

AFRICAN AMERICANS AND HETEROSEXUAL HIV INFECTION

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WHAT ARE RISK FACTORS?

- What factors contribute to high rates of heterosexually transmitted HIV among blacks?
- Sexual network characteristics?
- Role of STDs?

POPULATION-BASED CASE-CONTROL STUDY

- All subjects: African Americans, aged 18-59, who denied MSM and IDU
- CASES (N=206)
 - African Americans, aged 18-59 , with recently reported heterosexually transmitted HIV infection
 - Agreed to release their names to study staff
- CONTROLS (N=226)
 - Randomly selected from general population (NC Driver's License file)
 - Counties chosen for high proportions of African Americans and high STI/HIV rates among African Americans
- Standardized interview at home re: demographic data, sexual behaviors/partnerships, drug use

DEMOGRAPHIC FEATURES

	<u>Cases (%)</u>	<u>Controls (%)</u>	<u>OR (adj gender)</u>
Men	78	78	N/A
Women	128	148	NA
< High school education	41	17	3.4 (2.2, 5.3)
Annual income < \$16K	67	30	4.8 (3.0, 7.7)
Homeless in past 10 yrs	18	5	3.9 (1.9, 7.7)
Food insecurity	26	14	2.2 (1.4, 3.6)
≥ 24h in jail or prison	40	12	5.7 (3.3, 9.7)

RISK BEHAVIORS

	<u>Cases (%)</u>	<u>Controls (%)</u>	<u>OR (adj. gender)</u>
Lifetime # partners	11	6	P< .0001 (Wilcoxon)
# Partners past year	2	1	P< .0001 (Wilcoxon)
Exchanged sex	31	7	5.9 (3.3, 10.7)
STD dx ever	60	31	3.2 (2.2, 4.8)
Respondent used crack	31	5	8.6 (4.4, 16.9)
Partner IDU	19	5	4.6 (2.2, 9.7)
Partner used crack	48	15	5.4 (3.4, 8.5)
Concurrent partnerships past 5 yrs	60	38	2.3 (1.6, 3.5)

RISK FACTORS FOR HETEROSEXUALLY TRANSMITTED HIV: MULTIVARIABLE ANALYSIS

<u>Variable</u>	<u>Odds Ratio</u>
Less than HS education	3.0 (1.8, 5.2)
Number of partners during lifetime (log)	1.5 (1.1, 1.9)
Respondent smoked crack	3.7 (1.7, 8.1)
Partner(s) injected drugs	3.0 (1.2, 7.7)
Partner smoked crack	2.1 (1.2, 3.8)

RISK FACTORS FOR HETEROSEXUALLY TRANSMITTED HIV: AFRICAN AMERICANS IN NORTH CAROLINA

- African Americans with heterosexually acquired HIV infection:
- Most reported high-risk behavior and/or high-risk partners
- BUT
 - ★ 27% of cases (and 69% of controls) denied high-risk sexual partners or behaviors

LOWER RISK RESPONDENTS

Lower Risk Respondents *DENIED*:

- STD dx past year
- Crack use
- Binge alcohol
- IDU partner
- Trading sex
- Partner who smoked crack
- MSM partner

LOWER RISK RESPONDENTS: MULTIVARIABLE ANALYSIS

- Risk factors among lower risk cases:
 - Less than HS education (OR 5.2; 2.2, 11.1)
 - Food insecurity (OR 3.7; 1.5, 8.9)
 - Non-monogamous sex partner (OR 2.9; 1.3, 6.4)

