

# A personality- matched approach to the treatment and prevention of substance misuse

Sherry H. Stewart, Ph.D.

Professor of Psychiatry, Psychology, and Community  
Health and Epidemiology,  
Dalhousie University

# Acknowledgements

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## ■ Collaborators

- Dr. Patricia Conrod, University of Montreal
- Dr. M. Nancy Comeau, Dalhousie University
- Drs. Robert Pihl & Maurice Dongier, McGill University,
- Dr. Christopher Mushquash, Lakehead University

# Motivational Model of Substance Abuse Risk (Conrod, Pihl, Stewart, & Dongier, 2000)

*Differences in functioning of four theorized brain motivational systems:*

- specific “vulnerability profiles”
- risk for addictive and non-addictive psychopathology
- different motives for substance use
- differential sensitivity to drug reinforcement

# Reinforcing effects of Drugs of Abuse

## *Negative Reinforcement*

anxiety reducing (anxiolytic)

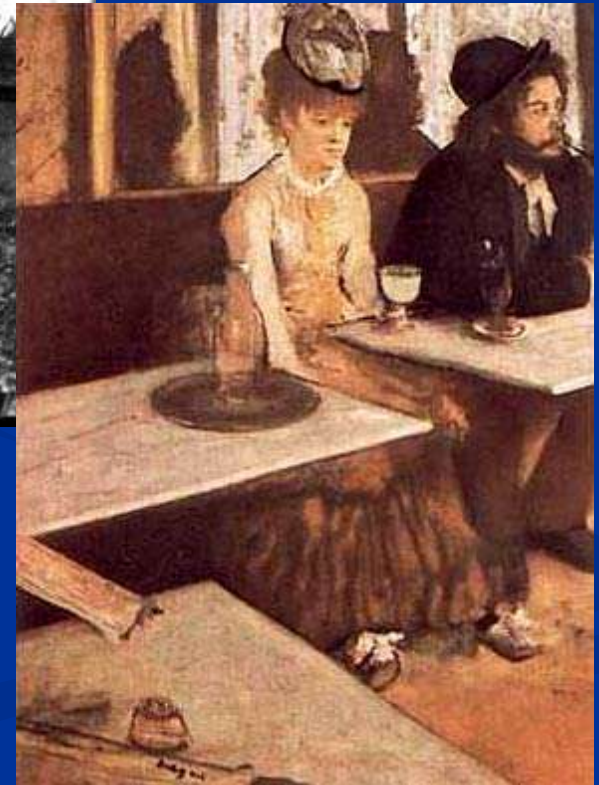
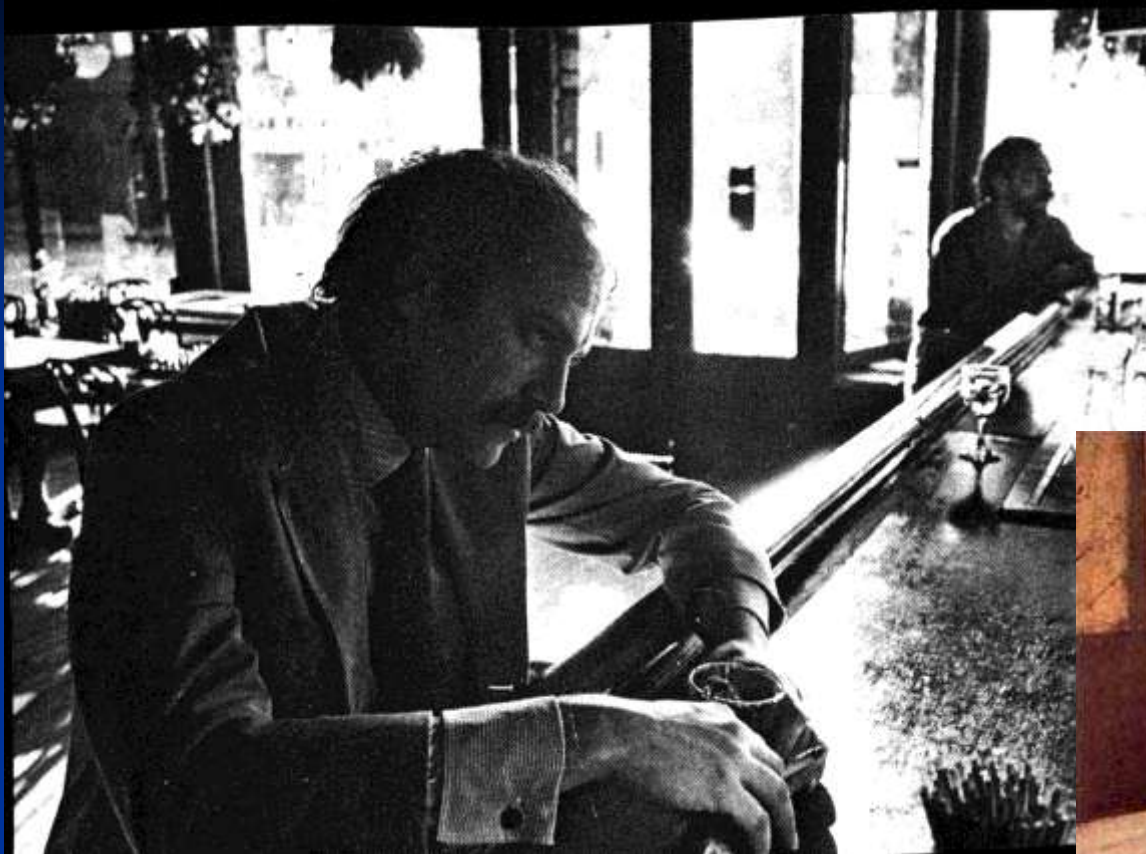
pain reducing (analgesic)

## *Positive Reinforcement*

psycho-stimulant

# Anxiety Sensitivity





Hopelessness-  
Introversion

# Sensation Seeking



# Impulsivity





# Motivational Theory of Substance Abuse Vulnerability

*Conrod et al.'s  
(2000)*

<i>Motivation systems</i>	<b>GABA/ Anxiety-Fear</b>	<b>Opiate / Punishment</b>	<b>Dopamine/ Reward</b>	<b>5-HT/ Self- regulation</b>
<i>Motivational profile</i>	<b>Anxiety Sensitivity</b>	<b>Hopelessness- Introversion</b>	<b>Sensation Seeking</b>	<b>Impulsivity</b>
<i>Patterns of co- morbid psycho- pathology</i>	<b>Anxiety Disorders</b>	<b>Mood Disorders</b>		<b>Externalizing Disorders</b>
<i>Drug sensitivity</i>	<b>Alcohol + Anxiolytics</b>	<b>Alcohol + Analgesics</b>	<b>Alcohol alone</b>	<b>Alcohol + Stimulants</b>

# Initial Treatment Matching Study

- Substance abusers differentiated based on specific personality profiles will manifest different patterns of:
  - response to personality-specific interventions  
(Conrod, Stewart et al., 2000; Psych of Addictive Behaviors)

# Matching brief interventions to motivational profiles

- **Random assignment to 1 of 3 90-minute interventions:**
- (1) Motivation-matched cognitive-behavioral training (N=94)
- (2) Motivation-mismatched cognitive-behavioral training (N=97)
- (3) Film control (N=52)

# 1. **Motivation-matched intervention:**

- **Brief (90 minutes)**
- **Personalized** feedback on profile
- **Cognitive-behavioral techniques:**
  - **Hopeless-Introverted:** negative thought challenging (Beck & Young, 1985)
  - **Anxiety Sensitivity:** decatastrophizing & exposure (Barlow & Craske, 1988)
  - **Impulsive:** “stop”, “focus”, “choose” (Kendall & Braswell, 1985)
  - **Sensation Seeking:** thought challenging for boredom & stimulation

## 2. **Motivation-mismatched intervention:**

- **General** information on personality factor (no personalized feedback)
- Cognitive-behavioral techniques:
  - Anxiety Sensitivity: “stop”, “focus”, “choose”
  - Hopeless-Introverted: boredom & stimulation
  - Impulsive: decatastrophizing & exposure
  - Sensation Seeking: negative thought challenging

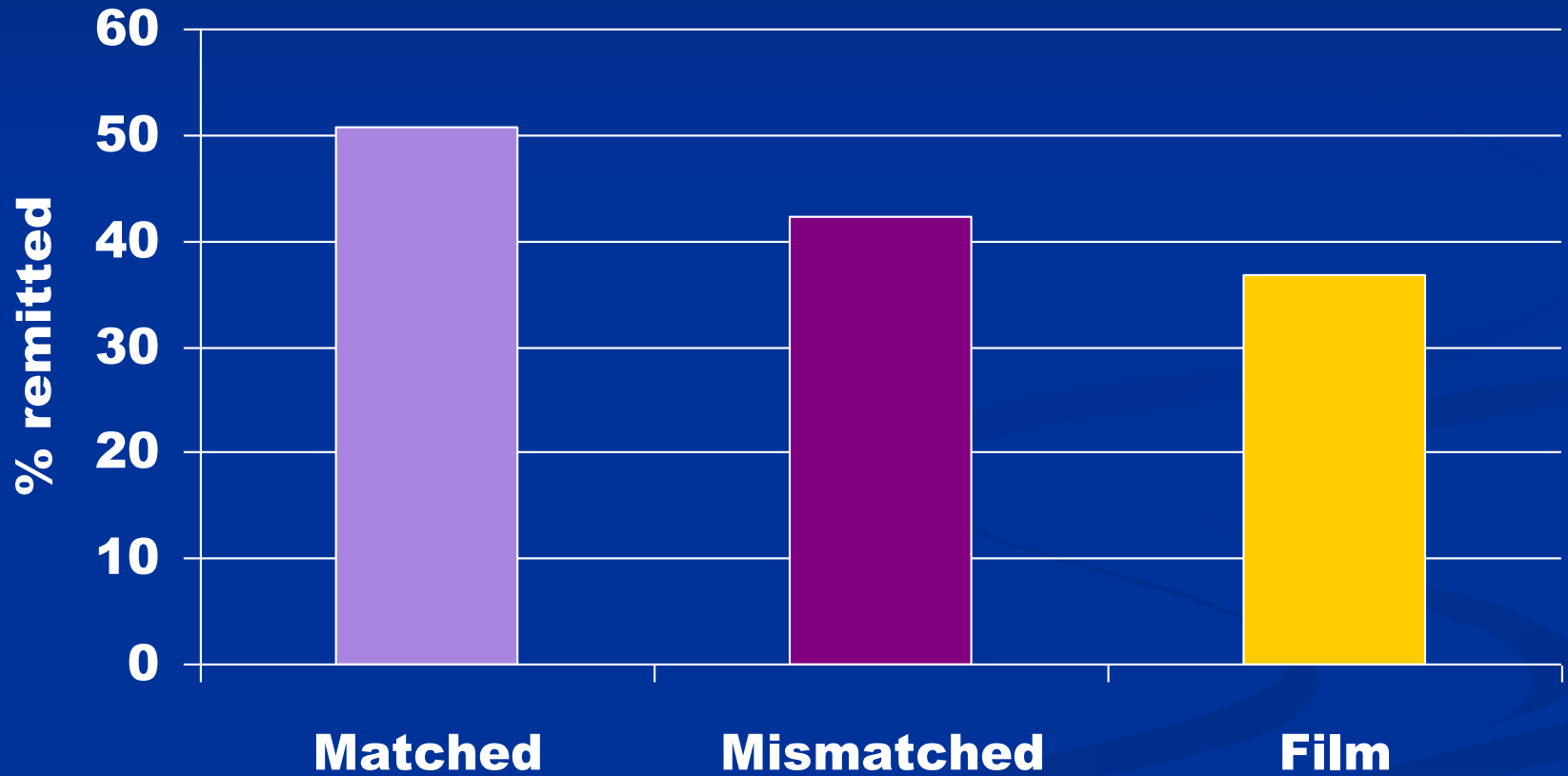
# 3. Film Control

- **Designed to enhance motivation to change substance use**
- **45-minute film on female substance abuse**
- **45-minute discussion on personal relevance of the film with therapist**

