What Do We Know About Trends in Adolescent Sexual Behavior in the United States?

John S Santelli
Heilbrunn Department of Population and Family Health and The Guttmacher Institute

February 4, 2009
Adolescent Sexual Health Symposium
Perspectives on Adolescent Sexual Behavior

- Public health perspectives
- Social determinants/ demographic perspectives
- Public policy perspectives
- Cultural and religious perspectives
- Rights perspectives
- Sexual health
Public Health Importance of Adolescent Sexual and Reproductive Health

- Sexually active teens
  - Highest rates for many STIs
  - Highest age-specific proportion of unintended pregnancy
- Initiation of sexual intercourse:
  - Near zero risk of deleterious health outcomes
    ↓↓
  - State of considerable risk
- Contraception can be highly effective in reducing pregnancy
- Risk reduction can be highly effective in reducing STI risk
### Gonorrhea — Age- and sex-specific rates: United States, 2004

<table>
<thead>
<tr>
<th>Age</th>
<th>Men Rate (per 100,000 population)</th>
<th>Women Rate (per 100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-14</td>
<td>430.6</td>
<td>610.9</td>
</tr>
<tr>
<td>15-19</td>
<td>302.1</td>
<td>569.1</td>
</tr>
<tr>
<td>20-24</td>
<td>252.9</td>
<td>450.6</td>
</tr>
<tr>
<td>25-29</td>
<td>226.5</td>
<td>369.9</td>
</tr>
<tr>
<td>30-34</td>
<td>178.6</td>
<td>322.6</td>
</tr>
<tr>
<td>35-39</td>
<td>124.5</td>
<td>272.5</td>
</tr>
<tr>
<td>40-44</td>
<td>89.6</td>
<td>225.1</td>
</tr>
<tr>
<td>45-54</td>
<td>48.1</td>
<td>114.2</td>
</tr>
<tr>
<td>55-64</td>
<td>17.0</td>
<td>60.3</td>
</tr>
<tr>
<td>65+</td>
<td>4.1</td>
<td>11.7</td>
</tr>
<tr>
<td>Total</td>
<td>110.2</td>
<td>116.7</td>
</tr>
</tbody>
</table>
Teenage Pregnancy
Industrialized Countries

- United States
- England and Wales
- Canada
- Sweden
- France
- Spain
- Netherlands
- Japan

Pregnancies per 1,000 women aged 15-19

- Births
- Abortions
- Miscarriages
Teen Birth Rate Rises in US, Reversing a 14 Year Trend

- ↓ teen births/ pregnancies 1991-2005
  - Larges ↓ in African Americans and youngest teens
- Teen birth rates rose in 2006
  - 3% increase 15-17 year olds
  - 4% increase 18-19 year olds
  - Declined for 10-14 year olds
- Total fertility rose 3%
- Nonmarital birthrate rose 7%
Figure 4. Pregnancy, birth, abortion, and fetal loss rates for teenagers 15-19 years, by race and Hispanic origin: 1990, 1995, 2000, and 2002

Rates per 1,000 women 15-19 years in specified group

SOURCE: CDC/NCHS, Division of Vital Statistics, Published reports.
The “Epidemic” of Teen Pregnancy
Birth Rates, U.S. 1950-2006 (per 1,000 girls)

Modern Contraception
Sexual Revolution
Roe
AIDS
Age of Abstinence
Proportion of Teen Births to Unmarried Teens
A Risk Factor Framework for Understanding Adolescent Sexual and Reproductive Health
An Integrated Risk Factor Model for Adolescent Reproductive Health Outcomes

STI/HIV
- Intercourse
  - Initiation of coitus
  - Number/choice of partners
  - Partner risk
  - Non coital behaviors
- Acquisition
  - Barrier Protection
  - Circumcision
  - STI/HIV Prevalence
  - STI Co-infection
- Detection/Treatment
  - Access
  - Adherence
- Short Term/Long Term Consequences

