

Alcohol and HIV Risk Behaviors

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Objectives

- Methodological Issues in Alcohol Use and Sexual Risk Research
- Approaches to Investigating the Connection of Alcohol and Sexual Risk
- Event Level Analysis: A Daily Diary Study
- A Conceptual Model of Alcohol Use in Sexual Situations
- Interventions Strategies and Conclusions

The Relations Between Alcoholic Indulgence and Venereal Disease: JAMA 1901

- “Of all the infectious diseases, there is none so easily and surely avoidable...as the venereal diseases.”
- “Alcohol increases sexual desire, while it blunts the moral sense and lowers the power of resistance...It increases indifference to the results of intercourse and carelessness in their prevention.”

JAMA 1901

Gonorrhea: 114 cases

1 in state of “chronic alcoholism”

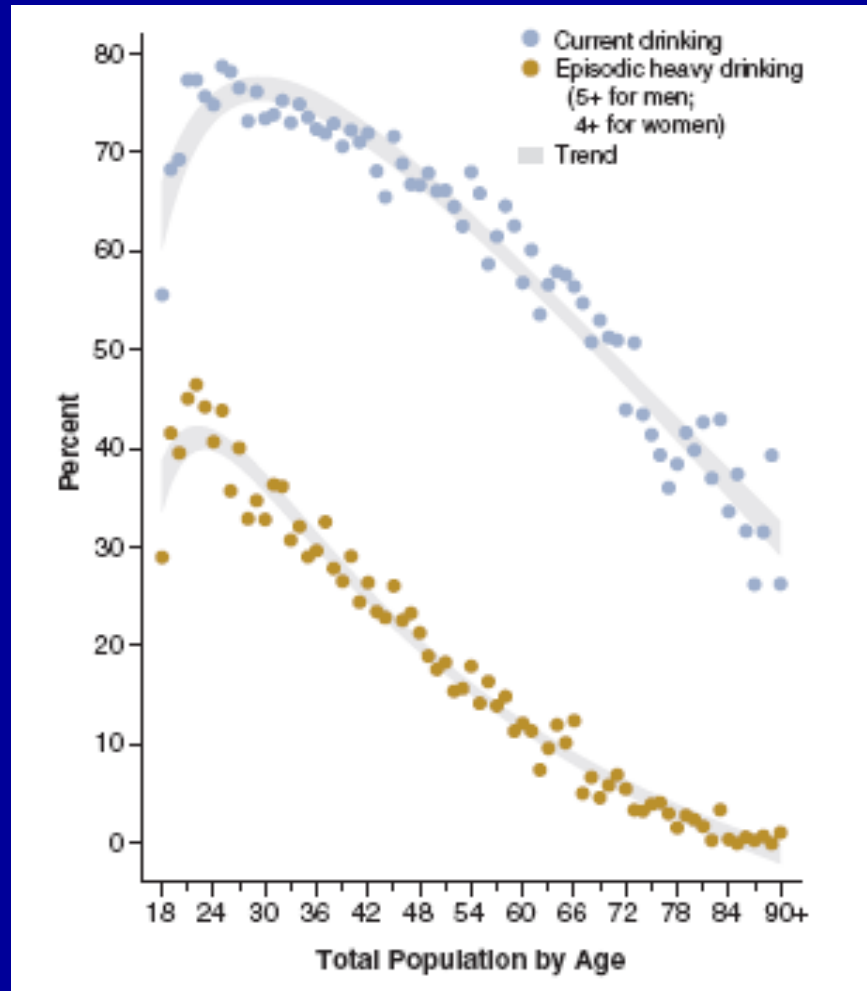
12 in “acute alcoholic intoxication”

42 in “mild alcoholic stimulation”

59 in “state of sobriety”

“It is properly not contended that the infecting coitus would not have taken place in all instances in the absence of alcoholic indulgence, but it seems likely that it would not have occurred in most instances, and that in those instance in which it had taken place precautionary measures would otherwise have been adopted.”

Current Drinking and Episodic Heavy Drinking by Age



NESARC 2001-2002

Two Fields: Alcohol and Sexual Risk Research

- Measurement issues
- Study design: observational
- Self-report validity
- Heterogeneous Risk Populations

- The precise relationship between alcohol and sexual risk is unclear

Measures

- Any Alcohol
- Quantity/Frequency
- Specific Situation Use
- Problem Drinking
(binge, intoxication,
DSM disorder,
weekly)
- Any unsafe
intercourse
- Frequency of Unsafe
intercourse
- New Partner
- Number of Partners
- STI

Methodological Approaches to Investigating the Connection of Alcohol and Sexual Risk

