



Impact of Contraceptive Choice and Use Patterns on Unintended Pregnancy: Disparities and Implications

Tina Raine-Bennett MD, MPH

Research Director

Women's Health Research Institute

Division of Research, Kaiser Permanent Northern California

Disclosures

- Research Support
 - Teva (Barr Pharmaceuticals – Duramed)

Overview

- Association Between Contraception and Pregnancy
 - Method Properties
 - Method Use
- Disparities in Choice and Use
 - Nationally
 - Kaiser Permanente Northern California
- Influencing factors
 - Providers

ASSOCIATION BETWEEN CONTRACEPTION AND PREGNANCY

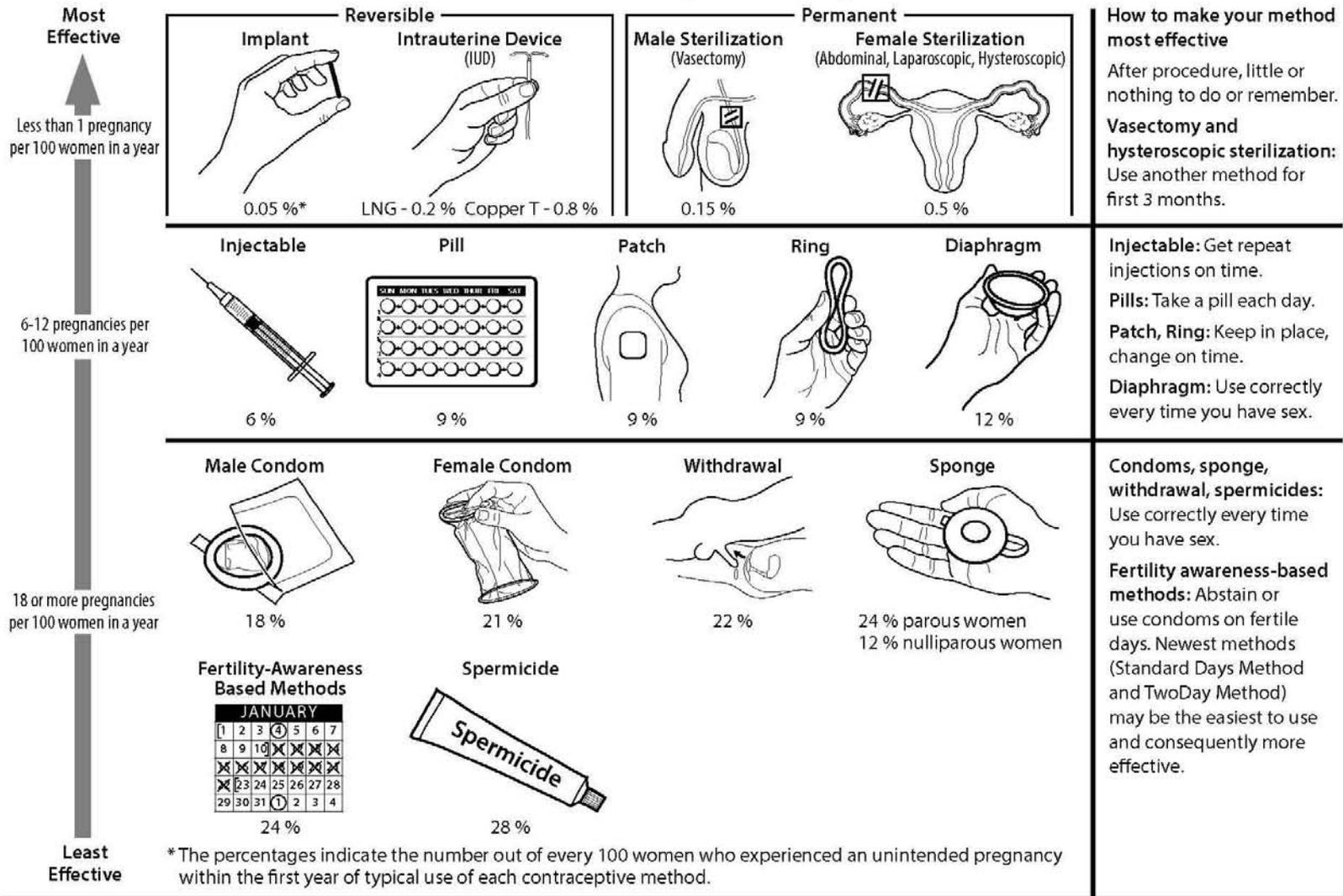
Contraceptive Effectiveness: Typical vs. Perfect Use

Percentage of women experiencing an unintended pregnancy during the first year of typical use and the first year of perfect use of contraception and the percentage continuing use at the end of the first year. United States

Method column (1)	% of women experiencing an unintended pregnancy within the first year of use		% of women continuing use at 1 year ^a
	Typical use ^b Column (2)	Perfect use ^c Column (3)	Column (4)
No method ^d	85	85	
Spermicides ^e	28	18	42
Fertility awareness-based methods	24		47
Standard Days method ^f		5	
TwoDay method ^f		4	
Ovulation method ^f		3	
Symptothermal method ^f		0.4	
Withdrawal	22	4	46
Sponge			36
Parous women	24	20	
Nulliparous women	12	9	
Condom ^g			
Female (fc)	21	5	41
Male	18	2	43
Diaphragm ^h	12	6	57
Combined pill and progestin-only pill	9	0.3	67
Evra patch	9	0.3	67
NuvaRing	9	0.3	67
Depo-Provera	6	0.2	56
IUCs			
ParaGard (copper T)	0.8	0.6	78
Mirena (LNG)	0.2	0.2	80
Implanon	0.05	0.05	84
Female sterilization	0.5	0.5	100
Male sterilization	0.15	0.10	100

LAM is a highly effective, temporary method of contraception.ⁱ

Effectiveness of Family Planning Methods



CS 242797

CONDOMS SHOULD ALWAYS BE USED TO REDUCE THE RISK OF SEXUALLY TRANSMITTED INFECTIONS.

Other Methods of Contraception

Lactational Amenorrhea Method: LAM is a highly effective, temporary method of contraception.

Emergency Contraception: Emergency contraceptive pills or a copper IUD after unprotected intercourse substantially reduces risk of pregnancy.

Adapted from World Health Organization (WHO) Department of Reproductive Health and Research, Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP). Knowledge for health project. Family planning: a global handbook for providers (2011 update). Baltimore, MD; Geneva, Switzerland: CCP and WHO; 2011; and Trussell J. Contraceptive failure in the United States. Contraception 2011;83:397-404.