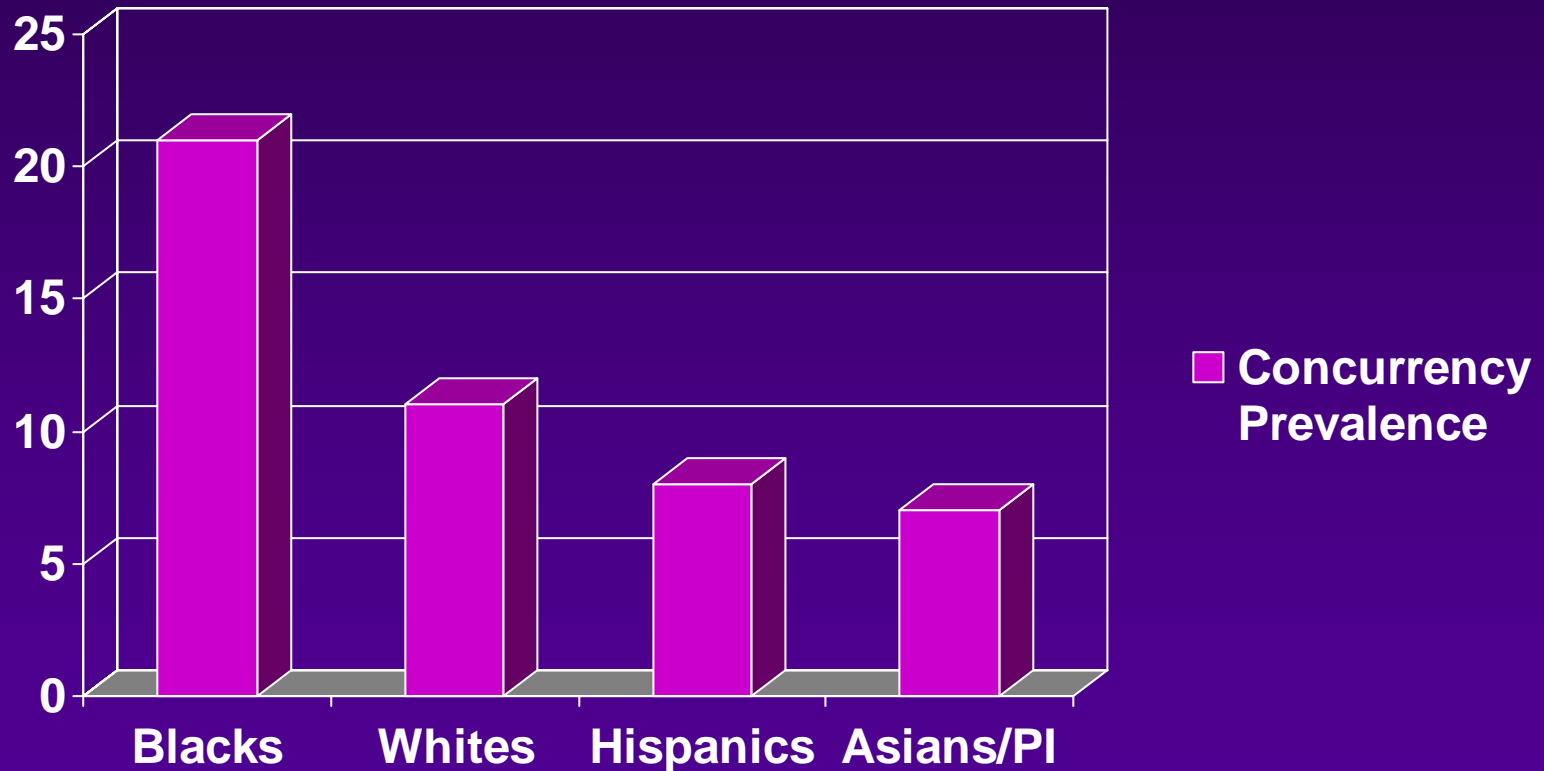
CONCURRENT SEXUAL PARTNERSHIPS

- Sexual partnerships that overlap in time
 - Permit more rapid spread of an STI throughout a population
 - Individual infected by 1 partner already has others to infect
 - Earlier partners are put at risk by individual's subsequent partners

PARTNERSHIP SEQUENCES

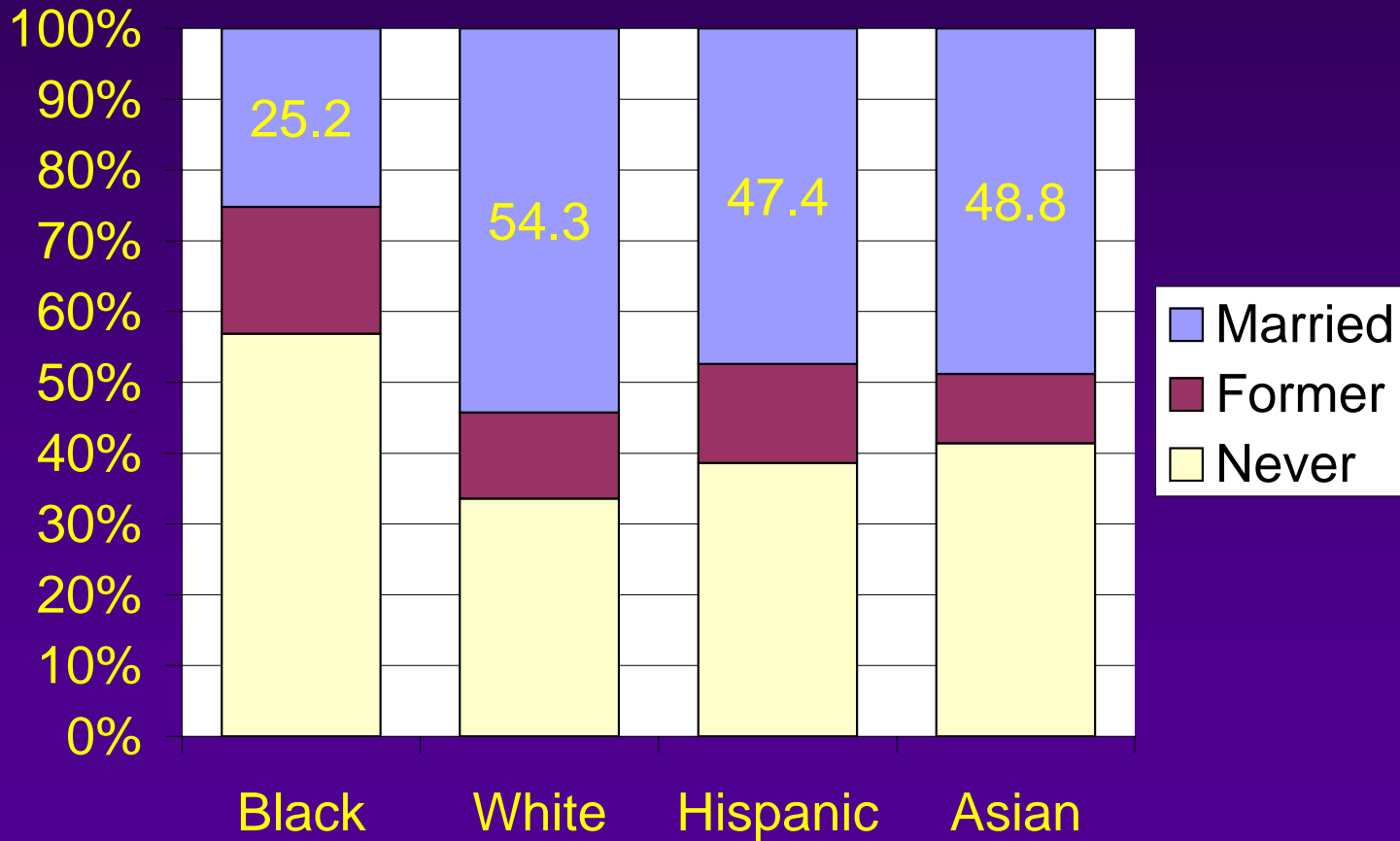
		MONTH									
Person	Relation	1	2	3	4	5	6	7	8	9	10
A	Monogamy		E	E		E		E	F	F	F
<i>B</i>	<i>Concurrency</i>		<i>G</i>	<i>G</i>	<i>H</i>	<i>G</i>	<i>H</i>	<i>G</i>	<i>H</i>	<i>H</i>	
C	Monogamy				I		I		I	I	I
<i>D</i>	<i>Concurrency</i>		<i>J</i>	<i>J</i>	<i>J</i>	<i>K</i>	<i>J</i>	<i>J</i>	<i>J</i>	<i>J</i>	<i>J</i>

