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

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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

<table>
<thead>
<tr>
<th>Method</th>
<th>Typical use (1) %</th>
<th>Perfect use (2) %</th>
<th>% of women continuing use at 1 year (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No method^d</td>
<td>85</td>
<td>85</td>
<td>42</td>
</tr>
<tr>
<td>Spermicides^e</td>
<td>28</td>
<td>18</td>
<td>47</td>
</tr>
<tr>
<td>Fertility awareness-based methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Days method^f</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TwoDay method^f</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ovulation method^f</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptothermal method^f</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdrawal</td>
<td>22</td>
<td>4</td>
<td>46</td>
</tr>
<tr>
<td>Sponge</td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Parous women</td>
<td>24</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Nulliparous women</td>
<td>12</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Condom^g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (fc)</td>
<td>21</td>
<td>5</td>
<td>41</td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>2</td>
<td>43</td>
</tr>
<tr>
<td>Diaphragm^h</td>
<td>12</td>
<td>6</td>
<td>57</td>
</tr>
<tr>
<td>Combined pill and progestin-only pill</td>
<td>9</td>
<td>0.3</td>
<td>67</td>
</tr>
<tr>
<td>Evra patch</td>
<td>9</td>
<td>0.3</td>
<td>67</td>
</tr>
<tr>
<td>NuvaRing</td>
<td>9</td>
<td>0.3</td>
<td>67</td>
</tr>
<tr>
<td>Depo-Provera</td>
<td>6</td>
<td>0.2</td>
<td>56</td>
</tr>
<tr>
<td>IUCs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ParaGard (copper T)</td>
<td>0.8</td>
<td>0.6</td>
<td>78</td>
</tr>
<tr>
<td>Mirena (LNG)</td>
<td>0.2</td>
<td>0.2</td>
<td>80</td>
</tr>
<tr>
<td>Implanon</td>
<td>0.05</td>
<td>0.05</td>
<td>84</td>
</tr>
<tr>
<td>Female sterilization</td>
<td>0.5</td>
<td>0.5</td>
<td>100</td>
</tr>
<tr>
<td>Male sterilization</td>
<td>0.15</td>
<td>0.10</td>
<td>100</td>
</tr>
<tr>
<td>LAM is a highly effective, temporary method of contraception.^[1]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Trussel J. Contraceptive Failure in the United States. Contraception 2011;83:397-404
## Effectiveness of Family Planning Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Most Effective</th>
<th>How to Make Your Method Most Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implant</td>
<td>0.05%*</td>
<td>After procedure, little or nothing to do or remember.</td>
</tr>
<tr>
<td>Reversible Intrauterine Device (IUD)</td>
<td>0.2% Copper T 0.8%</td>
<td></td>
</tr>
<tr>
<td>Male Sterilization (Vasectomy)</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Female Sterilization (Abdominal, Laparoscopic, Hysteroscopic)</td>
<td>0.5%</td>
<td>— Vasectomy and hysteroscopic sterilization: Use another method for first 3 months.</td>
</tr>
</tbody>
</table>

### Injectable
- Get repeat injections on time.

### Pill
- Take a pill each day.

### Patch
- Keep in place, change on time.

### Ring
- Use correctly every time you have sex.

### Diaphragm
- Condoms, sponge, withdrawal, spermicides: Use correctly every time you have sex.

### Female Condom
- Use correctly every time you have sex.

### Withdrawal
- Spermicides: Abstain or use condoms on fertile days. Newest methods (Standard Days Method and TwoDay Method) may be the easiest to use and consequently more effective.

### Contraceptive Failure in the United States

**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.

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*The percentages indicate the number out of every 100 women who experienced an unintended pregnancy within the first year of typical use of each contraceptive method.*
Pragmatic Study of Contraceptive Effectiveness

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

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

*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).

DMFA, depot medroxyprogesterone acetate.

DISPARITIES IN CONTRACEPTIVE CHOICE AND USE
Women at Risk for Unintended Pregnancy Not Using Contraception by Socio-demographic Characteristics

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Income</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>10.4</td>
<td>9.5</td>
</tr>
<tr>
<td>Non Hispanic White</td>
<td>10.3</td>
<td>17.3</td>
</tr>
<tr>
<td>Non Hispanic Black</td>
<td>11.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Asian</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>0-99% FPL</td>
<td>8.1</td>
<td>10.4</td>
</tr>
<tr>
<td>0-149% FPL</td>
<td>11.7</td>
<td>9.8</td>
</tr>
<tr>
<td>150-299% FPL</td>
<td>11</td>
<td>8.5</td>
</tr>
<tr>
<td>300-399%</td>
<td>11.7</td>
<td>10.4</td>
</tr>
<tr>
<td>400% or &gt; FPL</td>
<td>11</td>
<td>8.5</td>
</tr>
<tr>
<td>No HS Diploma/GED</td>
<td>11.7</td>
<td>8.5</td>
</tr>
<tr>
<td>HS Diploma/GED</td>
<td>9.8</td>
<td></td>
</tr>
<tr>
<td>Some College - No Degree</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>BS Degree or Higher</td>
<td>10.4</td>
<td></td>
</tr>
</tbody>
</table>

Contraceptive Use at First Sex by Race

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

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

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
Hormonal Method Dispensed in the Year Before Accessing EC

P < 0.0001

Age

Race/Ethnicity

Income
EC Dispensed in the Year After Accessing EC

- Age:
  - 15-18
  - 19-24
  - 25-29
  - 30-39
  - 40-44

- Race/Ethnicity:
  - Hispanic
  - White
  - Black
  - Asian

- Income:
  - Low Income Neighborhood
  - High Income Neighborhood

Statistical Significance:
- P < .001
- P = .0009
Contraception Initiated in the Year After Accessing EC

- Pill, patch, Ring, or DMPA
- Implant or IUD

**Race/Ethnicity**
- Hispanic
- White
- Black
- Asian

**Income**
- Low Income Neighborhood
- High Income Neighborhood

- Age

**Percent**
- 15-18
- 19-24
- 25-29
- 30-39
- 40-44

- P < .0001
- P < .0001
- P = 0.13
- P = 0.02
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)

Model included Age, Race, Neighborhood Income, Access route, Delivery Pre-EC, TAB Pre-EC, #Days to Dispensed, BMI
Why Do We See These Differences?

INDIVIDUAL
Knowledge, Attitudes, Values, Preferences

SYSTEM
Access, Cost, and Provision

Influenced by Socioeconomic Status, Historical context, and Mental Health
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
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
• 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.
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