**U.S. Department of Health and Human Services
Centers for Disease Control and Prevention**

Pragmatic Study of Contraceptive Effectiveness

Pregnancies (Per 100 Person-Years) by Method Selected and Contraceptive Use Pattern

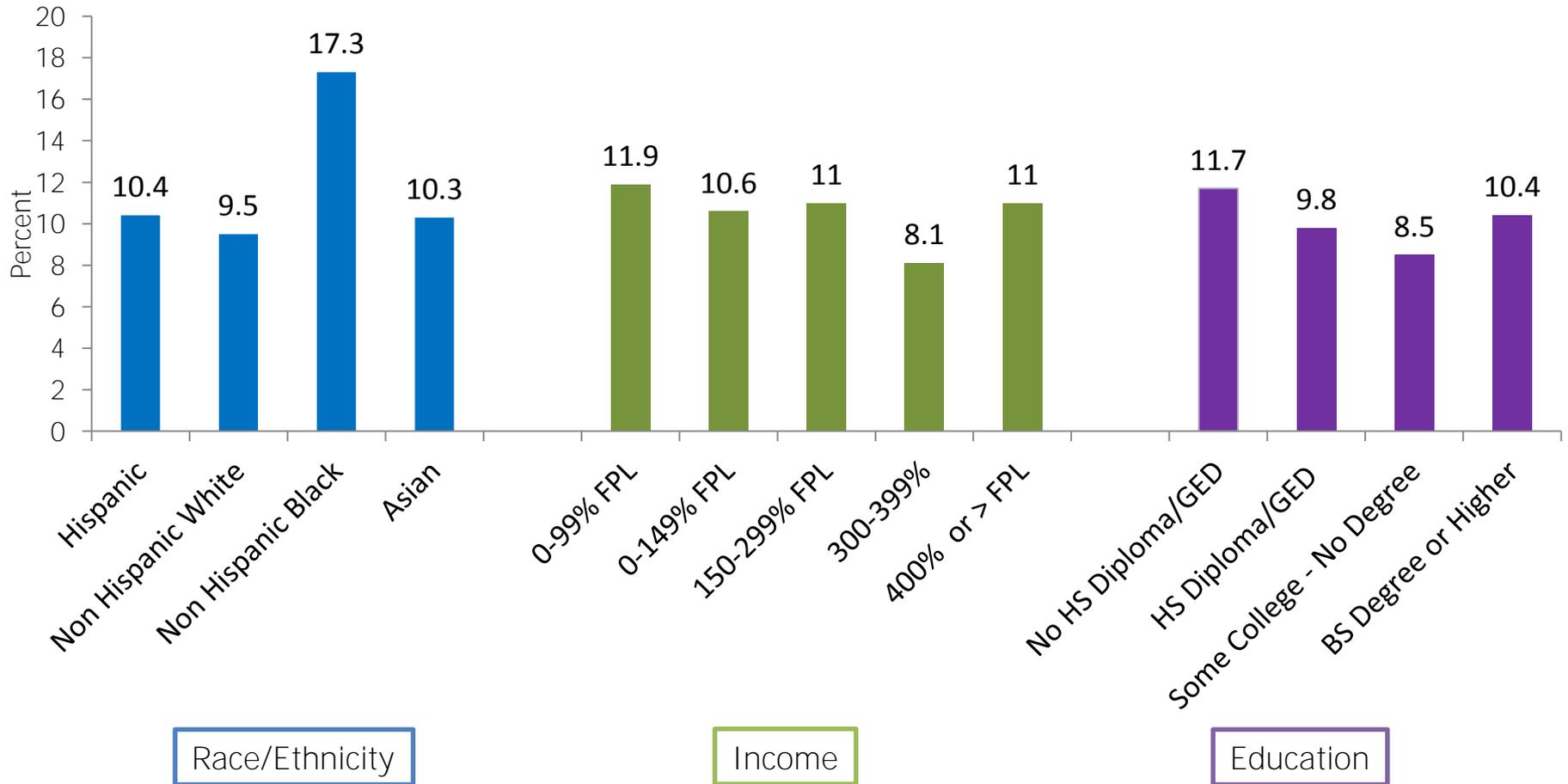
Method Selected at Baseline	Contraceptive Use Pattern			Pregnancy Rate by Method ($P < .001$)
	Continuation of the Method Selected* (n=325)	Discontinuation of the Method Selected With Switch to Another Effective Method (n=738)	Discontinuation of the Method Selected Without Subsequent Use of Another Effective Method (n=253)	
Pill (n=387)	→ 4.4	19.2	34.5	16.5
Patch (n=370)	19.6	28.8	39.1	30.1
Ring (n=233)	12.4	34.3	52.7	30.5
DMPA (n=279)	5.7	17.1	20.4	16.1
Pregnancy rate by use pattern ($P < .001$)	9.1	23.9	37.2	Overall 22.9

DMPA, depot medroxyprogesterone acetate.

* Of the 144 women in this category, 46.5% reported taking one or more breaks (pill, 46.5%; patch, 56.9%; ring, 51.4%; DMPA, 19.4%; $P = .003$).

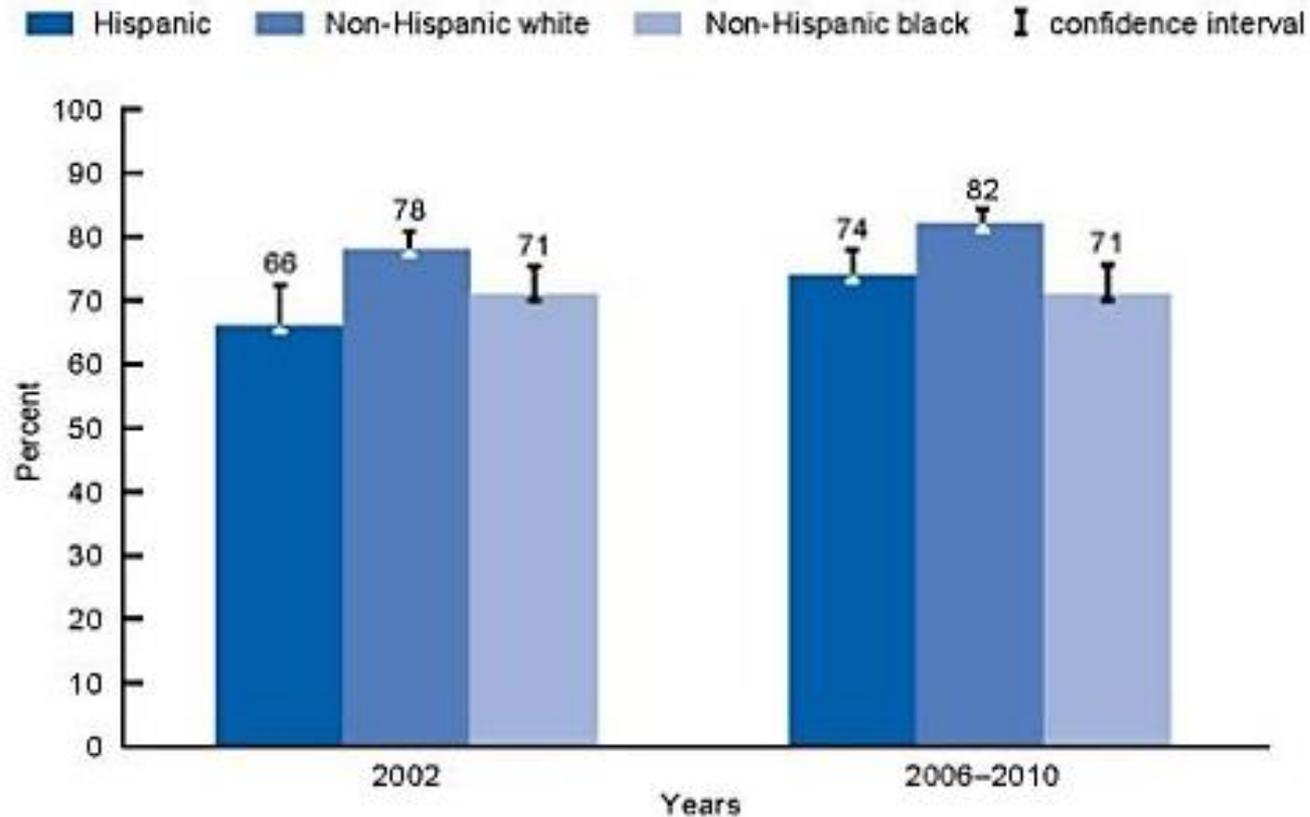
DISPARITIES IN CONTRACEPTIVE CHOICE AND USE

