

Brief Intervention (BI) for Adolescents

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Boston Children's Hospital
Until every child is well™



**HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL**

What is BI?



- Conversation between professional and patient
- Occurs in general medical setting
- Typically incorporated into a routine visit
- Includes negotiation and/or planning
- Aims to reduce substance use and/or increase acceptance of a referral to more specialized treatment

AAP SBIRT Guidelines

Use validated screening tool to identify risk level and appropriate intervention

Abstinence

**Substance use
without a disorder**

**Mild/moderate
substance use
disorder**

**Severe
substance use
disorder**

**Positive
Reinforcement**

**Brief Health
Advice**

Brief Intervention

Referral to Treatment

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Brief Intervention

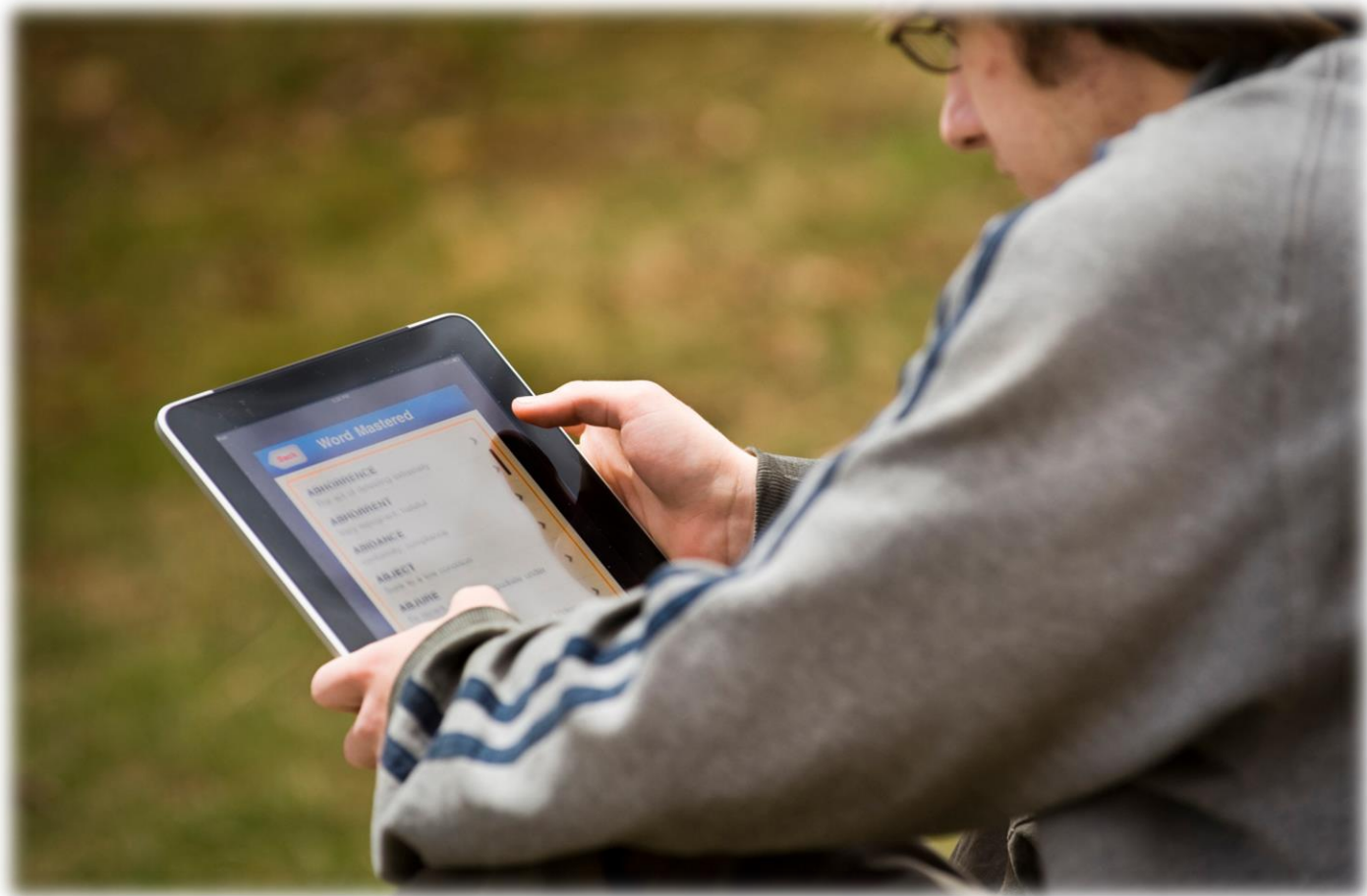
Referral to Treatment

What is not included in BI?

- Anticipatory Guidance and Brief Advice
- Interventions delivered in subspecialty SUD treatment
- Interventions delivered in outpatient psychiatric care



Electronic interventions are considered separately from BI



BI Models

Brief Negotiated Interview

5 A's

Project CHAT

Brief Negotiated Interview (BNI)

- Structured intervention comprised of 5 steps
- Based on Motivational Interviewing
- Also includes sharing information and offering advice



ED BNI

Components	Strategies
Establish rapport	Use open-ended questions Demonstrate concern
Raise subject	Ask permission to discuss problem behaviors
Assess readiness to change	Use assessment tool (“readiness ruler”) Discuss results
Provide feedback	Use objective data to show concerns Elicit reactions from patient
Offer further support	Target patient’s readiness for change

Bernstein BNI: “Chillers” vs. “Copers”

Study design

Eligibility

- Youth ages 14-21 in PED
- Engaged in high-risk alcohol use and/or
- Had experienced consequences related to drinking and/or
- Received a high Alcohol Use Disorders Identification Test (AUDIT) score

n = 60

Received an intervention – 30 minute BNI

Participated in 60-minute follow-up interview

Bernstein BNI: “Chillers” vs. “Copers”