CONCURRENCY PREVALENCE WOMEN, U.S. (1995, NSFG)

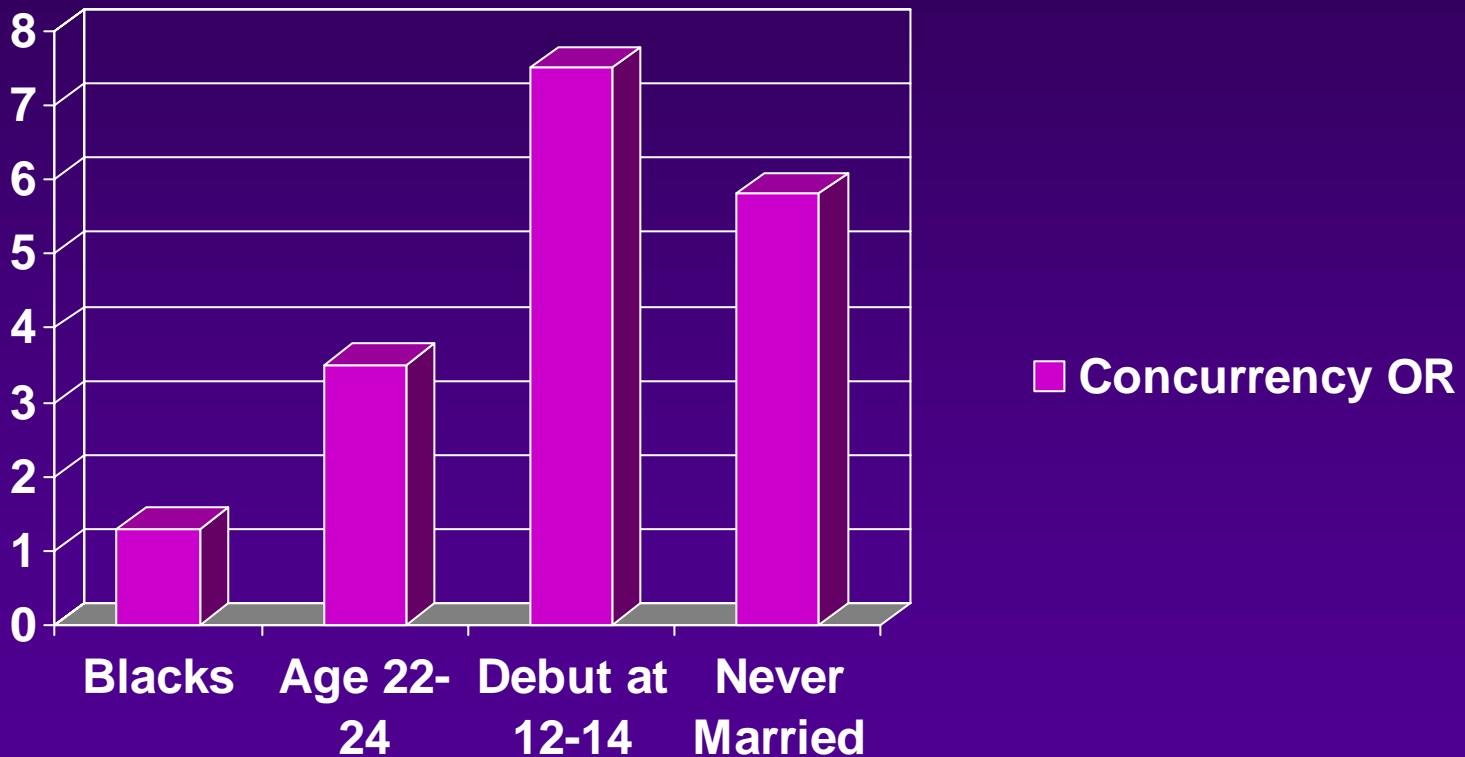


- *Adimora AA, Schoenbach VJ, Bonas DM, et al. Concurrent Partnerships among Women in the US. Epidemiology 2002; 13;320-327*

