

A Structural Model of Drug Use and Sexual Risk among Gay and Bisexual Men Who Attend Circuit Parties

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Introduction: Definitions

- “Recreational” drug use.
 - Episodic, non-injection, poly-drug use
 - Frequency is less suggestive of “abuse” or “dependence”
 - Often planned around major club/circuit party events
- “Circuit Parties”
 - Large scale events with dance parties scheduled across several days
 - Frequented by gay and bisexual men (GBM)
 - Originated as fundraisers for HIV/AIDS research and service organizations
 - Celebration of gay spirit and sexuality

Background:

Drug Use and Sexual Health

- Findings reflect marked associations between drug use, risky sexual behavior, and increased reports of HIV and other sexually transmitted infections (STIs) among GBM. (e.g., Fernandez et al., 2005; Shoptaw & Reback, 2006; Stall & Purcell, 2000)
- Research suggests that recreational drug use at major club and circuit party events facilitates subsequent high risk sex and the transmission of HIV and other STIs. (e.g., Halkitis & Parsons, 2002; Lewis & Ross, 1995; Mattison et al, 2001)
- To date, such inferences are weakened by methodological and design limitations in the existing body of research.

Background:

Limitations in Prior Research

- Methodological Issues
 - General vs. Event-specific Assessments
 - drug use linked to sexual risk while high?
 - Time frame capturing drug use and sexual risk?
 - Variability in definition of risky sexual behavior
 - Variability in specific drugs investigated
- Design Issues
 - Statistical models are cross-sectional and correlational
 - What are the relative risks of various club drugs?
 - Do particular combinations of drugs facilitate sexual risk?

Current Study: Goals and Hypotheses

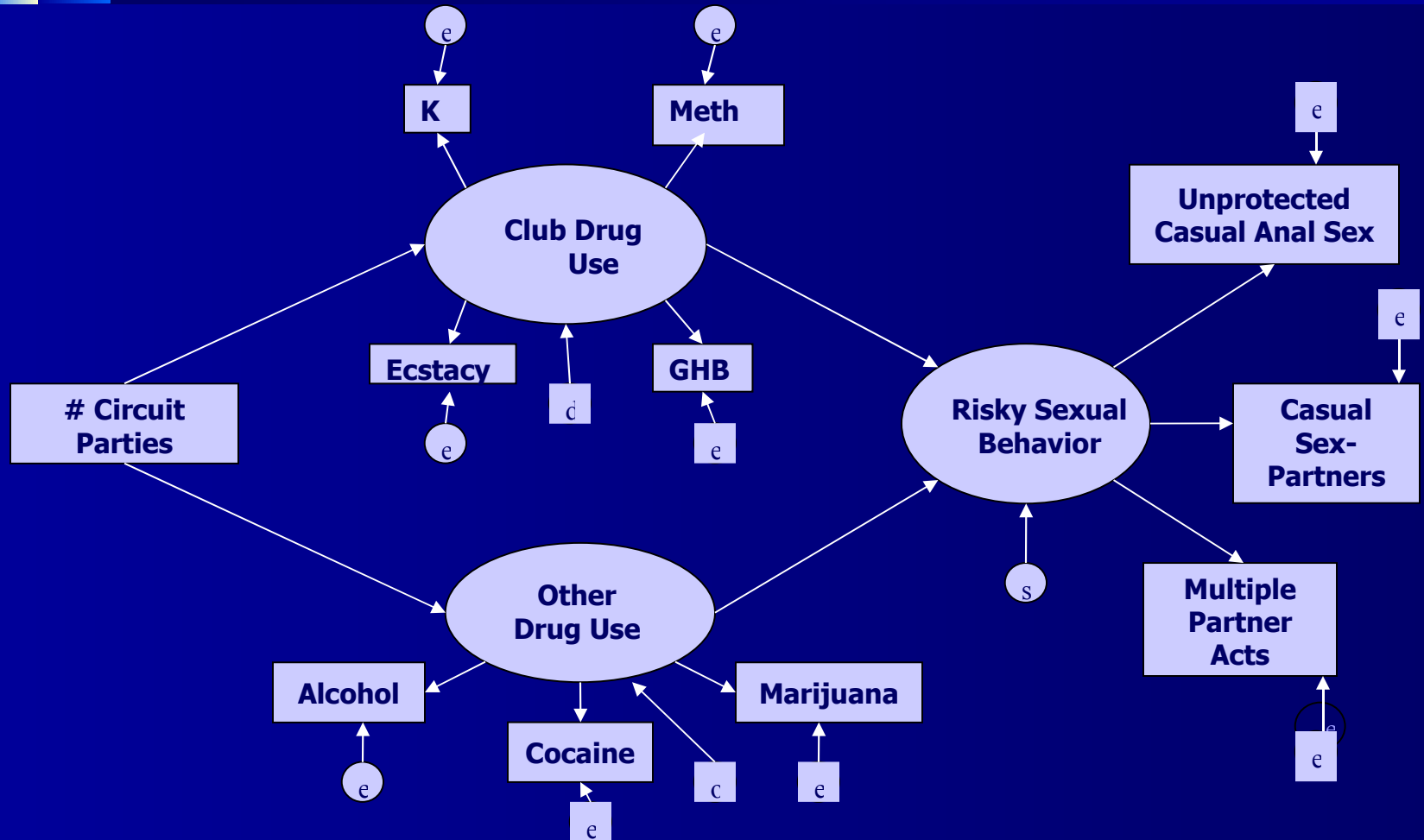
■ Goals:

- Contextualize the sequence of drug-use and sexual risk behaviors around club and circuit party events.
- Build a structural model that enables the analysis of complex paths among multiple drugs and sexual risk behaviors occurring under the influence of those drugs.

■ Hypotheses:

- It is expected that greater attendance at circuit parties will help explain greater use of club drugs—specifically ecstasy, meth, GHB, and Ketamine.
- It is expected that greater use of ecstasy, meth, GHB, and Ketamine will help explain greater amounts of unprotected anal intercourse with casual partners while high, greater numbers of casual sex-partners, and greater multiple sex-partner acts.

Proposed Model / Hypotheses



Methodology: Procedure

- On-site recruitment followed by self-administration with assistance as needed
 - doctors' offices waiting areas
 - local "gay" beach; coffee shops
- Behavioral Assessment (3-month window)
 - Two stage process to assist recall
 - Stage one: prompted to think *only* about days/nights at circuit
 - Stage two: prompted to think *only* about days/nights at bar/club
 - Sexual behavior questions were linked to the same days/nights previously used to assess drug use.

Sample Demographics

- 197 MSM
 - attended ≥ 1 bar/club/circuit party within 3 months
- Age: 20-49 years (Mean of 34.3 ± 6.4)
- Ethnicity: White (56%) and Latino (31%)
- Highly Educated: $>90\%$ attended some college
- Income: $< \$10,000 - > \$100,000$
 - well distributed across all income brackets
- HIV-negative (78%); HIV-positive (21%)
 - 1 participant did not know his status

Results:

Distribution and Prevalence

	<u>Mean (SD)</u>	<u>Total</u>	<u>HIV-Positive</u>	<u>HIV-Negative</u>	
■ Alcohol	21.38 (27.03)	79.2%	76.2%	79.9%	
■ Ecstasy*	2.84 (4.88)	43.1%	26.2%	48.1%	
■ Crystal Meth	4.52 (15.11)		25.9%	28.6%	25.3%
■ Marijuana*	15.79 (61.48)	23.9%	35.7%	20.8%	
■ Cocaine	5.90 (26.21)	20.3%	11.9%	22.7%	
■ Ketamine	3.18 (11.93)	19.3%	11.9%	21.4%	
■ GHB	1.99 (7.12)	18.8%	11.9%	20.8%	
■ Poppers*	4.90 (20.66)	9.6%	19.0%	6.5%	
■ Casual Sex-Part	5.06 (9.13)	75.1%	73.8%	75.3%	
■ Mult Sex-Part	.51 (1.77)	21.4%	21.4%		21.4%
■ Casual UAI	1.16 (4.25)	17.8%	26.2%	15.6%	
■ Circuit Party*	.84 (.98)	53.8%	40.5%		57.8%

- Note. Non-normal distributions suggested importance of dichotomizing behavioral risk variables for use in structural model. *Chi-square analyses examine differences in prevalence rates by HIV-status, $p < .05$

Correlations: Total Sample (N=197)