Interviewees were divided into two groups:

Chillers: drinking has social motives, enjoyment-seeking



Copers: drinking to relieve stress, lacking other sources of resilience, less goal-oriented



Bernstein BNI: Reaching Adolescents for Prevention (RAP)

Study design

Eligibility

- Youth ages 14-21 in PED
- Reported binge drinking and/or
- Reported high-risk behaviors in conjunction with alcohol use and/or
- Received a high Alcohol Use Disorders Identification Test (AUDIT) score

n = 858

Randomized into one of 3 groups

- Minimal assessment control
- Standard assessment
- Intervention – 20-30 minute BNI

Bernstein BNI: Reaching Adolescents for Prevention (RAP)

Question	Follow-up visit	OR (95% CI)
Have you tried to cut back on drinking?	3 months	2.82 (1.79-4.44)*
	12 months	1.48 (0.98-2.26)
Have you tried to quit drinking?	3 months	2.01 (1.32-3.05)*
	12 months	1.77 (1.17-2.67)*
Have you tried to be careful about situations you got into when drinking?	3 months	1.72 (1.07-2.78)*
	12 months	1.66 (1.05-2.62)*

* Indicates statistical significance.

Adapted ED BNI

- 5-10 minutes (cut from 30 minutes)
- Adjusted for context based on risk for drinking or current drinking habits



Adapted ED BNI

Components	Tools
Assess	3-question 2-minute NIAAA screen
Review screening results	NIAAA guidelines for low-risk drinking
Connect alcohol use to reason for ED visit/health concerns	
Enhance motivation	
Assess readiness to change	Readiness ruler
Negotiate specific action plan to reduce risks and consequences related to drinking	Prescription for change

ED BNI and Cannabis

Study design

Eligibility

- Youth ages 14-21 in PED
- No reports of “at risk” alcohol use, and
- Reported smoking marijuana at least 3 times in the past 30 days, or
- Reported risky behavior temporally associated with marijuana use

n = 149

Randomized into intervention, assessed control, or non-assessed control groups

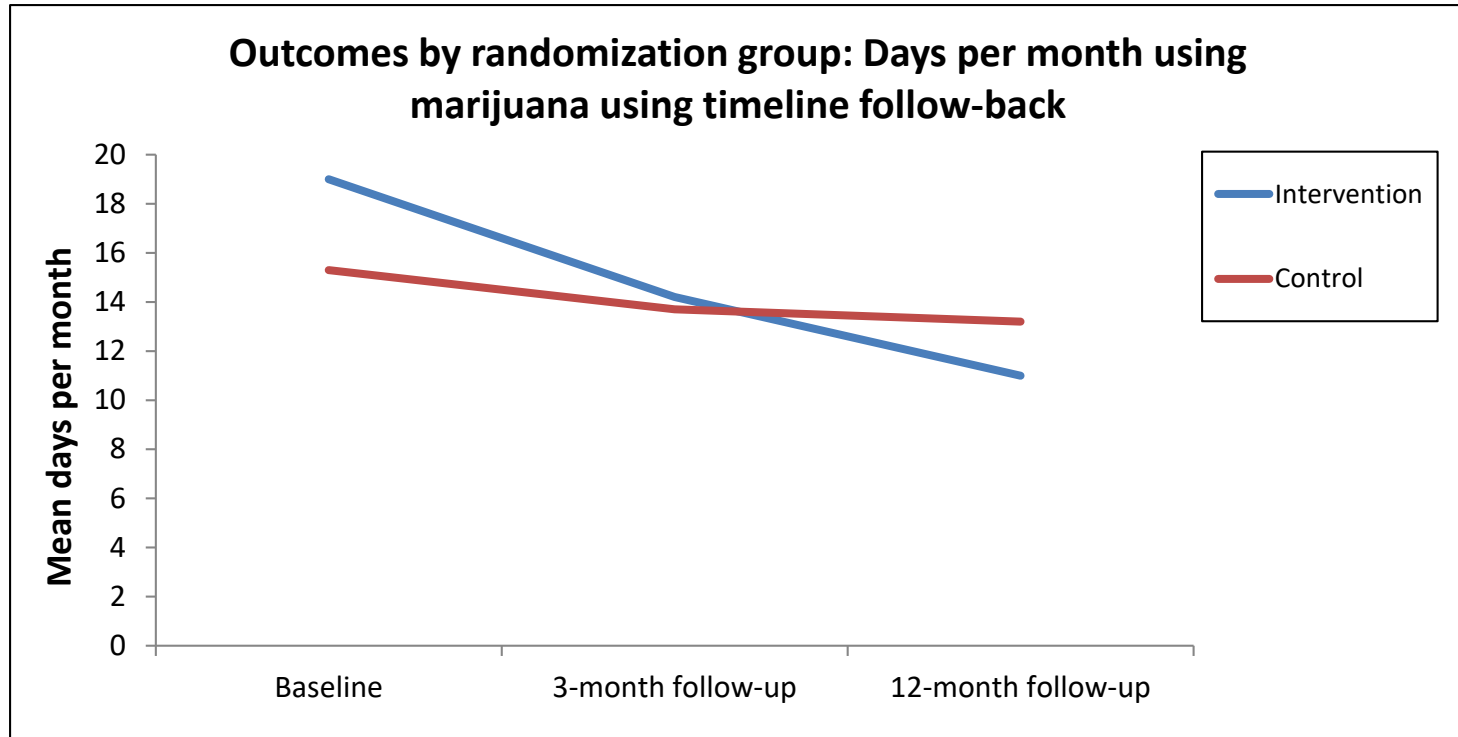
Surveyed at baseline and at 3- and 12-month follow-ups

ED BNI and Cannabis: Results

Variable		Intervention (n)	Control (n)	OR (95% CI)	P-value
After 3 months	Abstinent	6	7	1.15 (0.36-3.73)	0.814
	Not abstinent	35	47		
After 12 months	Abstinent	21	12	2.89 (1.22-6.84)	0.014*
	Not abstinent	26	43		

* Indicates statistical significance.

