Adolescent Sexual Risk-Taking Behaviors and The Impact of Programs to Reduce It

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Background - Nationwide

- In 2004, 7.2% of young women 15-19 became pregnant, most unintentionally
- 1n 2004, 26% of young women 14-19 nationwide had an STD
  - 18% had HPV
  - 38% of those who said they had ever had sex had an STD
- We need to be concerned about both teen pregnancy and teen STD

Importance of Behavioral Focus and Messages

- Research shows that focusing on particular behaviors and giving a "clear message" about those behaviors are among the most important characteristics of effective programs.
  - Effective sex and HIV education programs (group-based)
  - Clinic protocols (one-on-one)
  - School-based clinics

What messages about behavior *do* we give teens to prevent pregnancy and STD?

Content of Current Messages for Youth in the U.S.

- A: **A**bstain from sex
  - Until older
  - Until married

- AC: **A**bstinence is safest.
  If you have sex, always use a **C**ondom *(or Contraception).*

Limitations of the "A" and "AC" Messages

"A" message

- A majority of youth have sex while enrolled in high school
- The vast majority of young people have sex before marriage
- Many young people value their sexual intimacy prior to marriage and do not want to forgo it

Limitations of the "A" and "AC" Messages (continued)

"C" message

- Condoms are not 100% effective, even if used consistently and correctly
- Sexually active youth do not always use condoms consistently and correctly
  - Many youth stop using condoms when they have had sex a few times with same partner
  - As youth become older, they are less likely to use condoms
  - Females have less control over condom use

What are the behaviors that *directly* impact teen pregnancy and STD?

Which ones should we focus on?

At a minimum we should consider:

1. Can the behavior markedly reduce the chances of pregnancy or STD transmission?
2. Can programs increase the behavior?

1. Delay/abstain from sex

- Only certain method of avoiding pregnancy and STD (if “sex” includes vaginal, oral and anal sex)
- Multiple studies show delay is related to pregnancy and STD rates
  - Direct effect
  - Increased condom use if older
- Multiple studies show programs can delay sex

2. Decrease frequency of sex

- Chances of pregnancy or transmitting any STD during a single act of sex are less than p=1.0
- Multiple acts increase chances, up to a limit
- Multiple studies show some programs can decrease frequency of sex (or increase return to abstinence)

3. Decrease number of sexual partners

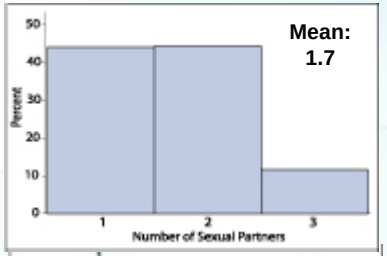
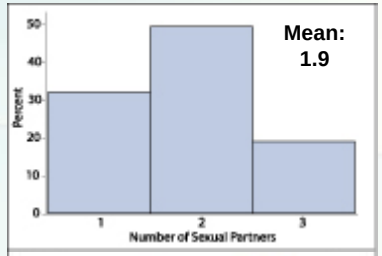
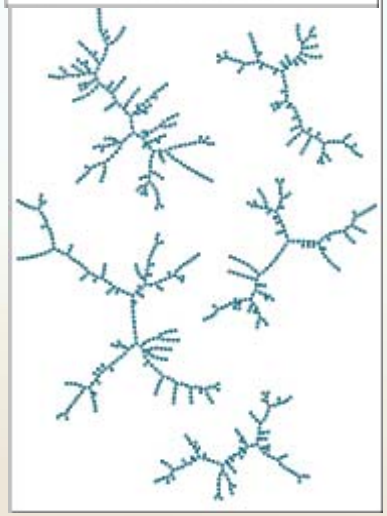
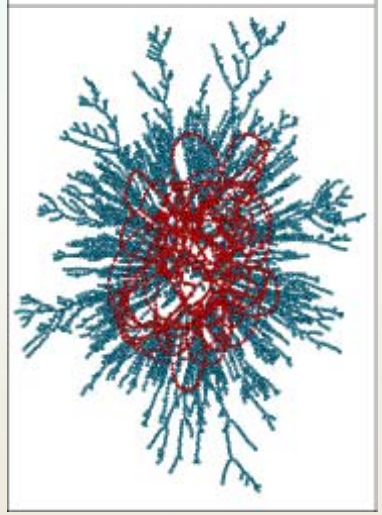
- Having multiple sexual partners over time greatly increases risk of STD, including HIV (see later slide)
  - Non-linear effects

Activity #1: One vs Two Partners

Major Point:

- By going from one partner to two, the risk at the individual level may double, but the population risk increases greatly

Impact of # Partners on Network Size

Number of Partners		
Largest components Bicomponents in red		
In largest component:	**2%**	**64%**
In largest bicomponent:	**0**	**15%**

Source: Martina Morris, Univ. of Washington, used with permission from a presentation given at a meeting on concurrent sexual partnerships and sexually transmitted infections at Princeton University, 6 May 2006.

