Osgoode 10:30 am

Gay Men and Substance Use

Perry Halkitis

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CHIBPS
CENTER FOR HEALTH, IDENTITY, BEHAVIOR & PREVENTION STUDIES
NEW YORK UNIVERSITY

Learning Goals

- Understand how illicit drug use manifests in the lives in HIV-positive and HIV-negative gay and bisexual men
- Delineate the link between illicit drug use and sexual risk taking in gay and bisexual men
- Cite evidence that demonstrates how illicit drug use exacerbates the transmission bacterial and viral pathogens through unprotected sex
- Consider how to treat the drug sex link in gay and bisexual men

Definitions: Gay and Bisexual Men vs. MSM

- Will use terms gay and bisexual
  - MSM is a CDC sanctioned term
    - undermines the identity of gay men (Young & Myer, 2005)
      - inadvertently advances heterosexist notions at the expense of gay individuals
      - ignores the social dimensions of sexuality
    - the percentage of MSM identifying as gay in most behavioral studies is rarely lower than 70% (Halkitis, 2010)
    - the prevention strategies for gay and bisexual men differ widely from non-gay or bi-identified MSM (Goldbaum et al, 1998)

Framing the Problem

GAYSTARNEWS

LGBT global news 24-7

Recommend 263

White Party attendees urged to get meningitis vaccine after West Hollywood lawyer dies

People who attended Palm Springs' annual White Party in California this year have been urged to get vaccinated against meningitis after a young gay West Hollywood lawyer died of meningococcal disease just weeks after attending the party

13 APRIL 2013 | BY ANDREW POTTS

West Hollywood city councilor John Duran is urging people who attended California's Palm Springs' White Party over the Easter weekend to get vaccinated against meningitis after one of his constituents died from the disease.

Gay lawyer Brett Shaad, 31, (pictured) died at around 4.45pm yesterday after being taken off life support.

Shaad had fallen into a coma and become brain dead from the disease earlier in the week.

He had been one of around 10,000 people who had attended the popular gay circuit party which attracts party goers from across the US.

His death follows a cluster of bacterial meningitis deaths among men who have sex with men in New York and calls by health officials there for men who have sex with men to get immunized.

22 gay men in New York have come down with severe bacterial meningitis since 2010 and seven of those cases have been fatal.

Framing the Problem

- For gay and bisexual men, there is a synergism between illicit drug use and unprotected sex
  - Facilitated by environmental factors and norms
    - Sexual and social venues
  - Fueled by psychosocial burdens
    - Discrimination, homophobia, and victimization
  - Heightens the likelihood of unprotected sex
    - Anal, oral, and “extreme” sex
  - Enables the transmission of of bacterial and viral pathogens
    - HIV but also HCV and other STIs
  - Compromises the overall health of the population

Illicit drug use in gay and bisexual men

Historical Considerations

- Illicit drug use linked to HIV epidemic in gay & bisexual men over the last 30 Years (Stall & Purcell, 2000; Halkitis et al, 2010)
- More limited literature prior to HIV documenting drug usage (e.g. Lohrenz et al, 1978)
  - Primarily focused on high rates of alcohol use and abuse (Martin et al, 1989)

HIV and IDU

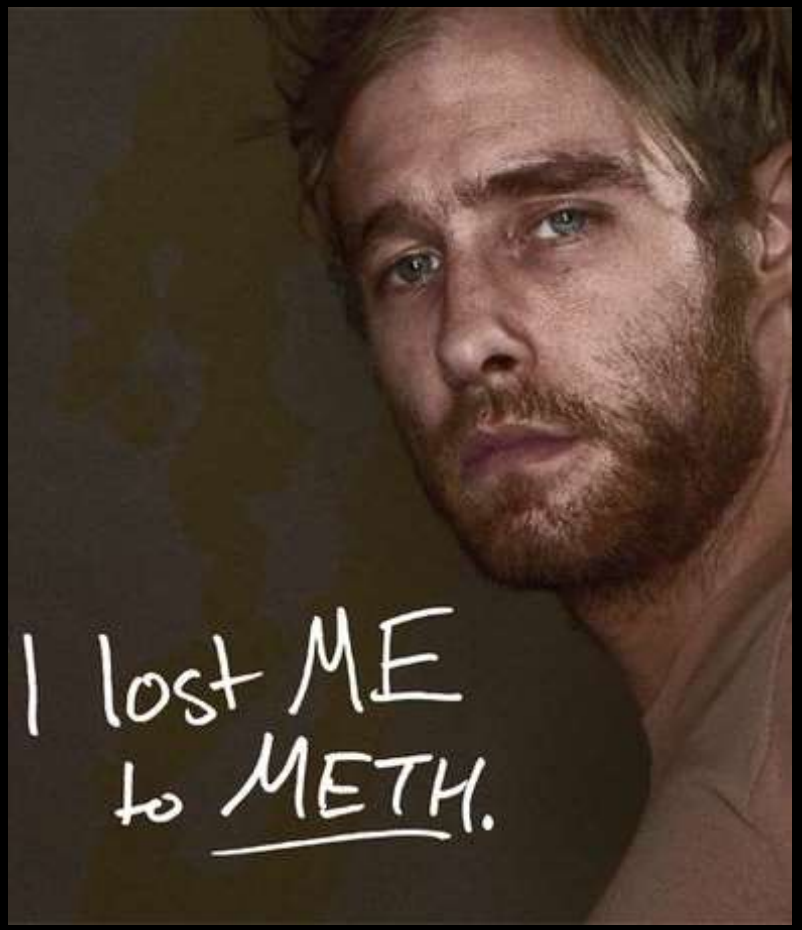
- Early in the HIV epidemic (in the 1980s) rates of HIV and in turn HIV prevention efforts were targeted on injection drug users (IDU)
- Transmission of HIV among IDU grew exponentially early in the epidemic due to the sharing of works and infected syringes
- IDU only constitute 10% of the 6 million active drug users in the USA
- Syringe exchange, a highly effective structural intervention for HIV

HIV & Non-IDU

- Non injection drug use (Non-IDU)
  - is highly implicated in the epidemic among gay and bisexual men (Halkitis et al, 2010)
  - is associated with risky sex for gay and bisexual men (Kalichman, 1999)
  - may decrease sexual inhibitions and affect judgments about sexual partners or sexual practices (Cabaj, 1998)
  - more common in gay & bisexual men than IDU
    - 7% lifetime IDU vs. 45% Non-IDU in last 1 month
      - NHBS 2003-2005 (Voetsch et al, 2012)

Drugs Commonly Used and Abused by Gay and Bisexual Men

- Amphetamine
- Cannabis
- Cocaine
- Crack cocaine
- Crystal methamphetamine
- Ecstasy
- GHB/GBL
- Heroin
- Ketamine
- LSD
- Mephadrone (MCAT, Meow-meow)
- “Poppers” (amyl, butyl, isobutyl nitrate, aromas, liquid incense)
- Alcohol
- Nicotine



Illicit Drug Use Across Cities

City/Region (Year)	Meth %	Cannabis %	Ecstasy %	Cocaine %	Poppers %	Time Frame
New York (2007) Carpiano et al, 2011	6.2	27.9	8.4	12.0	24.5	3 months
Chicago (2002-03) Fendrich et al, 2010	6.0	28.0	13.0	12.0	--	6 months
San Francisco (1999-2001) Colfax et al, 2005	23.0	--	--	19.0	37.0	lifetime

Non-Injection Usage Across Club/Party Drugs

Drug	Recent Use (3-6 Months)
Cocaine	10-25%
Ecstasy	6.7-24%
GHB	1.6-4.8%
Ketamine	4.2-5%
Methamphetamine	6-14.3%

Colfax et al, 2004; Halkitis et al, 2005; Purcell et al, 2005

Drug use of Gay Men Recruited at New York City Gay Social Venues

Drug	Any use %	<1/ week %	1-2x/Week %	>2X/Week %
Inhalants	29.2	12.4	10.4	6.5
Cocaine	22.3	16.3	4.5	1.5
Ecstasy	16.3	13.4	1.5	1.5
Meth	9.9	6.9	2.0	1.0
Crack Cocaine	5.4	3.0	1.0	1.5
GHB	4.5	3.5	0.5	0.5
Heroin	2.5	1.5	0.5	0.5

Halkitis & Parsons, 2002

Emerging Trend: Non Medical Use of Prescription Drugs

- Lifetime Usage: 37.7%
  - Pain Meds 34.9%
  - Sedatives 16.6%
  - Anxiolytics 16.6%
  - Sedatives 14.6%
- Recent Usage (last 3 months): 17.3%
- 350 men age 33

Benostch et al, 2011

Drug Use in Young Men Ages 18-19 Last Month New York City: Project 18/P18

	Lifetime Usage % (N)	Mean Age at Onset of Use M (SD)
Marijuana	71.6 (424)	15.8 (1.9)
Pain Drugs No Rx	70.3 (416)	16.3 (2.2)
Ecstasy	20.8 (123)	17.1 (1.4)
Cocaine	16.4 (97)	16.9(1.4)
Stimulants No Rx	16.4 (97)	16.9 (1.7)
Poppers	13.7 (81)	17.4 (1.3)
Tranquilizers No Rx	10.3 (61)	16.4 (2.3)
Methamphetamine	2.9 (17)	17.8 (1.0)
Heroin	2.9 (17)	17.8 (1.0)
Crack Cocaine	2.0 (12)	16.7 (1.2)

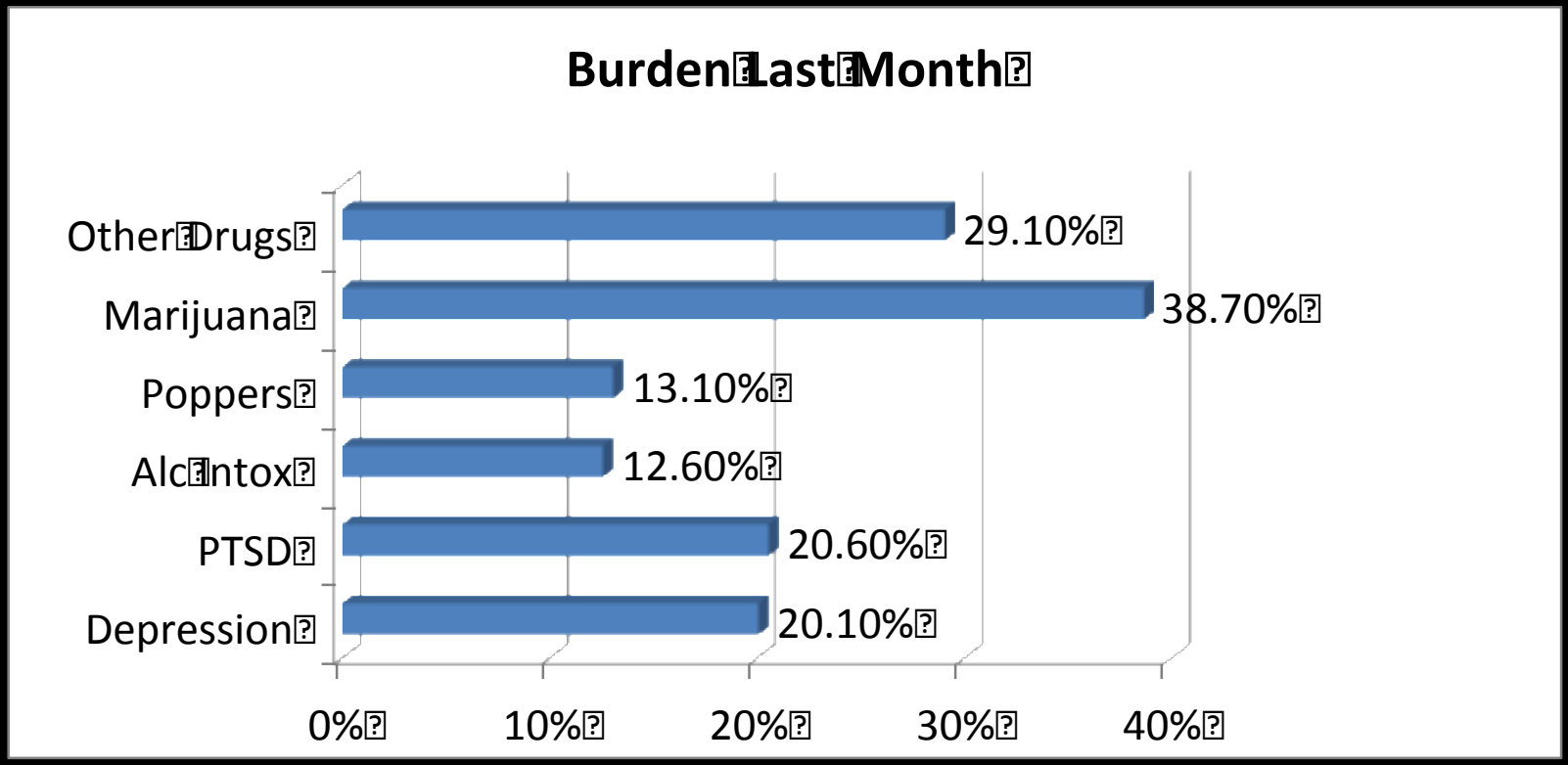
Halkitis, 2013, Contract #R01DA025537

Drug Use in Meth-Using Black Men Last Month New York City: Project Hope

	Means (SD) Days	Financial Liability ($)
Methamphetamine	8.61 (7.80)	159.00
Crack Cocaine	6.60 (9.01)	218.00
Powder Cocaine	5.38 (8.05)	156.00
Ecstasy	3.21 (2.56)	47.00
Poppers	2.34 (5.54)	94.00