	<u>Alc</u>	<u>Pot</u>	<u>E</u>	<u>K</u>	<u>G</u>	<u>Meth</u>	<u>Co</u>	<u>Popper</u>	<u>CP3</u>
Alcohol	_____	0.15*	0.00	0.07	-0.20[†]	-0.10	0.35[†]	0.14	-0.14
Pot	0.15*	_____	0.00	0.02	-0.04	0.10	0.11	0.23[†]	0.13
E	0.00	0.00	_____	0.48[†]	0.43[†]	0.45[†]	0.24[†]	-0.11	0.56[†]
K	0.07	0.02	0.48[†]	_____	0.24[†]	0.28[†]	0.27[†]	-0.07	0.20[†]
G	-0.20[†]	-0.04	0.43[†]	0.24[†]	_____	0.38[†]	-0.02	-0.09	0.32[†]
Meth	0.10	0.10	0.45[†]	0.28[†]	0.38[†]	_____	0.05	0.11	0.37[†]
Cocaine	0.35[†]	0.11	0.24[†]	0.27[†]	-0.02	0.05	_____	0.09	0.06
Poppers	0.14	0.23[†]	-0.11	-0.07	-0.09	0.11	0.09	_____	0.03
Casual UAI	-0.03	0.29[†]	0.14^a	0.05	0.14	0.31[†]	-0.01	0.16*	0.23[†]
Multiple Partner Sex	0.02	0.21[†]	0.19[†]	0.16*	0.41[†]	0.30[†]	0.10	0.23[†]	0.36[†]
Casual Sex-Partners	0.06	0.16*	0.12	0.12	0.30[†]	0.22[†]	0.12	0.22	0.28[†]

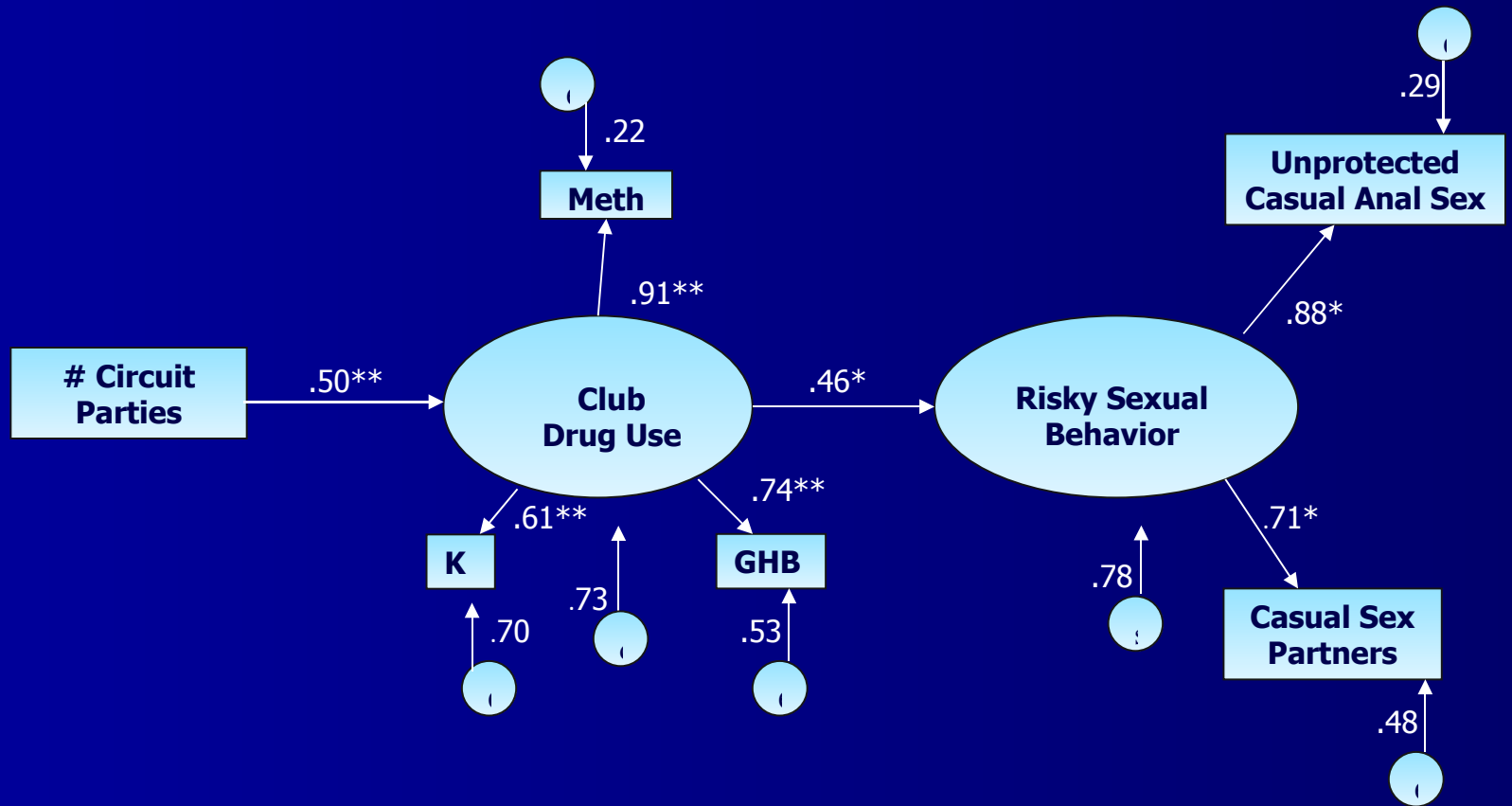
Note: CP3 stands for circuit parties attended past 3 months; * $p < .05$; [†] $p < .01$