3. Decrease number of sexual partners (continued)

- Multiple studies show impact of multiple partners on STD rates among teens
- Multiple studies show some programs can decrease number of sexual partners

4. Avoid concurrent sexual partners (or partners with concurrent partners)

- Greatly increases chances of HIV and other STD transmission among adults internationally
  - All partners can become infected
  - Sex during high viral loads more likely
- No studies measuring impact of programs on concurrent partners

Activity #2: Sequential vs Concurrent Partners

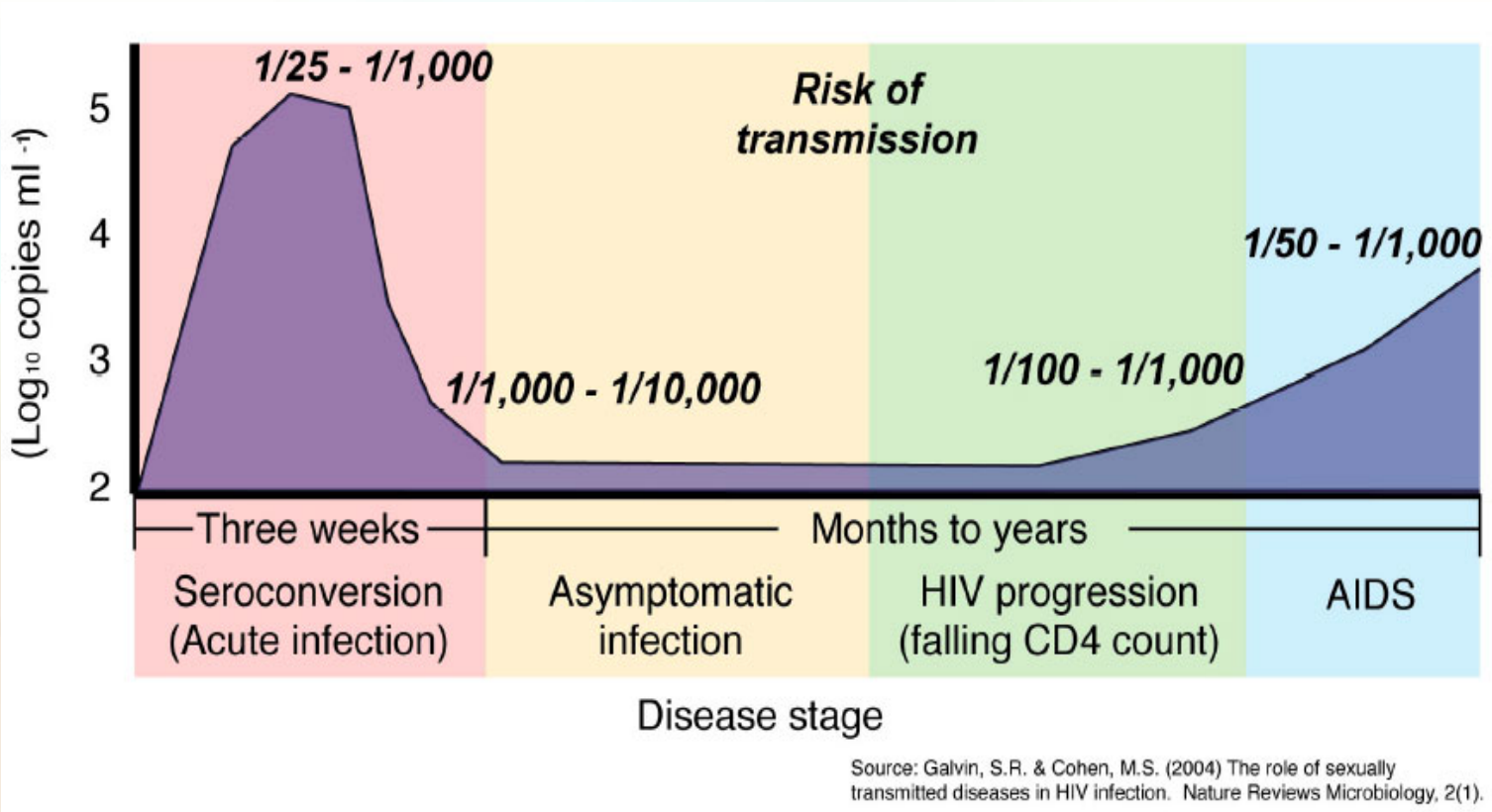
Major point:

- Having concurrent instead of sequential partners greatly increases risk at population level, but not at individual level

5. Increase the time gap between sexual partners

- Infectivity of some STDs declines with time (see next slide)
- May need roughly 6 months to substantially reduce viral load of some STDs; less for others
- No studies measuring impact of programs on time gap between partners

Transmission efficiency



Source: Galvin, S.R. & Cohen, M.S. (2004) The role of sexually transmitted diseases in HIV infection. Nature Reviews Microbiology, 2(1).

6. Use a condom consistently and correctly during every act of sex

- Strong evidence for impact on STD rates for teens
- Strong evidence for impact on nearly all specific STD rates among adults
- Multiple studies show programs can increase condom use

7. Use contraception consistently and correctly during every act of sex

- Strong evidence for impact on pregnancy rates for teens
- Multiple studies show programs can increase contraceptive use

8. Be tested and treated for STD

- At population level, can substantially reduce exposure to treatable STDs
- Works best in mutually monogamous relationships
- A few studies show programs can increase testing and treatment

9. Be vaccinated against STD

- Hepatitis B
- HPV
- Strong evidence for impact among adults (randomized controlled trials)
- No studies measuring impact of programs on vaccination rates

10. Be circumcised (males only)

- Strong evidence for impact on HIV (3 RCTs + population-level studies)
- Reduces female to male transmission of HIV by estimated 50% – 70%
  - If fewer males are infected, fewer females will become infected
- New evidence for other STDs
  - Some effects on herpes and HPV
- Note: This is a “medical intervention” and not quite a “behavior”

Whew! Nine or Ten "Behaviors"

1. Delay/abstain from sex
2. Decrease frequency of sex
3. Reduce number of sexual partners
4. Avoid concurrent partners or partners with concurrent partners
5. Increase time gap between sexual partners
6. Use a condom consistently and correctly
7. Use contraception consistently and correctly
8. Be tested and treated for STDs
9. Be vaccinated
10. Be circumcised (males only)?

How can we handle so many? Part 1

Drop male circumcision from further consideration for U.S. teens for now

How can we handle so many? Part 2

Group behaviors

1. Abstain from sex
   - Delay, abstain, reduce frequency
2. Have only long term mutually monogamous relationships
   - Reduce number, avoid concurrent partners, increase time between partners
3. Use condoms consistently and correctly
4. Use female contraception consistently and correctly
5. Be tested and treated for STDs
6. Be vaccinated

How can we handle so many? Part 3

Assess needs and resources in your community

- Relative importance of pregnancy and STD rates
  - For different age groups
- Relative importance of specific STD rates
  - Treatable versus not
  - Vaccines available or not
- Availability of vaccines and STD testing services in community

How can we handle so many? Part 4

Assign *primary* responsibility for different behaviors to different institutions in your community

- School sex education
  - Abstaining, few partners, condom and contraceptive use, STD testing
- School health guidelines
  - Vaccinations for STD
- Health clinics
  - Condom and other contraceptive use, vaccinations for STD, STD testing

Some Options

Option #1

- **A** = **A**bstain from sex; this is safest
- **C** = If you have sex, always use a **C**ondom
- **B** = **B**e faithful and use hormonal contraception: That is:
  - If you have been in a mutually faithful relationship for at least 3 months, and
  - Have been tested and treated for STD,
  - Use a hormonal method of contraception

- *For all youth or possibly higher risk youth*

Option #2

Always avoid sex that is not protected against both pregnancy and STD.

A = **A**bstinence is safest.

D = If you have sex, use **D**ual protection:

- To protect against *pregnancy*, use a female hormonal method of contraception during every act of sex, **AND**
- To protect against *STD*, either:
  1. Use a condom every time you have sex, *or*
  2. Be in a long term mutually faithful relationship *and* be tested (and treated) for STD before having sex without a condom

- To protect against *STD*, also be vaccinated against:
  - HPV (human papilloma virus)
  - Hepatitis B

Option #3: Comprehensive Message

Three slides:

A = **A**bstain from sex

- *Absolutely the safest option*
- *Best option for young people*

B = **B**efore you have sex,

- **B**e at least 18,
- **B**e in love and in a mutually faithful relationship for at least 3 months,
- **B**e tested and treated for STD,
- **B**e vaccinated against STD
- **B**e protected against pregnancy (use contraception)
- **B**e sure it is what you want
  - Voluntary, not pressured, consistent with your values
- *(Not as safe as A, but is much safer than other options.)*

C = **C**onsistently and **C**orrectly use **C**ondoms every time you have sex.