# Procedure: Follow-up

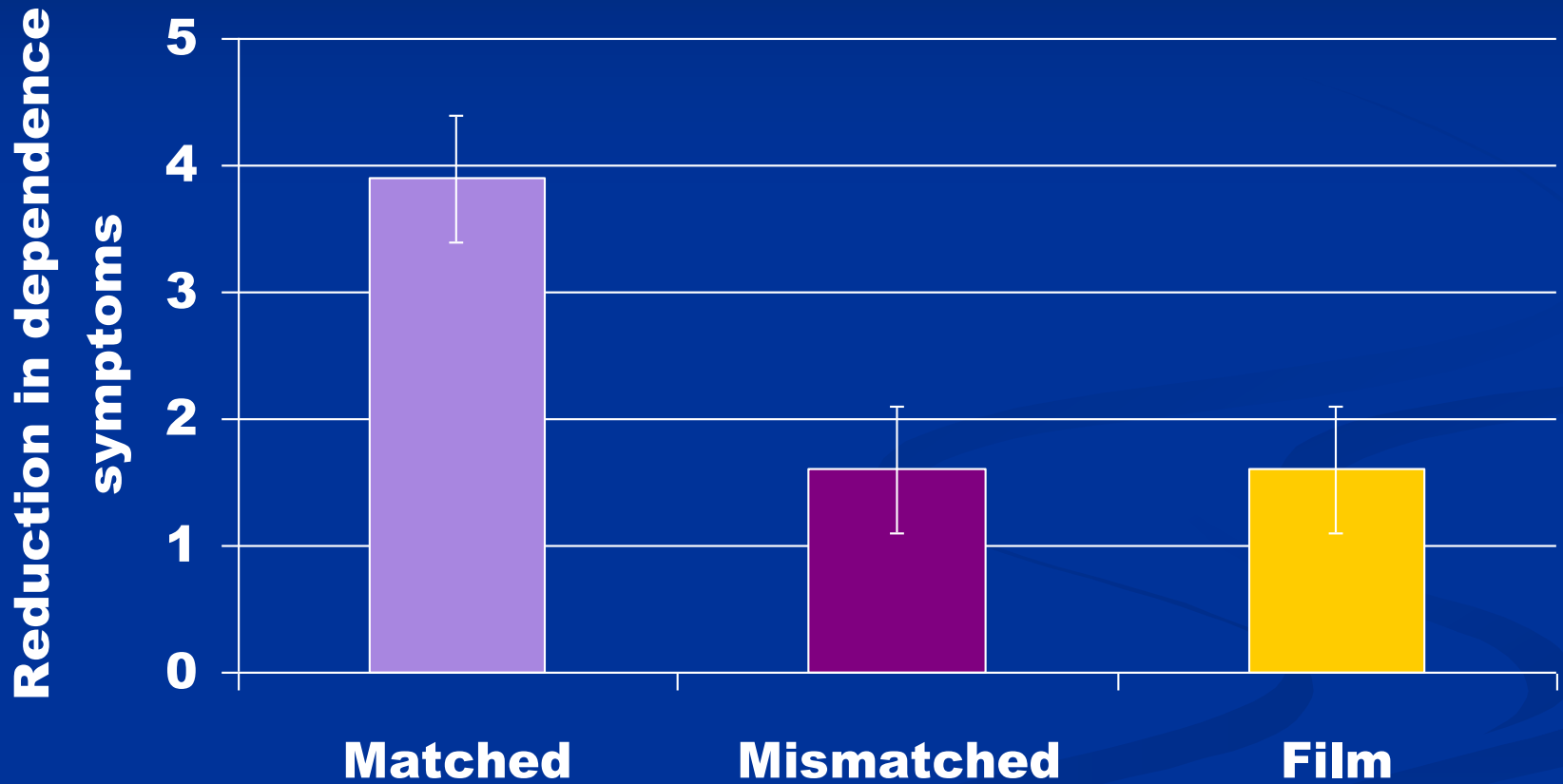
- Assessment at 6-months post-treatment
  - Telephone interview
  - Interviewer blind to subtype and intervention
  - Several substance-related outcomes assessed

# Six-months Remission Rates

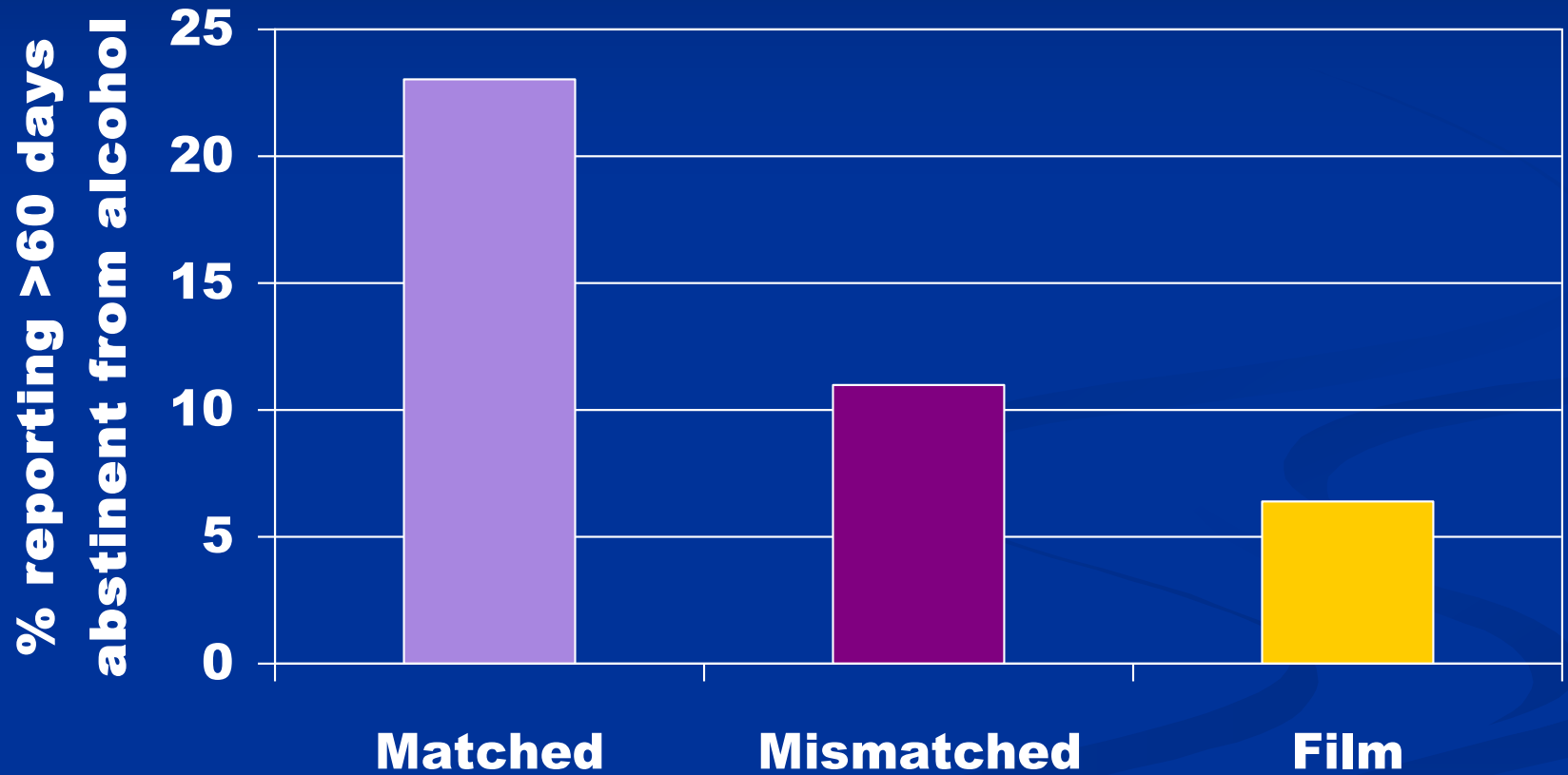




# Reduction in Dependence Symptoms



# Lengthy Abstinence from Alcohol



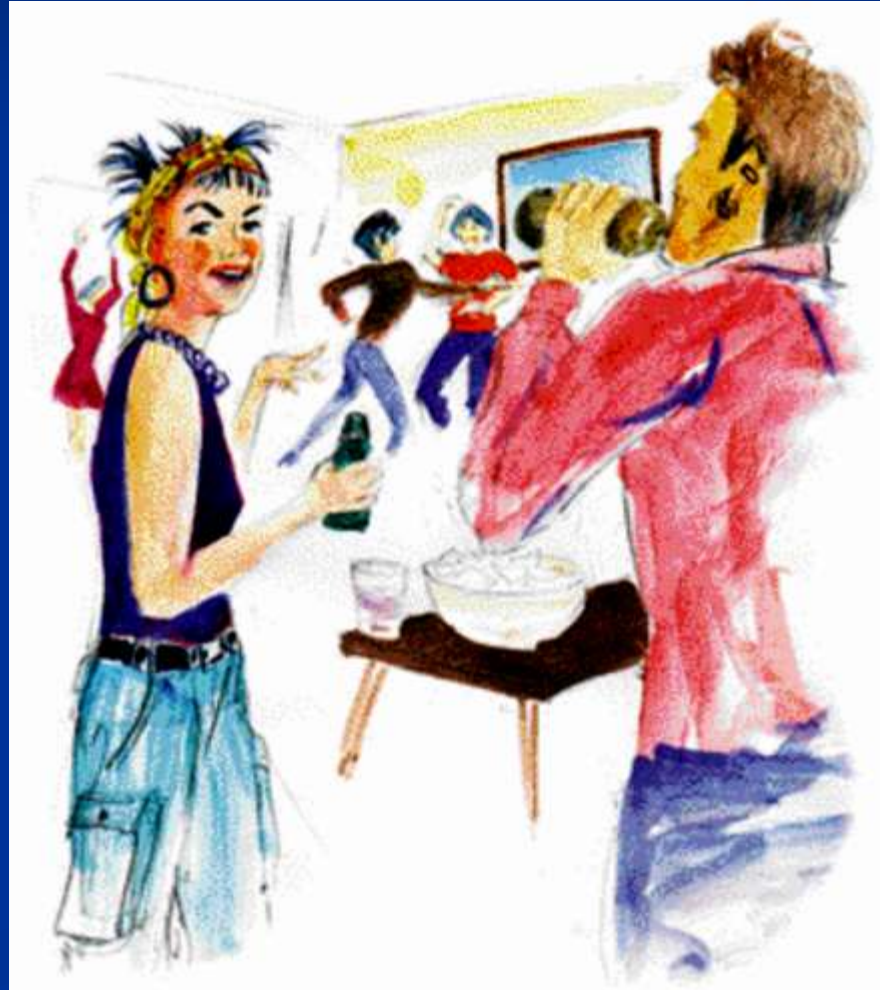
# Next Step

- Development of subtype-specific interventions to aid in the **prevention of / early intervention with alcohol/drug abuse** in high risk adolescents (Conrod & Stewart, 2005; Journal of Cognitive Psychotherapy; Conrod, Stewart, Comeau, & Maclean, 2006, Journal of Clinical Child and Adolescent Psychology)