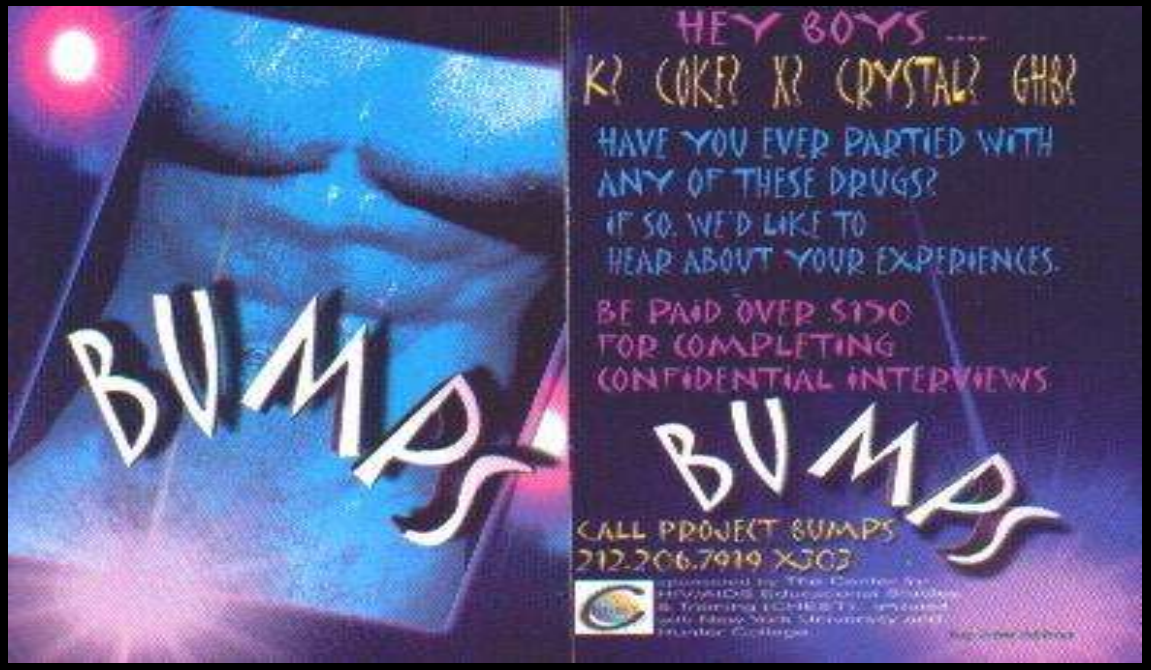
Jerome et al, 2009

Drugs Use and Other Burdens in HIV+ Men 50 and Over New York City: Project Gold



Halkitis et al, 2013

Club Drug Use & Men's Health (Project BUMPS)



Halkitis, NIDA Contract # R0DA113897

Club Drug Use at Baseline

		Days Use Past 4 Months		
Drug	**% Using**	**Mean**	**SD**	**Median**
Crystal	65.1%	12	19.20	5
Ecstasy	74.7%	10	13.00	5
Cocaine	78.9%	18	22.57	8
GHB	29.1%	6	12.45	2
Ketamine	55.1%	10	14.39	5

Halkitis et al, 2005

Poly-drug Use

- Among methamphetamine users
  - 7.9% reported use with 0 other drugs
  - 14.5% reported use with 1 other drug
  - 18.7% reported use with 2 other drugs
  - 14.8% reported use with 3 other drugs
  - 8.4% reported use with 4+ other drugs

Halkitis et al, 2005

Combination of Club Drugs

- Across the five club drugs
  - average of 3 of the five club drugs (SD = 1.28, Median = 3, Mode = 4)
- Number of club drugs used was explained by key demographic factors ($F(6,428) = 6.04$, $p < .001$)
  - fewer number of club drugs by men who were
    - older ($\beta = -.15$, $p < .01$)
    - Black ($\beta = -.20$, $p < .002$)
    - bisexual ($\beta = .11$, $p = .03$)
    - but was not related to HIV status

Halkitis et al, 2005

Motivations For Drug Use: Physical Domain

	%*	Common Descriptors of Motivations for Seroconverted Narratives (N=16)	%*	Common Descriptions of Motivations for Seronegative Men (N=16)
Physical Sensation (non-sexual)	88% (n=14)	"focus," "lose weight," "party more," "energy"	94% (n=15)	"physical stamina," "keeps you awake for days," "rush," "stay awake," "energy"
Sexual Sensation	75% (n=12)	"extremely horny," "prolongs ejaculation," "longer sex," "sexual," "more aggressive during sex," "intense [sex]"	63% (n=10)	"sexual," "cold sex," "intense [sex]"
Facilitation of Sex	38% (n=6)	"less inhibited," "group sex," "nasty sex," "makes me feel a little more freakier," "more free"	19% (n=3)	"less inhibited," "initiating sex more," "more courage"

Jerome et al, 2009

Motivations For Drug Use: Emotional Domain

	%*	Common Descriptors of Motivations for Seroconverted Narratives (N=16)	%*	Common Descriptions of Motivations for Seronegative Men (N=16)
Emotional Enhancement	56% (n=9)	"insight," "feel in control," "makes me feel alive and beautiful," "I love everyone on crystal," "self-improvement"	50% (n=8)	"affectionate," "considerate," "open and smart," "self discovery," "peaceful," "creative"
Emotional Equivalence	44% (n=7)	"I feel what they're feeling," "apart from the party," "makes me feel accepted with them," "I did it to basically be around him"	25% (n=4)	"I like being on the same wave length," "It makes me more together with my people," "in tune,"
Cognitive Disengagement/ Emotional Escape	69% (n=11)	"relaxing," "depression," "I hate my life," "feel less guilty about what I'm doing," "they look at you with hatred"	56% (n=9)	"relaxing," "relief," "anti-depressant," "escapism," "melancholy," "like I'm normal"

Jerome et al, 2009

Motivations For Drug Use: Social Domain

	%*	Common Descriptors of Motivations for Seroconverted Narratives (N=16)	%*	Common Descriptions of Motivations for Seronegative Men (N=16)
Social Interaction	50% (n=8)	"makes me outgoing and very talkative," "makes me feel accepted"	44% (n=7)	"makes me cool with the people I'm with," "I will focus on guys," "I will notice cute guys on the dance floor," "it's a fake confidence"
Overcoming Social Inhibitions	44% (n=7)	"security," "I'm kind of bashful," "people will come over to you," "makes us more secure," "more bold, more brave," "less afraid," "I would have waited for him to make the first move," "I'm normally more shy and introverted,"	31% (n=5)	"relaxes your inhibitions"

Jerome et al, 2009

Illicit drug use and sex risk in gay & bisexual men

Drug Use and Sex Risk

- Both IDU & Non-IDU
  - decrease inhibitions and affect judgements of risk (Romanelli et al., 2003)
  - increase sexual partnering
    - sexual marathons (Semple et al., 2009)
    - group sex (Prestage et al, 2009)
      - Rectal trauma and bleeding (Schimdt et al, 2007;2011)
  - reduce condom use (Crosby et al, 2006)
  - suppress immune functioning which may heighten risk during sex (Millstein, 1992)
  - increase likelihood of unprotected sex for drugs (Bull et al,2002)

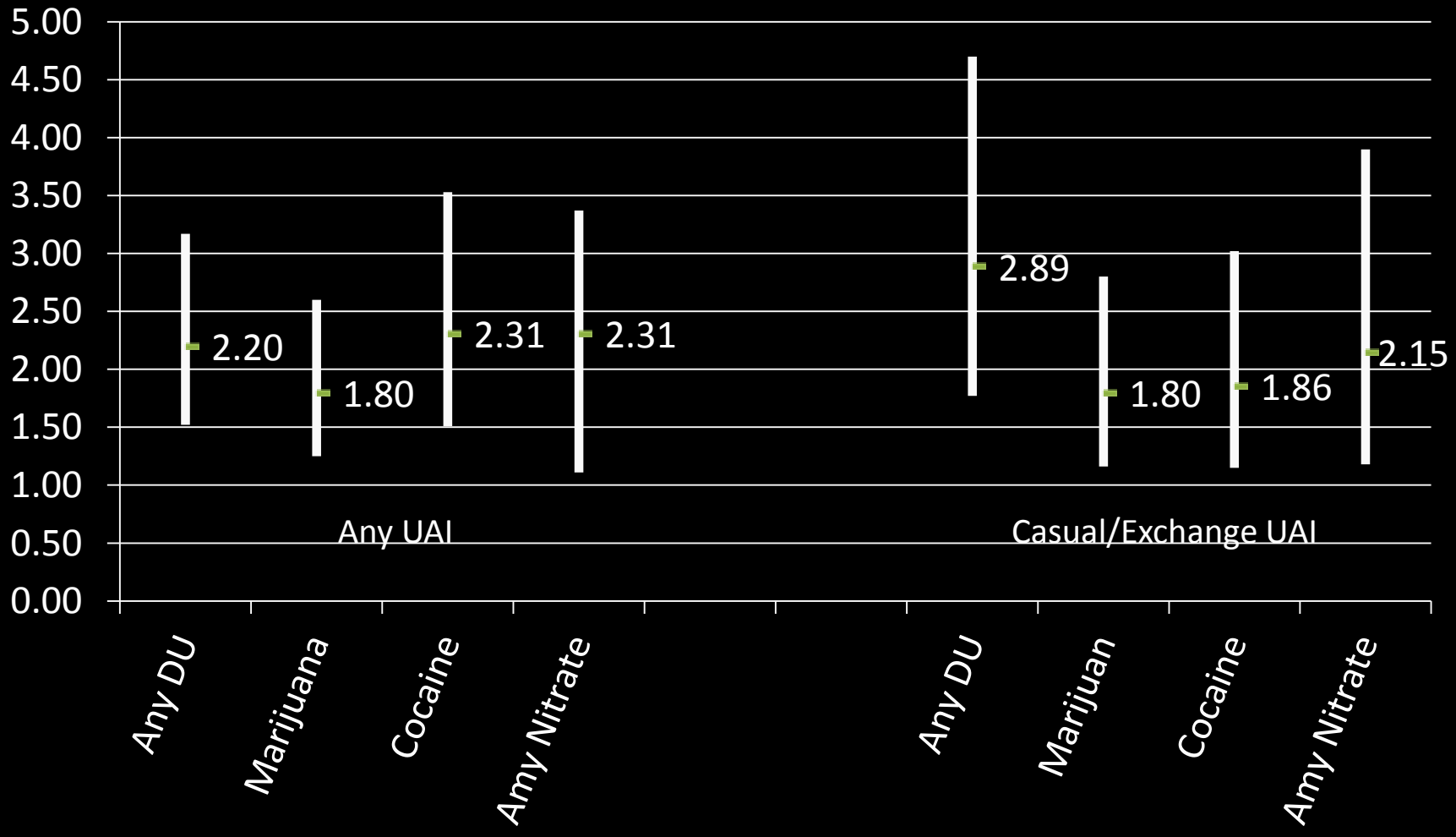
Drug Use and Sex Risk in HIV-positive Gay & Bisexual Men

- marijuana, alcohol, and hard drug use are most strongly associated with unprotected sex (Beckett et al, 2003)
- post diagnosis, those who continue to use crack cocaine report more unprotected sex, multiple partners, and exchange of sex for drugs or money (Harzke & Williams 2009)
- use of inhalant nitrates and alcohol associated with UIAI with casual partners and use of inhalant nitrates and non injection drugs associated with URAI (Purcell et al, 2001)
- use of methamphetamine, GHB, and ecstasy increase the odds or UAI with an HIV-negative partner 2-3 times and 3-5 times with HIV-positive partners (Pappas & Halkitis, 2011)
- among meth users, 65% report onset of use post seroconversion (Solomon et al, in press)

