Hispanic women are twice as likely to have an unintended pregnancy in comparison to White women.^{1,2} The US teen pregnancy rate is among the highest in the developed world, and the risk of death associated with these pregnancies is one third higher than for women 20-24 years of age.³ Teenagers are at particularly high risk for unintended pregnancy as they experience increased barriers to

accessing contraceptives such as financial constraints, misinformation about long-acting reversible contraception (LARC), and unclear legal frameworks surrounding confidentiality for minors.⁴

Many unintended pregnancies occur because of incorrect or inconsistent use of contraceptives, and nonuse of contraception.⁵ Incorrect, inconsistent, and nonuse of contraception are highest among non-Hispanic Black and Hispanic women when compared to other racial/ethnic groups.⁶ However, high rates of unintended pregnancies among minorities cannot solely be attributed to contraceptive failure and nonuse.

Health care disparities also contribute to the high rates of unintended pregnancy seen among Black and Hispanic women. Disparities in health usually occur at 3 points: (1) exposures to stressors throughout the life course, (2) access to medical care, and (3) quality of care received. Addressing the social determinants of health disparities by eliminating access, education, and cost barriers have the potential to significantly reduce racial disparities in health

outcomes.⁷ Non-Hispanic Blacks and Hispanics are also more likely to have lower education levels, poor quality of education, lower income, and lack health insurance in comparison to Whites.⁸⁻¹⁰

This is significant as several studies using data from the National Survey of Family Growth in 2006 through 2008 showed income and education attainment to be significant predictors for unintended pregnancy.¹

Removing barriers to the most effective forms of contraception could reduce unintended teen pregnancies, improve the reproductive health of non-Hispanic Black and Hispanic women, and promote educational and career advancement. The purpose of this study is to examine the effects that removing cost, access, and knowledge barriers would have on non-Hispanic Black-White disparities in rates of unintended pregnancy.

Materials and Methods

The Contraceptive CHOICE Project is a prospective cohort study; 9256 women and girls were enrolled. The study sought

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TABLE
Black-White teen pregnancy rates in the United States and Choice

	United States				CHOICE Project		
	2008	2009	2010	2011	2008 through 2009	2010 through 2011	2012 through 2013
White	101.0	96.2	87.7	82.4	6.8	27.2	32.0
Black	259.5	242.1	220.8	202.5	25.1	31.5	30.5

Rates are expressed as pregnancies per 1000 person-years among sexually active teens aged 15-19 y.
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to reduce unintended pregnancies among girls and women ages 14-45 years by informing and educating them about the most effective reversible methods of contraception: LARC including intrauterine devices and the contraceptive implant. Participants were recruited from medical clinics, study flyers, and newspaper advertisements. Participants were enrolled from August 2007 through September 2011, and were provided the contraceptive method of their choice at no cost for 2-3 years, depending on the date of enrollment. The Human Research Protection Office at Washington University in St Louis School of Medicine approved the protocol of the CHOICE Project.

Women and girls were eligible to participate in the CHOICE Project if they did not want to become pregnant within the coming year, were between 14-45 years of age, were sexually active with a male or were going to be sexually active in the next 6 months, lived in the St Louis area, and spoke English or Spanish. Those who had undergone a sterilization procedure or hysterectomy were excluded from the study. Before enrolling in the study, all participants gave written informed consent to join the study. Girls age <18 years gave written assent and a guardian or parent gave written consent. If minors sought contraception without parental knowledge, they could enroll using a waiver of parental consent.

All participants received contraceptive counseling that presented contraceptives in order of most to least effective. In addition, the counseling reviewed risks, side effects, and benefits associated with each method. Participants choose the

appropriate method of contraception for themselves and were offered same-day insertion (when applicable) unless the patient desired an intrauterine device and currently had cervicitis or if pregnancy could not be ruled out.

Participants conducted telephone interviews with study staff at 3 and 6 months and every 6 months until completion of 2-3 years of follow-up, depending on when participants enrolled in the study. During these interviews, information regarding demographic characteristics, pregnancy outcomes, contraceptive method use and satisfaction, and reproductive history of participants was obtained. The participants self-reported their race and ethnicity during these interviews. All pregnancies were documented in a pregnancy log as well as the contraceptive method that the participant was using at the time of the pregnancy. In addition, if the outcome of the pregnancy was known at the time of the survey, this information was documented.