Women at Risk for Unintended Pregnancy Not Using Contraception by Socio-demographic Characteristics



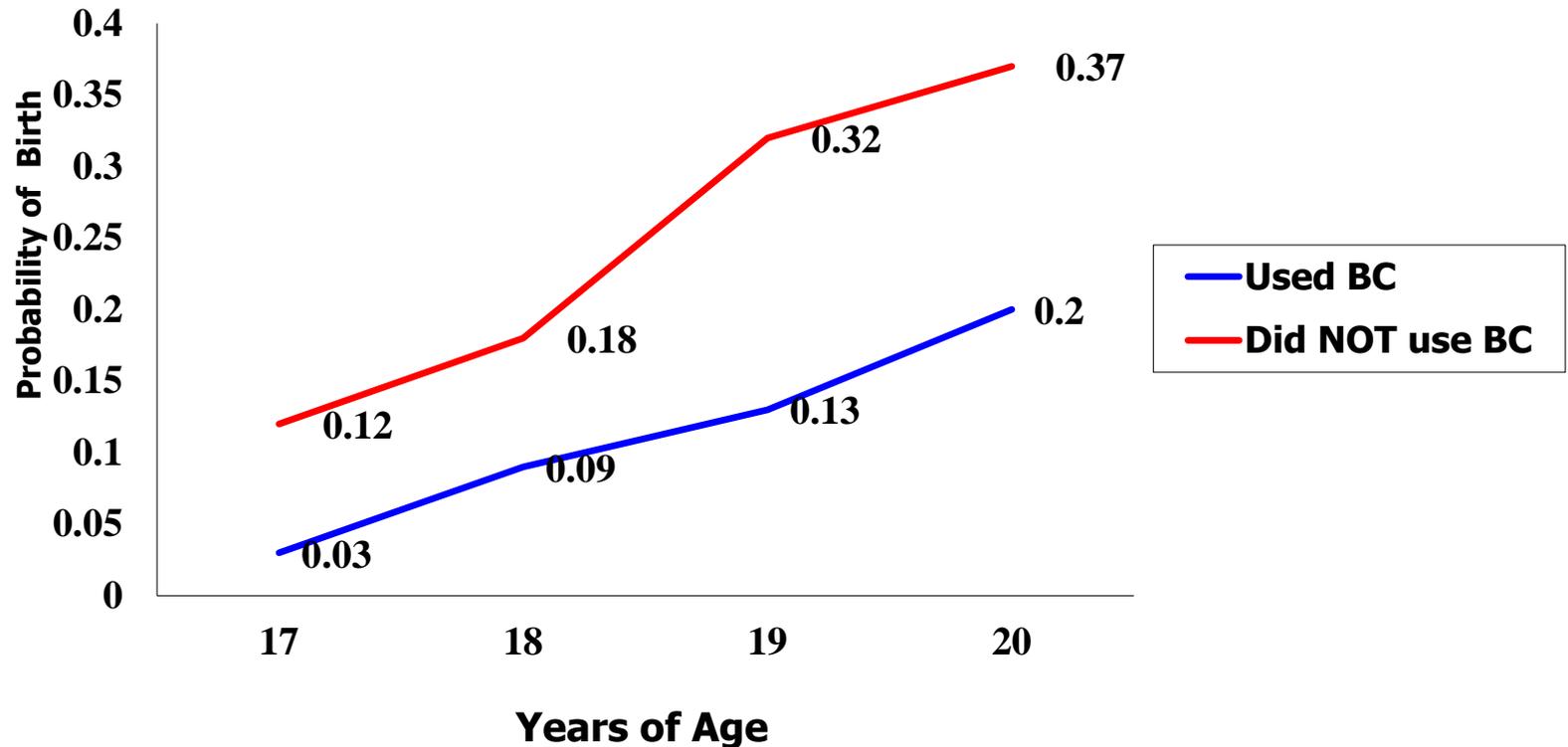
Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. National health statistics reports; no 60. Hyattsville, MD: National Center for Health Statistics. 2012.

Contraceptive Use at First Sex by Race



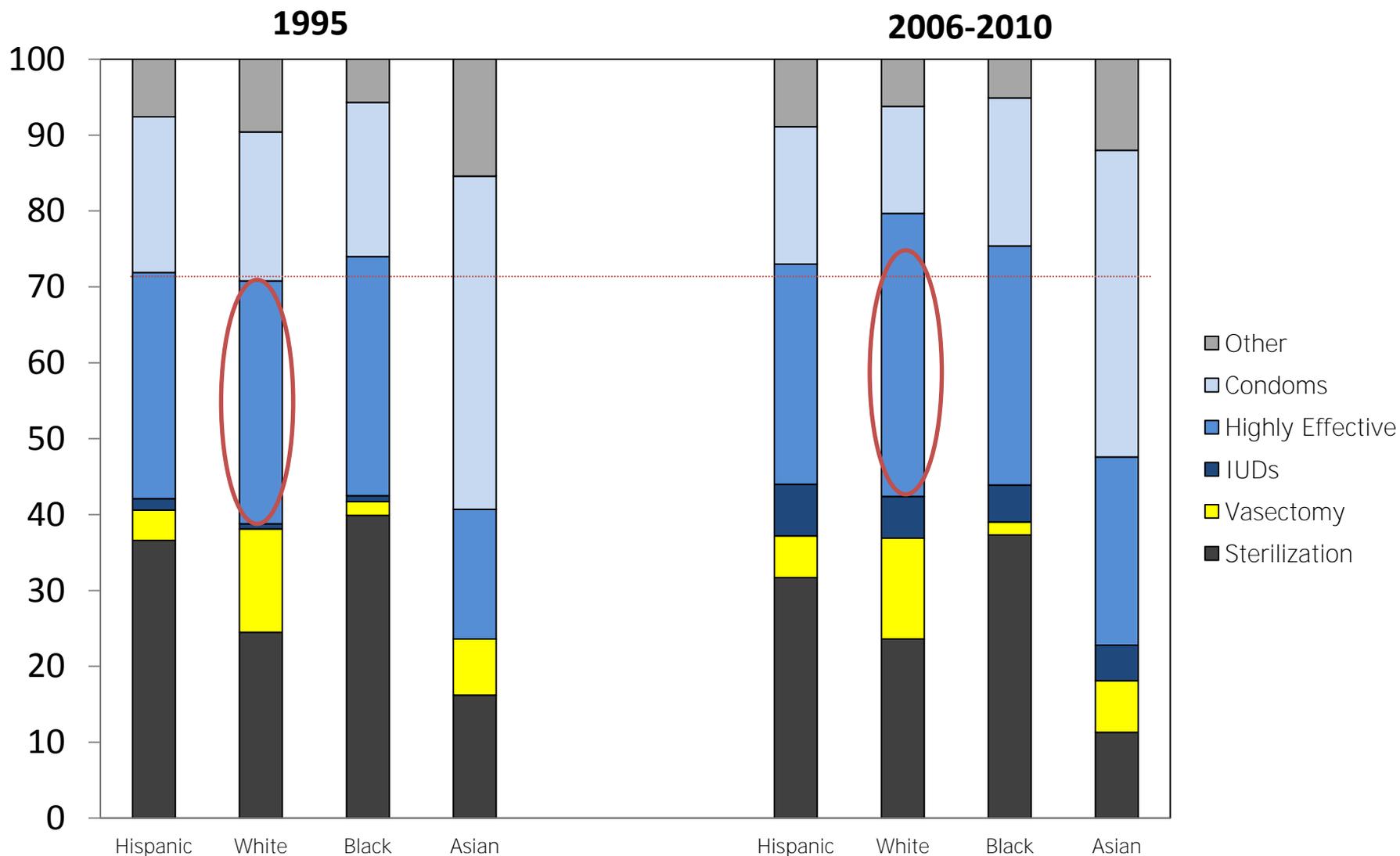
Martinez G, Copen CE, Abma JC. Teenagers in the United States: Sexual activity, contraceptive use, and childbearing, 2006–2010 National Survey of Family Growth. National Center for Health Statistics. Vital Health Stat 23(31). 2011.