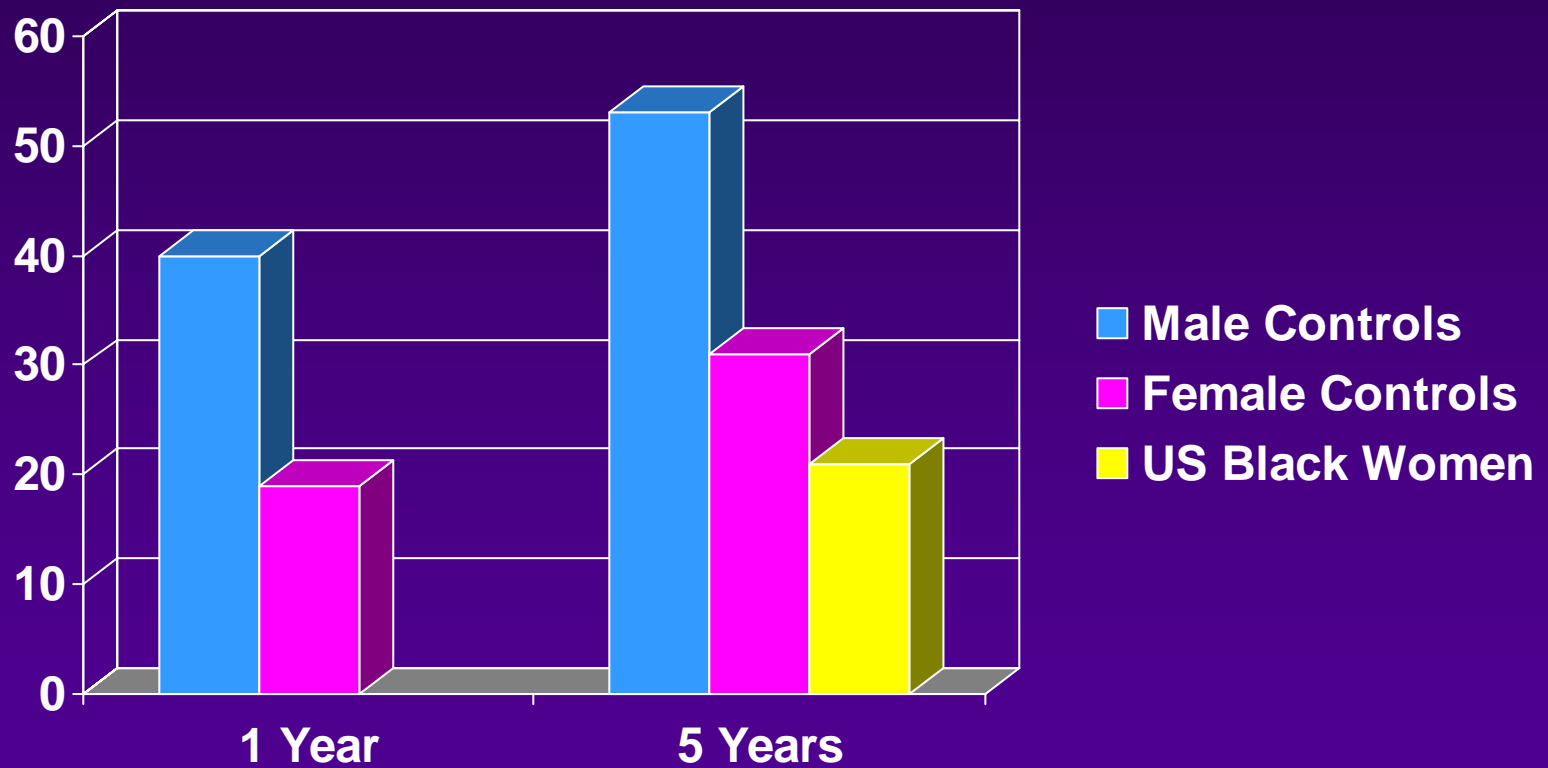
MARITAL STATUS BY ETHNICITY (1995, NSFG)



NSFG: CONCURRENCY ODDS RATIOS



CONCURRENCY PREVALENCE (%)