- *(Less safe than A or B, but is much safer than sex without protection against pregnancy or STD.)*

- Consistent with values of many teens
- Consistent with many teens' beliefs about romantic sex

Principles about Support:

- Not all groups have to support all elements
  - Faith communities might wish to promote A more than C
  - Reproductive health clinics might wish to promote C or D more than A
- No group should undercut or contradict any element of the message
- Overall, there should be an appropriate balance across the elements from different sources in each community

Two Important Questions:

- What are the effects of different kinds of programs on these behaviors?
- What are the characteristics of programs that change these behaviors?

Based in Part on the Reports:

Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Disease

- Published by the National Campaign to Prevent Teen and Unplanned Pregnancy

Tool to Assess the Characteristics of Effective Sex and STD/HIV Education Programs

- By Douglas Kirby, Lori A. Rolleri, & Mary Martha Wilson
- Published by Healthy Teen Network and ETR Associates

Sex and STD/HIV Education Programs

Goals:

- Decrease unintended pregnancy
- Decrease STD including HIV/AIDS
- Improve sexual health in other ways

Study Criteria

Programs:

- Targeted young people up through high school age
- Were curriculum-based with structured activities involving groups of youth (not one-on-one interaction
- Focused on sexual behavior (not drugs, violence, etc and sexual risk)
- Were implemented in schools or community settings
- Were implemented in the U.S.

Study Criteria

Studies:

- Employed experimental or quasi-experimental design
- Had a sample size of 100 or larger
- Measured impact on initiation of sex for at least 6 months and other behaviors for at least 3 months
- Were published in 1990 or later

The Number of Programs with Indicated Effects on Sexual Behaviors

	Abstinence Programs (N=9)	Comprehensive Sex & STD/HIV Education Programs (N=48)
Initiation of Sex		
Delayed initiation	2	15
Had no sig impact	7	17
Hastened initiation	0	0
Frequency of Sex		
Decreased frequency	2	6
Had no sig impact	4	15
Increased frequency	0	0
# of Sexual Partners		
Decreased number	1	11
Had no sig impact	4	12
Increased number	0	1

The Number of Programs with Indicated Effects on Sexual Behaviors

	Abstinence Programs	Comprehensive Programs
Use of Condoms		
Increased use	0	15
Had no sig impact	5	17
Decreased use	0	0
Use of Contraception		
Increased use	0	4
Had no sig impact	4	4
Decreased use	0	1
Sexual Risk-Taking		
Reduced risk	0	15
Had no sig impact	3	9
Increased risk	0	0

The Number and Percent of Comprehensive Sex & STD/HIV Programs with Indicated Effects on *Any* Behavior

Any Behavior

Had positive impact	33 (69%)
Had negative impact	2 (4%)
Total number	48 (100%)

The Percent of Comprehensive Programs with Effects on *Two or More* Behaviors

Two or More Behaviors

- Had positive impact 18 (38%)
- Had negative impact 0 (0%)
- Total 48 (100%)

Conclusions about the Impact of Sex and STD/HIV Education Programs

- Abstinence programs have weak evidence of positive impact
  - **Some are not effective**
- Sex/HIV education programs
  - **Do not increase sexual activity**
- Some sex/HIV education programs:
  - **Delay initiation of intercourse**
  - **Reduce number of sexual partners or**
  - **Increase use of condoms/contraception**
- Some do all three

Conclusions about the Impact of Sex/HIV Education Programs *continued*

- Talking about abstinence, fewer partners and condoms/contraception is not confusing
- It is effective

Conclusions about the Impact of Sex/HIV Education Programs *continued*

- Programs are quite robust; they are effective with multiple groups:
  - Males and females
  - All major ethnic groups in U.S.
  - Sexually experienced and inexperienced
  - Youth in advantaged and disadvantaged communities
- Programs may be especially effective:
  - With higher risk youth in disadvantaged communities
  - In communities where they address a salient issue

Conclusions about the Impact of Sex/HIV Education Programs *continued*

Sex/HIV education programs:

- Are not a complete solution
  - Can reduce sexual risk by roughly one-third
- Can be an effective component in a more comprehensive initiative

Are programs effective when they are replicated by others?