Probability of First Birth by Age by Use of Birth Control at First Sex



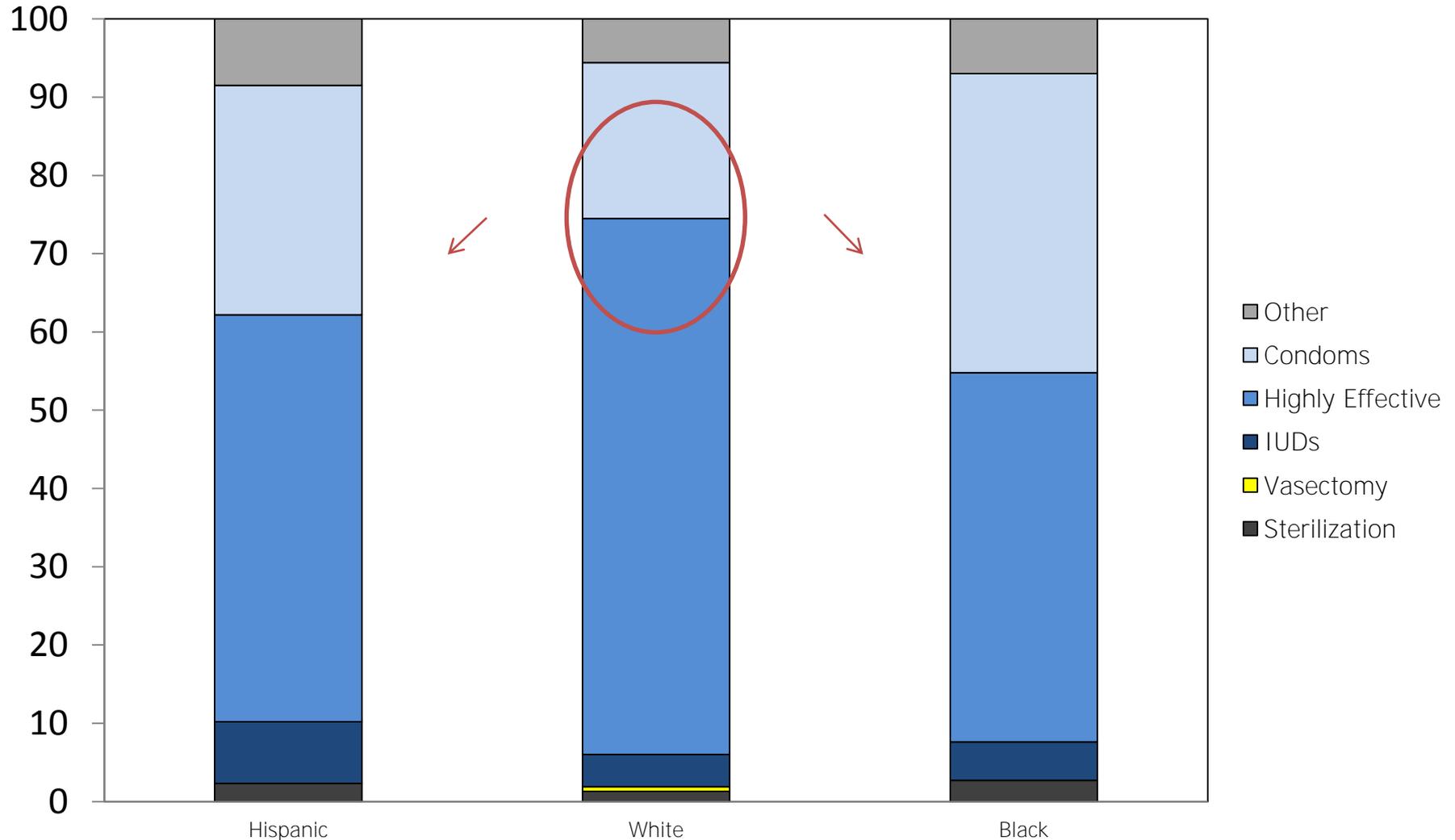
Martinez G, Copen CE, Abma JC. Teenagers in the United States: Sexual activity, contraceptive use, and childbearing, 2006–2010. National Survey of Family Growth. National Center for Health Statistics. Vital Health Stat 23(31). 2011.