Biopsychosocial Determinants
- Poverty
- Community
- Family
- Religiosity
- School
- Peers
- Puberty
- Resiliency
- Risk taking predilection
- Government policies
- Prevention programs

Fertility
- Intercourse
  - Initiation of coitus
  - Frequency of intercourse
- Contraception
  - Method efficacy
  - Correct/consistent use
- Pregnancy Outcomes
- Birth Outcomes
- STI/HIV
  - Method efficacy
  - Correct/consistent use
  - Access
  - Adherence
  - Short Term/Long Term Consequences
Risk and Protective Factors in Shaping Adolescent SRH

- Biopsychosocial factors that affect adolescent reproductive health in developing countries
  - Individual-level factors
  - Peer-level factors
  - Family-level factors
  - Community-level factors

- Biopsychosocial factors influence proximate behaviors and reproductive outcomes:
  - Sexual debut, condom and contraceptive use, multiple sexual partners
  - Pregnancy, STI infection, HIV infection, early child bearing

Individual Risk and Protective Factors

- Earlier onset of puberty
- Older age
- Male gender
- Personal resilience, e.g., intelligence, educational achievement
- Risk taking “personality”
- Substance use
- Adverse childhood experience
Peer Risk and Protective Factors

- Friends have sex
- Partner sexually active
- Involvement in pro-social behaviors
- Married/permanent sexual partner (protective or not?)
- Sexual coercion/interpersonal violence
Family Risk and Protective Factors

- Intact two-parent family (protective)
- Parents: limit setting, communication, values
- Urban residence
- Connection to adult role models
Community Risk and Protective Factors

- Educational opportunities
- Life opportunities
- Socio-economic status
- Social norms about marriage & childbearing
- Attachment to school and community
- Adult role models
Teen Pregnancy Risk: Why Are US Rates Changing (and So High)?

- Sexual activity?
- Contraceptive use?
- HIV prevention and sexuality education?
- Access to contraception?
- More equitable income distributions?
- Lower societal acceptance of contraceptive use?
- Higher fertility among women in their 20s?
Ever had Sexual Intercourse, Never Married Adolescent Females, NSYW, NSFG, YRBS
Female Contraceptive Use at First Intercourse by Year of First Premarital Intercourse, NSFG, 2002

---|---|---|---|---
No Method | 57.2 | 38.6 | 29.9 | 26.6 | 21.1
Condom Only | 10.4 | 9.2 | 4.1 | 4.7 | 4.3
Other | 20.1 | 31.9 | 49 | 47.8 | 50.6
Dual Use | 1.6 | 6.2 | 9 | 13.9 | 16.6
Hormonal Only | 10.7 | 14.1 | 8 | 7 | 7.4
Ever had Sexual Intercourse, Grades 9-12, National YRBS
Condom and Contraceptive Use at last Sex, Women in Grades 9-12, National YRBS

- Condom use
- Pill use
- No method
- Injection
- Withdrawal
Explaining Recent Declines in Adolescent Pregnancy in the United States: The Contribution of Abstinence and Improved Contraceptive Use
JS Santelli, LD Lindberg, LB Finer, S Singh (AJPH, 2007)

- Data from the 1995 and 2002 NSFG
- Estimated pregnancy risk over time based on changes sexual activity and contraceptive use
- Pregnancy Risk Index (PRI)
- Among 15-17 year olds
  - ↓ Sexual activity explained ~1/4 of ↓ in PRI
  - ↑ Contraceptive use ~3/4 ↓ in PRI

John S Santelli, Mark Orr, Laura D Lindberg, Daniela Diaz

- Falling and rising pregnancy risk among teens
- Reasons for the ↑ teen birth rate in 2006
Recent Sexual Activity, High School Girls by Race, YRBS, 1991-2007

Linear - Quadratic

*** ns
ns ns

Hispanic
Non-Hispanic Black
Non-Hispanic White
All Women
Trends in Prevalence of Contraceptive Use at Last Sex (YRBS) by race, 1991-2007