ED BNI and Cannabis: Results



Change baseline to 3 months

Decline in marijuana use greater in intervention group by -4.2 days/month (95% CI -8.1 to -0.3).

Change baseline to 12 months

Decline in marijuana use greater in intervention group by -5.3 days/month (95% CI -10 to -0.6).

5 A's

- Structured intervention comprised of 5 steps
- Initially developed for addressing tobacco use
- Educational component is minimized



5 A's

ASK: Identify/document substance use status

ADVISE: In a clear, strong, and personalized manner, urge user to quit

ASSESS: Is the substance user willing to make a quit attempt at this time?

ASSIST: For the patient willing to make a quit attempt, redirect to resources to help them quit

ARRANGE: Schedule follow-up contact, in person or by telephone, preferably within the first week after the quit date

5 A's: High School Nurses

Study design

Cluster design with 35 high schools

Eligibility

- Adolescents in grades 9-12
- Reported past 30-day smoking and interest in quitting

n = 1068

Randomly assigned to 5 A's or information-attention control (4 nurse visits each)

Completed surveys at baseline, 3 months, and 12 months

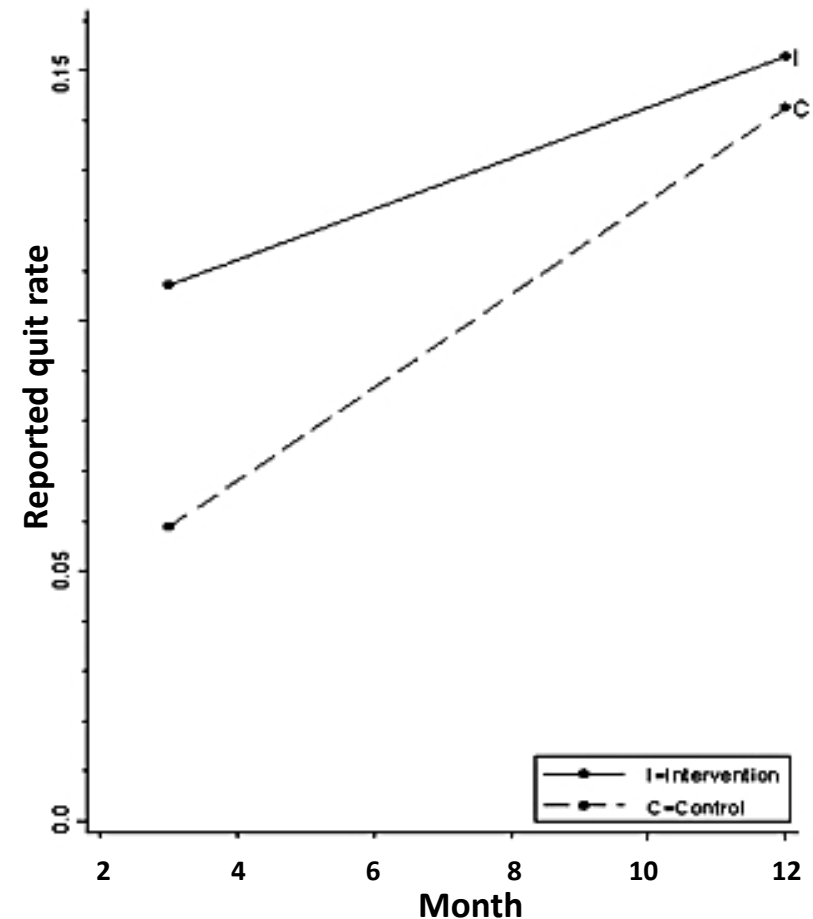
5 A's: High School Nurses

After 3 months

Variable	OR (95% CI)
Abstinence from tobacco	1.90 (1.12-3.24)*

Variable	Adjusted mean (95% CI)
Smoking amount (cigarettes/past week)	-5.4 (-9.8 to -1.1)*
Smoking frequency (days/past week)	-0.48 (-0.75 to -0.20)*

* Indicates statistical significance.