Percentage Distribution of Methods Used Women Age 15-44 By Year and Race



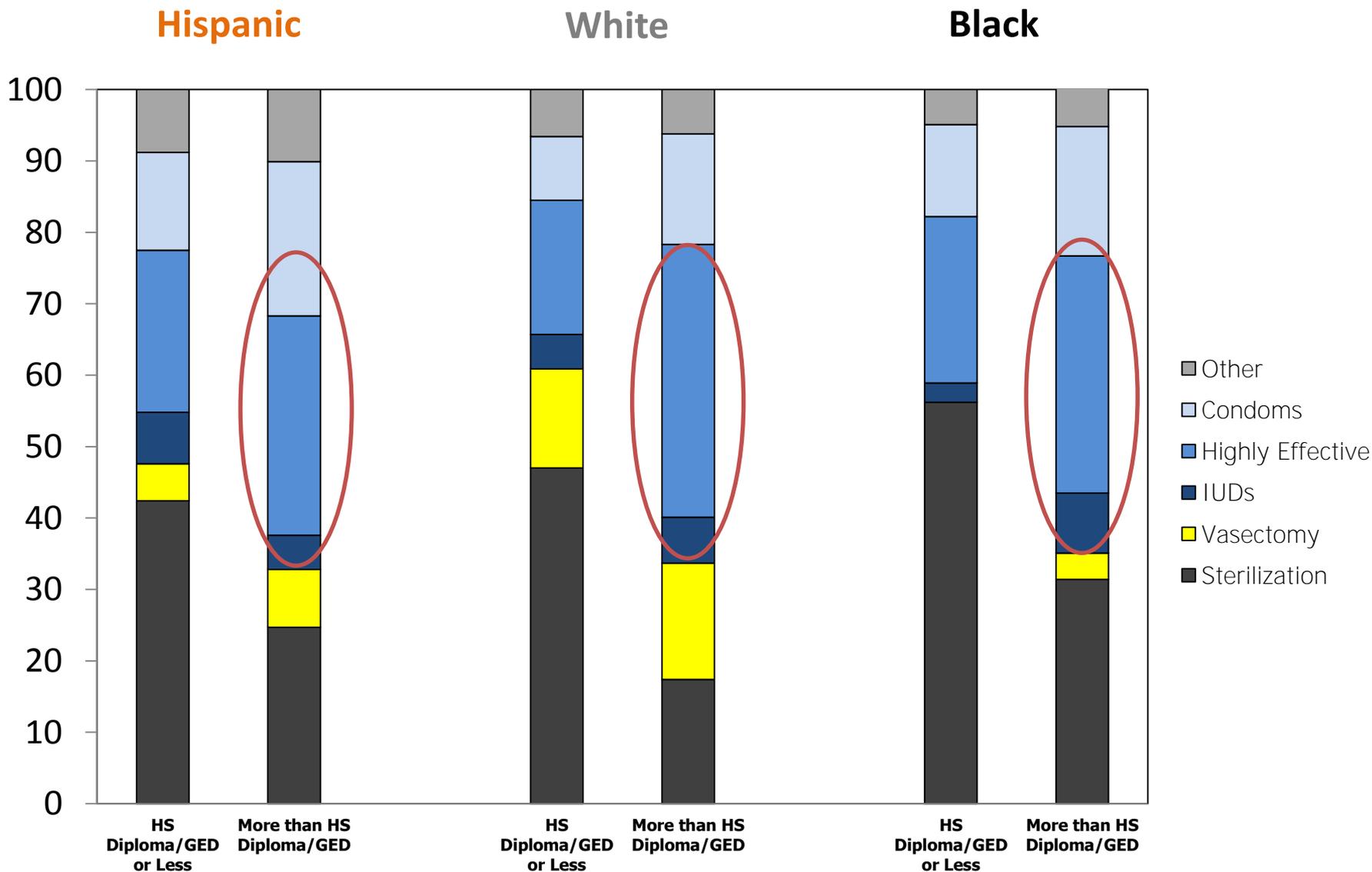
Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. National health statistics reports; no 60. Hyattsville, MD: National Center for Health Statistics. 2012.

Percentage Distribution of Methods Used Women Age 15-24 By Race **2006-2010**



Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. National health statistics reports; no 60. Hyattsville, MD: National Center for Health Statistics. 2012.

Percentage Distribution of Method Used – Women Age 22-44 By Race and Education – 2006-2010



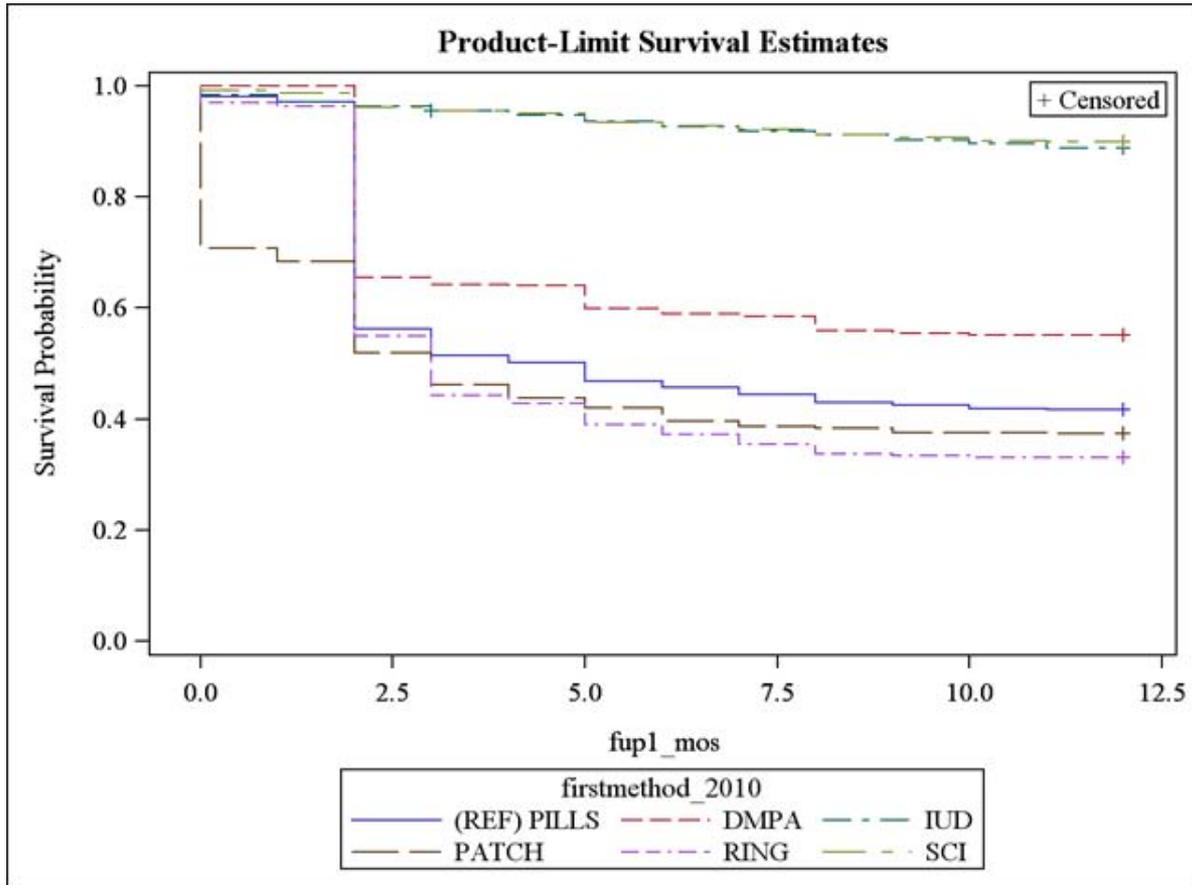
Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. National health statistics reports; no 60. Hyattsville, MD: National Center for Health Statistics. 2012.

Contraceptive Continuation

Kaiser Permanente Northern California Sample

- 39,861 Women Initiated a Method in 2010
 - 24 months of continuous membership
 - 68% Pill
 - 17% IUD
 - 9% DMPA
 - 5% Ring/Patch
 - 1% Implant
- Followed for 12 months after Methods dispensed or inserted

Continuation – Any effective Method



Risk of Discontinuation

HR

(95% CI)

Race:

- **Black - 1.35**
(1.28-1.41)
- **Hispanic 1.20**
(1.16-1.25)
- **Asian 1.25**
(1.20-1.30)

Neighborhood Income

- **>200% FPL - 1.11**
(1.05-1.19)