Drug Use and Sex Risk in HIV-negative Gay & Bisexual Men

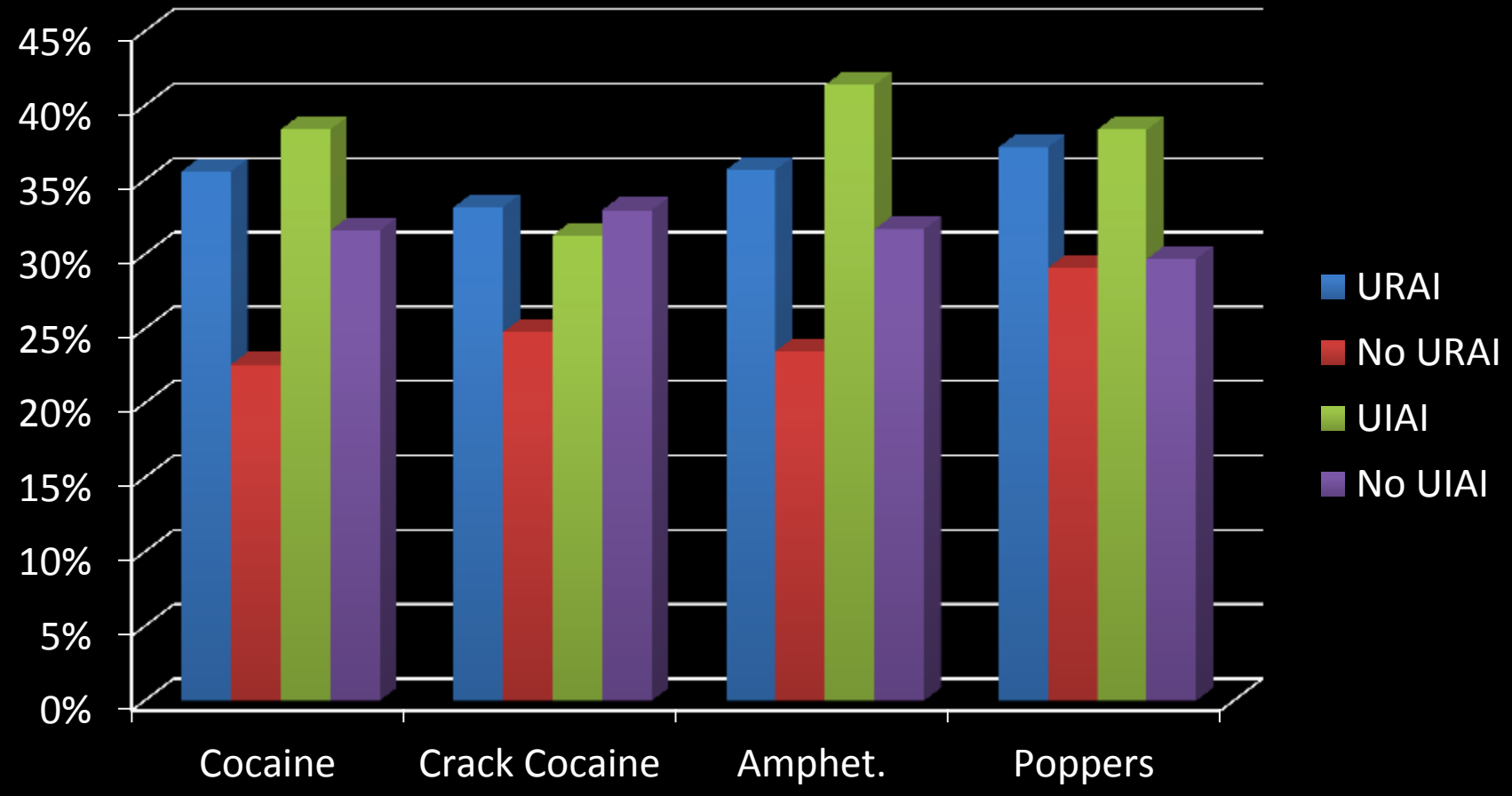
- URAI associated with cocaine dependence (Amit et al, 2011)
- 1 in 3 young gay and bisexual men who use methamphetamine reported unprotected sex with and HIV-infected person (Ellen et al, 2011)
- methamphetamine use ⇨ sexual dysfunction ⇨ receptive anal sex (Halkitis et al, 2001)
- odds for seroconversion heightened by use of drug combinations from 2.99 (stimulants only) to 8.45 (stimulants + poppers+ EDDs) (Ostrow et al, 2009)
- sex risk under the influence of drugs cross race/ethnicity (Choi et al, 2005; Fernandez et al, 2005)

Non-IDU and UAI Last Year
New York City: NHBS



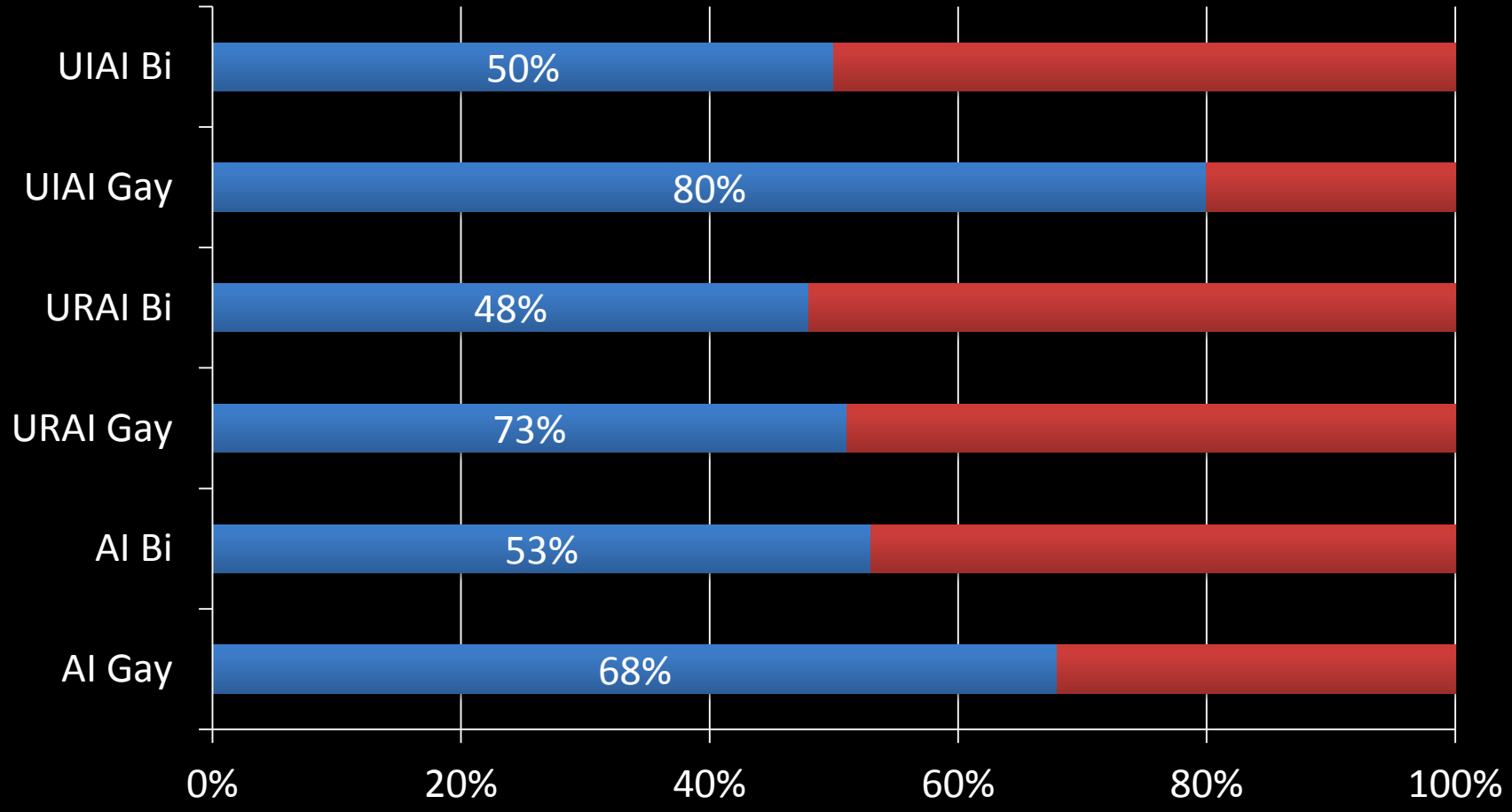
NYCDOHMH, 2010

Non-IDU and UAI with HIV-UK Partners Last 6 Months Six US Cities: Project EXPLORE



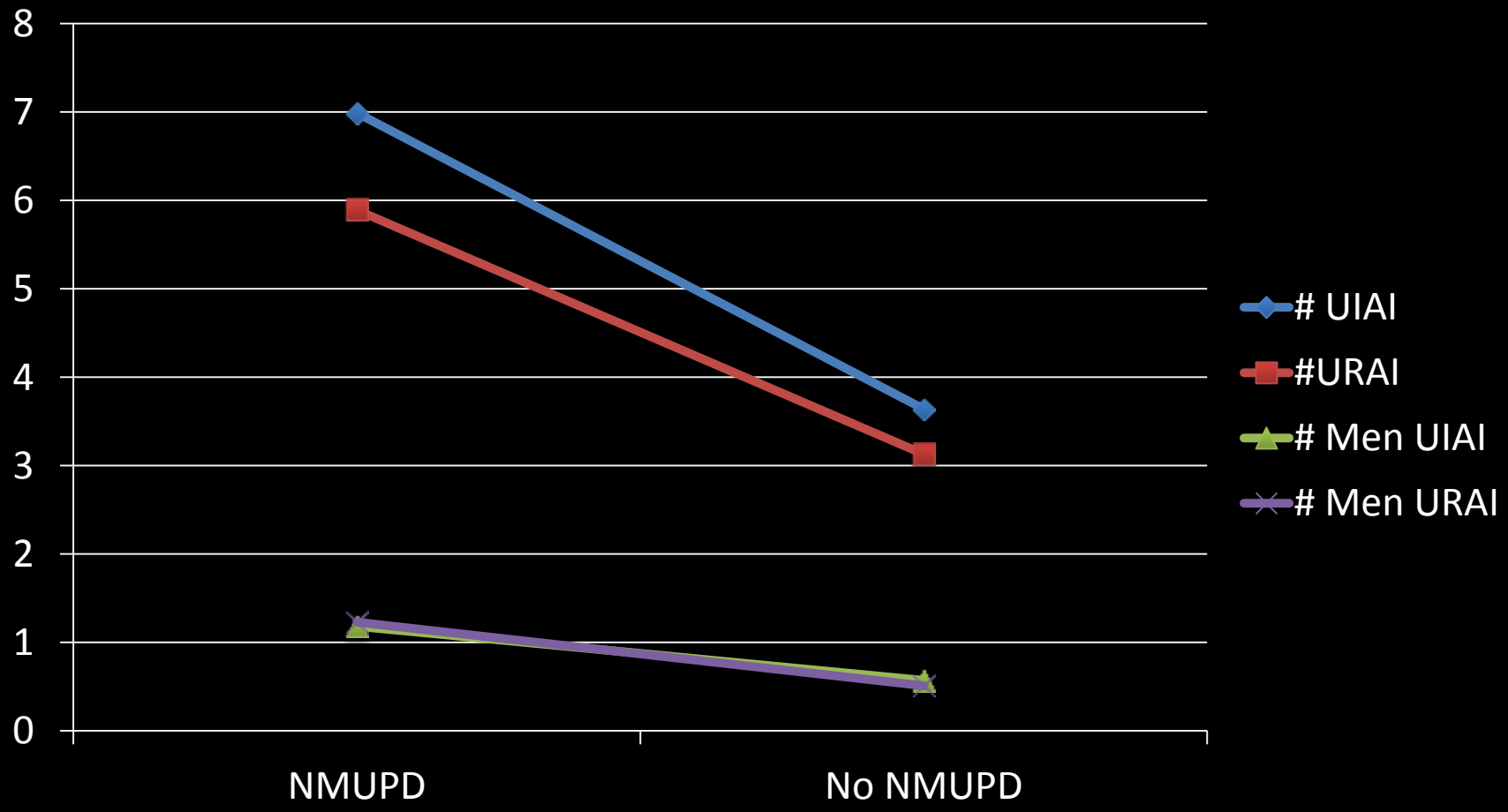
Koblin et al, 2003

IDU and Unprotected Sex Last 6 Months
San Francisco: Urban Health Study



Kral et al, 2005

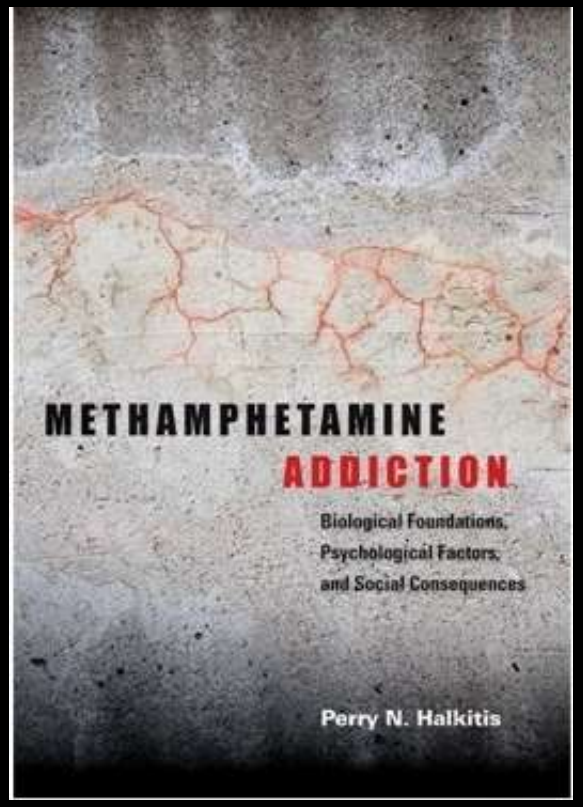
Non Medical Use of Prescription Drugs and Unprotected Sex Last 3 Months Denver, CO: Gay Pride Sample



Benostch et al, 2011

Case Study: Methamphetamine

- Link between methamphetamine use and HIV infection has been abundantly documented (Halkitis, 2009)
- “Dual epidemic” (Halkitis et al, 2001)



Of the many reasons I had unsafe sex while high on crystal, I think the most profound was simply that I was lonely. Meth got me close to men at clubs and in bed. And unsafe sex allowed me the deepest connection possible.