- Global Association
- Situational Covariation
- Event level Analyses

Event-Level Association

- A specific event of drinking prior to sex is paired with an event of unprotected sex occurring that same day
 - Single, multiple, daily diary
 - Daily diaries reduce recall errors and biases (Tennen & Affleck, 1996)
 - **Research Support**
 - Little published using event level studies among HIV-positive individuals in the U.S. or Africa
 - One single-event study among HIV-positive individuals in the U.S. found a positive association (Kalichman et al., 2002)
 - Results from event level studies among HIV-negative individuals in the U.S. have been mixed (e.g.; Dermen & Cooper, 2000; Fortenberry et al., 1997; Gilmore et al., 2002; Vanable et al., 2004; Weinhardt et al., 2001)

Psychological Mechanisms

- **Alcohol expectancy theory** (Goldman, Del Boca, & Darkes, 1999)
 - *Sex-Risk Expectancies*
 - Alcohol leads to unprotected sex only for individuals who believe that alcohol makes them more likely to have unprotected sex
 - Expectancies moderate:
 - alcohol-unprotected sex association (e.g, Corbin & Fromme, 2002; Dermen & Cooper, 2000; Dermen et al., 1998)
 - alcohol-motivation to use condoms association (Gordon et al., 1997; Maisto et al., 2004)

Psychological Mechanisms

- **Alcohol myopia** (Steele & Josephs, 1990)
 - Some behaviors involve an inhibition conflict—both instigatory and inhibitory cues
 - Alcohol reduces cognitive processing capability and so instigatory cues (sexual arousal) become more salient than inhibitory cues (evaluations of using condoms)

Sensation Seeking

- Adventurous and Stimulating Experiences
- Meta-analysis of 53 studies that examine correlates of sexual risk behavior, SS accounts for 64% of observed personality effects on number of partners, first-time partners, frequency unprotected sex
- SS is also robustly associated with alcohol use

Hoyle et al., 2000

Implied Causal Association

Is unprotected sex more likely to occur when alcohol is consumed?

- Daily diary methods are appropriate to investigate this question

South African HIV-Positive Sample, Daily Diary Study Methods

■ Participants

- 82 sexually active HIV-positive individuals who drink alcohol (24 men, 58 women), average age 32, Xhosa
- Recruited from HIV Clinics & Support Groups in Cape Town



South African HIV-Positive Sample, Daily Diary Study Methods

■ Procedures

- Participants were called by an interviewer everyday between 1 – 6 pm for 6-weeks
- The interview consisted of a 6-12 min. duration structured daily diary phone interview

■ Adherence to daily protocol

- 3,035 of the possible 3,396 (89.37%) daily interviews were completed



Measures

Structured Daily Diary

- Daily alcohol consumption (Carney et al., 2000)
 - Number of drinks consumed last night and today
 - 0-15 and 16 or more
- Unprotected sexual behavior (Kiene et al., 2006)
 - Number of times had vaginal and anal sex last night and today
 - Number of times a condom was used during sex last night and today
 - For each time period: partner type (casual or steady), perceived partner serostatus (positive or negative/unknown), whether alcohol was consumed prior to sex (y/n)

Measures

Baseline Questionnaire

■ Sex-risk Related Alcohol Outcome Expectancies

(Dermen & Cooper, 1994)

- 6 items sexual disinhibition
 - *When I'm having sex after I've had a few drinks, I can only think of what is going on in the moment.*
- 2 items sexual risk taking
 - *I am less likely to ask a partner to use a condom after having a few drinks.*
- 1 (*strongly disagree*) to 7 (*strongly agree*) scale
- In the present sample $\alpha = .84$

HIV-positive South African Sample

Among the 82 participants over the 42 days. . .

■ Evening

- 3,060 unprotected vaginal sex acts (M=2.01 pp pd, SD=1.23)
- 10,475 drinks consumed (M=6.13 pp pd, SD=3.71)

■ Daytime

- 1,007 unprotected vaginal sex acts (M=1.62 pp pd, SD=.93)
- 5,754 drinks consumed (M=4.93 pp pd, SD= 3.73)