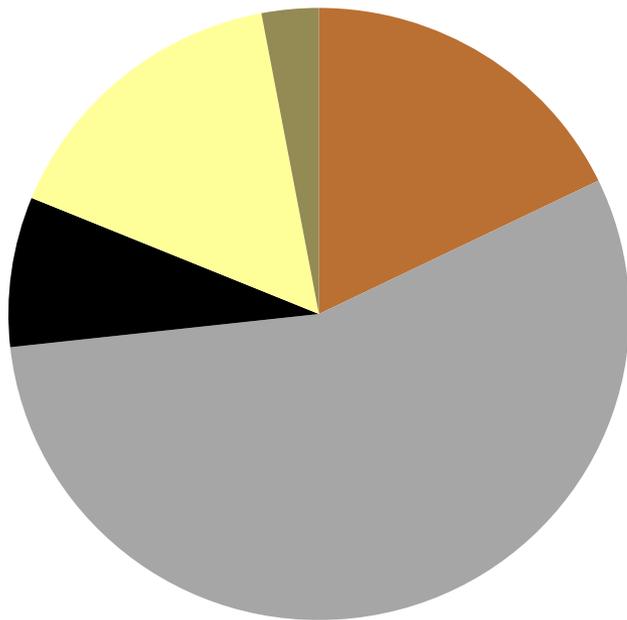
Model included Method, Age, Race, Neighborhood Income, and Provider Specialty

Emergency Contraceptive Use

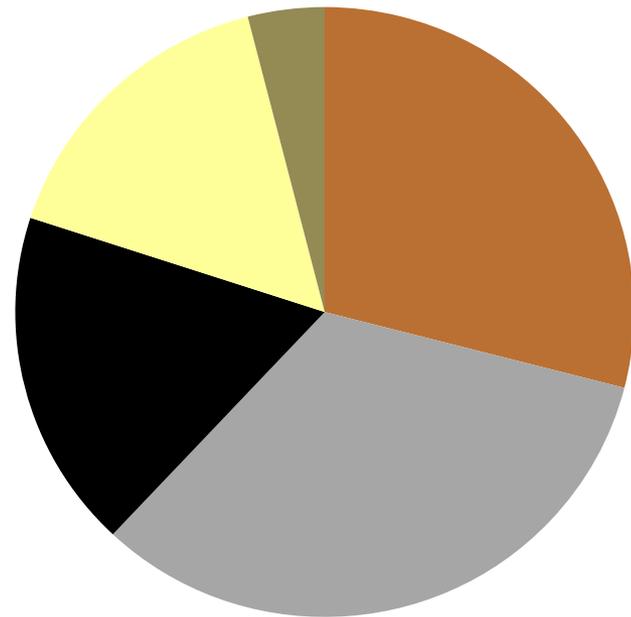
Unmet Contraceptive Need - KPNC

- 2010-2011 - 24,547 eligible women age 15-44 received at least one prescription for EC
- Examined Birth control Use 12 months before and after Accessing EC