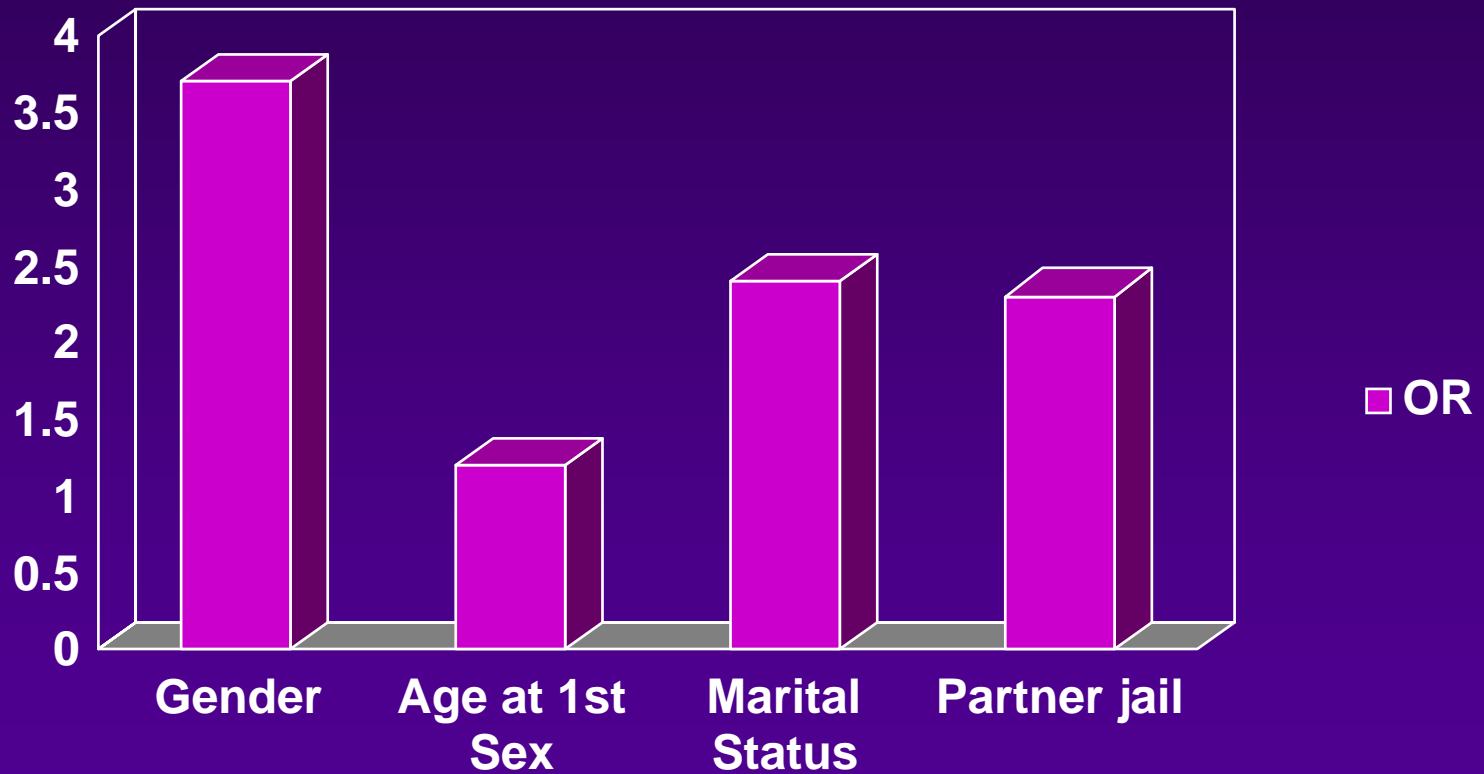


CONCURRENCY ODDS

	<u>Males</u>	<u>Females</u>
Marital status	4.2 (1.6, 11.0)*	1.9 (0.9, 4.1)
Income < \$16K	2.6 (0.8, 8.6)	1.8 (0.8, 4.2)
Respondent incarceration	5.3 (1.6, 17.8)*	1.7 (0.4, 7.9)
Partner incarceration	2.7 (0.7, 11.3)	3.0 (1.4, 6.4)*
Partner had other partners	4.5 (1.7, 11.9)*	11.3 (3.3, 38.7)*

CONCURRENCY ODDS

MULTIVARIABLE ANALYSIS, MEN & WOMEN, NC



CONTROLS

SOCIAL CONTEXT/SEXUAL NETWORKS

- How does the social and economic environment contribute to sexual network patterns that promote population spread of HIV?

FOCUS GROUPS

- Employment and economic opportunities
 - *“There are no jobs for anybody coming right out of high school...”*
 - *“You can have all the schooling in the world, but if you’re black you can’t get a good job.”*
 - *“Most of the temporary agencies ...like to send the blacks to jobs in factories...”*
 - *“Every job here is dead end with terrible pay.”*

FOCUS GROUPS

- Racism/Race relations
 - *“A lot of things are divided racially... you have a white side of town, and the black side...doesn’t usually mix. It’s sort of covert. You don’t have white folks walking around in robes or anything, but in the schools and things you can see it.”*
 - *“It’s hard to get a loan to get a house. Banks don’t just give black people loans. You got to know somebody.”*

FOCUS GROUPS

- Relationships between men and women
 - *“To get to the next semi-urban city, if you don’t have a job, or a good education, you’ve got to depend on somebody to get you there. For young black women, it’s not a good position to be in without a good job or a good education.”*
 - *“The choices in men are very limited around here. I guess the women put up with the men they have because there aren’t that many.”*

FOCUS GROUPS

- Relationships between men and women
 - *“There’s so many black men in prison, strung out on drugs, or dead, that if a decent black lady finds a decent black man, she’s going to do whatever it takes to get him.”*
 - *“It’s not that many good men worth anything in this area.”*
 - *“The ratio of women to men is very high.”*