5 A's: Provider- and Peer-Delivered Interventions (PPDI)

Study design

Cluster design with 8 pediatric primary care clinics stratified by size

Eligibility

- Adolescents ages 13-17
- Smokers or non-smokers

n = 2690

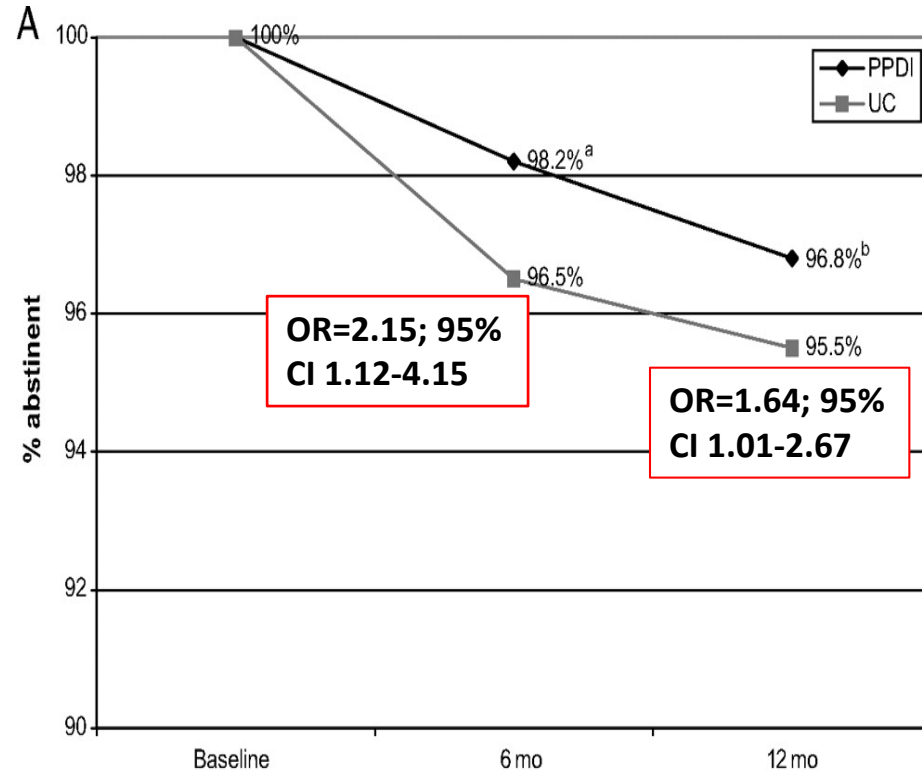
Randomly assigned to 5 A's or usual care control

5 A's delivered by providers and peer counselors

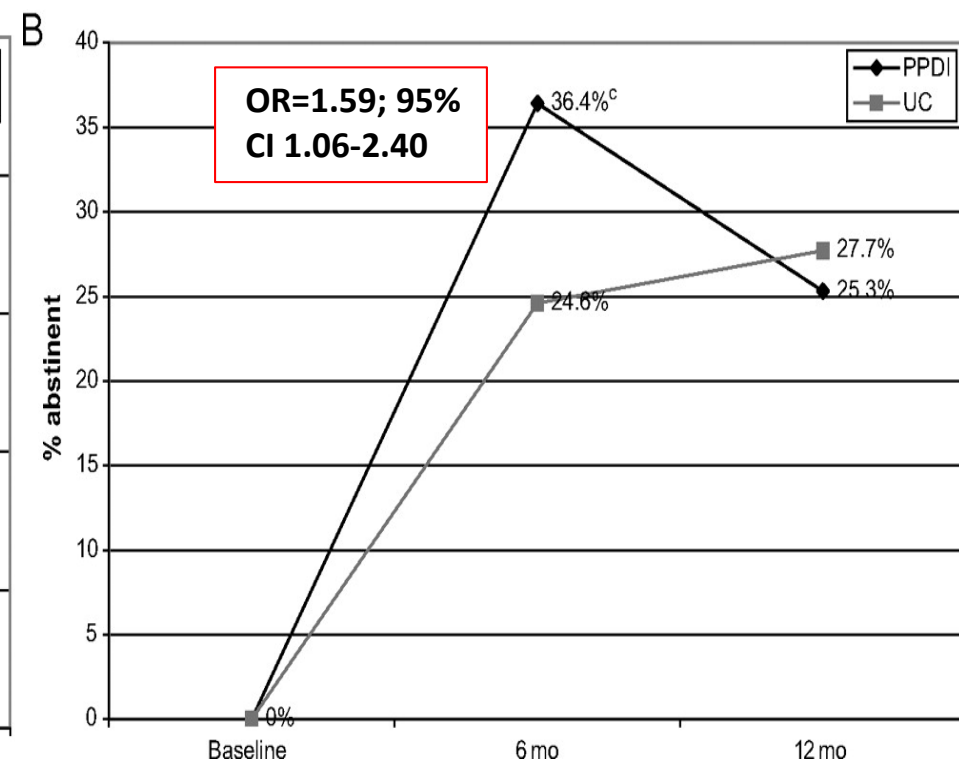
- Provider: Ask, Assess, Assist
- Peer counselor: Advise, Arrange