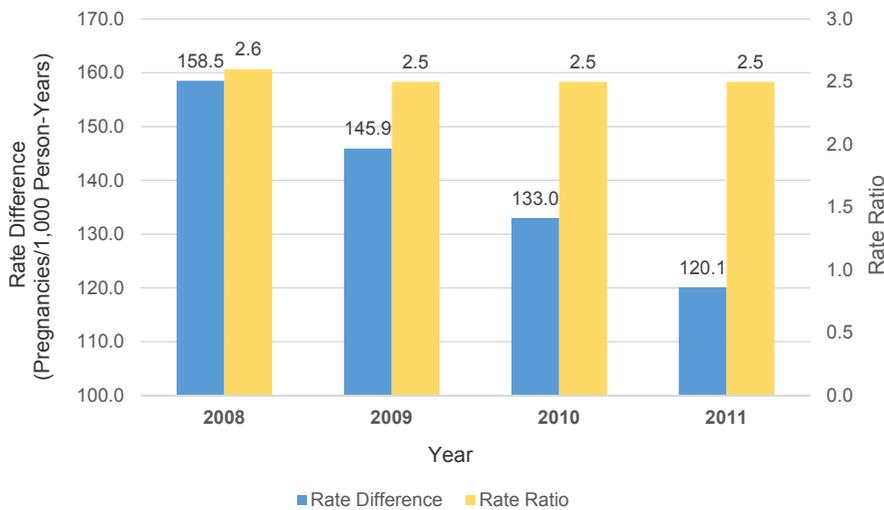
Estimates for pregnancy rates among sexually active teens in the United States were calculated from the yearly birth rate, abortion rate, and miscarriage rate for each year from 2008 through 2011 by race for non-Hispanic Whites and Blacks ages 15-19 years. Birth rates were obtained from National Vital Statistics reports, a project of the National Center for Health Statistics.¹¹⁻¹³ The abortion rate comes from the statistics released by the Guttmacher Institute.¹⁴ The number of miscarriages is estimated to be 20% of births and 10% of abortions (miscarriage rate = birth rate \times 0.2 + abortion rate \times 0.1).¹³ The pregnancy rate is the

sum of the birth rate, abortion rate, and the miscarriage rate, expressed in pregnancies per 1000 teens. Using data from the National Survey of Family Growth, we calculated the percent of teens age 15-19 years who had ever had sex by race to develop race-specific estimates. This percentage is multiplied by the number of teens (age 15-19 years) of each race to estimate the number of sexually active teens by race. The number of sexually active teenagers in the United States is the denominator and the number of pregnancies is the numerator of the race-specific estimates. Because the national rates are calculated for each year, they are expressed as pregnancies per 1000 person-years.

CHOICE estimates of pregnancy rates among sexually active teens are calculated by dividing the number of pregnancies by person-years contributed by participants aged 15-19 years and multiplied by 1000 to get rate per 1000 person-years. Given the low number of pregnancies in some years, rates are calculated for 2-year periods (2008 through 2009, 2010 through 2011, 2012 through 2013) (Table). Details of the assessment of unintended pregnancies in CHOICE can be found in Secura et al.¹⁵

We examined Black-White disparities in teenage (ages 15-19 years) pregnancy rates in US population estimates and CHOICE Project estimates using 2 disparities measures: 1 absolute (rate difference [RD]) and 1 relative (rate ratio [RR]) measure. RD is the absolute difference between the unintended teenage pregnancy rates for Blacks (r_B) and Whites (r_W) and is calculated as $r_B - r_W$. The RR is the relative difference and is calculated as r_B/r_W . RR measures the

FIGURE 1
Black-White disparities among sexually active teenagers in the United States



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relative difference in the rates of the best and worst group at each time point.

Results

We noted a decline in national teenage (ages 15-19 years) pregnancy rates among non-Hispanic Whites and Blacks from 2008 through 2011. While decreases in teenage pregnancy rates occur in both racial groups, larger decreases are seen among Whites. The Black-White RD drops from 158.5 per 1000 in 2008 to 120.1 per 1000 person-years in 2011 (Figure 1). This is a 38.4 per 1000 decrease in the RD over the 4-year period. The decrease in absolute racial disparity does not hold for relative racial disparity; the RR decreases only slightly from 2.6-2.5 and then holds steady over the 4-year period, suggesting that on average in the United States, Black sexually active teenagers (age 15-19 years) have 2.5 times the rate of unintended pregnancy than White teenagers (Figure 1).