# Background

◆ Personality-matched preventative interventions for at-risk teenage drinkers

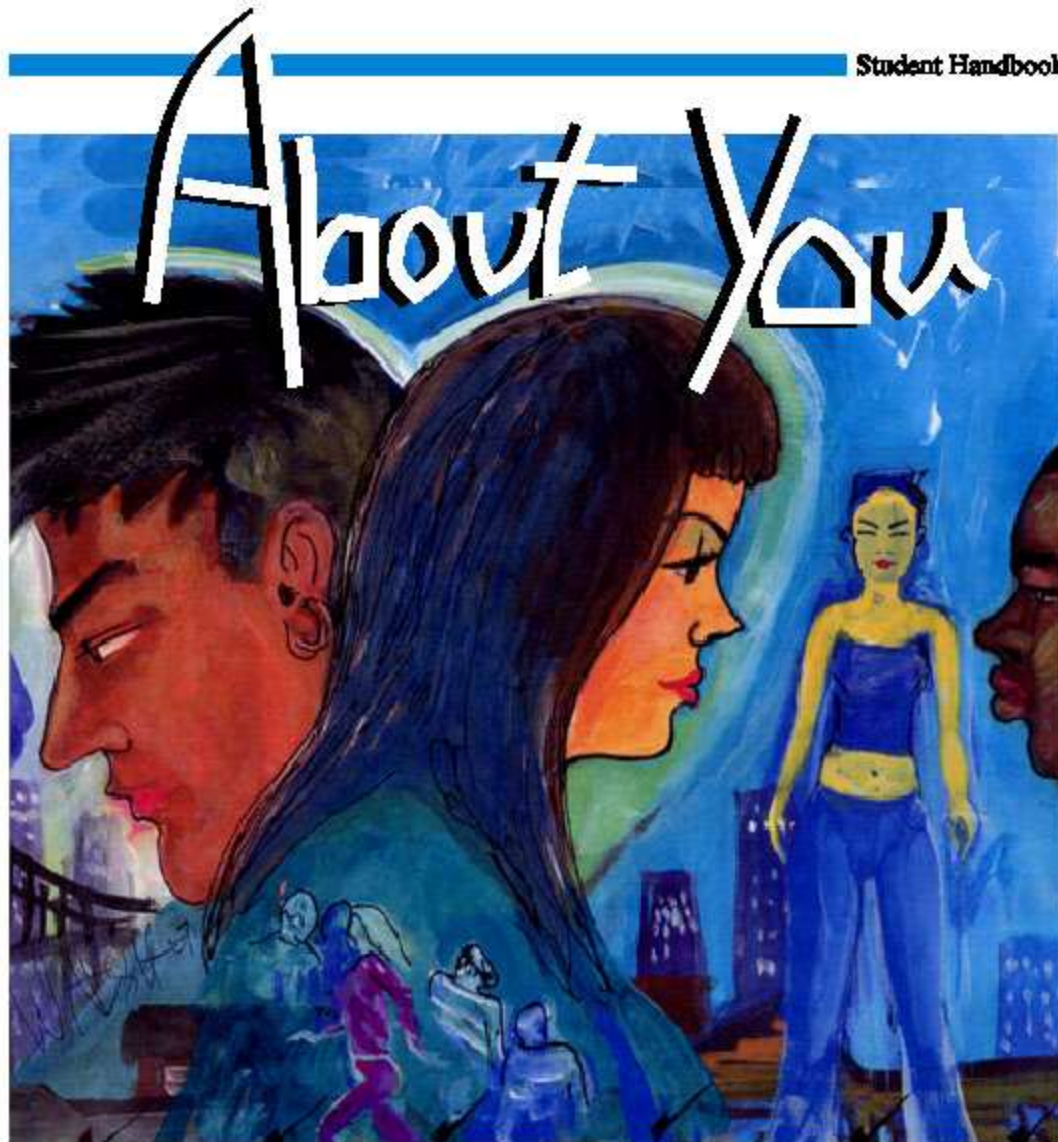
Derived from personality-matched treatments for addictive disorders in SS, AS, H-I, and IMP adults (Conrod, Stewart, et al., 2000) and questionnaires and interviews with high personality risk teens (e.g., Comeau, Stewart, et al., 2001).



# Personality Risk Factors for Alcohol Abuse in Youth

- Anxiety Sensitivity
- Sensation Seeking
- Hopelessness-Introversion





*a brief program to help teens deal with sensation seeking*

SAMPLE

# Personality-targeted interventions

- Psychoeducational Component
- Behavioral Component
- Cognitive Component
- Cognitive-Behavioral Component

# Psychoeducational Component

- Ways of Coping

Avoidance

Interpersonal  
Dependence

Distraction

Alcohol and  
Other Drugs





IDENTIFY ways of coping with sensation seeking.

7

# IDENTIFY

Write below possible things that Katie or you might do to cope with feelings of boredom and the urge for excitement in this situation.

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your notes —

99999

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name \_\_\_\_\_  
 title \_\_\_\_\_  
 Start \_\_\_\_\_  
 Feel \_\_\_\_\_  
 end \_\_\_\_\_  
 It's \_\_\_\_\_  
 from \_\_\_\_\_

# Behavioral Component



- Decisional Balancing

Consequences:  
Short Term vs.  
Long Term;  
Positive vs. Negative

## Pros and Cons of behavior

10

Behaviour has **positive** and **negative** consequences.  
Consequences are **short** and **long** term.



There are 4 squares in a decision box.

When you are bored, restless and crave excitement, you may tend to focus on actions that give you immediate relief of your restlessness and desire for more excitement.

You may look for a way of dealing with high energy that has short term, positive consequences. In other words, you tend to focus on getting immediate excitement.

There are 3 other squares to think about, though!

	Short term	Long term
Positive consequences	1	2
Negative consequences	3	4

your notes —

99999

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# Cognitive Component



- **Hot Thoughts**

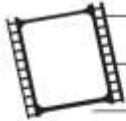
“thoughts that lead you to feel even more anxious”

Write about a recent situation in which your energy level increased and your actions got out of control or things didn't turn out like you thought they might. Imagine your situation captured on film. Write down the situation you were in. Write your physical sensations, your thoughts, and the action you took to deal with your boredom or craving for excitement.

16

Situation

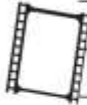
Physical  
sensations



Thoughts



ACTIONS



# Thought Challenging



# Types of Hot Thoughts



Overestimating the Possibility  
Thinking the Worst



# Cognitive-Behavioral Component 'The Five Fs'



Freeze

Frame

Focus

Find

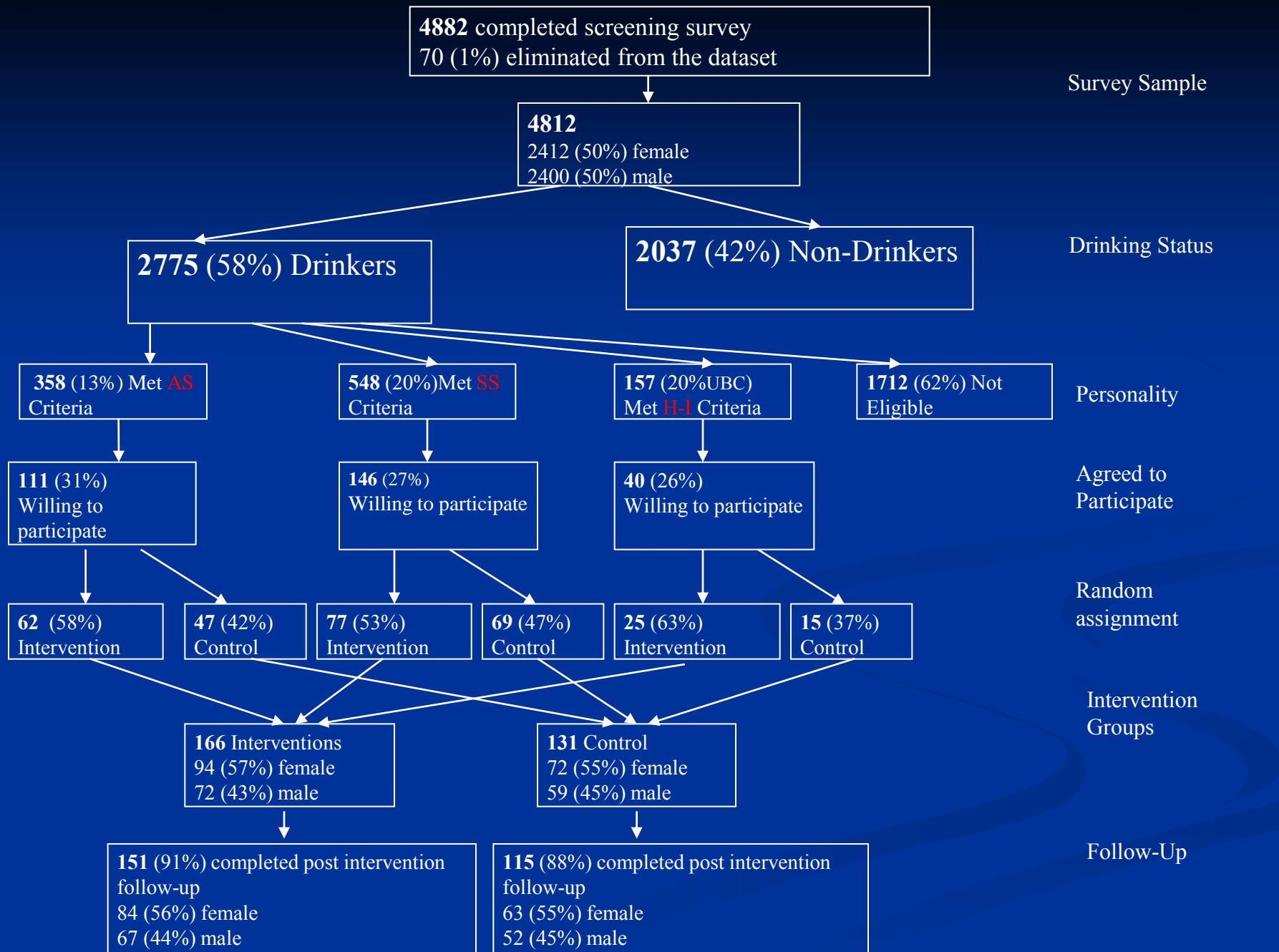
Finalize



# Randomized Controlled Trial in Schools (Conrod, Stewart, et al., 2006)

- 297 high school students (14-18 years; grades 9-12) in urban British Columbia and rural Nova Scotia who indicated:
  - drinking alcohol in the past 4 months
  - personality risk in a school-wide screening.
- Random Assignment:
  - Personality-matched interventions:
    - AS management
    - SS management
    - H-I management (BC only)
  - No intervention Control
- Outcome assessed 4 months post-intervention