- **Condom**
- **Pill**
- **Withdrawal**
- **No method**

- **Hispanic**
- **Non-Hispanic Black**
- **Non-Hispanic White**
- **All Women**
Trends in the Pregnancy Risk Index (PRI) among High School Girls

Linear – Quadratic

Hispanic
Non-Hispanic Black
Non-Hispanic White
All women

*** ns
ns
***
ns
European Teens Compared to the U.S. Teens (Godeau et al, Santelli et al 2008)

- Data from the HBSC and YRBS surveys
- The condom and the pill are the most common choices among European and US youth
- Pill use more common among European youth
  - Many European teenagers opted for the “double Dutch” method of using both condoms and the pill
- Contraceptive use among young teenagers is particularly high (and pregnancy low) in countries like the Netherlands
  - Parents are strongly accepting of teenage contraceptive use
  - Assure adolescent access to contraception and sex education
Condom Use at Last Sex Among 15 Year-Old Males: U.S. and Select European Countries

** For NY State we used 9th grade students. Based on the national YRBS data 9th grade students have a mean age of 14.7 years at time of survey administration.
Condom Use at Last Sex Among 15 Year-Old Females: U.S. and Select European Countries

For NY State we used 9th grade students. Based on the national YRBS data 9th grade students have a mean age of 14.7 years at time of survey administration.
Pill Use at Last Sex Among 15 Year-Old Females: U.S. and Select European Countries

** For NY State we used 9th grade students. Based on the national YRBS data 9th grade students have a mean age of 14.7 years at time of survey administration.
Summary

- After improvement in the 1990s and early 2000s, sexual behavioral change related to teen pregnancy appears to have stalled or even reversed.
- Recent behavioral trends portend stagnant or even rising teen birth and pregnancy rates through 2008.
- Reinvigorated efforts to promote teen condom and contraceptive use are needed.
- New vision for sexual health in America.
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Extra Slides
Figure 3. Ever Had Sexual Intercourse, by Lifetime Risk Behavior Scale, 1991-2007, Youth Risk Behavior Survey
Teen Pregnancy Risk Over Time: What’s Really Changed?

Distal determinants:

- Concerns about HIV and other STIs
  - Prevention fatigue recently
- Declining social acceptance of teen childbearing
- A more conservative social climate, emphasis on abstinence at state and local level
An Organizing Framework: Adolescent Risk Factors for Teen Pregnancy

**Biopsychosocial factors**
- Pubertal timing
- Race/ethnicity
- Religion
- Labor force participation
- Education
- Income
- Access to health care
- Family background
- Community environment (economic, social, etc)
- Coercion/abuse

**Proximate variables**
- **Intercourse variables:**
  - Timing of first intercourse
  - Percent of women who ever had intercourse
  - Time spent in marriage (separation, divorce)
  - Frequency of intercourse

- **Conception variables:**
  - Contraceptive use
  - Sterilization
  - Infertility/fecundity

- **Pregnancy outcome (gestational) variables:**
  - Miscarriage and stillbirth
  - Induced abortion

**Fertility**
- Live birth
Distal Factors

Contextual Factors
- Social Context
  - Family influences
  - Urban Vs. Rural
  - Migration & mobility
  - Peer pressure
  - Partner Influences

Individual Psychosocial Factors
- Marriage & relationship dynamics
- Gender socialization & roles
- Pregnancy desires and motivation to avoid HIV and other STIs
- School achievement
- Perceived risk of HIV
- ARV treatment optimism & prevention fatigue
- Perceived efficacy of condoms & abstinence
- Perceived effectiveness of circumcision
- HIV and infertility related stigma
- Use of alcohol
- Experience of sexual & physical abuse

Proximate Factors
Behavioral and Biological
- Sexual intercourse:
  - Age at Initiation
  - Current sexual activity
- Use of barrier protection and contraception
- Partners factors
  - Numbers of partners
  - Probability of HIV infection (age, lifetime partners, etc.)
  - Pregnancy desires of partner
- Circumcision
- HIV prevalence & Viral load
  - Community-wide
  - Specific partners

Biological Outcomes
- Pregnancy
- STI
- HIV

Figure 1. Biopsychosocial Framework of Sexual Transmission of HIV among Youth in Rakai
Teen Pregnancy Risk Over Time: What’s Really Changed?