The CHOICE Project followed 1371 teens aged 15-19 years over the study period. The majority of teens were non-Hispanic Black (61%, 838 of 1371), and 28% (384 of 1371) were non-Hispanic White. For 2008 through 2009, the unintended pregnancy rate in Black teenagers was 25.1 per 1000 person-years,

and in Whites 6.8 per 1000 person-years (Table). Using the 2-year estimates, we found that the 2008 through 2009 period had the largest Black-White disparities (RD, 18.2; RR, 3.7). For the subsequent 2-year period (2010 through 2011), both the absolute and relative measure decreased despite increases in unintended pregnancy rates in both groups (RD, 4.3; RR, 1.2). For 2012 through 2013, the pregnancy rate for White teens in CHOICE exceeded that for Black teens by approximately 2 pregnancies per 1000 person-years inverting both the RD and RR (RD, -1.5; RR, 0.95), suggesting an elimination of racial disparities in unintended pregnancy. Figure 2 shows this reduction in racial disparities graphically.

Using an absolute measure, there is a dramatic reduction in the Black-White disparity in teenage pregnancy rates in the CHOICE Project when compared to the United States. Compared to the national rate of 158.5 in 2008 and 145.9 in 2009, the combined 2008 through 2009 RD among CHOICE participants is 18.2. Thus, not only are the teen pregnancy rates by race in CHOICE much lower than the national averages, the racial disparity (as an absolute measure) is also reduced (Figure 2).

When examining the relative disparity measures, the Black-White RR in the CHOICE Project started out higher (2008 through 2009: RR, 3.7) than the national average of 2.6 in 2008 and 2.5 in 2009 (Figure 1). However, by the following 2-year period, we see reductions in the RR (2010 through 2011: RR, 1.2) and, by 2012 through 2013, the Black-White relative disparity was essentially eliminated in CHOICE (RR, 0.95) (Figure 2). However, the change in the RR and RD for CHOICE between the 2-year periods was not statistically significant.

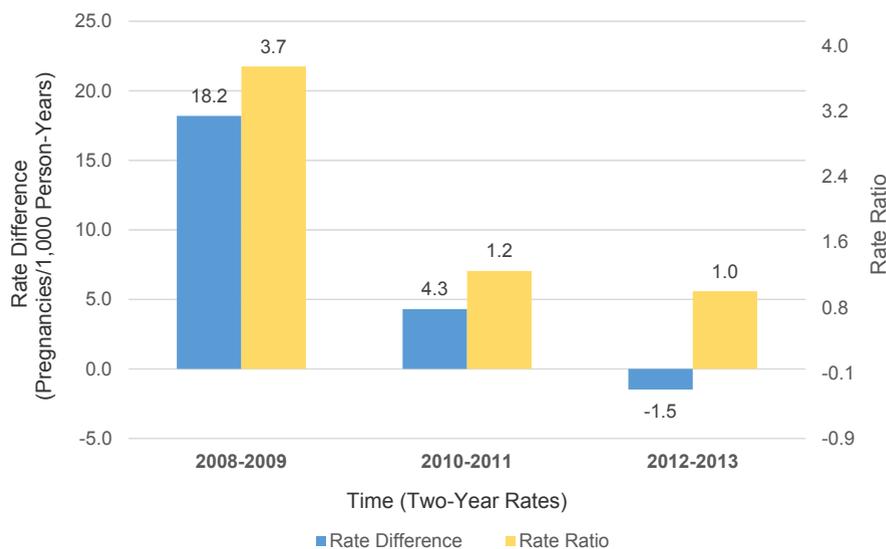
Comment

CHOICE participants, ages 15-19 years, who were offered free contraceptive access and tier-based counseling, had a much lower rate of unintended pregnancy, whether they were Black or White, than US teens. In the CHOICE Project, we see a disparities reduction of >95% on the absolute scale and >60% on the relative scale compared to national rates. In fact, improving access to contraceptives lowered the risk of pregnancy among Black and White teens to approximately a risk ratio of 1 in comparison to the national ratio of 2.5.