5 A's: Provider- and Peer-Delivered Interventions (PPDI)

Non-smokers



Smokers



Project CHAT

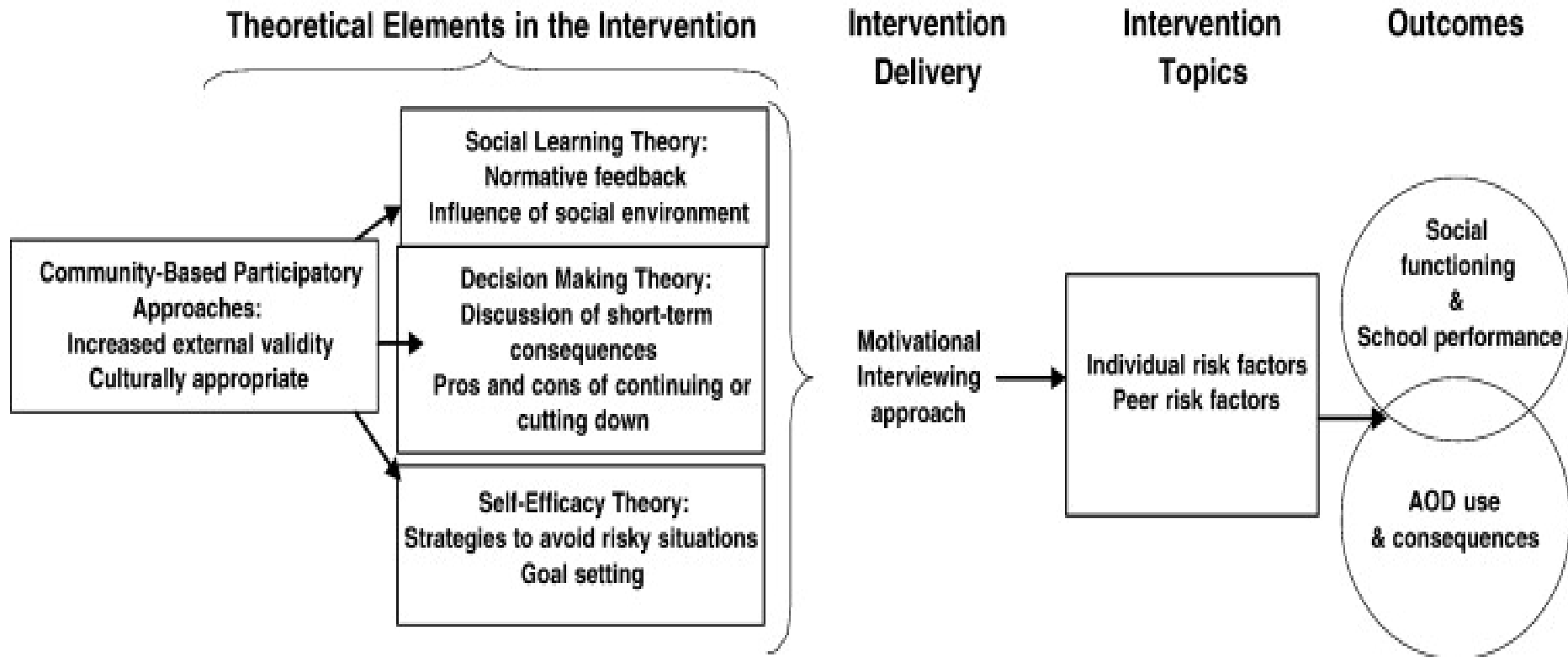
- Structured intervention comprised of 3 steps
- Based on Motivational Interviewing
- Delivered by a health educator after handoff from another clinician
- Community-based participatory research approach, involving all parties in planning phases
 - Clinic staff
 - Parents
 - Adolescents



Project CHAT: Development



Project CHAT: Theoretic Model



Project CHAT

Goals

- Help adolescents make healthier choices
- Minimize PCP burden
- Preserve adolescent, parent, and provider choices

Total: 15-20 min		
Part 1: Assess motivation to change	Part 2: Enhance motivation to change	Part 3: Make a plan

Project CHAT

Study design

Adolescents at a community-based free health care organization

Eligibility

- Adolescents ages 12-18
- Considered high-risk (reported alcohol consumption and drug use and some consequences due to use)