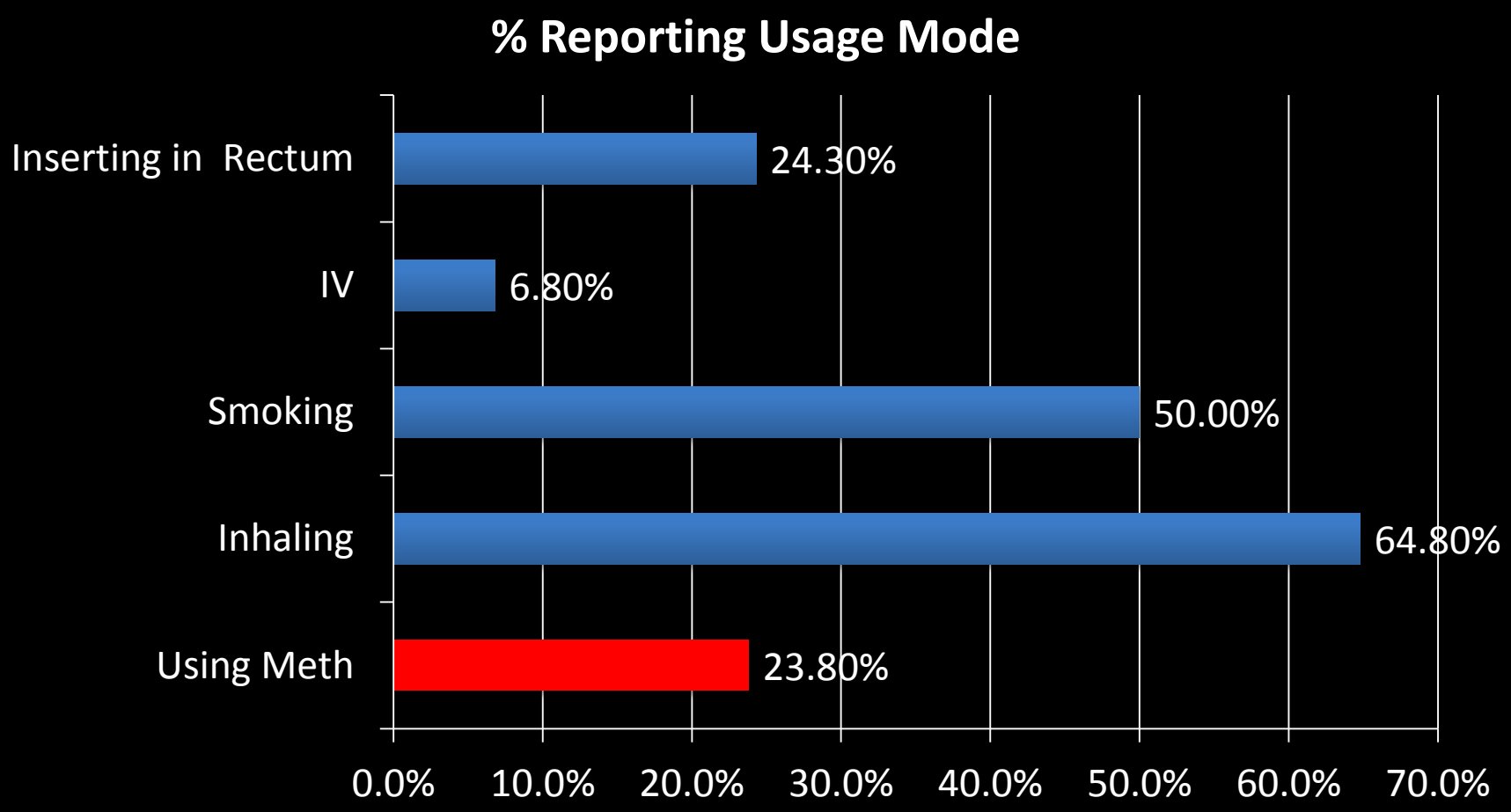
This quote from Kevin Koffler, which appeared in the periodical *POZ* (2002), encapsulates many of the psychosexual effects which methamphetamine has on its users

How is Methamphetamine Used?

- Inhaled (“bump”), smoked, ingested/swallowed, injected (muscles or veins) or placed in the anus (“booty-bump”)
- Smoking and injection of methamphetamine produces the fastest rates of absorption,
  - Smoking 10 seconds
  - Intravenous injection 15 seconds
  - Snorting 3-5 minutes
  - Eating 20-30 minutes




Modes of Meth Use in a Gym-Attending Sample New York City: Project Pump

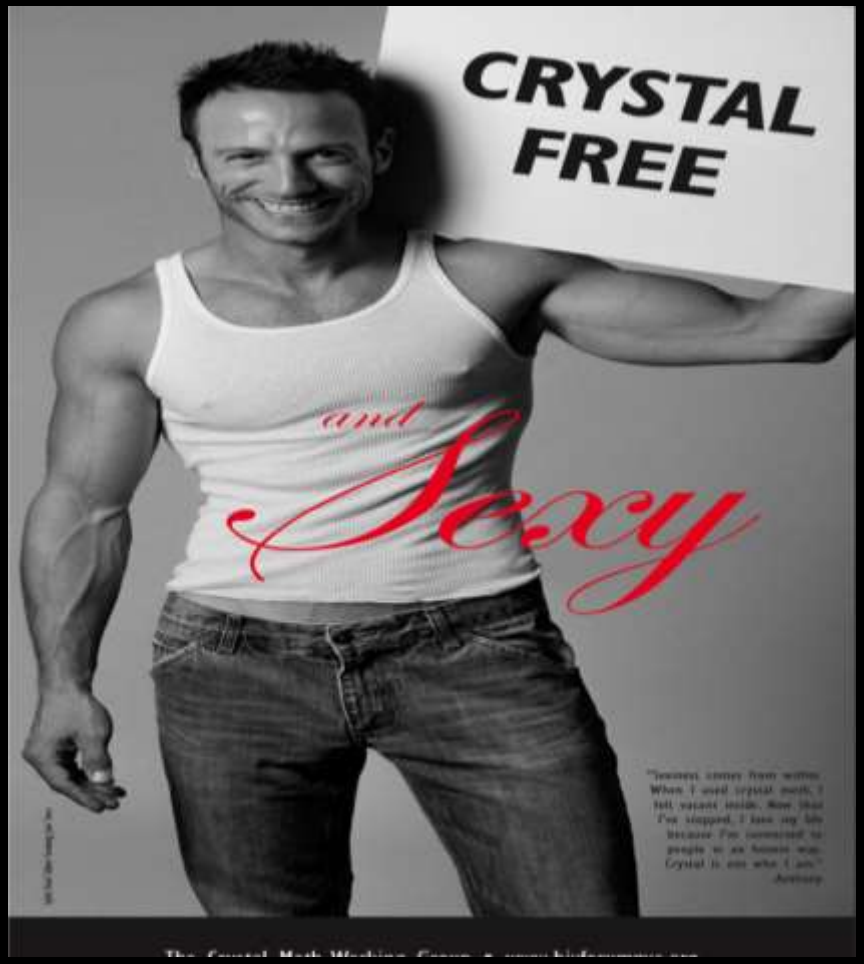


Halkitis et al, 2008

Methamphetamine & Gay Men in NYC

- Mid 1990s: Anecdotal evidence
- 1998-1999: Seropositive Urban Men's Study (SUMS) finds 7% among HIV + MSM in NYC as compared to 17% in San Francisco are active methamphetamine users (Purcell et al, 2001)
- 2000-2005: Anecdotal evidence from LGBT Center and other community based agencies coupled with research studies documents exponential increases in use among segments of gay and bisexual male communities of NYC (Halkitis, et al, 2003; 2005; 2006; 2008; 2009)
- 2006-Present: evidence that the drug has fully crossed racial/ethnic lines and is also lodged among low SES men of color (Halkitis et al,2008; Solomon & Halkitis, 2010; Solomon, 2012)

PSA Responses



Methamphetamine and Unprotected Sex

- The current current concern methamphetamine in the United States is embedded in accompanying concerns about HIV disease and other STIs (Shrem & Halkitis, 2007)
  - Methamphetamine creates an extreme and extended sense of euphoria, with some individuals using the drug as a means of heightening their sexual behavior and thus exacerbating sex risk (Ellenhorn et al, 1997)