KPNC Women

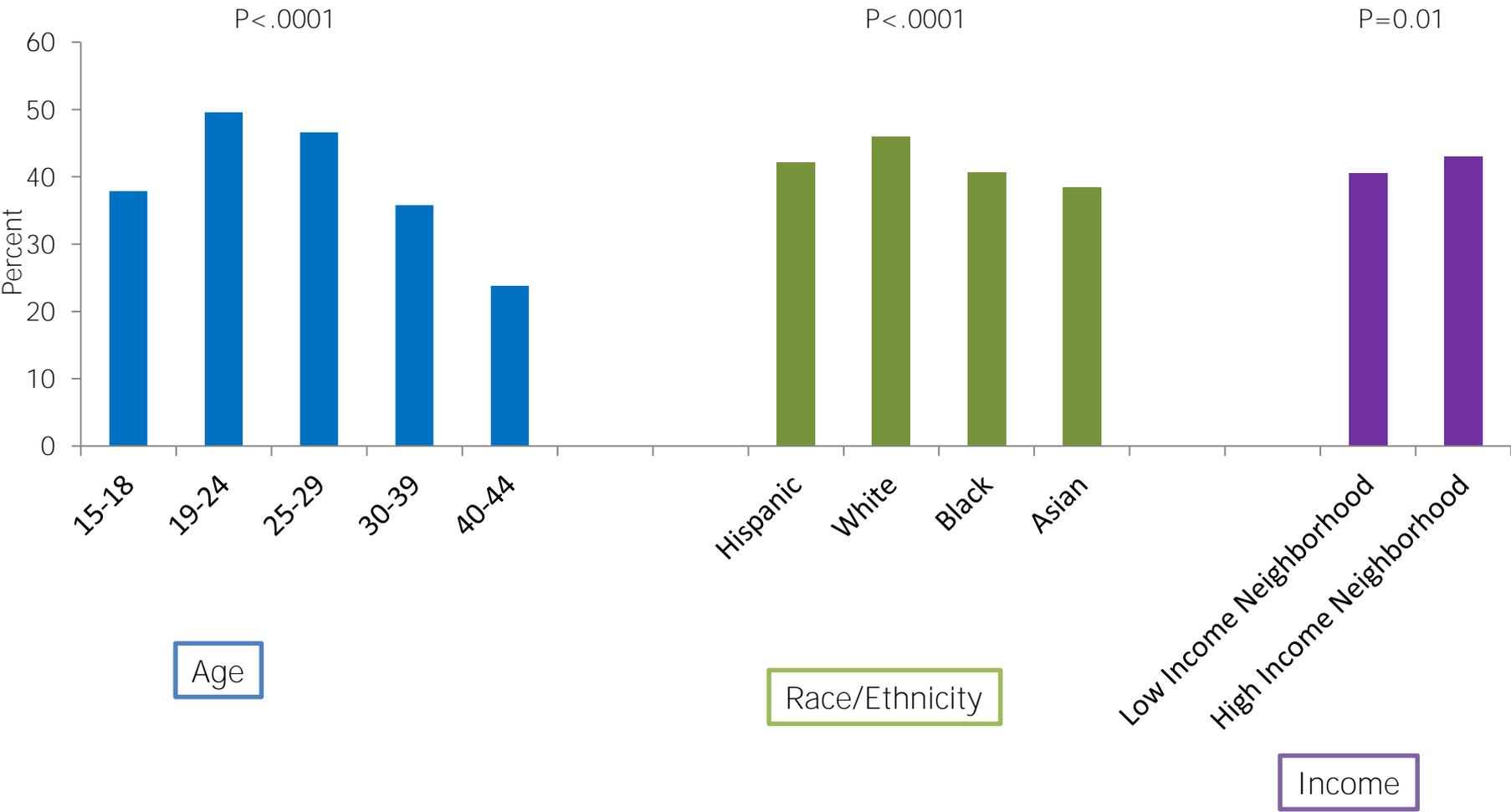


Accessed EC

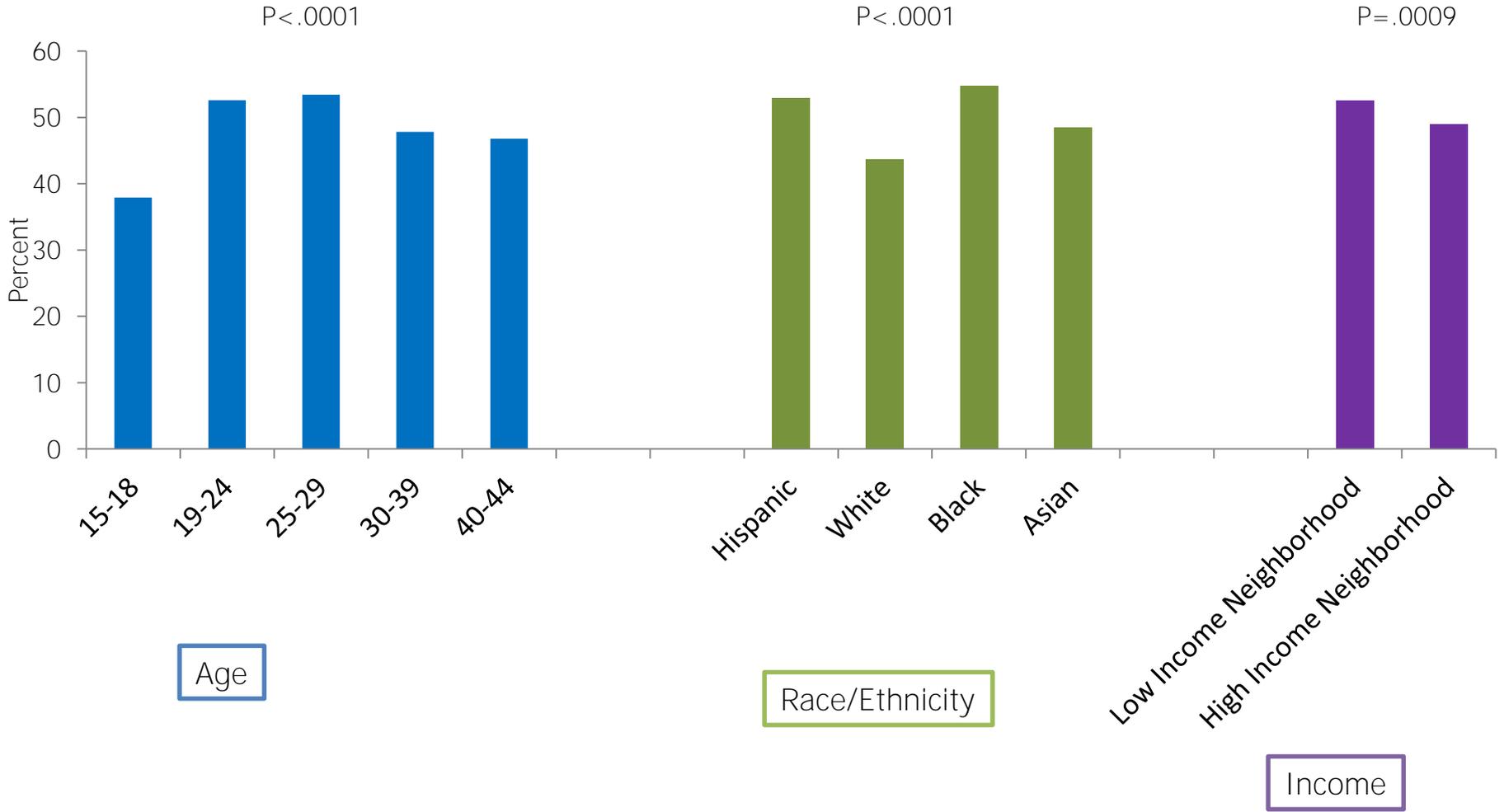


- Hispanic
- White
- Black
- Asian
- Other/MR

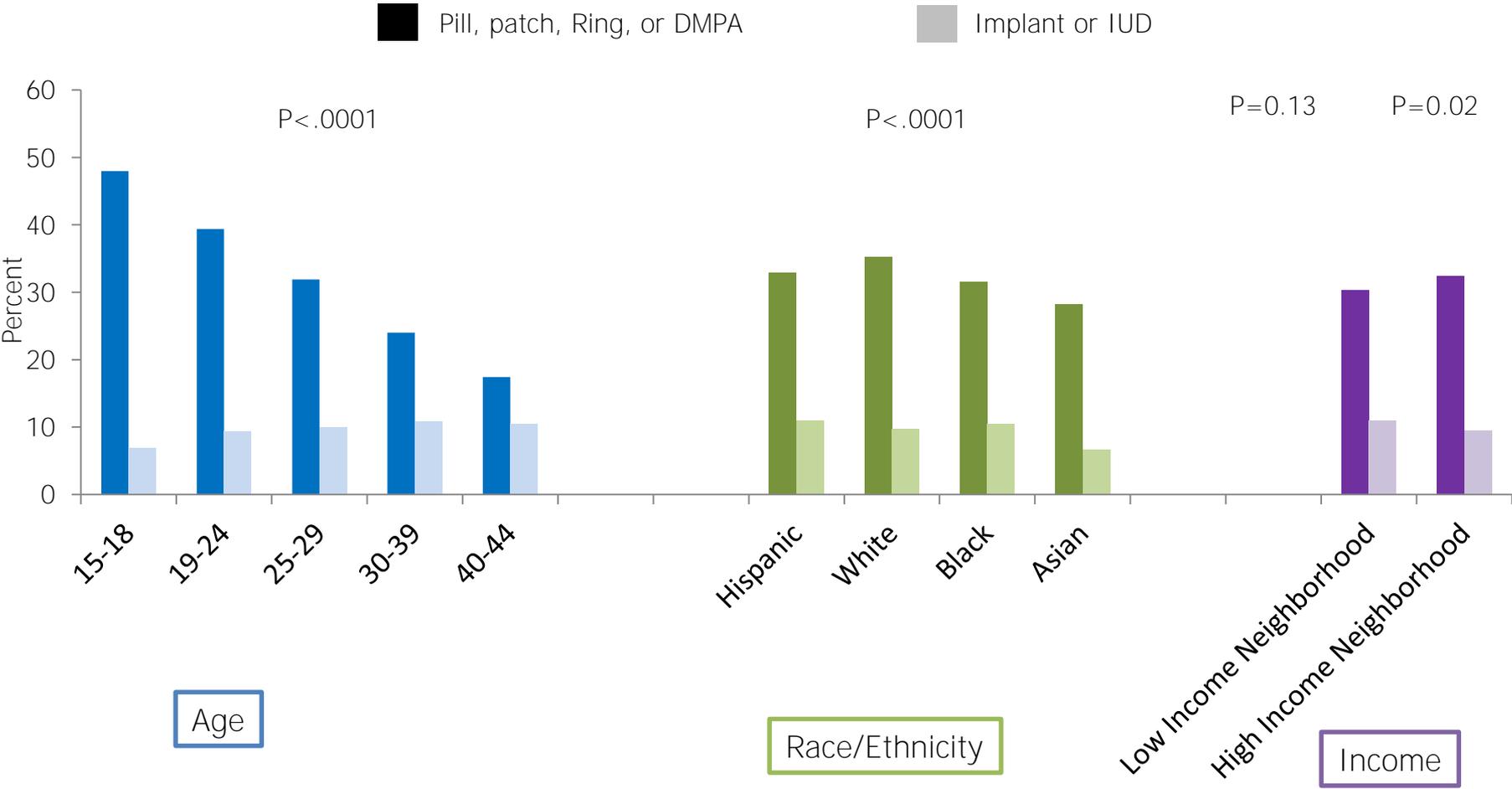
Hormonal Method Dispensed in the Year Before Accessing EC



EC Dispensed in the Year After Accessing EC



Contraception Initiated in the Year After Accessing EC



Pregnancy After Accessing EC

Within 3 Months

5.5% (1357) Pregnancies

-2.5% (604) Abortions

-0.9% (213) Other

-2.2% (540) Live births

69% (243) "Unwanted"

From 3 to 6 Months

4.5% (1106) Pregnancies

-1.8% (448) Abortions

-1.1% (265) Other

-1.6% (393) Live births

61% (225) "Unwanted"

Risk of Pregnancy W/I 3 MOS

OR

(95% CI)