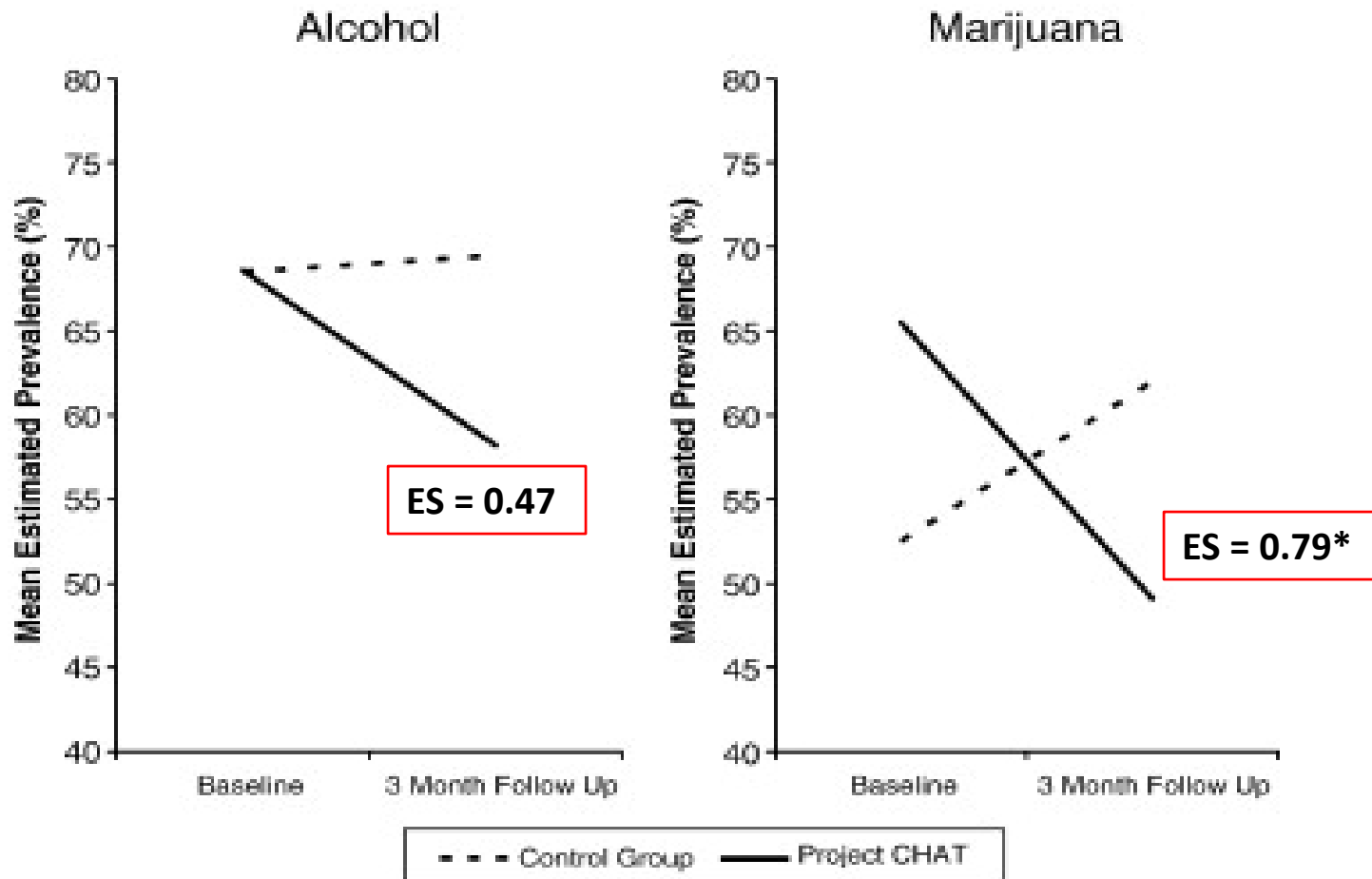
n = 42

Randomized into Project CHAT or usual care control

Assessments

- CRAFFT screening
- Alcohol and Drug Use questionnaire
- Post-intervention feedback interview

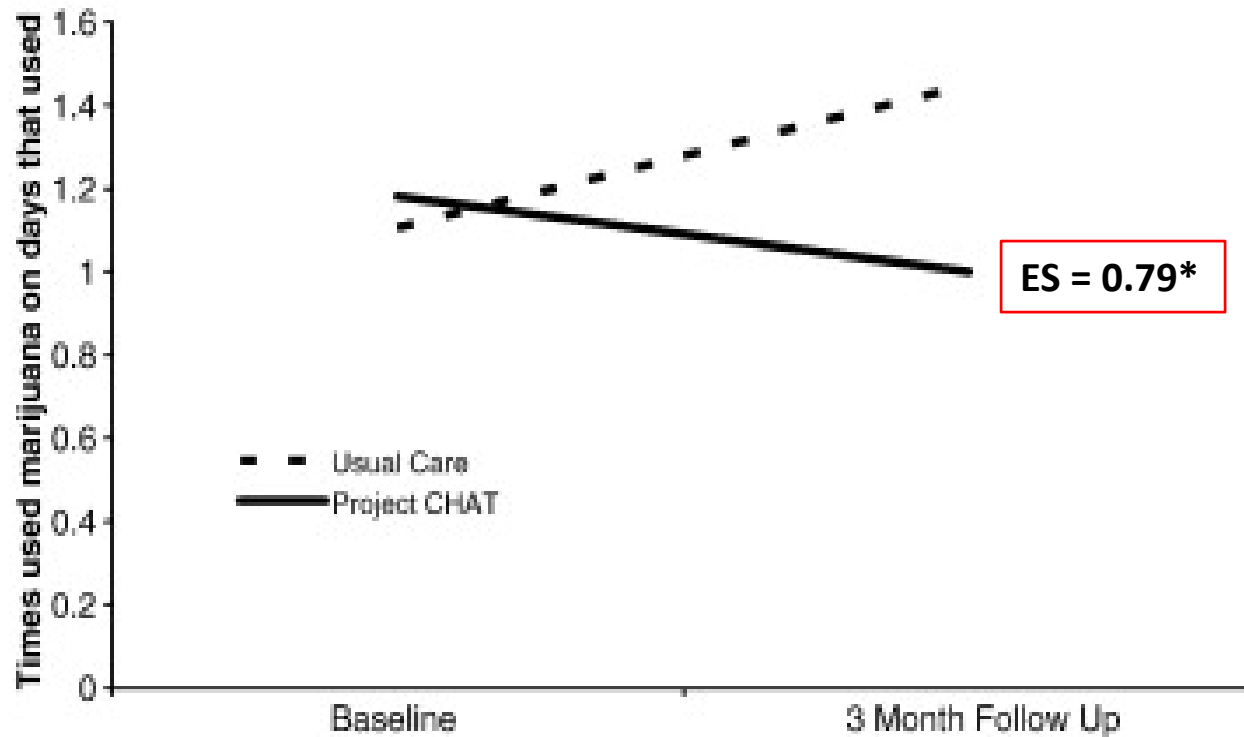
Project CHAT: Results



ES: Standardized effect size.

* Indicates statistical significance.

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Technology-based BI



Study design

Adolescents ages 13-17 in a PED completed a survey regarding baseline technology use, risky behaviors, and interest in and preferred format for interventions.

Results

Adolescents preferred technology-based BI

- Of those who reported risky behaviors, 84.8% (95% CI 77.3-92.2) were interested in a BI
- Of those who reported risky behaviors and were interested in a BI, 51.3% (95% CI 39.9-62.6) were interested in a technology-based intervention

HeadOn

- Interactive substance abuse prevention program for grades 6-8
- 15 sessions during the academic year, each 30-45 minutes
- Control: non-computerized Life Skills Training Program drug abuse prevention intervention