Providing free contraception and contraceptive counseling for women is essential in reducing the risk of pregnancy. A retrospective study conducted at HealthPartners, a nonprofit Minnesota health care organization, analyzed missed opportunities for pregnancy prevention. Investigators found that on average teens had 2.7 outpatient visits before they became pregnant, and that half of these visits represented missed opportunities to provide contraceptive counseling to sexually active teens during preventative health visits.¹⁶ Ensuring that sexually active teens are given accurate contraceptive counseling during routine clinic visits can better educate women to avoid unintended pregnancy and improve optimal birth spacing.

CHOICE used tiered counseling, presenting contraceptive methods from most to least effective. Participants were introduced to all birth control methods, including the most effective reversible methods. This may have helped reduce

FIGURE 2
Black-White disparities in pregnancy rates among teenagers in CHOICE



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Health disparities related to differences in quality of care and subconscious stereotyping by health care professionals. A study analyzing recommendations for intrauterine contraception presented doctors and health care professionals with videos of women seeking contraception. The women were White, Black, or Hispanic and were portrayed as being of low socioeconomic status and then as high socioeconomic status. The study found that doctors were more likely to recommend intrauterine contraception to Black patients in comparison to White women and were less likely to recommend intrauterine contraception to women who appeared to be of low socioeconomic status.¹⁷ These findings suggest that there are biases that may influence the recommendation of the clinician. Using the tiered counseling method would aid in eliminating such influences, because patients are introduced to all methods regardless of their demographic characteristics; this ensures that the patients' contraceptive method is chosen based on their preference instead of any possible clinician bias.

Additionally, data from the Guttmacher Institute and the National

Family Growth Survey have shown that lower income women have the highest rates of unintended pregnancy. Women below the federal poverty line have unintended pregnancy rates of 137 per 1000 women in comparison to women at the highest income level (26 per 1000), which is almost a 5-fold increase.¹⁸ With regard to race and ethnicity, a disproportionate number of Blacks and Hispanics fall below the national poverty line, which may contribute to these women struggling to obtain contraception that could prevent unintended pregnancies.⁹ Poor and low-income women are at high risk, and account for a disproportionate number of unintended pregnancies, births, and abortions in the United States.¹ Thus, increasing access to contraception for women who are poor, underinsured, or uninsured is essential to decrease the rates of unintended pregnancies.

When Title X Family Planning agencies in Colorado received private funding to support the increase of LARC uptake and provide contraception at no cost, investigators noted a 42% reduction in teen abortions and 40% reduction in teen births.¹⁹ Additionally, LARC usage increased among poor women

from 1 in 170 to 1 in 15 women, and reached 95% of young low-income women. Interventions such as the one in Colorado clearly show that funding programs that provide no-cost contraception and counseling can significantly impact rates of unintended pregnancy among all women, teens, and especially minorities who represent a larger portion of those living below the federal poverty line. Health disparities disproportionately affect historically disadvantaged populations such as Blacks and Hispanics. Implementing programs that account for disparities such as poverty and educational inequalities between different populations can be an effective measure to reduce these disparities, as seen by the CHOICE Project and others such as those implemented in Colorado. We noted decreasing disparities in CHOICE as we were able to recruit greater numbers of disadvantaged women over time, improving the precision of our estimate.²⁰

Strengths of the Contraceptive CHOICE Project design include a large study sample featuring a diverse group of women who varied by age, income, race, and ethnicity. In addition, the study had a high rate of follow-up among participants. However, the small number of pregnancies by race in some years caused instability in 1-year CHOICE estimates of unintended pregnancy. We used 2-year rates in our analysis that are more stable and compare these to most recent national data available (2008 through 2011). The scale at which the CHOICE Project was able to provide no-cost access of contraceptives distinguishes the study.

Our secondary analysis has several limitations. One is generalizability: the sample group of teens was located in the St Louis region and may not be fully representative of the US population. In addition, the participants in CHOICE were motivated to actively seek out contraception, which may not be true for the general population. Moreover, a larger portion of teens in the CHOICE Project were Black, low income, and at high risk for unintended pregnancy compared with the general population. We also limited our analysis to

non-Hispanic Black and White teens to create a more homogeneous comparison; Hispanic teens were excluded as the sample was too small to draw meaningful conclusions.

Conclusions

Removing barriers to contraception, providing all methods including the most effective contraceptive methods at no cost, and providing informative counseling reduced the risk of unintended pregnancy among teens in the CHOICE study and reduced racial disparity in unintended pregnancy rates. ■

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