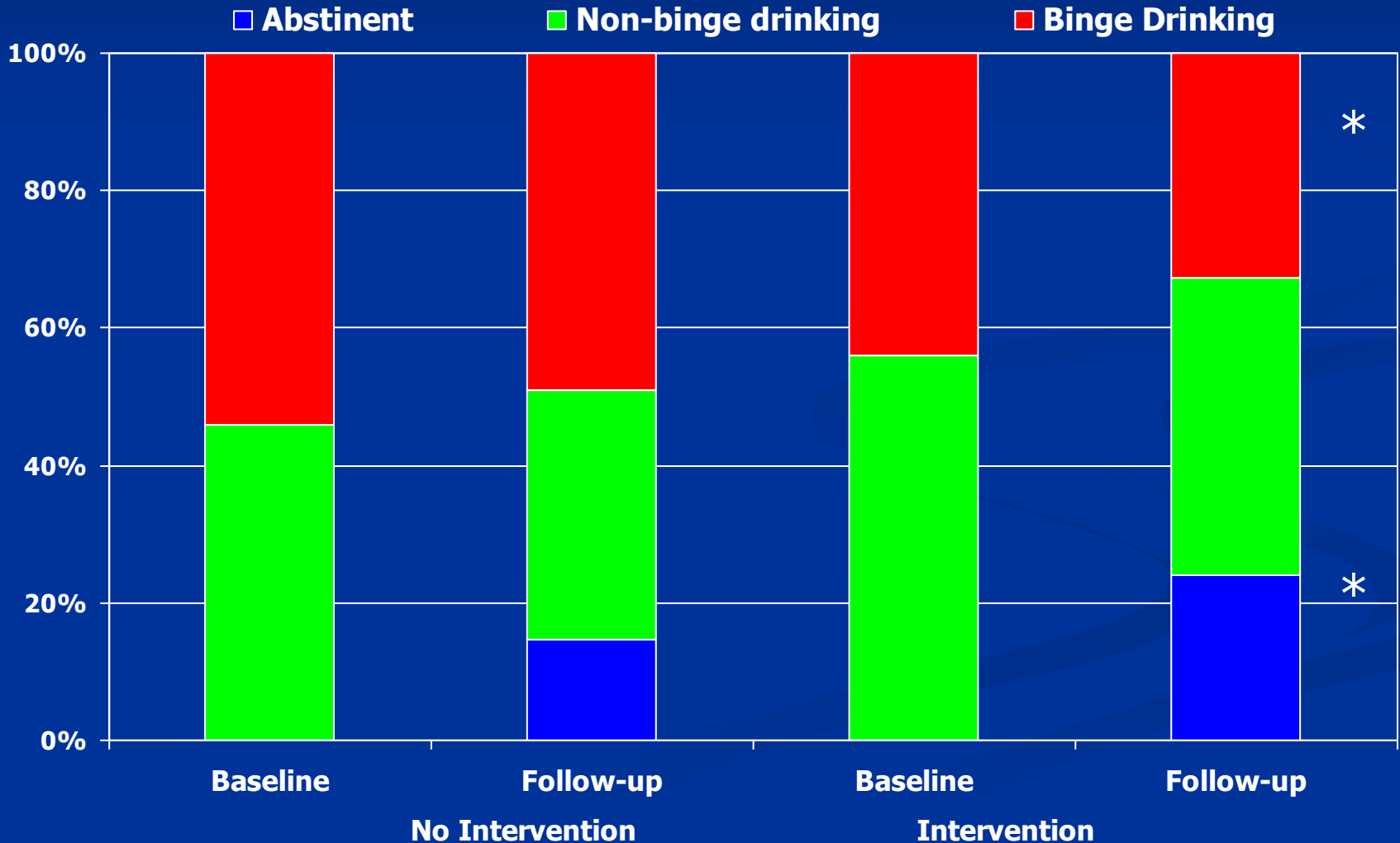


# Interventions

- ◆ 2 x 90-minute sessions at lunchtime (lunch provided)
- ◆ single gender groups
- ◆ with trained facilitator/co-facilitator
- ◆ intent-to-treat analyses

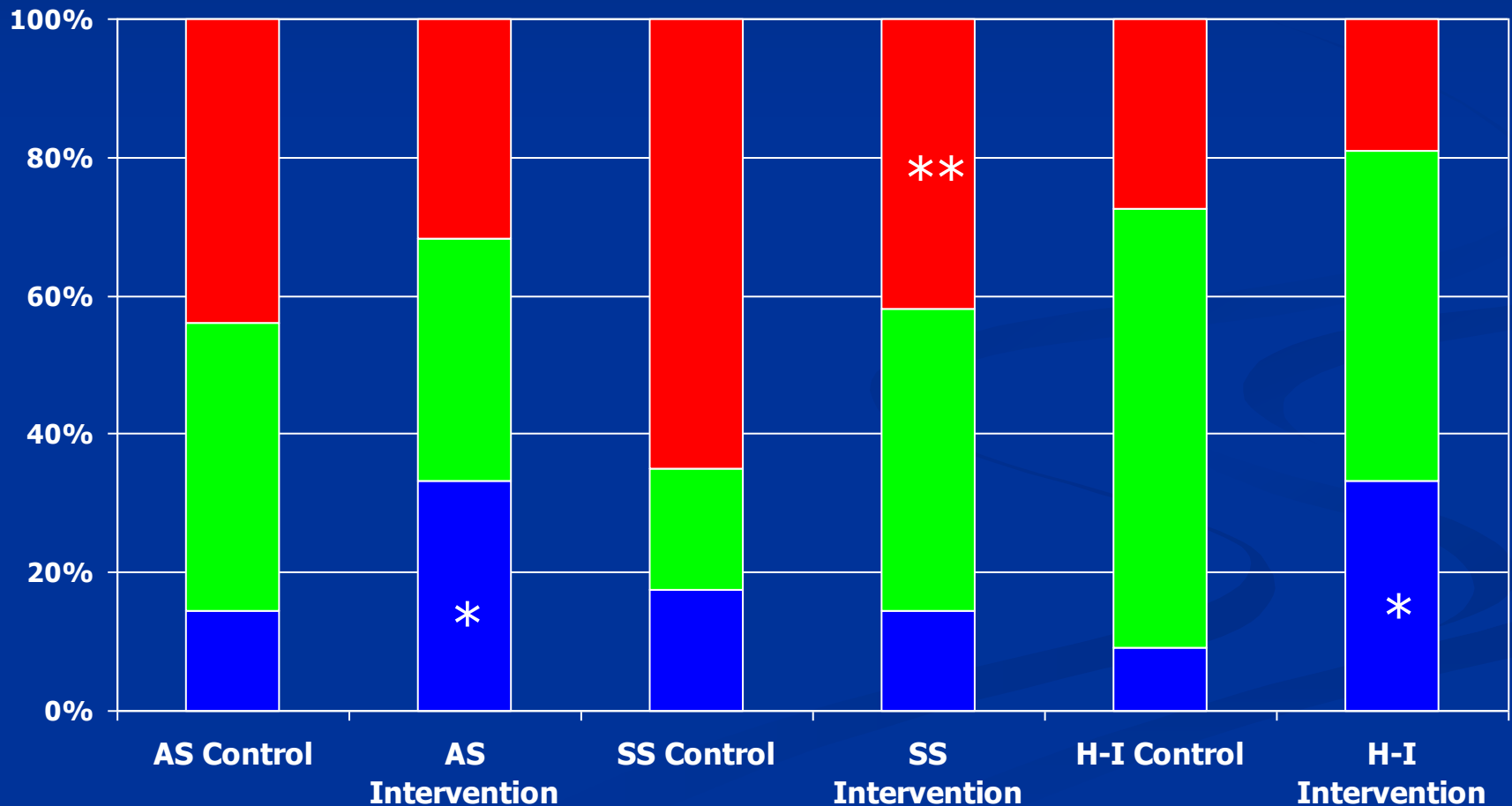


# Rates of Abstinence, Non-Binge Drinking and Binge Drinking 4-Months Prior and 4-Months After Brief Personality Matched Interventions