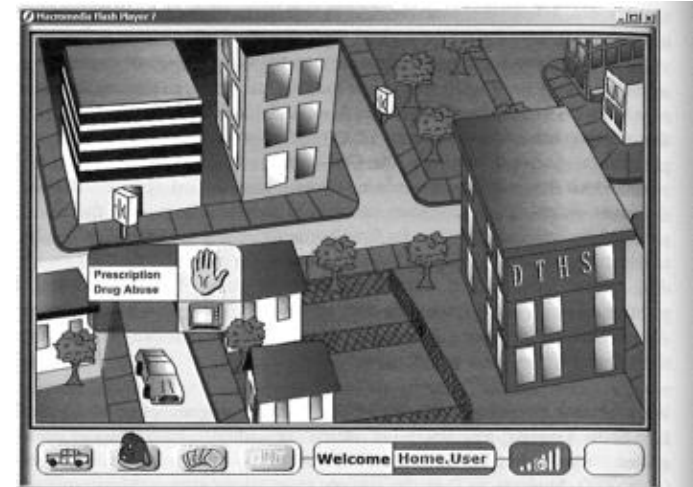
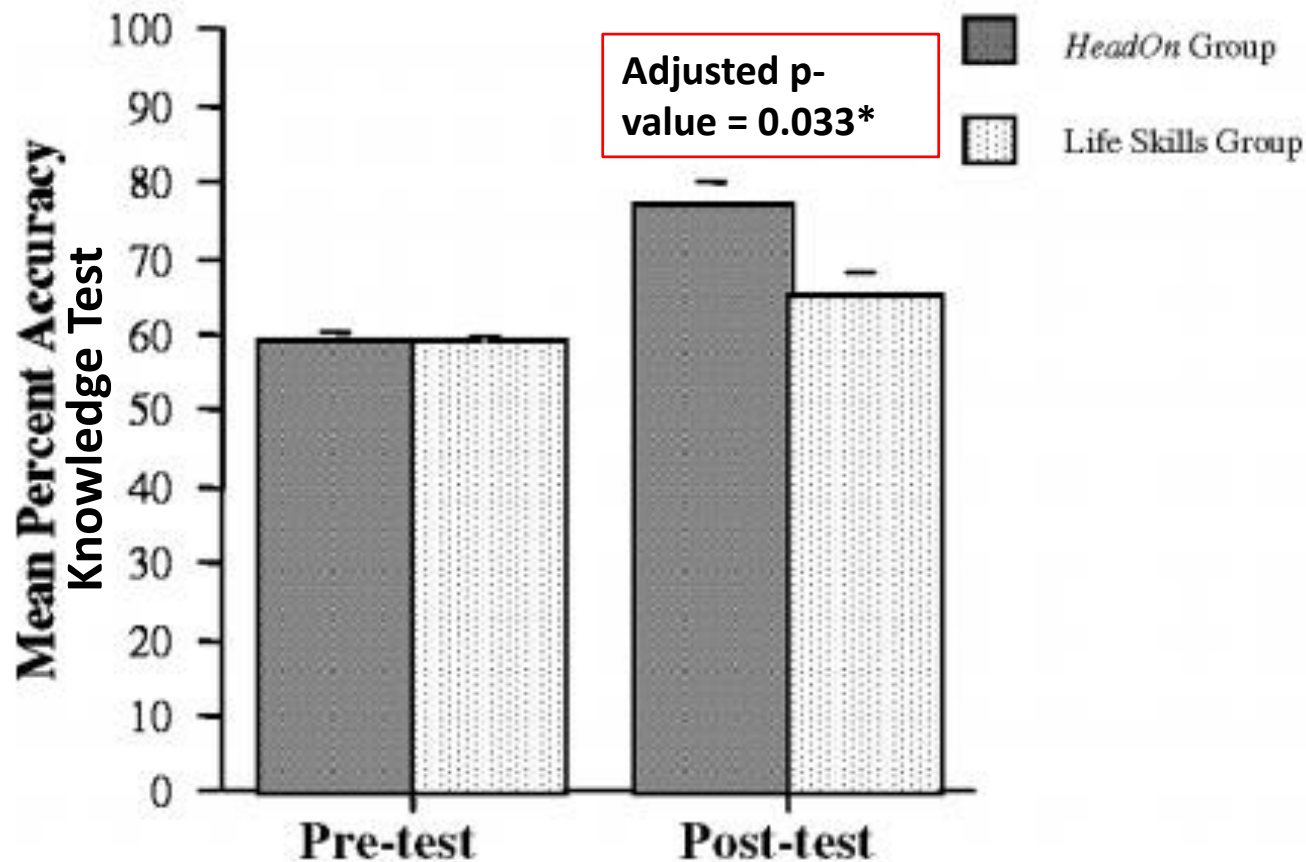


Fig 2. Example of a neighborhood within HeadOn: Substance Abuse Prevention for Grades 6-8.



Fig 1. Introduction to cab driver-narrator in HeadOn: Substance Abuse Prevention 6-8.

HeadOn: Results



* Indicates statistical significance.

- 1) Marsch LA, Bickel WK, & Grabinski MJ. Application of interactive, computer technology to adolescent substance abuse prevention and treatment. *Adol Med* 2007, 18(2), 342–356.
- 2) Marsch LA et al. Applying Computer Technology to Substance Abuse Prevention Science: Results of a Preliminary Examination. *J Child & Adol Subst Abuse* 2007, 16 (2).

HeadOn: Results

Outcome measure	Pre-test Mean (SEM)	Post-test Mean (SEM)	P value
Frequency of cigarette smoking	1.71 (0.18)	1.60 (0.17)	0.164
Frequency of alcohol use	1.83 (0.15)	1.60 (0.11)	0.004*
Frequency of marijuana smoking	1.31 (0.10)	1.33 (0.13)	0.611
How many people your age smoke cigarettes?	2.45 (0.09)	2.28 (0.09)	0.007*
How many people your age drink alcohol?	2.42 (0.09)	2.16 (0.08)	<0.001*
How many people your age smoke marijuana?	2.28 (0.10)	2.13 (0.09)	0.040*

* Indicates statistical significance.

Frequencies measured on a 0-9 point scale. Prevalence beliefs measured on a 0-5 point scale.

- 1) Marsch LA, Bickel WK, & Grabinski MJ. Application of interactive, computer technology to adolescent substance abuse prevention and treatment. *Adol Med* 2007, 18(2), 342–356.
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SafERteens - Computerized BI and Alcohol

Goal

To examine the efficacy of ED-based BIs delivered by computer or therapist, with and without a post-ED session, on alcohol consumption and consequences.