Replications of Studies: *Reducing the Risk*

California schools: 16 sessions

- Delayed sex; increased contraceptive use

Arkansas schools: 16 sessions

- Delayed sex; increased condom use

Kentucky schools: 16 sessions

- Delayed sex; no impact on condom use*

Kentucky schools: 12 sessions

- Delayed sex; no impact on condom use

Replications of Studies:

"Be Proud, Be Responsible" or "Making Proud Choices"

Philadelphia: 5 hours on Saturdays

- Reduced sex & # partners; increased condom use

Philadelphia: 8 hours on Saturdays

- Reduced freq of sex; increased condom use

86 CBO in northeast: 8 hours on Saturdays

- Increased condom use

Philadelphia: 8 hours on Saturdays

- Reduced sex & # partners; increased condom use

Cleveland: 8 sessions *in school*

- Deleted one condom activity
- No significant effects on any behavior

Replications of Studies:
Becoming a Responsible Teen

Jackson, Miss health center: 12 90-minute sessions

- Delayed sex; reduced frequency; increased condom use

Residential drug treatment: 12 90-minute sessions

- Reduced sex & # partners; increased condom use

Juvenile reformatory: *6 1-hour sessions*

- No effects

Replications of Studies: *Focus on Kids*

Baltimore recreation center: 8 sessions

- Increased condom use

West Virginia rural areas: 8 90-minute sessions

- Deleted some condom activities
- No effects

Replications of Studies: Preliminary Conclusions

- Curricula can remain effective when implemented with fidelity by others!
  - Fidelity: All activities; similar structure
- Substantially shortening programs may reduce behavioral impact
- Deleting condom activities may reduce impact on condom use
- Moving from voluntary after-school format to school classroom may reduce effectiveness

1st Policy Implication

Your *most* promising strategy:

- Implement programs with strong evidence that they were effective with populations similar to your own

What are they?

Criteria for Strongest Evidence

- A single study with a very rigorous experimental design demonstrating positive impact for at least one year

OR

- Multiple studies with strong quasi-experimental designs demonstrating positive impact for at least one year

Abstinence Curricula with Strong Evidence for Behavior Change

*"Making a Difference: Abstinence Only"***

- Not school-based
- Targeted African-American youth
- Delayed and reduced sex over two years

** Based on slide presentation at International AIDS meeting in Toronto, 2006

Sex Ed Curricula with Strong Evidence for Behavior Change

Safer Choices: Preventing HIV, Other STD and Pregnancy

- School-based
- Delayed sex for Hispanics; increased condom & contraceptive use
- Reduced unprotected sex for 31 months or more

Reducing the Risk: Building Skills to Prevent Pregnancy, STD & HIV

- School-based
- Delayed sex and increased contraceptive use

Sex Ed Curricula with Strong Evidence for Behavior Change

Making Proud Choices: A Safer Sex Approach to STD, Teen Pregnancy and HIV/AIDS Prevention

- Not school-based
- Targeted African-American youth
- Increased condom use for one year

HIV/AIDS Curricula with Strong Evidence for Behavior Change

Becoming a Responsible Teen: An HIV Risk Reduction Program for Adolescents

- Not school-based
- Targeted African-American youth
- Focused primarily on HIV/AIDS
- Increased abstinence, reduced the number of sexual partners, increased condom use and reduced unprotected sex

HIV/AIDS Curricula with Strong Evidence for Behavior Change

SIHLE: Sistas, Informing, Healing, Living, Empowering

- Not school-based
- Targeted African-American youth
- Focused primarily on HIV/AIDS
- Increased condom use for one year, decreased pregnancy rate for 6 months and decreased STD rates for one year

2nd Policy Implication

Your *second* most promising strategy:

- Implement sex/HIV education programs with the common characteristics of those programs that were effective at changing behavior

Uncovering the 17 Characteristics

1. Identified 28 programs that had strongest evidence for positive behavior change
2. Obtained 19 curricula for effective programs
3. Obtained curricula for a few ineffective programs
4. Conducted in-depth content analyses of these curricula and compared them

Category 1:

Characteristics Describing the Process of Development

Category 1: Process of Development

Used logic model approach

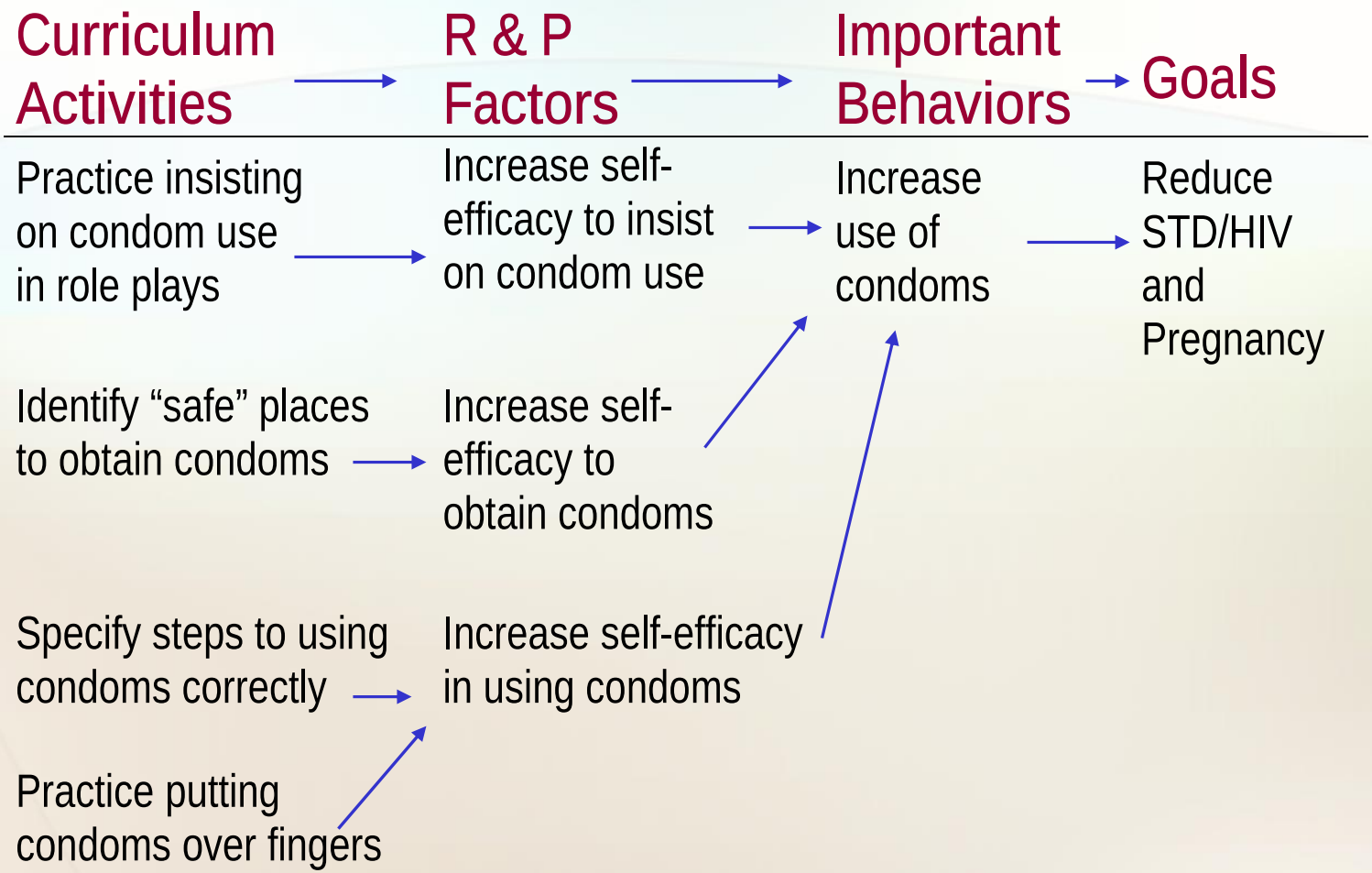
a) Specified the health goals (prevention of HIV, other STD, or pregnancy)

b) Specified the behaviors that cause or prevent HIV, other STD or pregnancy

c) Used theory, research, and personal experience to identify the psychosocial sexual risk and protective factors affecting those behaviors

d) Designed activities to affect those factors

Partial Example: Continued



How did they identify important risk and protective factors to target?

- Used psychosocial theory
  - E.g., theory of planned behavior, social cognitive theory, theory of reasoned action
- Reviewed studies of r & p factors
  - More than 1,000 studies
- Interviewed professions working with youth in the community
  - Specific myths and barriers
- Conducted focus groups with youth
  - Specific myths and barriers

Category 2: Characteristics Describing the Curriculum Content:

- Goals and objectives
- Activities
- Teaching Methodologies

Category 2: Curriculum Content

1. **Focused on clear health goals - the prevention of STD/HIV and/or pregnancy**
   - Talked about these health goals, including susceptibility and negative consequences
   - Gave a clear message about these goals
   - Identified behaviors leading to the health goal (see next characteristic)

Category 2: Curriculum Content

2. Focused narrowly on specific behaviors leading to these health goals

- Specified the behaviors
- Gave clear messages about these behaviors
- Addressed situations that might lead to them

Category 2: Curriculum Content

2. continued

What were the specific behaviors?