Proposed Model: Standardized Loadings and Paths

<u>Factors/Variables</u>	<u>Model Loading</u>	<u>Paths to DU</u>	<u>Paths to Other</u>	<u>Paths to Sex</u>
# Circuit Parties		.58(.07)†	.10(.08)	
Any Recreational Drugs				.52(.08)*
Ecstasy	1.03(.20)			
Ketamine	.72(.08)†			
GHB	.83(.07)†			
Methamphetamine	.77(.08)†			
Any Other Drugs				.13(.11)
Alcohol	.81(.50)			
Marijuana	.36(.25)			
Cocaine	.72(.49)			
Any Risky Sex				
Multi-Partner Acts	1.07(.49)			
Casual Partners	.62(.16)*			
Casual UAI	.62(.27)*			

Notes. Values in parentheses are standard errors. 34% variance accounted for in the DU factor, 1% in the OU factor, and 28% in the risky sex factor. Risky sex variables were tied to when the participant was under the influence of drugs. *p<.05, †p<.01

Final Structural Model



Conclusions

- Gay and bisexual men who attend a greater number of circuit parties are at increased risk of using Meth, GHB, and K, and subsequently engaging in unprotected anal intercourse with casual or unknown sex-partners while under the influence of those drugs.

Circuit Party Attendance Explains Club Drug Use

- Greater attendance is more likely to result in greater peer pressure and social norms
- “Recreational” paradigm → Reduced risk perception
 - Feel less vulnerable to addiction and consequences
- Classical conditioning: contextual triggers
 - electronic music, beats, lasers, costumes, muscular go-go dancers and “circuit boys”

Club Drug Use Explains Unprotected Anal Intercourse

- Emotion-focused, escape-based theory
(Folkman and Lazarus, 1990; McKirnan et al., 1996; Theodore et al., 2005)
 - Cognitive Disengagement
 - Escape from same-sex based shame/guilt/stigma
 - Escape from safer-sex messages, anxiety/fear, and intrapsychic conflicts around trust, intimacy, illness, and death
- Classical Conditioning:
From Circuit Party to “Party and Play”
 - Meth/GHB → increase libido and self-confidence
 - Meth/K → numbing → rough, rigorous sex
 - Meth → delayed ejaculation → prolonged intercourse

Strengths of Current Findings

■ Methodology

- event-specific versus global assessment of bx
 - contextualized club drug use
 - tied risky sexual behavior to prior drug use

■ Design

- use of sophisticated statistical technique (SEM)
 - developed a more precise model that sequentially links recreational drug use in club/circuit events with unprotected anal intercourse with casual or unknown partners
 - Demonstrated the increased risk of meth, GHB, and K relative to ecstasy in helping explain subsequent sexual risk

Limitations/Future Directions

- Cross-sectional, self-report design → Longitudinal w/ urinalysis
- Limits to generalizability
 - Sample mostly Caucasian and Latino
 - Target recruitment venues frequented by other groups
 - Small sample that is predominantly HIV-negative
 - Target equal samples by HIV-status
 - Investigate HIV-status as a moderator
- Low prevalence of risk bxs → restrict sample
 - include only “drug using” GBM and circuit patrons
- Did not assess for substance use disorders
 - Include “Addiction Severity Index” or DSM-checklist

Implications: Public Health Concerns

- Identification as a recreational user likely decreases risk perceptions and subsequently increases the likelihood of the following:
 - Unprotected anal intercourse with casual partners
 - HIV/STI complications
 - efficiency of transmission and disease progression
 - treatment failure and/or non-adherence
 - increased aggression of symptom display
 - Neurotoxic drug effects
 - stroke, seizure, cardiac arrhythmia, cognitive impairment, death

Implications: Methods of Prevention

- Circuit Party Industry
 - Continued distribution of condoms and materials
 - Train club and circuit promoters to serve as an informational resource and referral system
- internet sites and electronic ticket outlets
 - embedded windows
 - pop up screens
- local club magazines and email chains
 - Distribute prevention and treatment materials