Have we made effective policy and programmatic changes in:

● Abstinence or comprehensive sex education?
● Improved access to reproductive health services?
● Welfare reform?
Teen Pregnancy Risk Over Time: What’s Really Changed?

Have we dramatically:

- Reduced poverty?
- Stabilized the American family?
- Improved economic opportunities?
- Become more religious?
- Reduced sexual coercion?
Political and Policy Direction for Changing Adolescent Sexual Behavior

- Should the U.S. focus on improving contraceptive use or promoting abstinence?
- European experience: is it relevant for the US?

- Non-Hispanic Black
- All Women
- Non-Hispanic White
- Hispanic
Non-coital sexual activity among never-married males aged 15-19, 1995, NSAM

- Ever had Vaginal Sex
- Never had Vaginal Sex

Activities:
- Masturbated by female
- Received oral sex
- Gave oral sex
- Had anal sex
# Trends in Ever Having Oral Sex

<table>
<thead>
<tr>
<th></th>
<th>1991 NSM (20-24 years)</th>
<th>1992 NHSLS (18-24 years)</th>
<th>2002 NSFG (18-24 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men, Gave</td>
<td>67%</td>
<td>72%</td>
<td>66%</td>
</tr>
<tr>
<td>Men, Received</td>
<td>75%</td>
<td>74%</td>
<td>76%</td>
</tr>
<tr>
<td>Women, Gave</td>
<td>na</td>
<td>69%</td>
<td>72%</td>
</tr>
<tr>
<td>Women, Received</td>
<td>na</td>
<td>75%</td>
<td>76%</td>
</tr>
</tbody>
</table>

Trends in Pregnancy Risk among Sexually Active High School Girls

The graph shows the trends in CRI Score among different groups of women over the years from 1991 to 2007. The x-axis represents the years, and the y-axis represents the CRI Score.

- **Hispanic** (blue line) shows a significant decrease over the years, indicated by the ** and *** symbols.
- **Non-Hispanic Black** (black line) also shows a decrease, with the *** symbol indicating a significant trend.
- **All Women** (red line) shows a decrease, with the ns symbol indicating no significant trend.
- **Non-Hispanic White** (yellow line) shows a decrease, with the ns symbol indicating no significant trend.

The graph includes a legend with the mentioned categories, and the Linear - Quadratic fits are indicated with symbols: ** for the Hispanic group, *** for the Non-Hispanic Black group, ns for All Women and Non-Hispanic White groups.
Teen Pregnancy and Sexually Transmitted Diseases in the U.S.

- 745,000 pregnancies under age 20 (2004)
  - Births 57%, abortions 27%, fetal loss 16%
  - 80-90% are unplanned or mistimed
  - ~½: no contraceptive use

- 9.5 million STIs among youth
  - ~½ new infections are under 25 years
  - ~20% under 20
Percentage of Births to Unmarried Women and Teens

- 15 years
- 16 years
- 17 years
- 18 years
- 19 years
- Under 15
- 15-19
- All Women
Percentage of Births to Unmarried Teens

- 15 years
- 16 years
- 17 years
- 18 years
- 19 years
- Under 15
- 15-19

↑↑↑ Sexual experience (began in the 60s)
leftrightarrow Condom use / 1970s
↑↑↑↑ Condom use / 1980s
↓ Pill use
↑↑ Contraceptive use @ first intercourse

↔ ↓ Sexual experience
↑↑ ↔ Condom use
↓ ↑ Pill use
↑ Contraceptive use @ first intercourse
↑ New methods