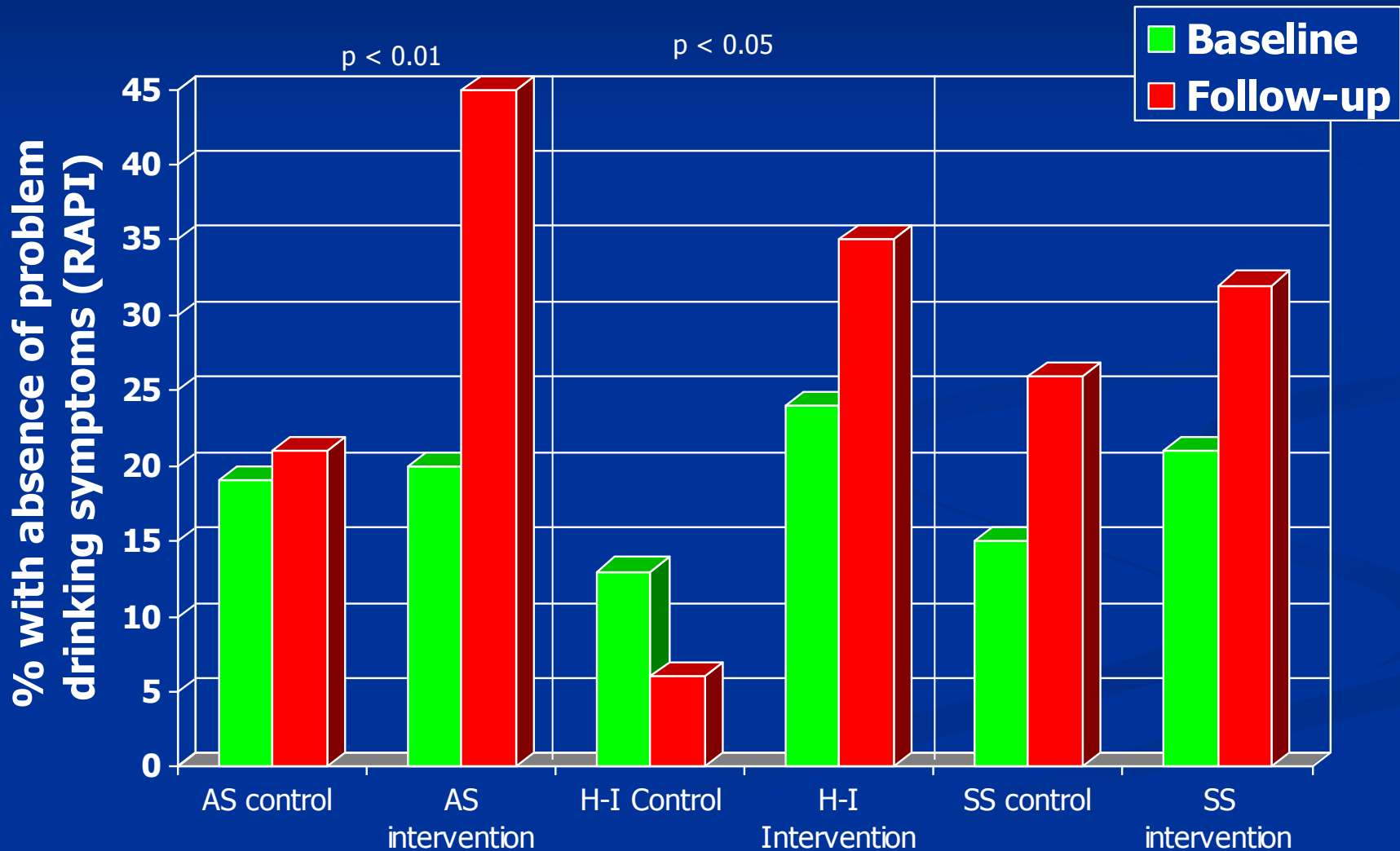


# Changes in Rates of Abstinence and Binge Drinking 4-month After Brief Interventions

- Binger
- Drinker nonbinger
- Abstinent



# Absence of Drinking Problems Intervention X Time X Group:



# Students' Responses

“I think the pictures were really good...the girl that carried a pint to school. ...It seemed realistic.”

“The manual was good. It will help me out in the future. ...I'll find ways to calm down or if I get sad I'll find ways to make so that I don't feel so bad.”

“It gave me a title to put on what my nervous feelings are. When before going to these sessions I'd be like...uh... I'm just being dumb...why do I get nervous over this?”

“It was very parallel to my real life. Next time I'm freaking out. I'll be like 'freeze'.”



# Conclusions

Brief cognitive-behavioral interventions targeting personality risk factors for alcohol abuse appear to be a promising strategy for reducing risk for alcohol abuse in youth





# More Recent Directions

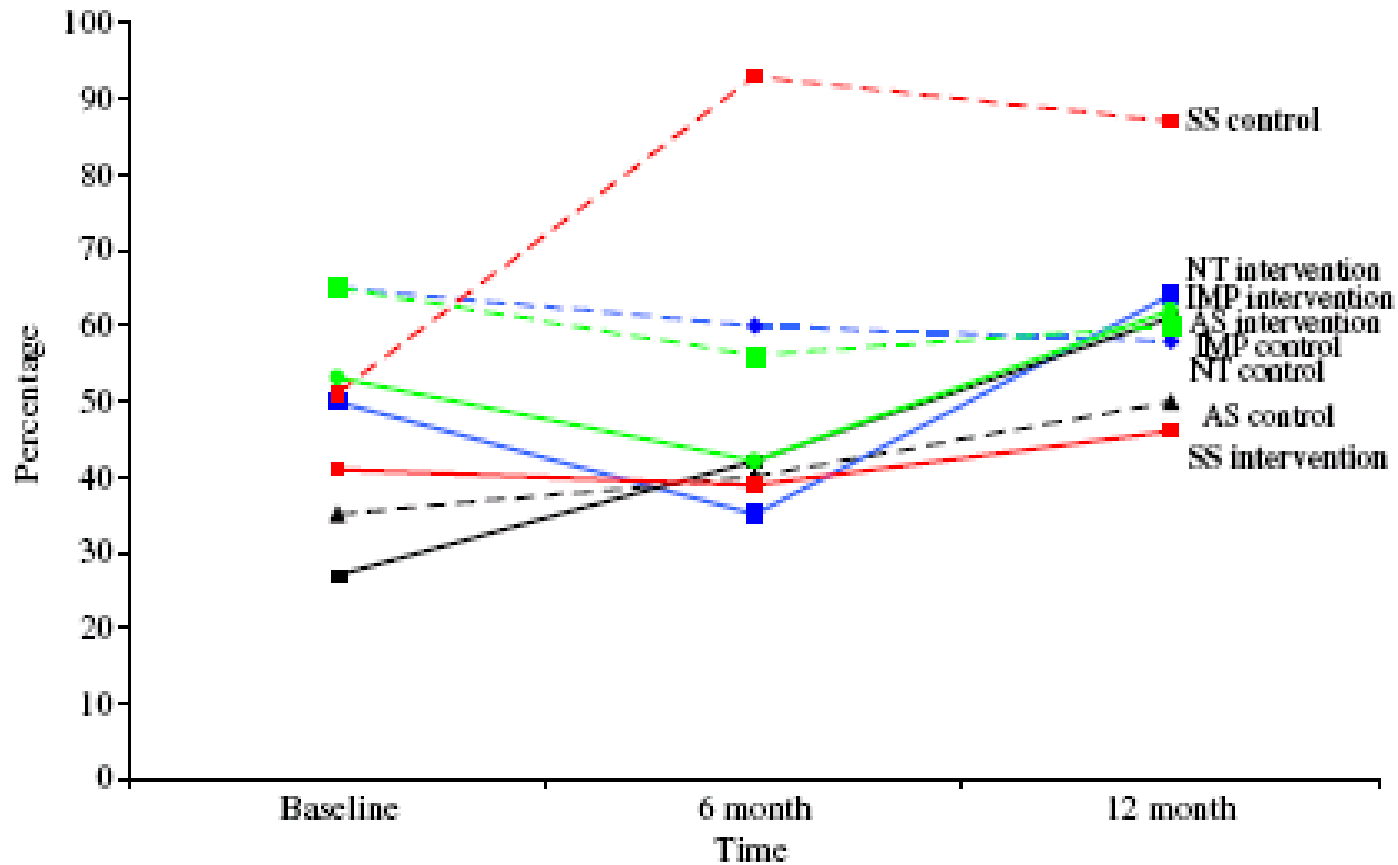
Expanding to different populations of youth:

First Nations youth in Canada  
(With Chris Mushquash and Nancy Comeau)

Urban youth in London, UK  
(Patricia Conrod's group) – Preventure  
and Adventure trials



**Can we delay growth  
in drinking?**



**Binge drinking rates (%) by personality and treatment group in those students who indicated drinking alcohol at baseline (N = 190)**

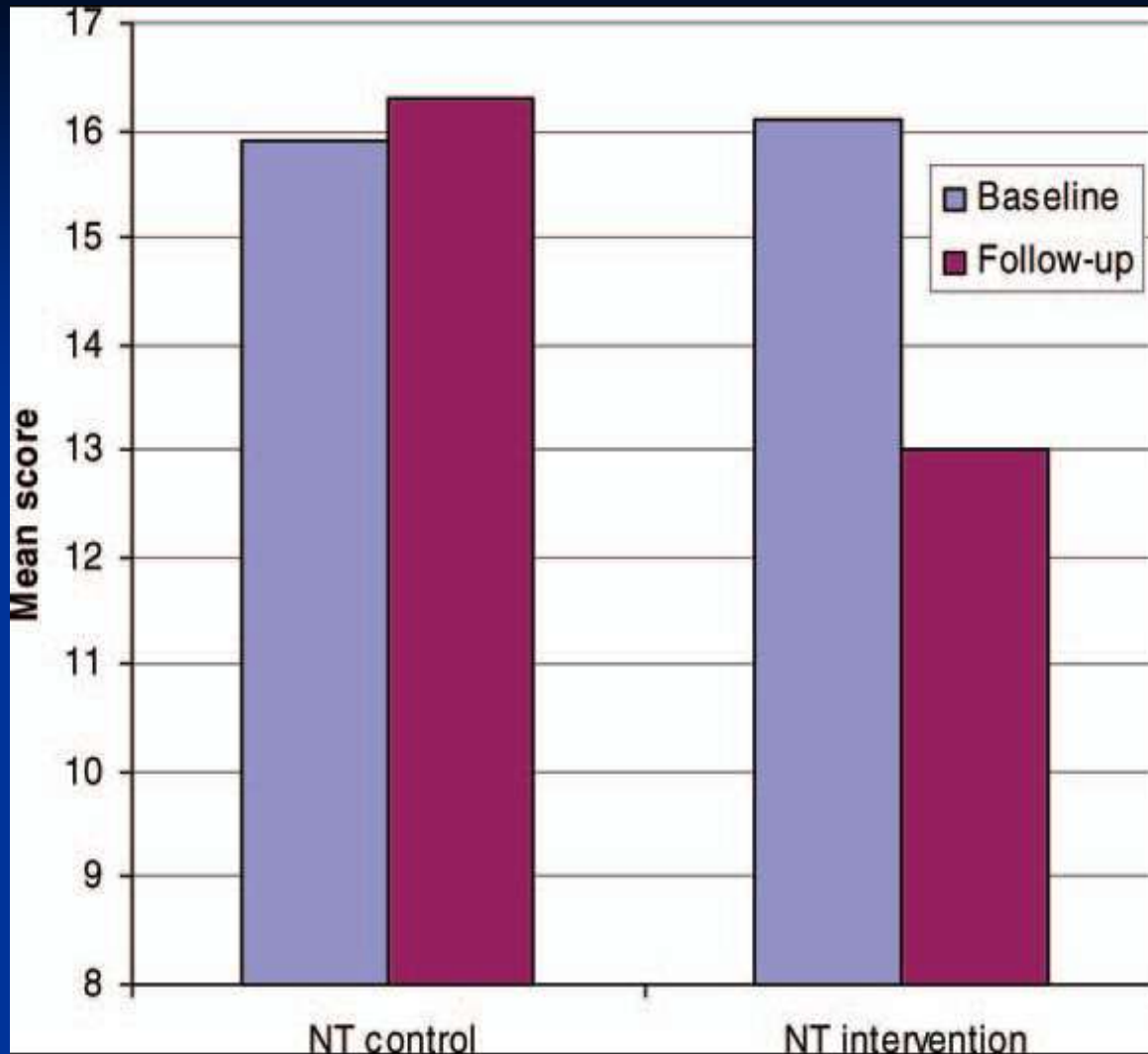
From Conrod, Castellanos, & Mackie (2008). *Journal of Child Psychology and Psychiatry*