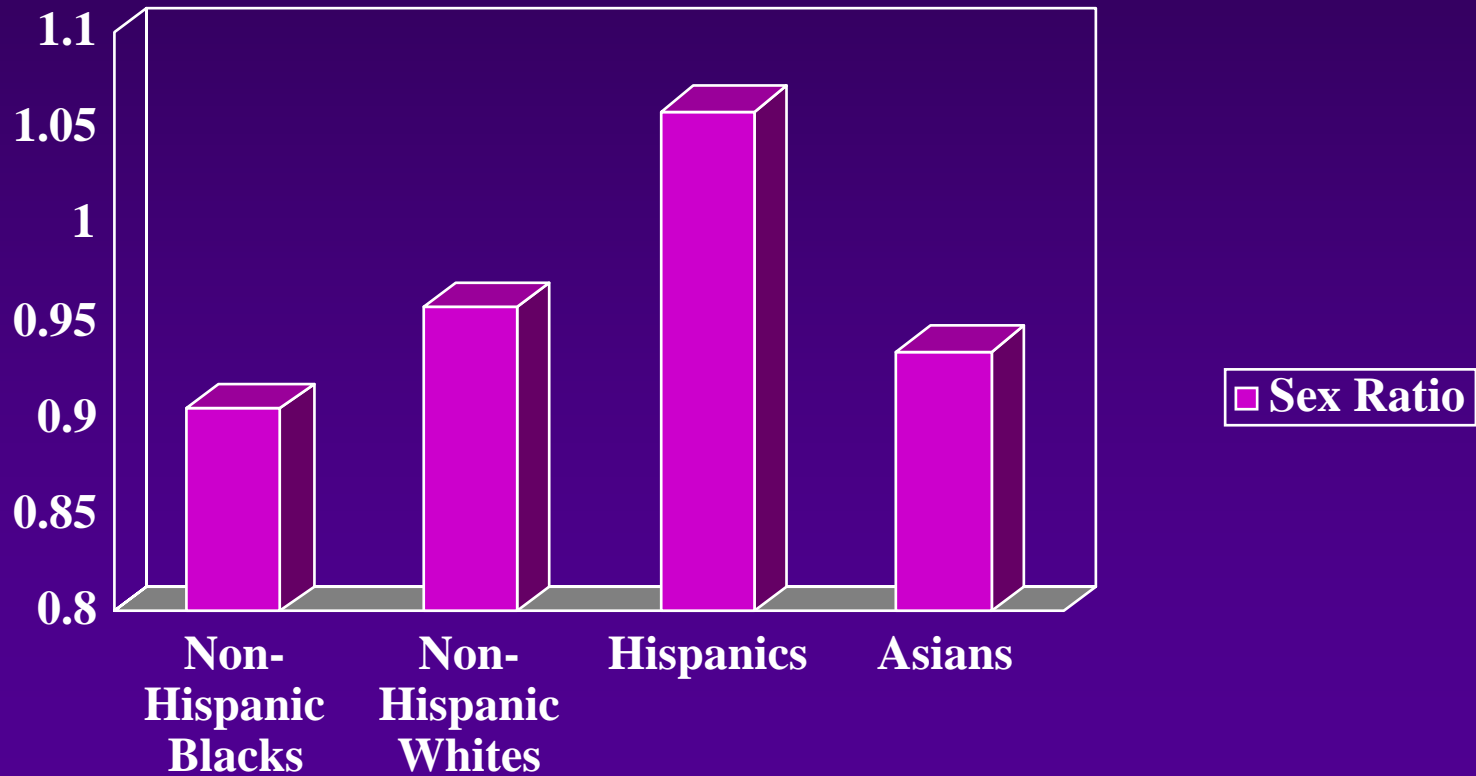
FOCUS GROUPS

- Concurrent partnerships
 - *“Most [unmarried] couples aren’t going to be true to each other.”*
 - *“If they aren’t planning on getting married, they’re probably going to have relationships on the side.”*
 - *“I say it’s quite common for people to be involved in relationships with more than one person at a time.”*