Comparison of Global and Event Level Findings

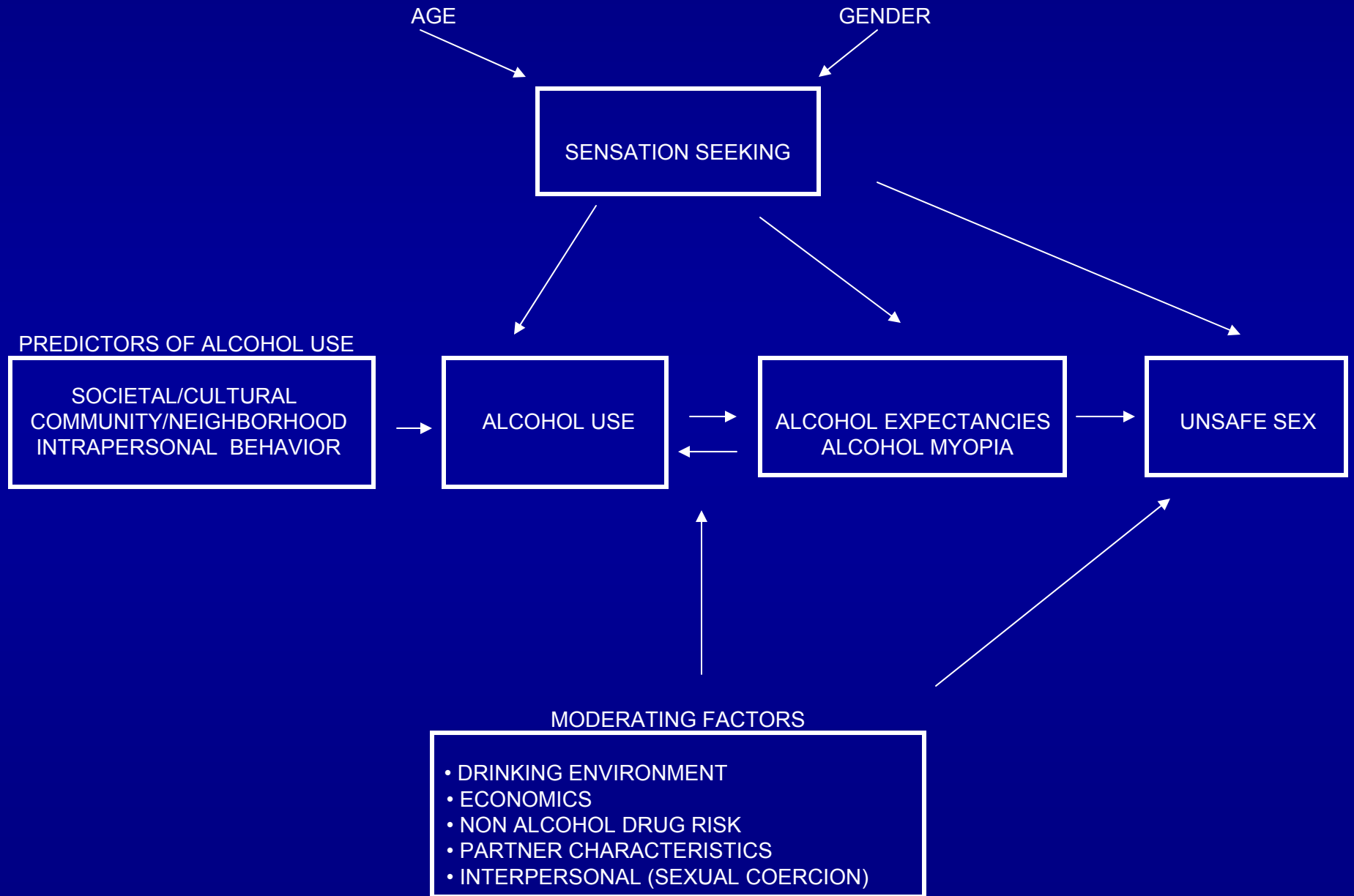
- **Data from the 42-days were aggregated**
 - Those who drank more and drank more frequently had more unprotected sex
- **Event-level data**
 - Consuming alcohol prior to sex and consuming greater quantities of alcohol in this context increased both the proportion of subsequent acts that were unprotected and increased the total number of unprotected sex acts that occurred
 - Alcohol outcome expectancies and inhibitory cues moderated these associations under certain circumstances.

General Discussion

- **Public health implications**

- Nearly 4,000 unprotected sex occurred among the 82 participants over 42 days,
 - 58% of which were with partners perceived to be HIV-negative or HIV-serostatus unknown
 - Using average likelihood of infection rates from the Rakai, Uganda Seroconversion Trial (Wawer et al., 2003) suggests that **11 people who were HIV-negative or HIV-status unknown became infected with HIV during the study**
- Need for widespread prevention efforts to help individuals who are living with HIV reduce their sexual risk behavior

CONCEPTUAL MODEL



Plausible Intervention Strategies

- Cognitive or Motivational Counseling can address expectancies that alcohol enhances sexual outcomes
- Counseling directed at alcohol use reduction, unrelated to sexual risk-taking, may have indirect effects on sex outcomes
- No RCT has shown that reducing alcohol leads to reduced sexual behavior/STI risk

CLINICAL CONCLUSIONS

- Alcohol Use is common and modifiable
- Alcohol use rarely addressed as part of STI/HIV prevention strategy
- Clinicians need to screen for alcohol problems
- Attention to alcohol in HIV/STI testing sites and Family Planning clinics where focus is usually on a single health issue
- Community-based alcohol interventions (taxes, outlet numbers, campus bans) plus individual sex risk interventions may be most potent