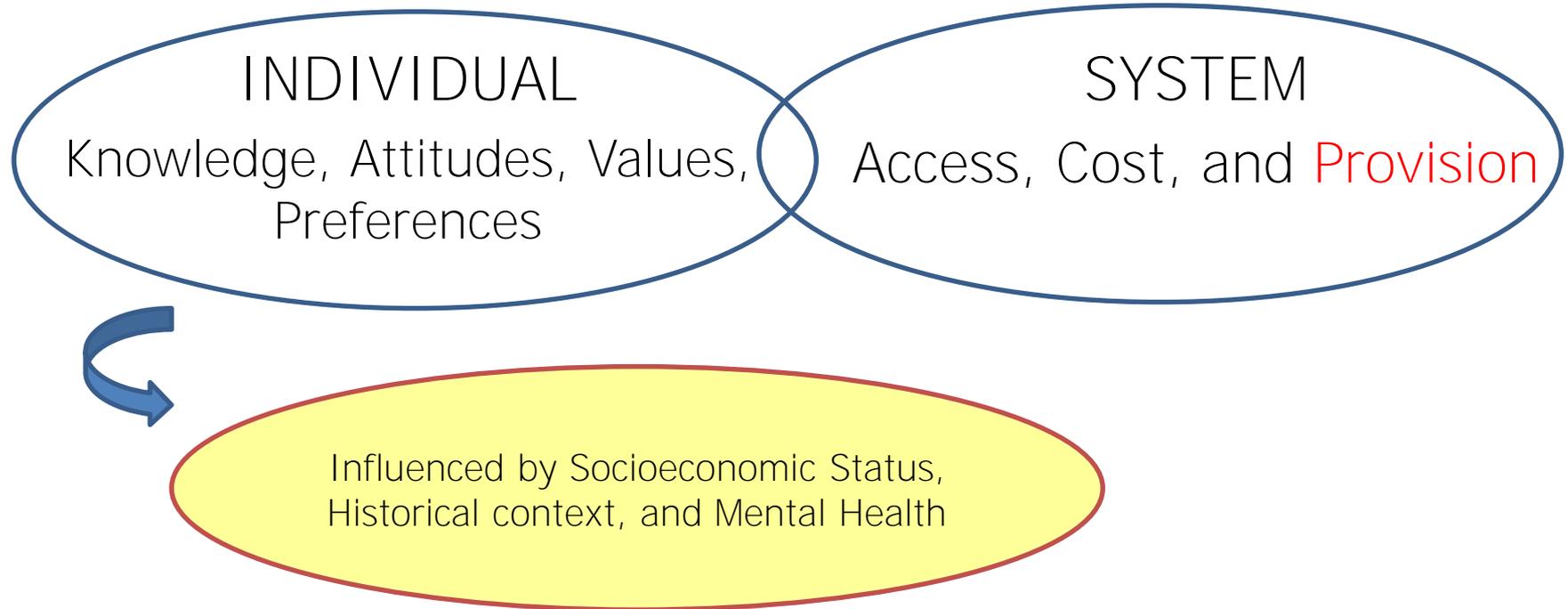
Race:

- **Black – 1.46**
(1.72 - 2.03)
- **Hispanic 1.43**
(1.43 – 1.93)
- **Asian 1.05**
(0.86 – 1.28)

Neighborhood Income

- **>200% FPL - 1.14**
(1.01 – 1.28)

Why Do We See These Differences?



Do Racial and Ethnic Differences in Contraceptive Attitudes and Knowledge Explain Disparities In Method Use?

By Corinne H.
Rocca and Cynthia
C. Harper

CONTEXT: Sustained efforts have not attenuated racial and ethnic disparities in unintended pregnancy and effective contraceptive use in the United States. The roles of attitudes toward contraception, pregnancy and fertility remain relatively unexplored.

- 602 Sexually Active Women Age 18-29 not trying to become pregnant
- 2009 National Survey of Reproductive and Contraceptive Knowledge
- Assessed Knowledge and Attitudes:
 - Contraception
 - Pregnancy
 - Childbearing and Fertility
- Skepticism that the government ensures contraceptive safety was associated with use of less effective methods
 - This belief did not differ by race
- Blacks and Latinas:
 - More likely to believe the government encourages contraceptive use to limit minority populations
- Latinas
 - More favorable attitudes towards pregnancy and childbearing
 - More fatalistic about the timing of pregnancy
 - Less knowledge of effective methods
 - More likely to believe minorities and poor used as Guinea pigs
- Blacks
 - More fatalistic about life in general

Oral contraceptive discontinuation: do side effects matter?

Carolyn L. Westhoff, MD; Stephen Heartwell, PhD; Sharon Edwards, MD; Mimi Zieman, MD; Gretchen Stuart, MD; Carrie Cwiak, MD; Anne Davis, MD; Tina Robilotto, MPH; Linda Cushman, PhD; and Debra Kalmuss, PhD

- 1716 Women < 25 years (RCT of quick start)
- Examined symptoms (Headache, Moodiness, Weight Gain, Sexual Satisfaction) and discontinuation
- 57% discontinued OCPs by 6 months
 - 34% Side effects
 - 45% Access
 - 21% Other
- Women with any symptoms were more likely to discontinue
- Half of women believed their symptoms were due to other causes - NOT the OCPs
- Women were just as likely to discontinue OCPs if they believed their symptoms were due to other causes
- Women who have any negative feelings, regardless of cause, are more likely to discontinue



Hormonal contraceptive method choice among young, low-income women: How important is the provider?

Cynthia C. Harper^{a,*}, Beth A. Brown^a, Anne Foster-Rosales^b, Tina R. Raine^a

^aBixby Center for Global Reproductive Health, Department of Obstetrics, Gynecology & Reproductive Sciences, The University of California, San Francisco, CA, USA
^bPlanned Parenthood Golden Gate, San Francisco, CA, USA

- Pill, Patch, Ring DMPA initiators
 - Similar racial differences to national stats
- Choice:
 - 89% of women said they chose the method themselves
 - 11% chose together
- Counseling:
 - Counseling that included a range of methods was infrequent (75% said 1-2 methods, 14% all methods)
 - 51% reported that they chose the method because of what the provider told them
 - Ring and patch initiators were more likely to report that they chose their method due to what the provider told them.

GENERAL GYNECOLOGY

**Recommendations for intrauterine contraception:
a randomized trial of the effects of patients'
race/ethnicity and socioeconomic status**

Christine Dehlendorf, MD, MAS; Rachel Ruskin, MD; Kevin Grumbach, MD; Eric Vittinghoff, PhD;
Kirsten Bibbins-Domingo, MD, PhD; Dean Schillinger, MD; Jody Steinauer, MD, MAS



- 524 Health Care Providers attending Clinical Meetings
- Shown video scenarios:
- Each video cast with women of different race and SES but same history:
 - “Parous - no STI history”
- Race X SES interactions found:
- Would they recommend an IUD?
 - Black > White & Latina
 - But only for LSES
 - Low SES < High SES
 - But only for White

Summary

- Differences in Method Choice and Use
 - Method Properties + User Characteristics Important
 - Demographics associated with choice
 - Demographics associated with continued use
 - Provider behavior associated with demographics
- Research directions:
 - Increase education of providers
 - Increase Patient Centered Care
 - ? Social marketing of positive aspects of methods
 - ?New methods