FOCUS GROUPS

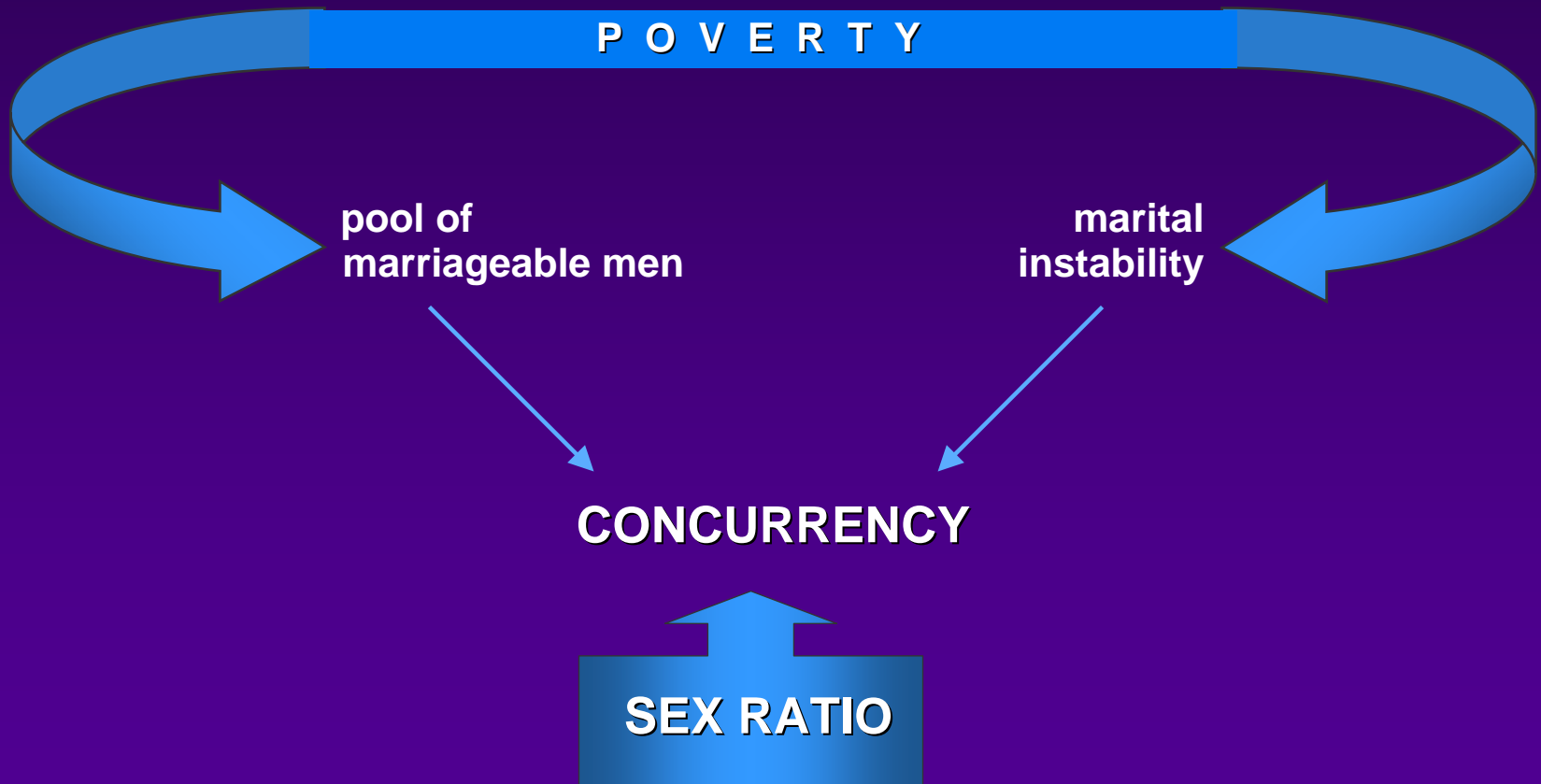
- Respondents described:
 - Pervasive economic and racial oppression
 - Lack of community recreation, boredom, resultant substance abuse
 - Shortage of black men (higher mortality and incarceration rates)
 - Widespread concurrency among unmarried people
- Conclusion:
 - Contextual features may promote sexual patterns that transmit STIs
 - Adimora, Schoenbach, et al. *Sexually Transm Dis* 2001;28:69-76

SEX RATIO AMONG SELECTED ETHNIC GROUPS, US, 2000



Source: US Bureau of the Census. Census 2000 Summary File 1. Vol 2003, 2000.