STD/HIV

- Abstinence and frequency of sex
- Number of partners (less commonly)
- Condom use

Pregnancy

- Abstinence and frequency of sex
- Contraceptive use

Category 2: Curriculum Content

2. *continued*

What was the clear message about behavior?

- Emphasized not having sex as safest and best approach
- Encouraged condom/contraceptive use for those having sex
- Sometimes also emphasized other values:
  - Be proud, be responsible, respect yourself, stick to your limits, remain in control (for women)

Category 2: Curriculum Content

2. continued

- **Discussed specific situations that might lead to unwanted or unprotected sex and how to avoid them or get out of them**

Category 2: Curriculum Content

3. Addressed multiple sexual psychosocial risk and protective factors affecting sexual behaviors

Category 2: Curriculum Content

3. continued

For abstinence:

- Overall knowledge of sexual issues
- Knowledge of pregnancy, STD and HIV condom/ contraceptive use for those having sex

  Including HIV risk
- Personal values about sex and abstinence
- Perception of peer norms about sex
- Self-efficacy to refuse sex
- Intention to abstain from sex or restrict sex or partners
- Communication with parents or other adults about sex, condoms or contraception

Category 2: Curriculum Content

3. continued

For condom and contraceptive use:

- Knowledge of pregnancy, STD and HIV
- Attitude toward risky sexual behavior and protection
- Attitudes towards condoms
- Perceived effectiveness of condoms to prevent STD/HIV
- Perceptions of barriers to condom use
- Self-efficacy to obtain condoms
- Self-efficacy to use condoms
- Intention to use a condom
- Communication with parents or other adults about sex, condoms or contraception

Category 2: Curriculum Content

5. Included multiple activities to change each of the targeted risk and protective factors

Category 2: Curriculum Content

5. continued

- **Included activities to increase basic knowledge about risks of teen sex and methods of avoiding sex or using protection**
  - **Short lectures**
  - **Class discussions**
  - **Competitive games**
  - **Simulations**
  - **Statistics on prevalence**
  - **Skits or videos**
  - **Flip charts or pamphlets**

Category 2: Curriculum Content

5.continued

Included activities to address risk (susceptibility and severity)

- Data on the incidence or prevalence of pregnancy or STD/HIV (sometimes among youth) and their consequences
- Class discussions
- HIV+ speakers
- Videos, handouts, etc.
- Simulations
  - STD handshake
  - Monthly pregnancy risk
  - Immediate and long term effects on own lives

Category 2: Curriculum Content

5. continued

- **Included activities to change individual values about abstaining and perception of peer norms**
  - Clear message
  - Advantages of abstinence
  - Forced choice value exercises
  - Peer surveys/voting
  - Peer modeling of responsible values
    - Discussion of lines, role plays

Category 2: Curriculum Content

5. continued

- **Included activities to change individual attitudes & peer norms about condoms**
  - Clear message
  - Discussions of effectiveness
  - Peer surveys/voting
  - Discussions of barriers
    - where to get
    - how to minimize hassle & loss of enjoyment
  - Visits to drug stores or clinics
  - Peer modeling of insisting on using condoms
    - Discussion of lines, role plays

Category 2: Curriculum Content

5. *continued*

- **Included activities to improve three skills:**
  1. To avoid unwanted sex and unprotected sex
  2. To insist on and use condom or contraception
  3. To use condoms correctly

Category 2: Curriculum Content

5. continued

- **To avoid unwanted/unprotected sex and to insist on using condoms or contraception**
  - Description of skills
  - Modeling of skills
  - Individual practice in skills -- Role playing
    - Everyone practices
    - Repetition
    - Increasing difficulty
    - Increasing use of own words
  - Feedback (e.g., checklist)

Category 2: Curriculum Content

5. continued

- **To use condoms properly**
  1. Arrange in order the proper steps for using condoms
  2. Model and practice opening package and putting condoms over fingers, verbally stating and following the important steps

Category 2: Curriculum Content

5. *continued*

- Included instructionally effective activities to increase communication with parents or adults about sex (occasionally)
  - Homework assignments
    - Information sent home to parents
    - Multiple assignments