**Are effects on drinking  
outcomes durable?**

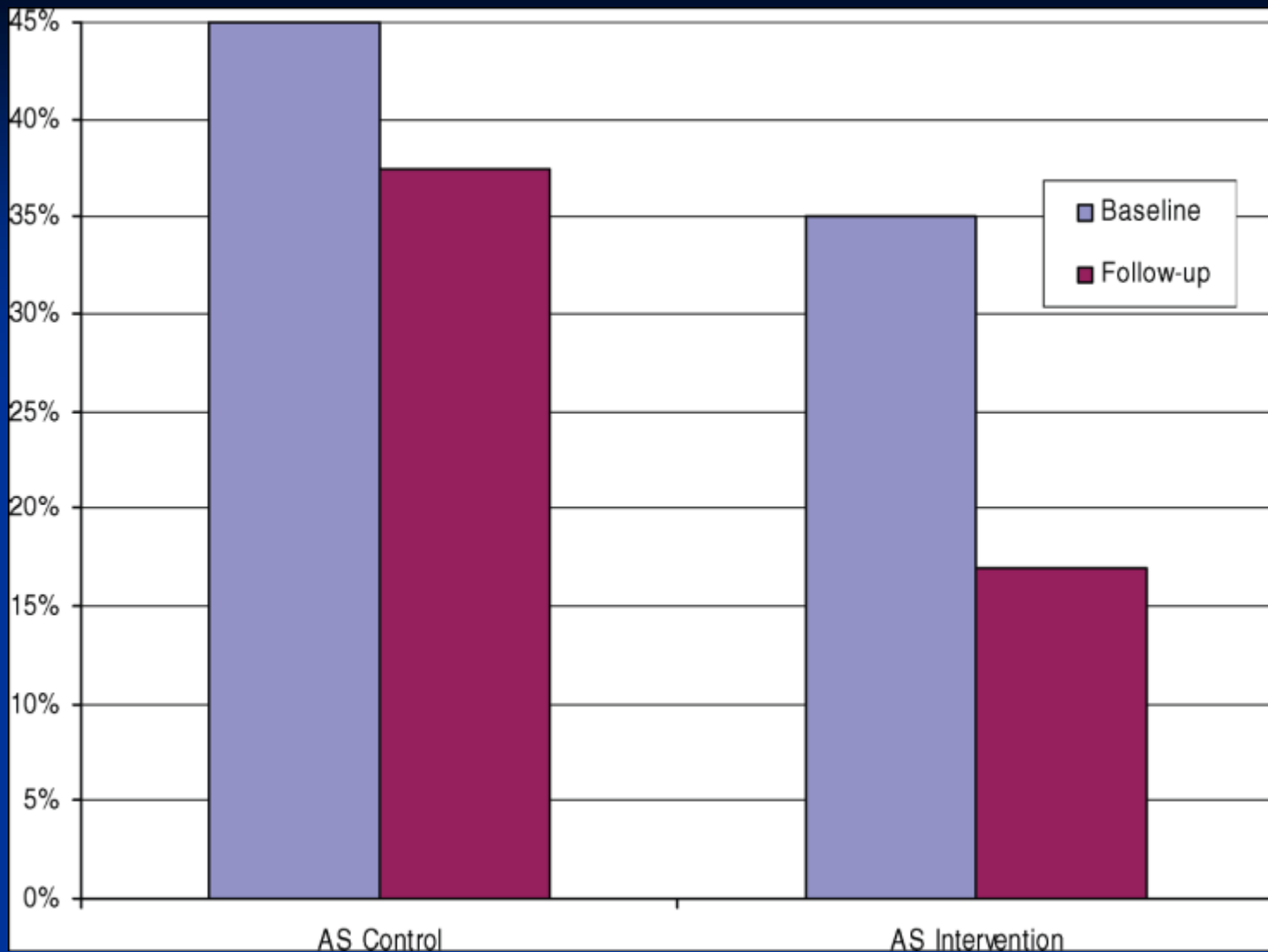
## Log-Transformed Changes in Alcohol Outcomes from Baseline to 6, 12, 18, and 24 Months Post-Intervention

Change	6 months	12 months	18 months	24 months
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
QF				
Intervention	0.49 (0.32)	0.53 (0.32)	0.56 (0.32)	0.55 (0.33)
Control	0.56 (0.33)*	0.50 (0.32)	0.59 (0.35)	0.53 (0.38)
	<i>d</i> = .12	<i>d</i> = -.09	<i>d</i> = .09	<i>d</i> = -.06
Frequency of binge drinking				
Intervention	0.14 (0.14)	0.17 (0.14)	0.20 (0.17)	0.19 (0.19)
Control	0.17 (0.14) <sup>§</sup>	0.15 (0.14)	0.18 (0.18)	0.18 (0.22)
	<i>d</i> = .21	<i>d</i> = -.14	<i>d</i> = -.11	<i>d</i> = -.05
Problem drinking symptoms				
Intervention	0.22 (0.26)	0.25 (0.27)	0.23 (0.26)	0.23 (0.26)
Control	0.31 (0.26)**	0.30 (0.29)*	0.31 (0.28)**	0.29 (0.28)*
	<i>d</i> = .35	<i>d</i> = .17	<i>d</i> = .29	<i>d</i> = .22

**Can we impact mental  
health outcomes?**

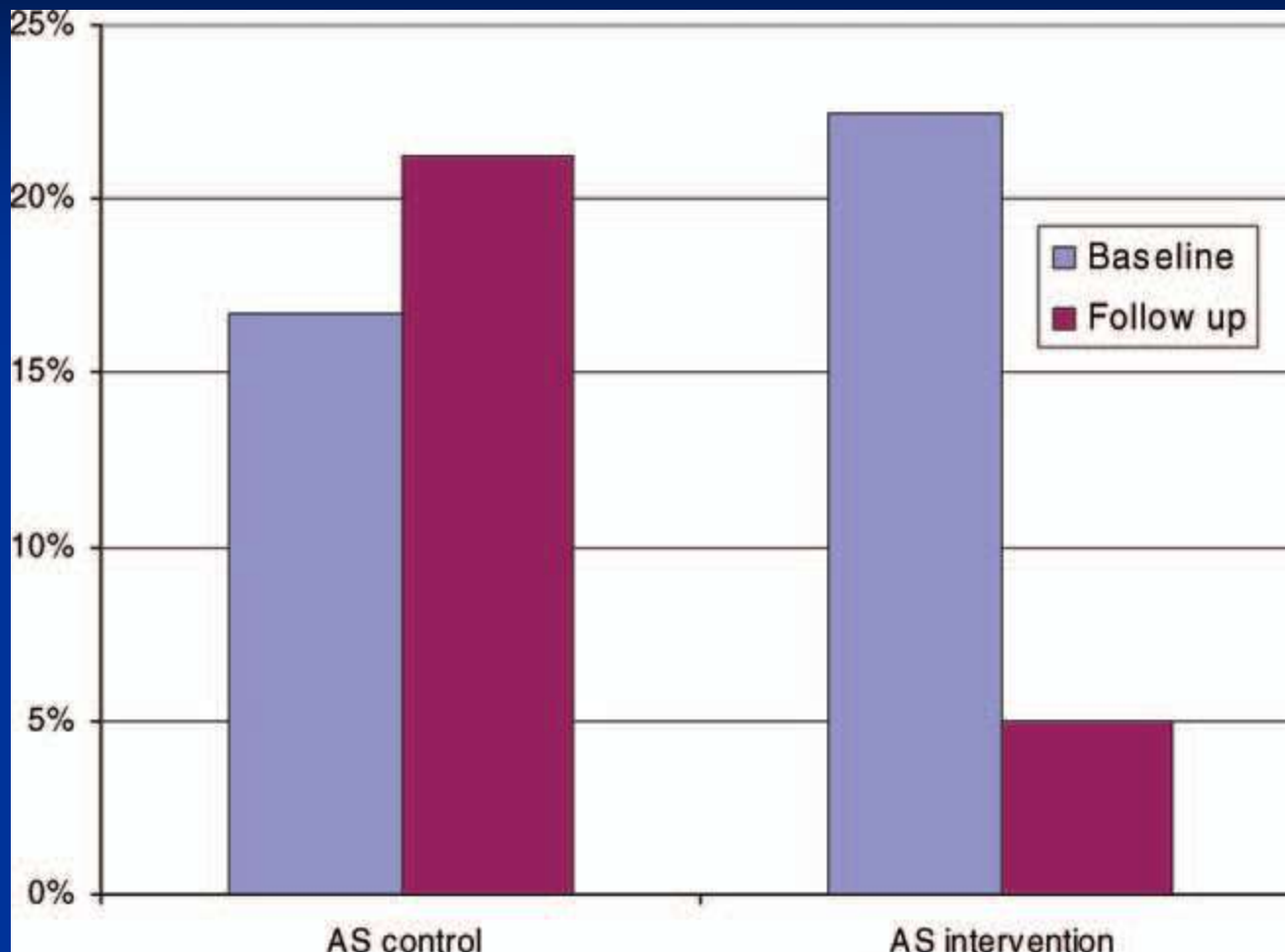


**Depression scores in NT (hopeless-introverted) students  
(from Castellanos & Conrod, 2006; Journal of Mental Health)**