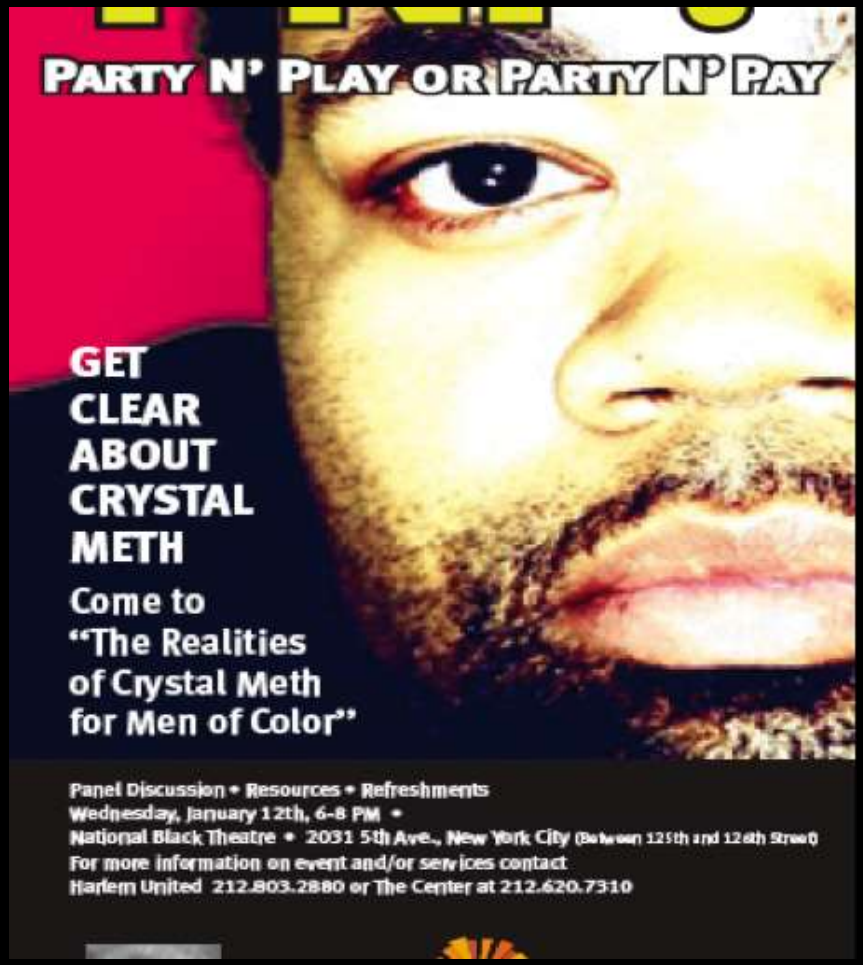
Methamphetamine and Unprotected Sex

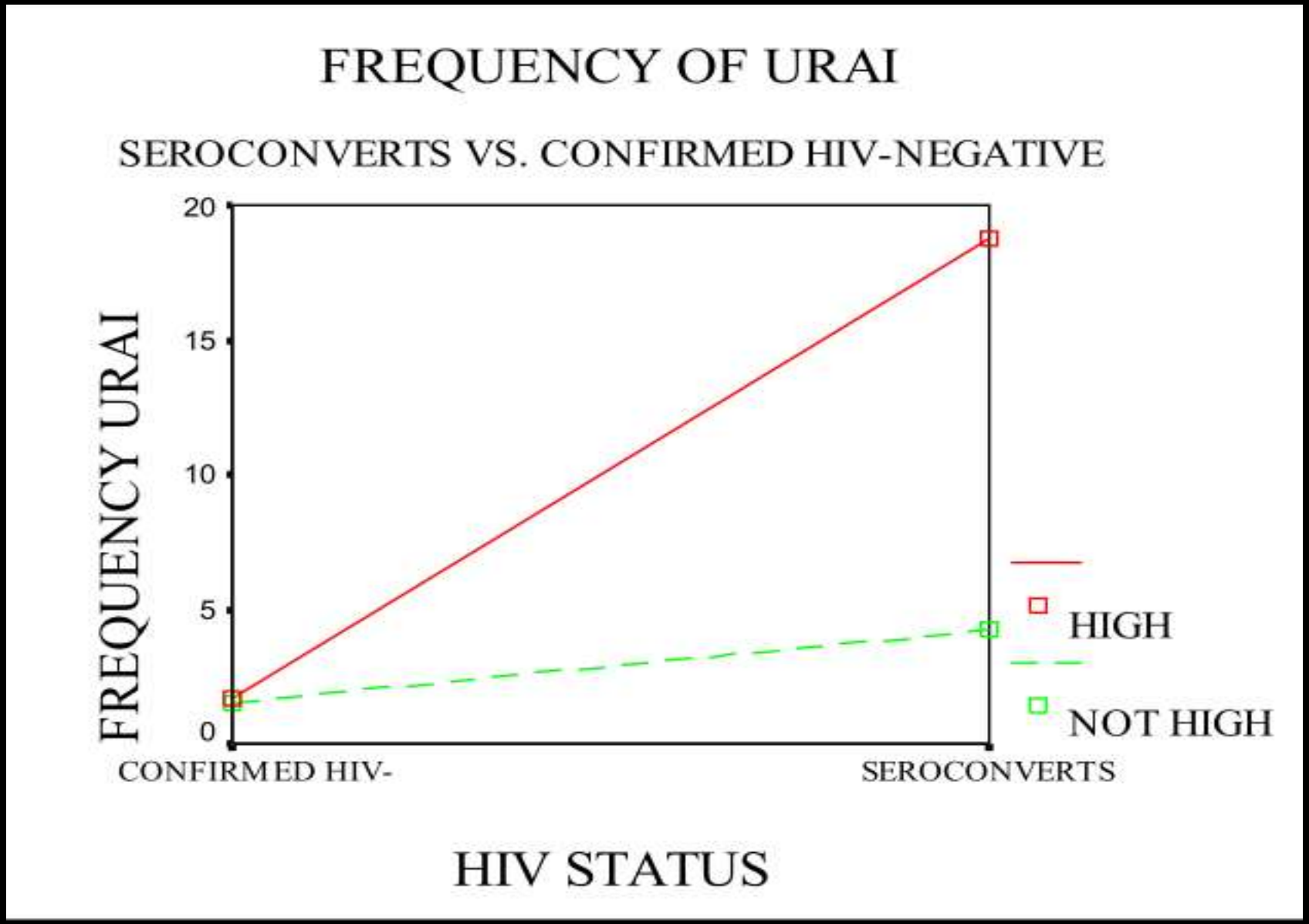
- Associations across time
  - between meth use and other club drug use specifically Ecstasy and GHB (Halkitis et al, 2007)
  - between meth use and unprotected anal intercourse with both HIV+ and HIV-UK partners (Halkitis et al, 2009)

	Unprotected Insertive Anal Intercourse			Unprotected Receptive Anal Intercourse		
Effect	β	SE	P-value	β	SE	P-value
Fixed effects						
Intercept	1.34***	0.36	<0.001	1.28***	0.37	0.001
Methamphetamine	0.17**	0.07	0.01	0.16*	0.07	0.013
Cocaine	0.01	0.01	0.56	-0.01	0.01	0.48
Ketamine	-0.003	0.03	0.90	0.01	0.03	0.71
Random effects						
	Variance			Variance		
Intercept	11.16***			12.21***		
Methamphetamine	0.55*			0.27		
Cocaine	±			±		
Ketamine	±			±		

Methamphetamine Use among Seroconverts: Project BUMPS

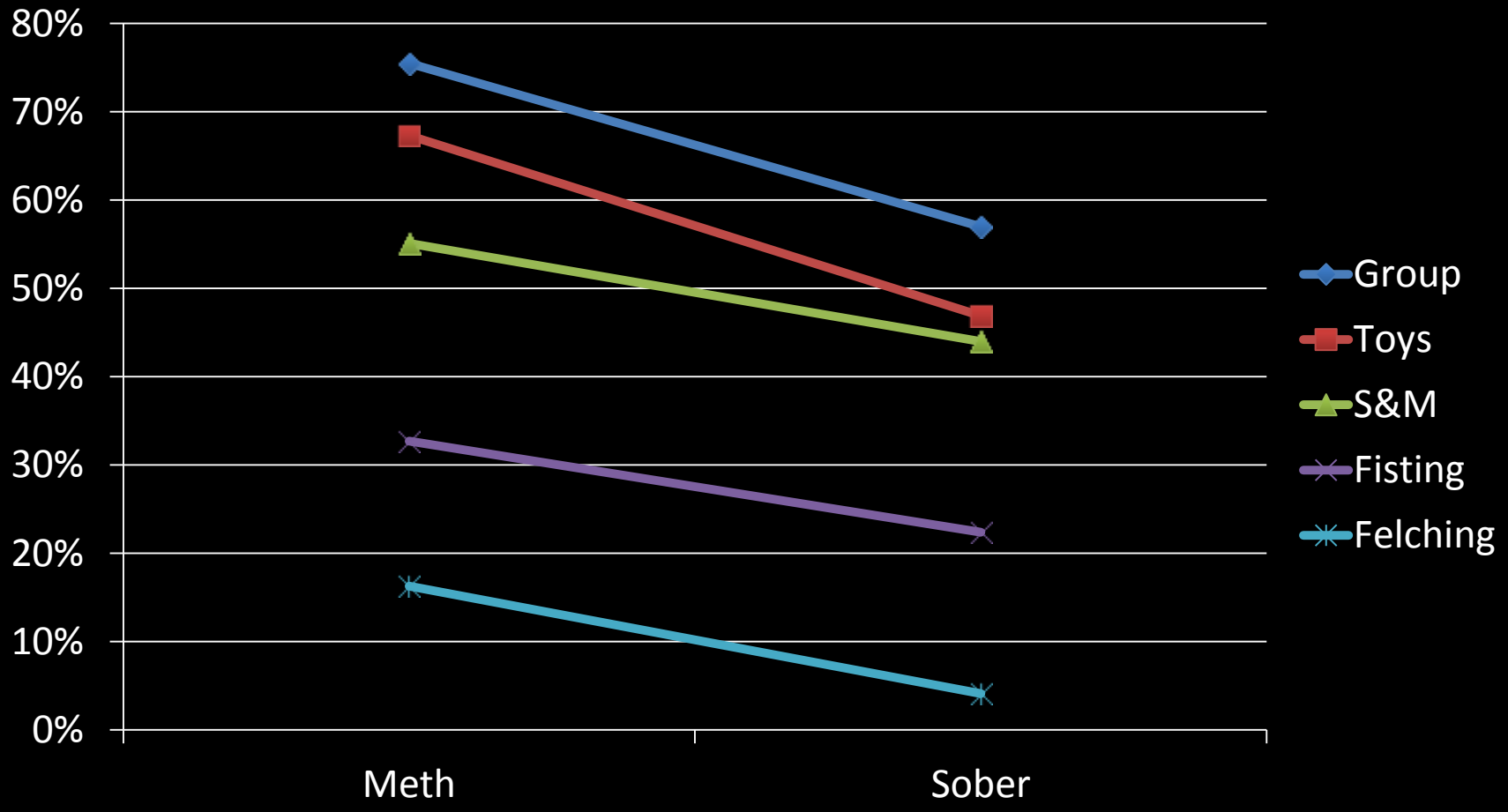
- 11 prevalent cases of HIV detected at baseline
  - 63% (n=10) of the seroconverts reported use of methamphetamine
  - Seroconverts reported 18 days of use in the four months prior to assessment in comparison to 12 days of use for confirmed HIV-negative men
  - Seroconverts and confirmed HIV-negative men were just as likely to combine methamphetamine with cocaine, ketamine, GHB, MDMA, alcohol, marijuana, inhaled nitrates, and Viagra





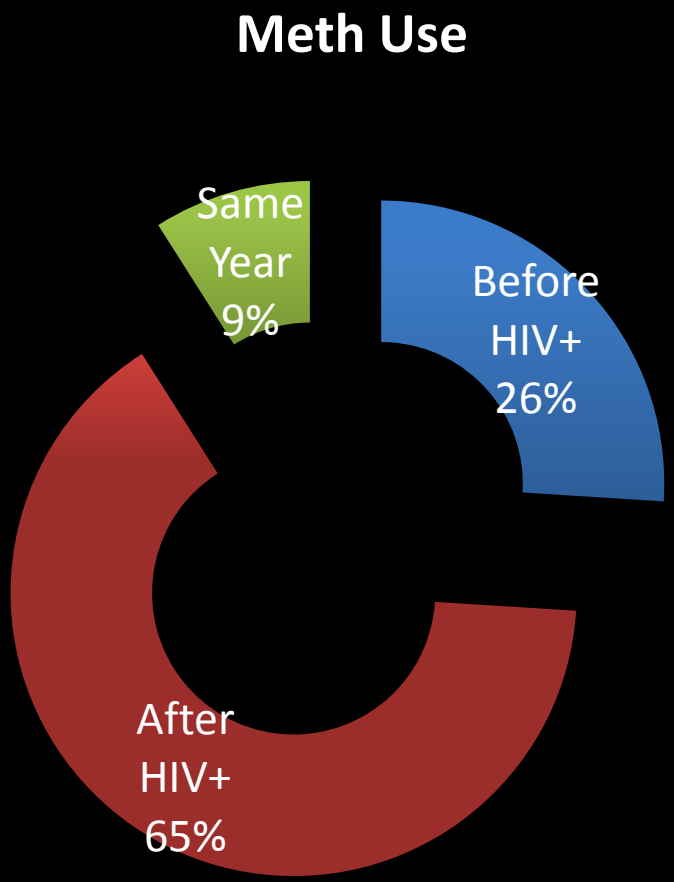
Halkitis et al, 2006

Methamphetamine and Extreme Sex New York City: Project Tina



Halkitis et al, 2005

Methamphetamine and Time of Seroconverison



- N = 58 HIV+ Men
- 9 years between onset of use and HIV infection
- 10 years between infection and onset of use
- Meth does not always proceed serconversion

Halkitis et al, In Press

FRAMING THE SYNERGIES OF DRUG USE AND SEX RISK: THE SYNDEMIC

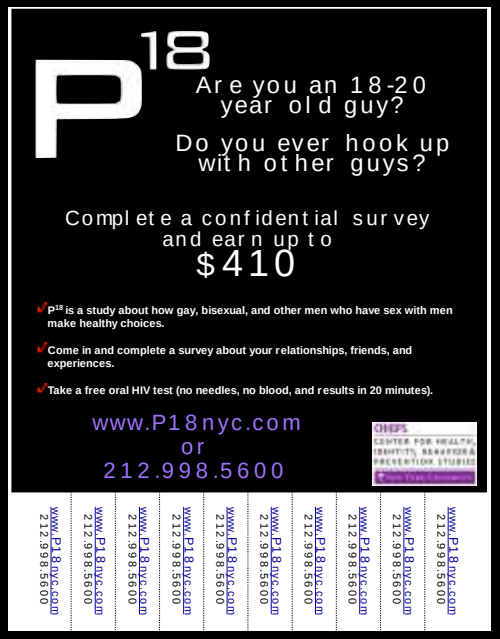
Drug-Sex Link in Gay & Bisexual Men: A Syndemic

- A theory of syndemics
  - stigma, discrimination, homophobia and other psychosocial burdens experience by gay men
    - heighten mental health problems (e.g., depression, PTSD, GAD)
    - exacerbate risk behaviors (drug use and unsafe sex)
    - compromised well being of gay and bisexual men
- This confluence of epidemics is described as syndemics (Stall et al, 2003l Wolitski, et al, 2007; Halkitis et al, 2013)
  - begins to take shape in emerging adulthood
  - Represents a complex relationship between behaviors and symptoms that, in concert, may compromise an individual's overall mental, physical and spiritual health as well as his social capital (Halkitis et al., 2010)
  - these vulnerabilities include greater drug use, and higher rates of HIV and other STIs, and greater mental health burdens