Category 2: Curriculum Content

6. **Employed effective teaching methods**
   - **Were instructionally sound**
     - E.g., role playing to improve skills
   - **Actively involved participants**
   - **Helped them personalize the information**

Category 2: Curriculum Content

7. **Employed activities, instructional methods and behavioral messages that were appropriate to the youths' culture, developmental age, gender and sexual experience**
   - *Be Proud; Be Responsible:* Focused on needs of African American youth
   - *SIHLE*: Empowered women
   - **Many:** Appropriately addressed abstinence versus condom use

Category 3:
Characteristics Describing the Implementation of the Curriculum

Category 3: Implementation

2. Selected educators with desired characteristics, trained them and supervised them

Category 3: Implementation

2. *continued*

Important selection criteria:

- Could relate to youth
- Had experience with health education
- Were comfortable with topic

Possibly *unimportant* selection criteria:

- Age (adult versus peer)
- Matched gender or race

Category 3: Implementation

2. *continued*

Supervision

- Monitoring
- Supervision
- Support
  - E.g., Discussed problems in small groups

Category 3: Implementation

4. **Implemented virtually all activities with reasonable fidelity**
   - Most activities
   - Same setting or structure as designed

Conclusions about the Impact of Sex/HIV Education Programs

- About two-thirds significantly improved behavior
- But, not all curricula were effective
- Most effective curricula incorporated 17 characteristics
- Most curricula with nearly all 17 characteristics were effective

Other Effective Education Programs

- Interactive computer programs
  - Youth chose parts of program to access
  - Youth made decisions about characters' behavior
  - Used program multiple times for lengthy times
  - Can be effective in clinics

Other Kinds of Programs

Clinic Programs (Including Changes in Clinic Protocols)

Advance Provision of Emergency Contraception

The Number of Clinic Programs with Indicated Effects on Sexual Behaviors

	Clinic Programs (N=6)	Advance Provision of EC (N=4)
Initiation of Sex		
Delayed initiation	0	0
Had no sig impact	0	0
Hastened initiation	1	0
Frequency of Sex		
Decreased frequency	1	0
Had no sig impact	2	2
Increased frequency	0	0
# of Sexual Partners		
Decreased number	1	0
Had no sig impact	1	1
Increased number	0	0

The Number of Clinic Programs with Indicated Effects on Sexual Behaviors

	Clinic Programs (N=6)	Advance Provision of EC (N=4)
Use of Condoms		
Increased use	3	1
Had no sig impact	1	3
Decreased use	0	0
Use of Contraception		
Increased use	2	0
Had no sig impact	0	2
Decreased use	0	1
Sexual Risk-Taking		
Reduced risk	2	0
Had no sig impact	0	3
Increased risk	0	1

The Number of Clinic Programs with Indicated Effects on Sexual Behaviors

	Clinic Programs (N=6)	Advance Provision of EC (N=4)
Use of Emergency Contraception		
▸ Increased use	0	4
▸ Had no sig impact	0	0
▸ Decreased use	0	0

Conclusions about the Impact of Clinic Programs

- Programs can increase condom and contraceptive use
- Programs can reduce unprotected sex
- Advance provision of EC can increase use of EC

Common Characteristics of Effective Clinic Programs

- Clinics changed their protocols for working with adolescent clients
  - Provided more than routine information
  - Asked questions about adolescents' sexual behavior and barriers to abstaining from sex or using protection
  - Did role plays refusing sex or using condoms
  - Gave a clear message about avoiding unprotected sex

School-Based and School-Linked Clinics

The Number of Clinic Programs with Indicated Effects on Sexual Behaviors

	Clinic Studies (N=5)
Initiation of Sex	
Delayed initiation	1
Had no sig impact	1
Hastened initiation	0
Frequency of Sex	
Decreased frequency	0
Had no sig impact	1
Increased frequency	0
Contraceptive Use	
Increases use	1
Had no sig impact	1
Decreased use	0

The Number of Clinic Programs with Indicated Effects on Sexual Behaviors

	Clinic Studies (N=5)
Pregnancy	
Decreased pregnancy	1
Had no sig impact	1
Increased pregnancy	0
Childbearing	
Decreased childbearing	1
Had no sig impact	3
Increased childbearing	0

Conclusions about the Impact of School-based and School-linked health services

- Do not increase sexual behavior
- May:
  - increase contraceptive use
  - Decrease pregnancy and childbearing
  - IF if they give reproductive health considerable attention (prescribe or do close referral and monitoring)

Thank You

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