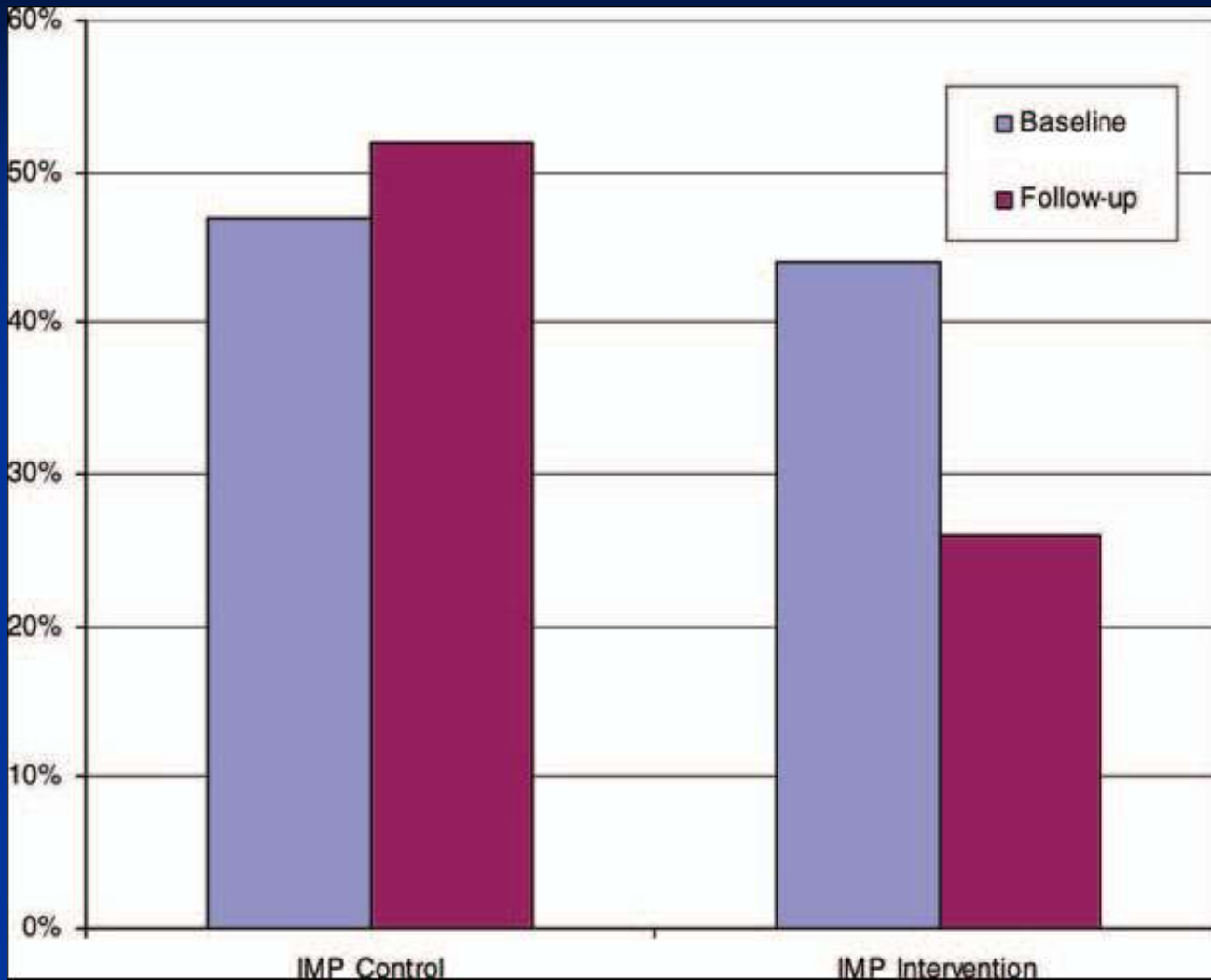


**Prevalence of panic attacks in AS students (from Castellanos & Conrod, 2006; Journal of Mental Health)**



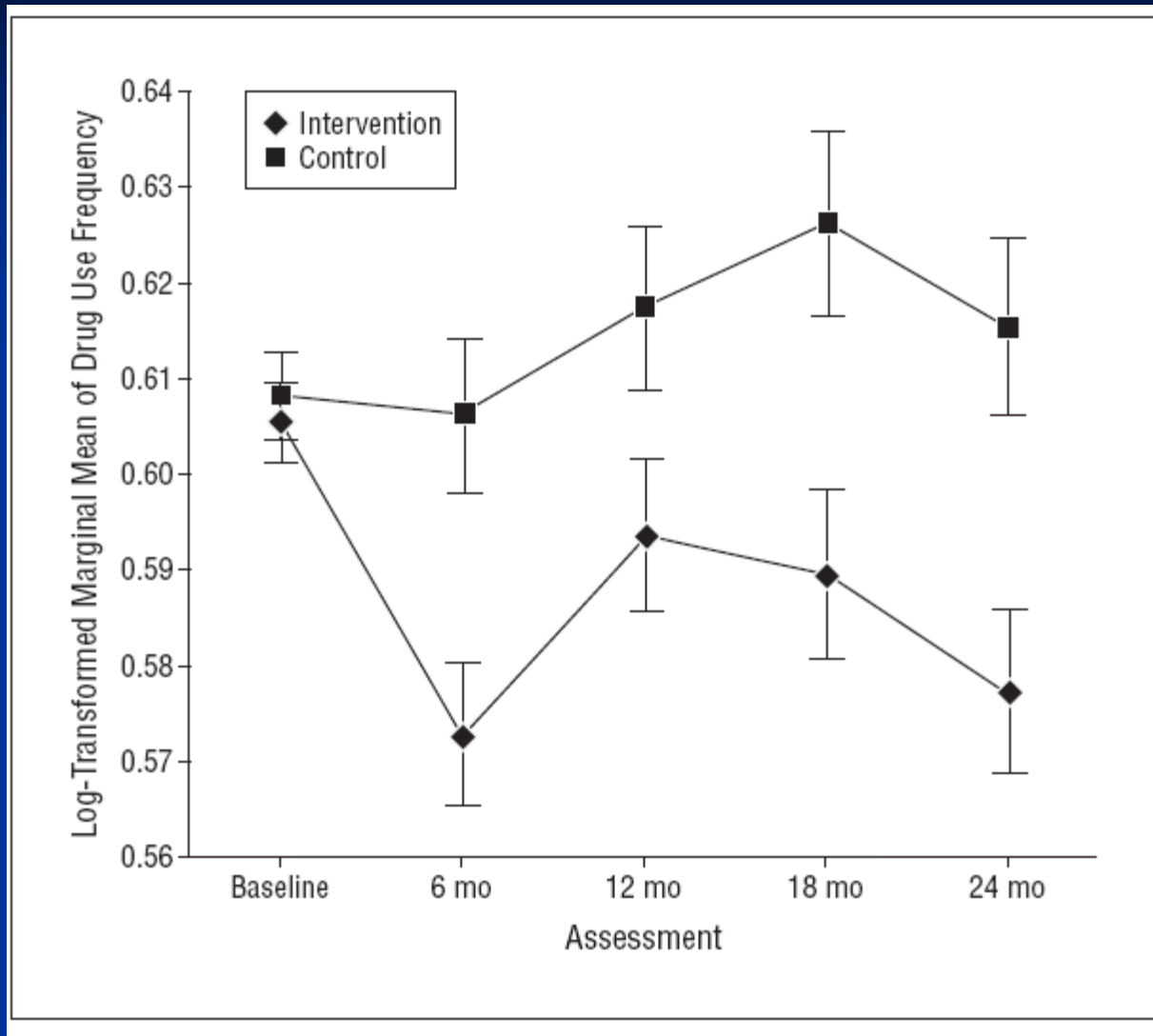


**Prevalence of school avoidance in AS students  
(from Castellanos & Conrod, 2006; Journal of  
Mental Health)**



**Prevalence of shoplifting in IMP students (from Castellanos & Conrod, 2006; Journal of Mental Health)**

**Can we impact other  
drug use?**



**Illicit drug use frequency scores in adolescents randomized to control or intervention conditions.** (from Conrod et al., 2010; Archives of General Psychiatry)

**Table 4. Time-Specific Intervention Effects on the Percentage of Adolescents Reporting Drug Use (Nonsurvival)<sup>a</sup>**

Drug Use	6 mo	12 mo	18 mo	24 mo
<b>Marijuana</b>				
Intervention	19.0	24.7	26.2	29.7
Control	17.2	26.0	31.2 <sup>b</sup>	35.3 <sup>b</sup>
OR (95% CI)	1.1 (0.6-1.8)	0.9 (0.6-1.4)	0.7 (0.5-1.1)	0.7 (0.5-1.1)
<b>Cocaine</b>				
Intervention	1.2	2.4	2.8	4.0
Control	5.9 <sup>c</sup>	10.3 <sup>c</sup>	10.2 <sup>c</sup>	13.5 <sup>c</sup>
OR (95% CI)	0.2 (0.05-0.7)	0.2 (0.1-0.5)	0.2 (0.1-0.5)	0.2 (0.1-0.5)
<b>Other drugs</b>				
Intervention	4.1	6.9	7.7	10.0
Control	6.1	11.8 <sup>b</sup>	13.2 <sup>c</sup>	16.4 <sup>c</sup>
OR (95% CI)	0.7 (0.3-1.5)	0.5 (0.3-1.0)	0.5 (0.3-0.9)	0.5 (0.3-0.9)

Abbreviations: CI, confidence interval; OR, odds ratio.

<sup>a</sup>Values for the intervention and control groups are reported as the percentage of adolescents. Intervention effects on drug use status were assessed using logistic regression analyses including sex, age, ethnicity, and drinking status at baseline as covariates. The ORs indicate the odds of reporting a drug use event at that time in the intervention group relative to the odds in the control condition, controlling for baseline covariates. An OR of 0.2 indicates 80% reduction in cocaine use rates in the intervention condition, and an OR of 0.5 indicates 50% reduction in other drug use in the intervention condition.

<sup>b</sup> $P < .10$ .

<sup>c</sup> $P < .05$ .



# Pilot Study

Open trial of culturally-adapted  
intervention in two First Nations  
Mi'kmaq communities in NS  
(Mushquash et al., 2010)

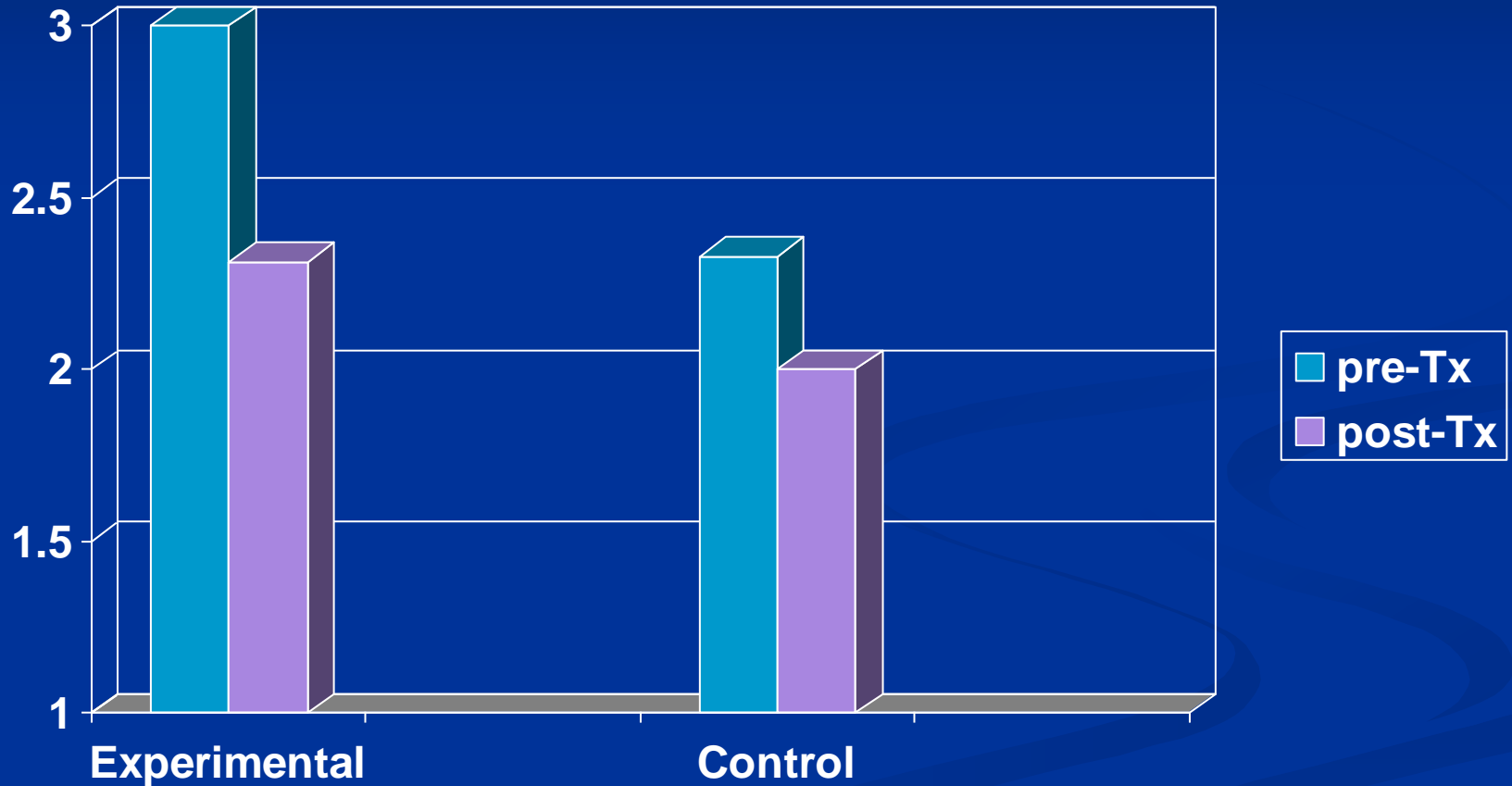
# “Nemi’simk, Seeing Oneself”