CONTEXT-NETWORK PATHWAYS



CONTEXT-NETWORK RELATIONSHIPS

INCARCERATION



disrupts
partnerships

employment
prospects

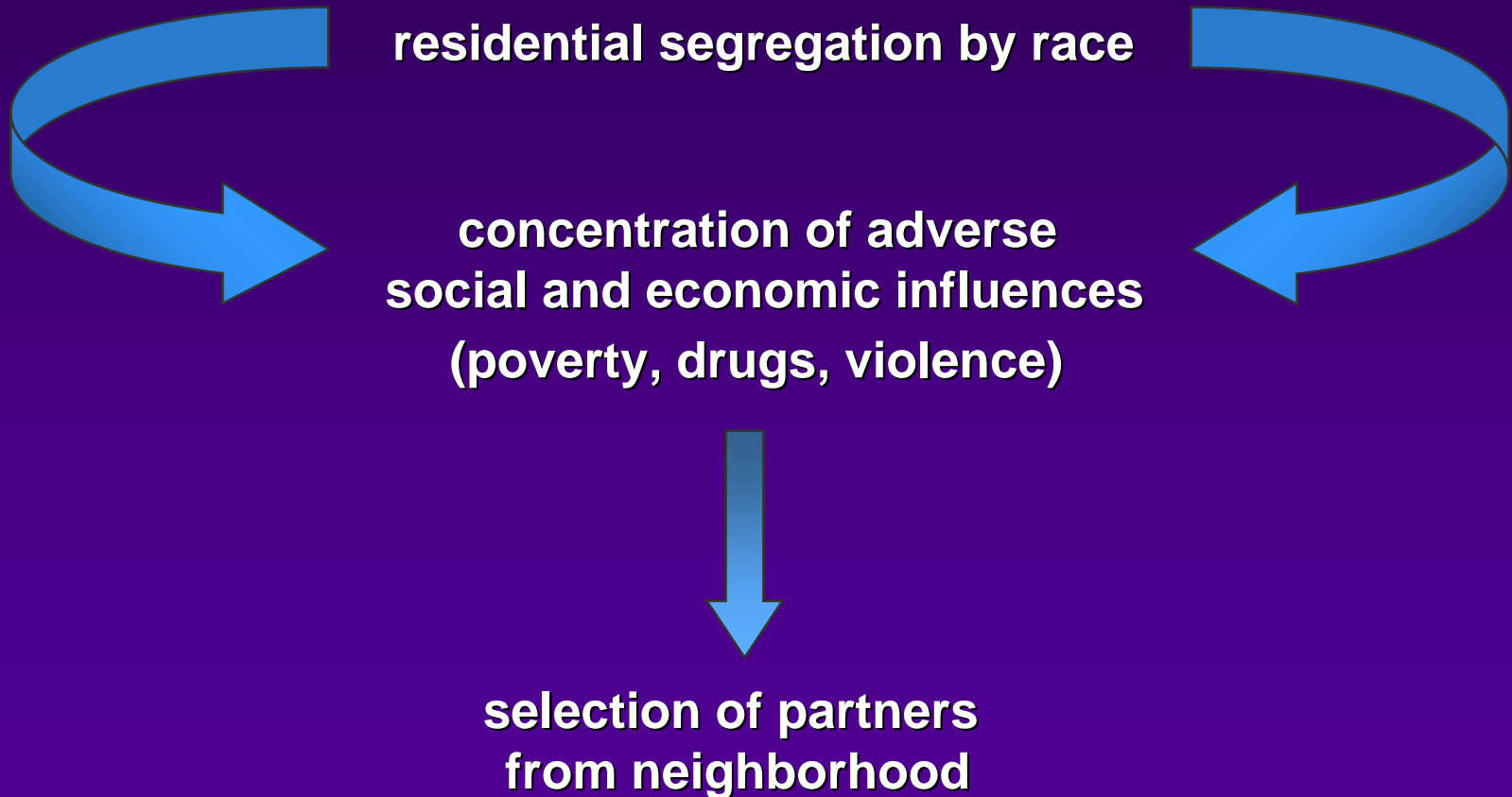
pool of men
in community

inmates: sex in
pool with high
HIV prevalence

new long term links
with antisocial
networks

SEXUAL NETWORKS

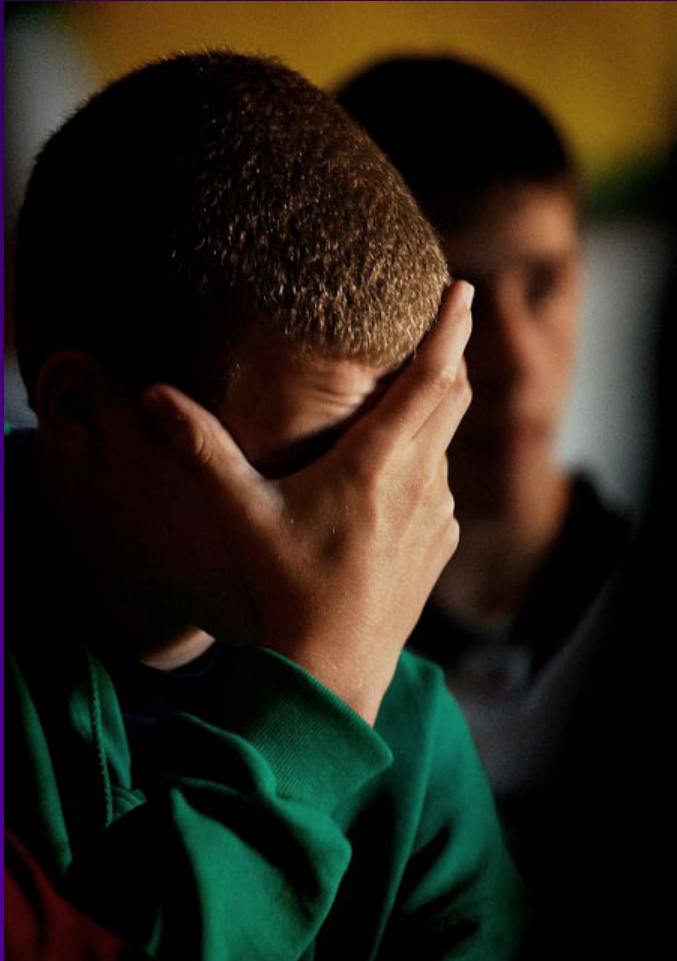
CONTEXT-NETWORK RELATIONSHIPS



HETEROSEXUAL HIV AND AFRICAN AMERICANS

- MAJOR PROXIMAL CAUSES:
 - High prevalence of STDs
 - Sexual network patterns: concurrency and mixing among different subpopulations
- DISTAL DETERMINANTS help shape behavior and risk associated with behavior
 - Poverty, inequality, discrimination

WHAT TO DO?



ENHANCE STD DX AND RX

- High STD rates facilitate HIV transmission
- STD rates rise when funding falls
- Increase funding to enhance STD diagnosis and treatment - including trichomonas and bacterial vaginosis

HIV DX AND RX

- ~1/3 of HIV+ individuals are unaware of their infection
- Lack of access to ART:
Medicaid and ADAP eligibility vary by state
- Increase HIV diagnosis but must have **access to anti-retrovirals and medical care**
- Increase state funding and liberalize Medicaid and ADAP eligibility

COMPREHENSIVE SEX EDUCATION IN SCHOOLS



HIV: A UNITED STATES HUMAN RIGHTS ISSUE

- Feasible and effective ways to address structural inequities that underpin racial disparity in HIV rates
- Who should come to the table?
- Types of interventions?

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