The Role of Stigma in the Syndemic

- The stigmas, ongoing marginalizatio and discrimination faced by gay and bisexual men
- Make them more susceptible to multiple epidemics
- Including initiation into drug use,
- Unprotected sexual behavior
- As well as access to treatments and resources, accessibility and opportunities for engagement (Halkitis et al, 2010)
- Social class, poverty, history of abus may exacerbate syndemics

Syndemics in Emerging Adult Men aka Project 18 (P18)



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Funded by Grant #R01DA025537

First Order Model: Substance Use

# Days Alcohol	1.00(.39)
# Days Marijuana	4.019***(.75)
# Days Inhalant Nitrates (Poppers)	.050**(.14)
# Days Other Drugs	.632***(.40)
Any Drugs - Urine	.210***(.72)
# Drugs - Urine	--

Halkitis et al. (2012)

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First Order Model: Unprotected Sex

# Episodes UIAI	1.00(.615)
# Episodes URAI	1.11***(.606)
# Episodes Performing Unprotected Oral	2.50***(.891)
Confirmed HIV Status	.000(-.001)

Halkitis et al. (2012)

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First Order Model: Mental Health Burden

	Unstandardized (Standardized)
Suicidal Thoughts	1.00(.47)
Attempted Suicide	--
Total Depressive Symptoms	44.74***(.87)
Total Loneliness	7.74***(.54)
Total PTSD	31.48***(.78)

Halkitis et al. (2012)

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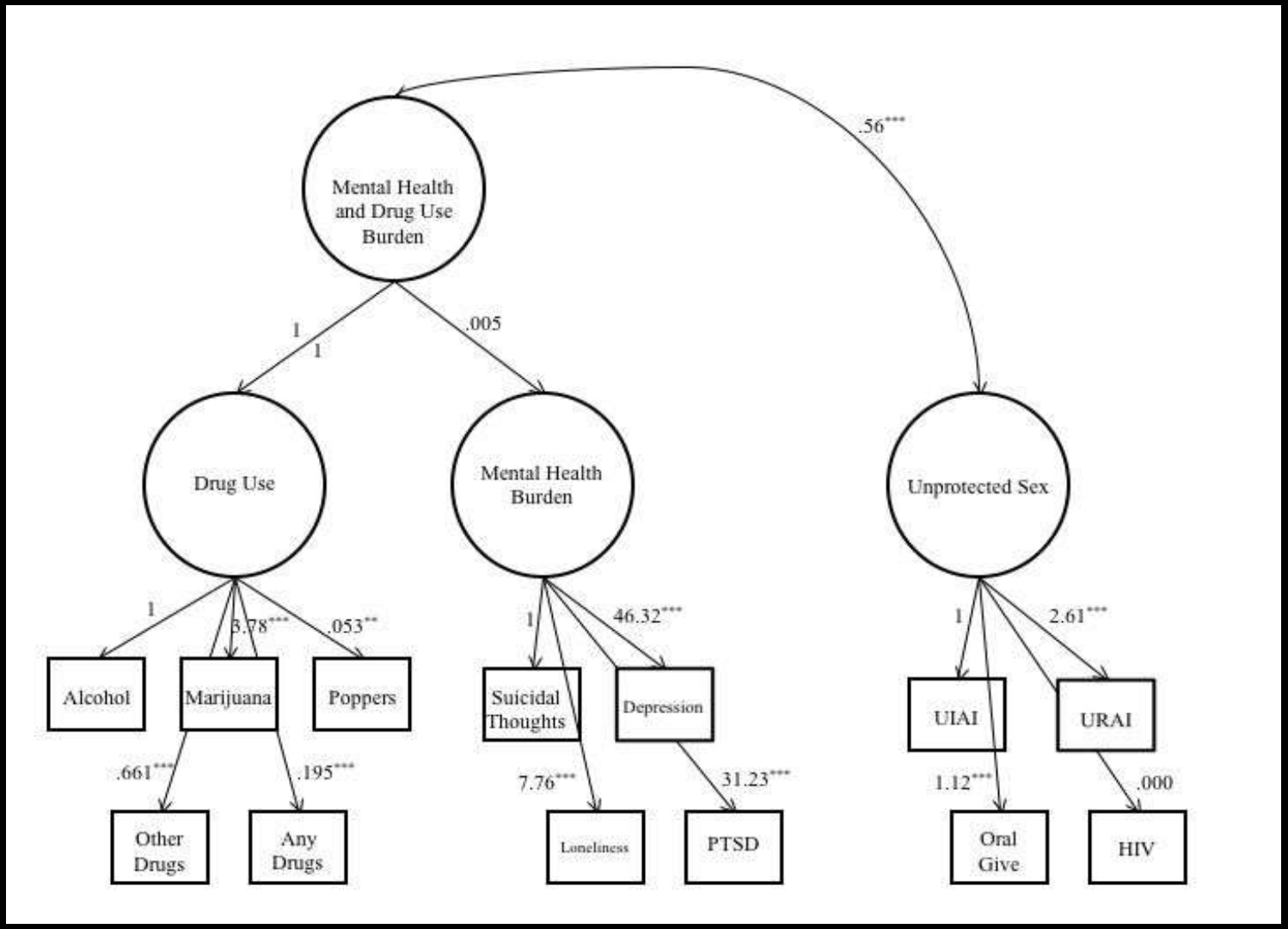
Syndemics Model in Young Gay & Bisexual Men New York City: P18



Halkitis, et al, 2012

Syndemics in HIV+ Gay & Bisexual Men Ages 50+ aka Project GOLD

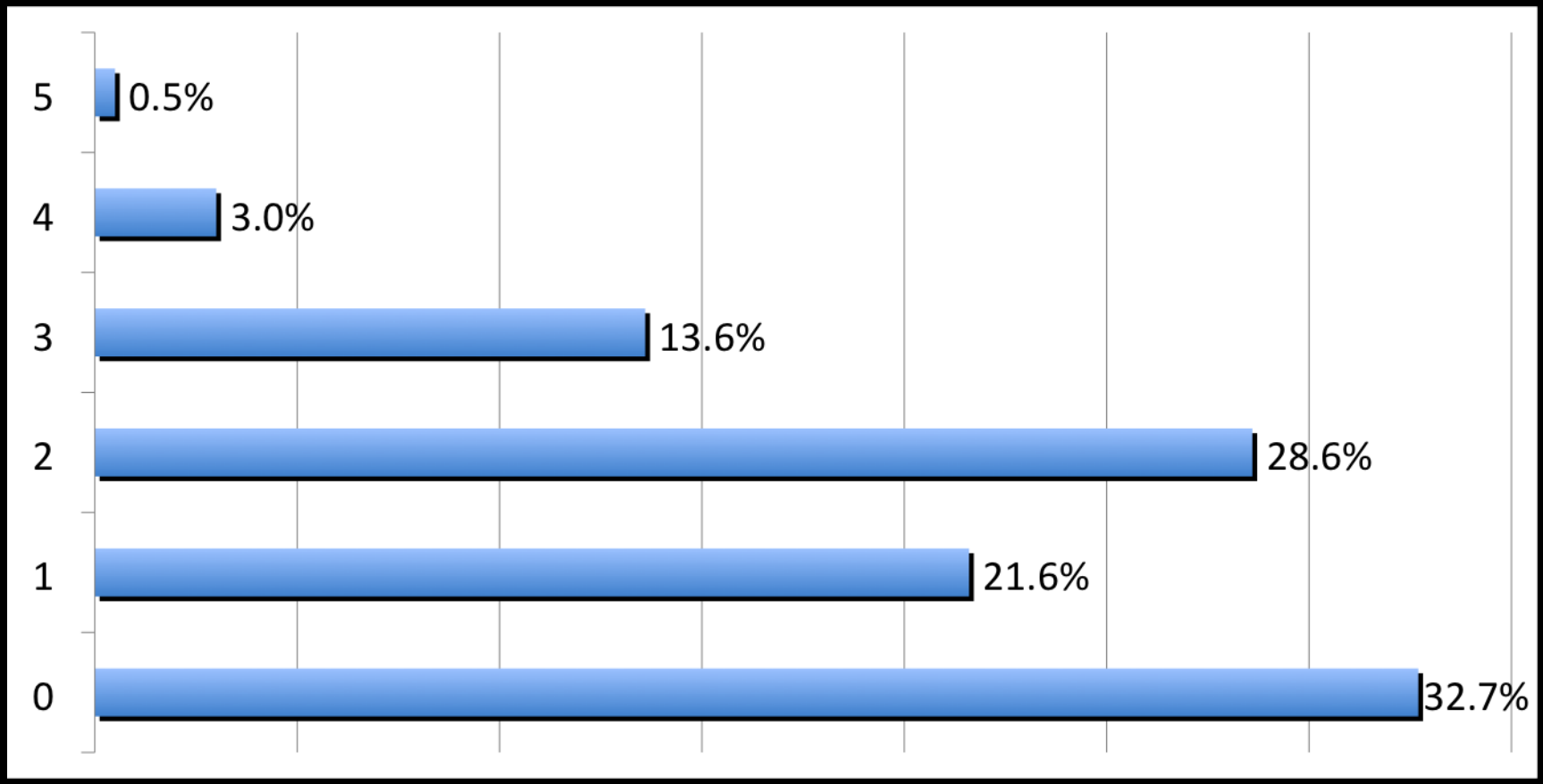
Funded by a Pilot Grant from Center Grant #3P30DA011041-20S1

Current Burden Associations

	1. Alcohol to Intoxication	2. Inhalant Nitrates	3. Marijuana	4. Other drugs	5. Depression	6. PTSD
1		1.82	3.29*	4.57**	1.30	0.70
		(0.61, 5.40)	(1.35, 8.05)	(1.85, 11.28)	(0.48, 3.52)	(0.23, 2.19)
2			1.42	1.63	0.48	0.46
			(0.62, 3.28)	(0.68, 3.85)	(0.14, 1.70)	(0.13, 1.64)
3				3.59**	1.22	0.68
				(1.84, 6.99)	(0.60, 2.47)	(0.33, 1.42)
4					1.05	0.87
					(0.49, 2.25)	(0.40, 1.88)
5.						9.01**
						(3.77, 21.52)

Halkitis et al. (2013)

Total Current Burden Score



Halkitis et al. (2013)

Mean Burden: 1.34 (SD = 1.18, Md = 1)

Related to age ($r = -0.20$, $p < .01$)

Related to race/ethnicity ($F(3, 192) = 3.26$, $p < .05$)

B > L; B>~ W

O >L; O > W

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Current Burden and Risk (OR, 95%CI)

Any UA HIV+	1.51 (1.12, 2.04)
URAI HIV+	1.48 (1.05, 2.11)
UIAI HIV+	1.48 (1.05, 2.11)
Any UA HIV-/Unknown	1.53 (1.04, 2.25)
URAI HIV-/Unknown	1.80 (1.17, 2.78)
UIAI HIV-/Unknown	1.35 (0.84, 2.17)

Halkitis et al. (2013)