# Drinking Frequency

(1-5 scale)

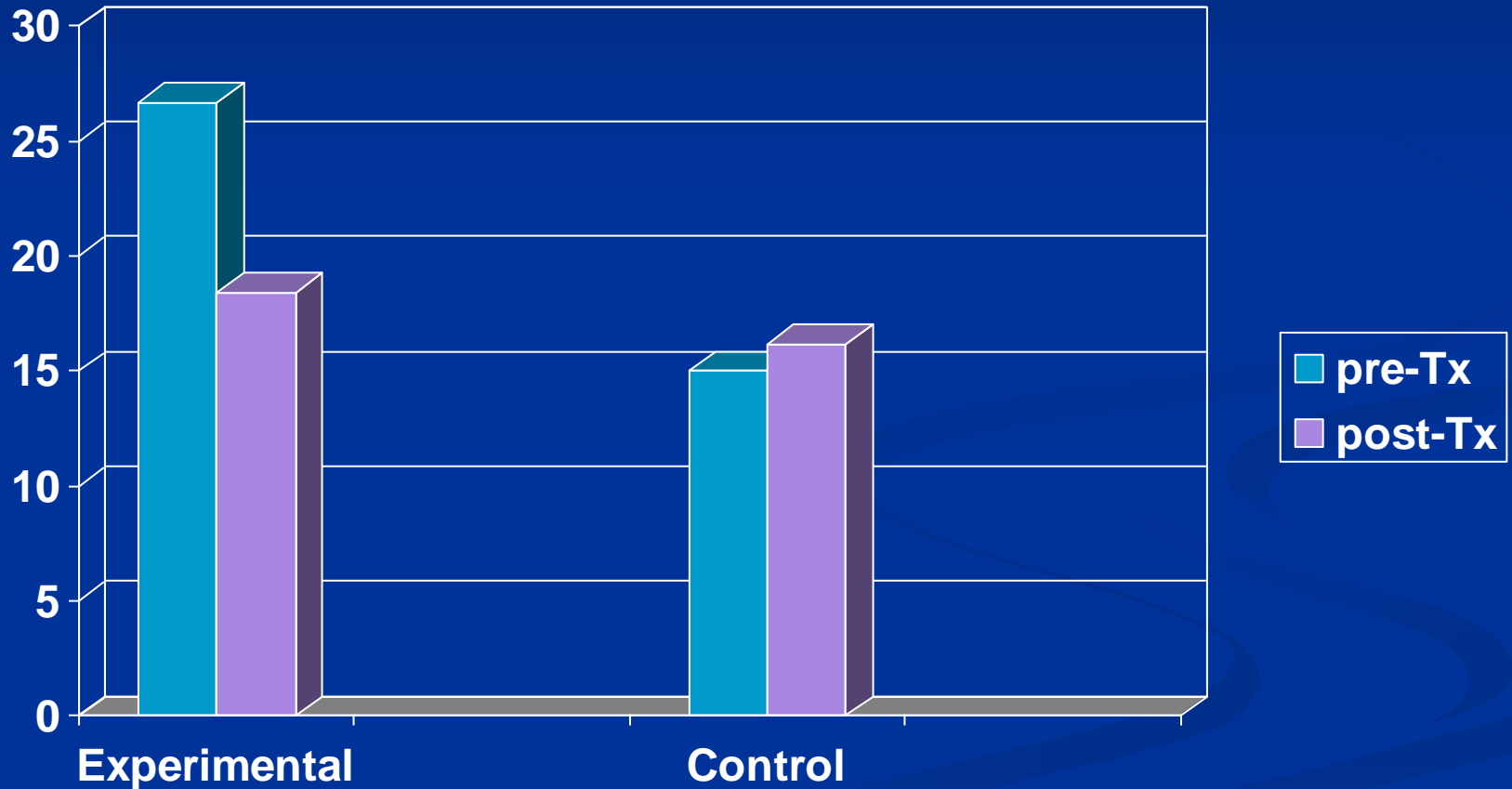
\*p < .05





# Alcohol Problems (RAPI)

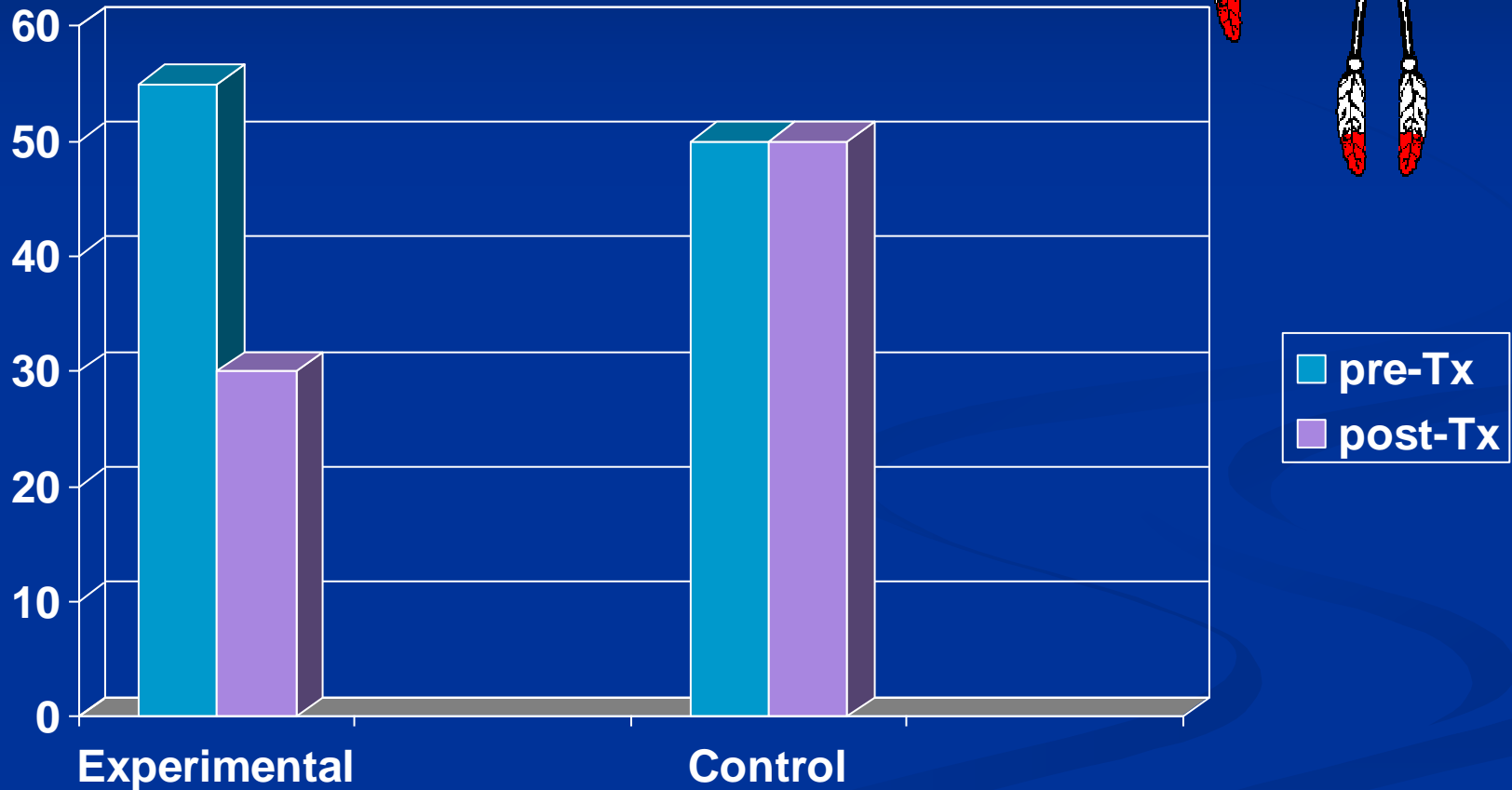
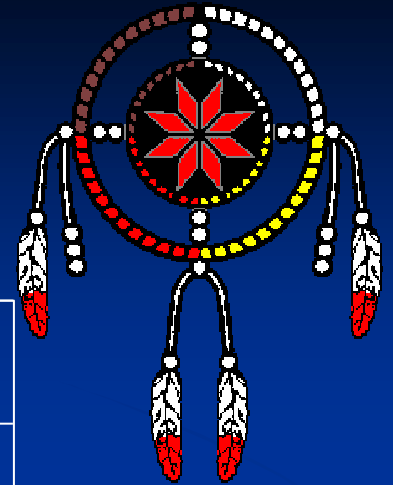
\*p < .005



# Recent Marijuana Use

(% last 30 days)

\*p < .05



# Current Directions

- CIHR-funded project to examine longer term (5 year) effects of Preventure program, and cognitive impacts of program (Co-Venture) (PI: Conrod) in Montreal and Halifax
- Work on AS intervention as brief intervention for college students and as distance treatment for adults with anxiety-related psychopathology; impacts on anxiety and substance-related outcomes (collaboration with Margo Watt; workshop)

# Questions?

Contact Dr. Stewart at  
[ssewart@dal.ca](mailto:ssewart@dal.ca)