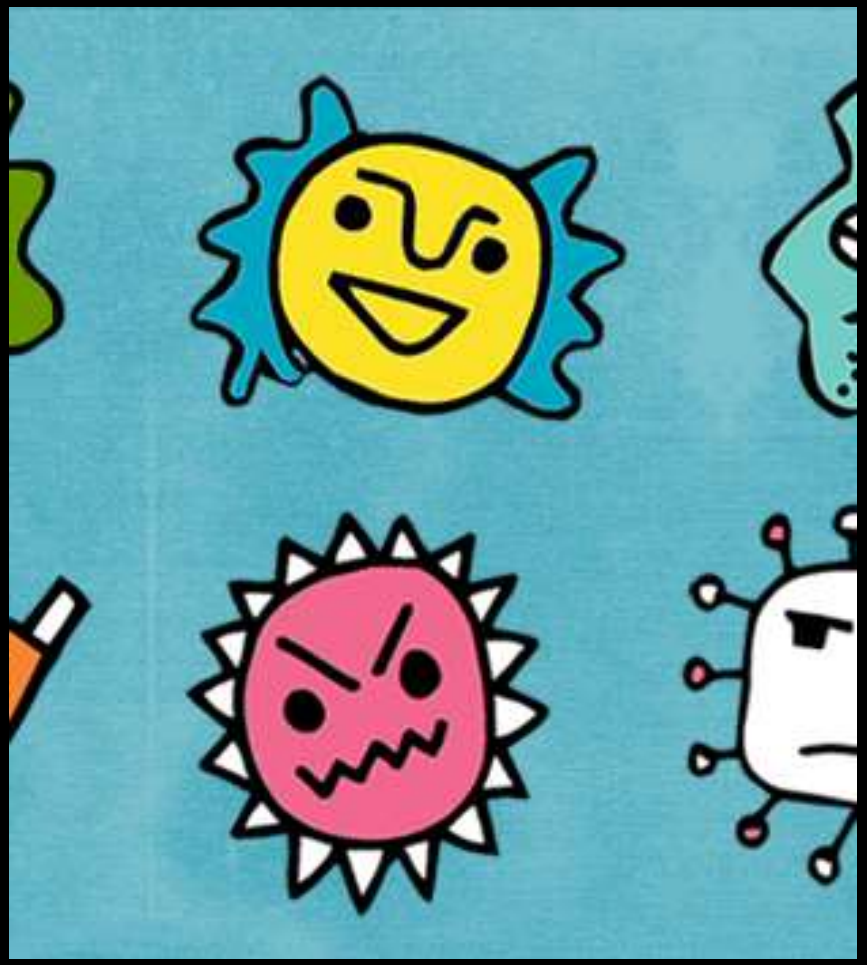
	Unprotected anal with HIV positive partners		Unprotected anal with HIV-negative/status unknown partners	
	OR (95% CI)	p	OR (95% CI)	p
Age	0.95 (0.86, 1.04)	.23	0.92 (0.81, 1.05)	.20
Years Living with HIV	1.01 (0.96, 1.07)	.65	1.21 (1.01, 1.24)	.03
Race/Ethnicity	N/A	.08	N/A	.75
Total Current Psychosocial Burden	1.47 (1.06, 2.02)	.02	1.62 (1.06, 2.46)	.03
Final Model Fit	X^2 (6) =14.20, p = .03		X^2 (6) = 12.93, p = .04	
Pseudo R^2	11.3%		13.2%	

Halkitis et al. (2013)

Illicit drug use and the transmission of pathogens in gay & bisexual men

STIs Associated with Unprotected Sex

- Viral STIs
  - HIV
  - HPV (penile, rectal warts)
    - anal cancers (HPV 16 & 18)
  - HSV
  - Hepatitides
    - HBV
    - HCV
- Bacterial STIs
  - Gonorrhea
  - Syphilis
  - Chlamydia



Drug Use and HIV Transmission

- Gay and bisexual men who use non injection drugs seroconvert at higher rates than those who do not use non-injection drugs (Stall & Purcell 2000)
- Risk for HIV among cocaine, crack cocaine, and methamphetamine users comparable to IDU (Strathdee & Stockman, 2010)
- Risk for seroconversion increases with the number of drug/drug combinations (Ostrow et al, 2009)
  - 3 times increased odds for those who use 1 drug
  - 9 times increased for those who use 3 drugs
- Risk for HIV transmission highly associated with amphetamine and other drug use prior to the onset of sex (Koblin et al, 2006)
  - Project EXPLORE' 4,295 HIV-negative participants across 6 U.S. cities

Drug Use in HIV-positive Gay & Bisexual Men

- HIV-positive gay and bisexual who use drugs
  - Place their own health at risk
    - the development of opportunistic infections is more likely during periods of active drug use (Lucas et al, 2006
  - Become more infectious/viremic increasing possibility of transmission
    - Use of certain drugs such as methamphetamine and other stimulants increases HIV viral replication (Ahmad, 2002; Carico, 2007)
    - Use of drugs may interfere with adherence to ART (Braitstein et al, 2004)
      - Use of drugs and alcohol in previous 30 days is associated with worse adherence (OR =.17) and worse viral suppression (OR =.51)

Dug Use & Incident STIs Internet Study

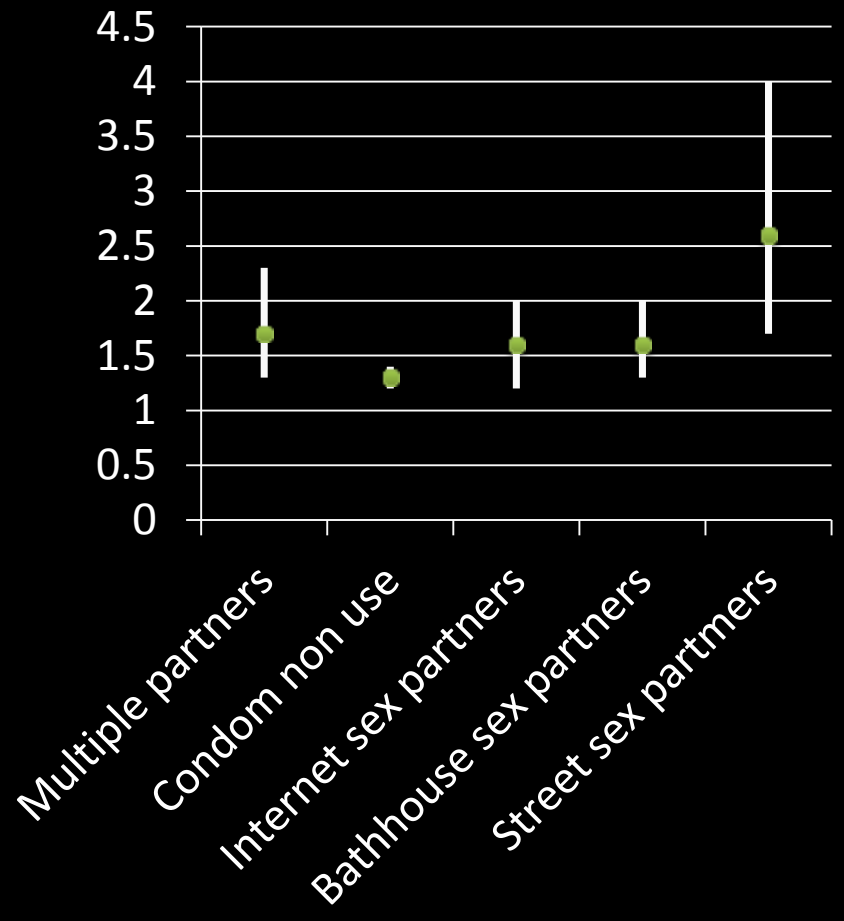
- 2949 online questionnaires
- 2463 gay or bisexual
- Incident STI defined as during two consecutive three month periods
- 102 STIs reported
  - Syphilis 9
  - Herpes 4
  - Genital/anal warts 16
  - Gonorrhea 49
  - Hep B 2
  - Chlamydia 29
  - NGU 24

	Incident STI (%)	Rug use and Behavioral Risk (OR, 95% CI)
Meth	5%	3.8 (2.1,6.7)
Cocaine	7%	2.3 (1.2,4.2)
Ecstasy	9%	2.2 (1.3, 3.8)
Viagra	9%	2.1 (1.2, 3.7)

Hirshfield et al, 2004

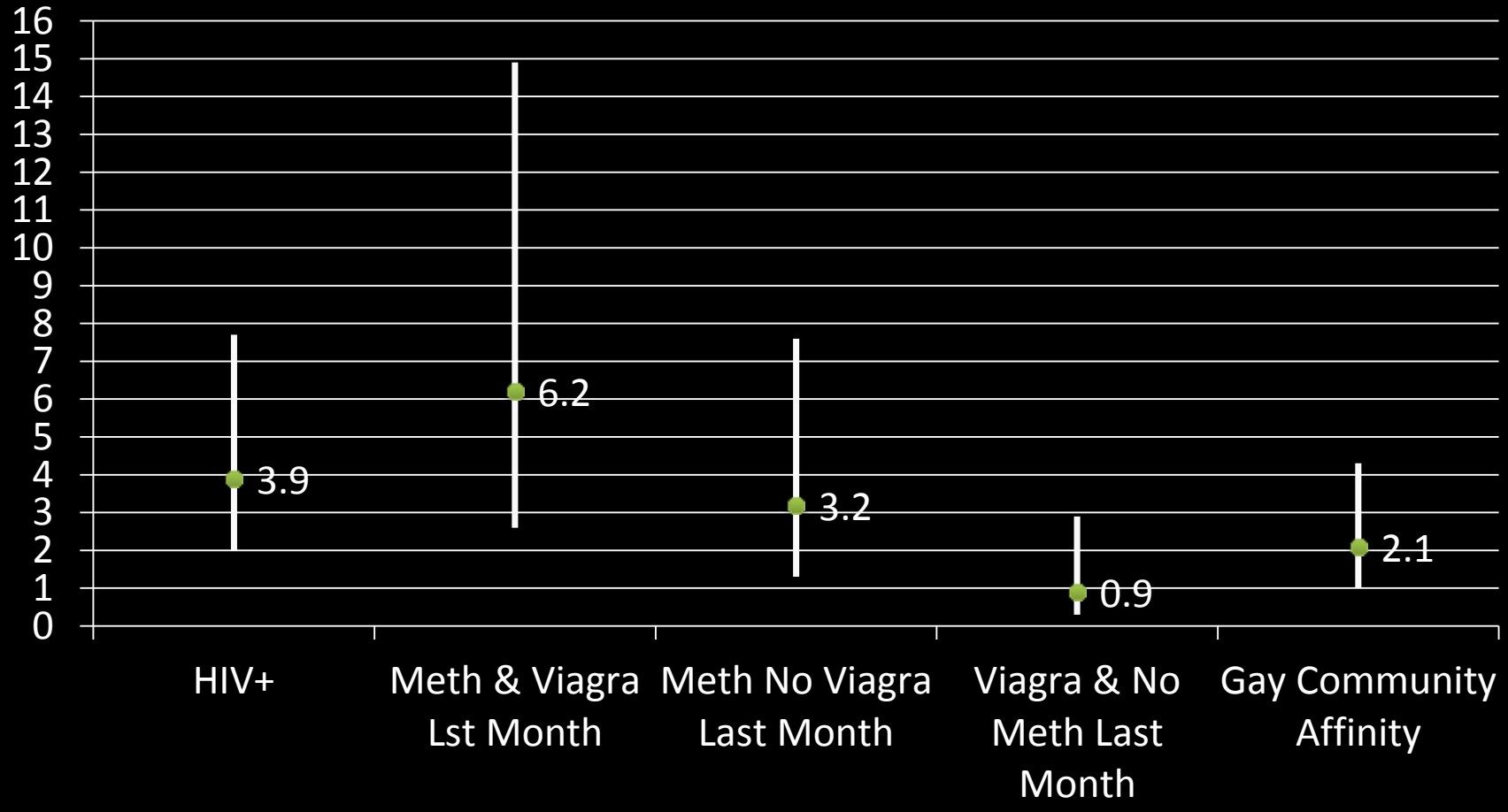
Drug Use & Syphilis
Los Angeles: LADOH Study

- Methamphetamine use and early syphilis
  - Los Angeles 2001-2005
  - 2915 cases at LADOH
    - 1904 cases (65%) among gay, bi, or other MSM
      - 59 % primary or secondary; 41% early latent
      - 167 (9%) among those reporting meth use
  - Meth use related to numerous risk factors



Taylor et al, 2007

Drug Use & Early Syphilis San Francisco: City Clinic



Wong et al, 2005

HCV and HIV MACS Cohort

- HCV acquisition among gay, bisexual, and other MSM occurring since onset of HIV/AIDS
  - Incidence 2.08 per 1000 person-years in MACS cohort (N = 4384 recruited in first decade of AIDS)
- Higher among HIV+ than HIV-
  - 4.44 per 1000 person-years vs. 0.50 per 1000 person-years
  - Increases of each 100 CD4 cells/mm^3 linked to 7% decrease in HCV infection
- Among all, HCV Incidence associated with
  - IDU — IRR = 16.22
  - Heavy alcohol consumption — IRR = 8.45
  - HIV coinfection — IRR = 8.40
  - URAI with multiple partners — IRR = 7.44
- Among Non-IDU, HCV acquisitions associated with
  - HIV coinfection — IRR = 7.56
  - HBV coinfection — IRR = 2.14
  - URAI with multiple partners — IRR = 4.02

Witt et al, 2013

HCV Acquisition and Traumatic Sex

- Other studies have shown that traumatic sexual behaviors are associated with HCV transmission amongst MSM. We did not record these practices throughout follow-up so could not determine [if] they increased HCV transmission (Witt et al, 2013)
- Case control study in Germany among non-IDU HIV+ gay men (Schmidt et al et al, 2011)
  - HCV cases associated with
    - Sex associated with rectal bleeding
    - Receptive fisting
    - Group sex
    - Snorting cocaine/amphetamines

Witt et al, 2013

HCV Risk Factors: Sydney, Australia: Health in Men and Positive Health

- HCV 10X greater in HIV+ than HIV- men
- HCV incidence in HIV- associated with
  - sex with HIV+ man
  - use of sex toys
  - fisting
  - ulcerative STIS
- HCV prevalence in HIV+ associated with
  - fisting
  - use of sex toys
  - UAI in context of drug use and group sex

Jin et al, 2009

Treatment considerations for drug use in gay men

Cognitive Behavioral Approaches

- Based on social learning theory, which views substance abuse as a learned and maladaptive behavior due to distorted beliefs regarding the power of the abused substances over the individual (Ouimette, Finney & Moos, 1997).
- The goal of treatment is to modify maladaptive learning and help the individual develop coping strategies.
- A significant element of CBT is functional analysis
  - An iterative process by which therapist and client better understand the function that drug use plays in the life of the user, identifies triggers, including people, places, and things (Irwin, 2006)

- The efficacy of CBT in clinical trials of substance abusers has been validated (Irvin, Bowers, Dunn & Wang, 1999).
- CBT has been shown to be an effective treatment for those with cocaine dependence (Huber et al., 1997; Rawson, McCann, et al., 2002), and was found to be even more effective over time (Carroll et al., 1994).

Motivational Interviewing

- Developed by Miller and Rollnick (1991)
- Concentrates on issues of motivation at various points along a continuum of behavior change
- Motivational interviewing strategies treat resistance, ambivalence, and diminished capacity for objective self-assessment, which is common among clients in the earlier stages of behavior change.
- To date, the empirical support for the use of motivational interviewing in addressing methamphetamine addiction is not available, although numerous funded research endeavors are currently implementing elements of the approach

- Bux and Irwin (2006) describe the elements of motivation interviewing and indicate that four key principles to this approach:
  - (1) Expression of empathy to the addict
  - (2) Development of discrepancy in which the addict evaluates fully behaviors in light of consequences
  - (3) Avoidance argumentation with the client and rolling with the addict's resistance to change; and
  - (4) Supporting the addicts self-efficacy to not use methamphetamine

Combining Motivation & Cognition

- HIV behavioral researchers have recently combined motivational elements with skill-building approaches to improve on the well-documented success of skills-based behavior change interventions.
  - Motivation is a key to treatment success, because patients are more likely to be committed to a behavior change plan they perceive as their own and because ambivalence about change is likewise addressed.

- The use of cognitive behavioral therapy and motivational interviewing can be combined to address the drug-sex link
  - Carey and his colleagues (1997; 2000) have published two studies documenting the success of such a cognitive behavioral/motivational interviewing integrative intervention.
  - Interventions that combined elements of motivational interviewing and cognitive behavioral therapy are successful in promoting HIV behavior change (Kalichman, Cherry & Browne-Sperling, 1999; Rhodes, Wolitski & Thornton-Johnson, 1992).

- Jaffe, et al. (2007) recently indicated that through the use of growth curve modeling, that MSM in outpatient treatment for methamphetamine abuse also tended to show improvements in levels of depression and decreases in sexual risk-taking over time

- Rawson et al. (2008) have shown that treatment for methamphetamine addiction via the Matrix Model in the Methamphetamine Treatment Project resulted in a decrease in HIV risk behaviors over 26 months of assessment among study participants

Contingency Management

- The tenets of contingency management are based on behaviorism and operant reinforcement (Skinner, 1938), whereby individuals are rewarded for their behavior
- This approach has been applied to the treatment for heroin and cocaine addiction (Higgins et al., 1993; Iguchi, Stitzer, Bigelow & Liebson, 1988), as well as other drug addictions (Higgins et al., 1993; Higgins & Silverman, 1999; Higgins & Petry, 1999)

- Vouchers/rewards are often used to exchange for goods or services to support an addiction-free lifestyle (Shoptaw et al., 2005).
- Roll (2007) notes that contingency management programs are often delivered in conjunction with pharmaceutical and or/psychosocial interventions.

12-step

- At the present time, 12-step approaches, are the standard of care for most individuals seeking help for addictions such as methamphetamine use within community settings.
- Such programs are readily available and accessed for substance abuse recovery either as formal treatment or in the absence of a formal treatment plan (Humphreys, 1999; Room & Greenfield, 1993).

- Based the models developed first in Alcoholics Anonymous (AA), and later adapted by Narcotics Anonymous (NA), Crustal Meth Anonymous, and Cocaine Anonymous (CA).

- In this paradigm, substance abuse is seen through the disease model of addiction (Ouimette et al., 1997) and individuals in this treatment modality are encouraged to accept their identities as abusers.

- The 12-step paradigm is nested within the belief that substance abuse is the result of a biological or psychological vulnerability, and thus 12-step programs are centered on the notion that substance abuse is a progressive illness, and that the illness affects the body, mind, and spirit.
- 12-step approaches are also built on the concepts of camaraderie and social support

- The short- and long-term effectiveness of 12-step programs and interventions that enact elements of 12-step facilitation to treat methamphetamine addiction is very limited—no substantial empirical knowledge
- What little is known is drawn from use of the approach in addressing alcoholism and cocaine addictions, although more recently evidence is amounting for the potential benefit of the approach to address methamphetamine addiction (Fiortentine, 1999)
  - Perhaps best as a source of “after-care”
    - Morgenstern et al. (1997) indicate that 12-step programs, in the form of AA etc., are the most prevalent approaches to aftercare for substance abusers after the termination of treatment
    - 12-step experimental after care programs result in outcomes as effective as other community-based aftercare programs (Brown, Sereganian, Tremblay & Annis, 2002b; Morgenstern et al., 1997; Ouimette et al., 1997).

APPLYING A HOLISTIC APPROACH

Applying syndemics theory

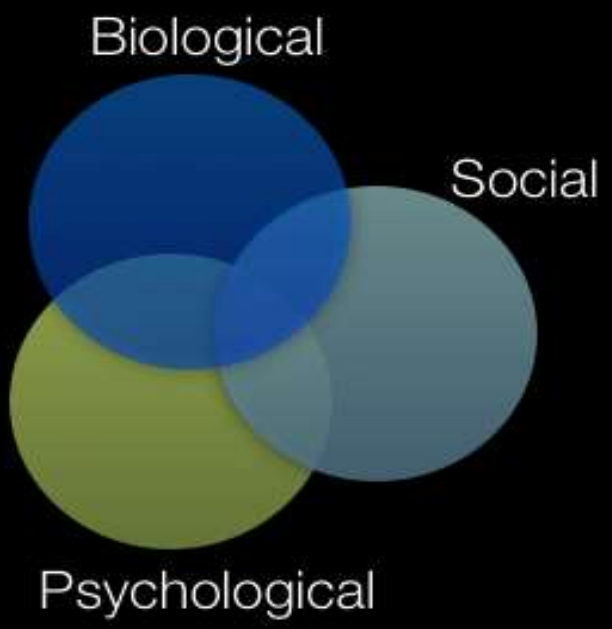
- HIV prevention agenda for gay men has focused on sexual health
- Substance use programs often ignore sexuality
- Both often disregard the psychosocial vulnerabilities gay men face due to stigmas
- Treatments and prevention often focus on these issues individually
  - A syndemics perspective asks us to integrate all of these elements
  - **Applicable across ages**

A Model for Gay Men's Health

- HIV health must be understood as part of total health program for gay men
- A holistic approach addresses the confluence of sexual risk, with drug and mental health risk
- Current HIV prevention strategies are "Band-Aid" solutions to a much deeper and bigger problems

Addressing Substance Use in Gay Men's Health

- A program of gay men's health to substance use must consider the interplay of
  - Biological conditions
  - Psychological states
  - Social Conditions
- Mind and body
  - Psychosocial factors create vulnerabilities which predispose gay and bisexual men to risk behaviors with biological consequences



Substance Use Programs for Gay and Bisexual Men

- Must be tied to the realities of the HIV epidemic
- Must consider the psychological vulnerabilities that gay and bisexual men experience due to the social conditions of homophobia and discrimination
- Must address these underlying conditions to reduce the risk that gay men face in relation to both HIV and substance abuse problems

Addressing the Drug-Sex Link in Practice

- The behavioral literature on the use of drugs suggests conclusively that a very strong link does exist between use of the substance and sexual risk taking behavior
  - this may be especially true for sexual minorities
    - and even more complex due to the synergy with the HIV epidemic in gay men

- Whether it is the desire for sexual behavior that predisposes users to the drug, or the drug itself, which creates a heightened level of sexuality, the need to consider the role that sex plays in the lives of its users must not be overlooked.

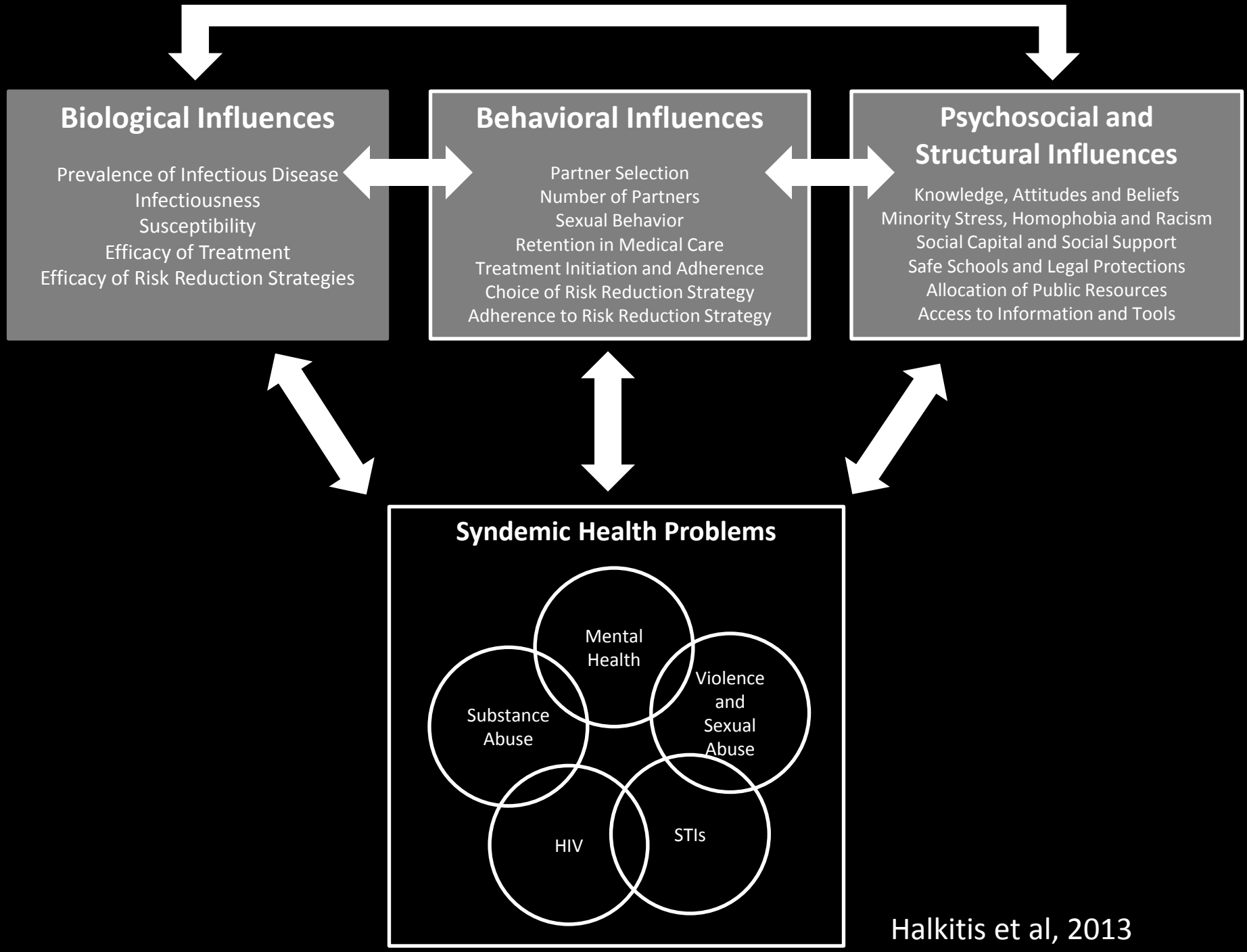
- Treatment modalities must delve into the underlying psychological processes that may serve as current and lifelong antecedents of sexual risk taking and the role that environmental factors, including specific sexually-charged contexts, may serve to strengthen the link between sexual risk taking and methamphetamine use.

Shoptaw & Reback (2006)

"Drug use treatment can be an efficient tool for leveraging sexual risk reductions… comprehensive prevention strategy should include elements of both [sexual risk taking, drug use]"

Issues to Consider with Gay & Bisexual Men Regardless of Treatment Approach

- Integrating considerations of sexual identity and sexual behavior in treatment
- Understanding the multiple stigmas experienced by LGBT individual
- Building upon the resiliencies that LGBT individuals possess and bring to treatment
- Examining the role that the LGBT community has in actually celebrating MA and other drug use
- Understand what sex means for LGBT individuals
- Considering social supports available to LGBT persons



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Gay Men and Substance

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