Study Design

Eligibility

- Patients ages 14-20
- Screened positive for risky drinking

n = 836

Randomized to 1 of 3 intervention groups

- Computer BI
- Therapist BI
- Control

(1) Cunningham RM et al. Alcohol Interventions Among Underage Drinkers in the ED: A Randomized Controlled Trial. *Pediatrics* 2015.

(2) Cunningham RM et al. Three-month follow-up of brief computerized and therapist interventions for alcohol and violence among teens. *Academic Emer Med* 2009; 16:1193–1207.

SafERteens - Computerized BI and Alcohol: Results

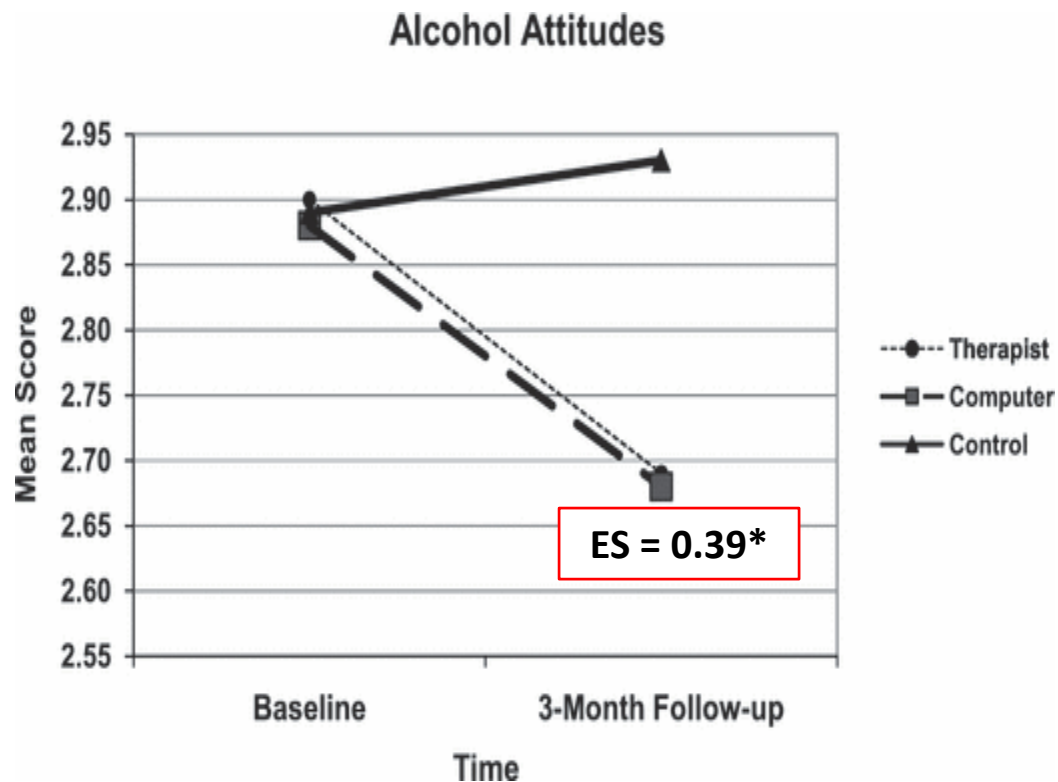
After 3 months

Variable		IRR (95% CI)
Alcohol consumption index	Computer	0.86 (0.75-0.98)*
	Therapist	0.87 (0.76-0.98)*
Alcohol consequences	Computer	0.85 (0.76-0.95)*
	Therapist	0.87 (0.79-0.97)*

After 12 months

Variable		IRR (95% CI)
Alcohol consequences	Computer	0.86 (0.75-0.98)*
	Therapist	0.87 (0.76-0.98)*

* Indicates statistical significance.



ES: standardized effect size.

* Indicates statistical significance.

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Computerized BI and Cannabis

Study Design

Eligibility

- Patients ages 12-18
- Reported past-year cannabis use

n = 284

Randomized to 1 of 3 groups

- Computer-based intervention
- Therapist-based intervention
- Control

Follow-ups regarding cannabis use and cannabis-related consequences done at 3, 6, and 12 months



(1) Walton MA et al. Computer and therapist based brief interventions among cannabis-using adolescents presenting to primary care: One year outcomes. *Drug Alc Dep* 2013; 132(3), 646–53.
(2) Walton MA et al. A randomized controlled trial testing the efficacy of a brief cannabis universal prevention program among adolescents in primary care. *Addiction* 2014; 109(5), 786–97.

Computerized BI and Cannabis: Results

Variable	3-month follow-up (95% CI)	6-month follow-up (95% CI)	12-month follow-up (95% CI)
<i>Cannabis Use Frequency</i>			
Computer	0.53 (0.29, 0.95)*	0.61 (0.37, 0.99)*	0.86 (0.58, 1.27)
Therapist	0.84 (0.49, 1.42)	0.66 (0.41, 1.06)	0.94 (0.21, 4.18)
<i>Other Drug Use Frequency</i>			
Computer	0.52 (0.31, 0.86)*	0.97 (0.61, 1.55)	0.78 (0.38, 1.58)
Therapist	0.65 (0.39, 1.08)	0.63 (0.37, 1.07)	0.90 (0.39, 2.04)
<i>Alcohol Use Severity</i>			
Computer	0.93 (0.52, 1.68)	0.66 (0.42, 1.04)	1.22 (0.75, 1.99)
Therapist	1.38 (0.78, 2.43)	0.57 (0.36, 0.91)*	1.36 (0.84, 2.23)

* Indicates statistical significance.

- (1) Walton MA et al. Computer and therapist based brief interventions among cannabis-using adolescents presenting to primary care: One year outcomes. *Drug Alc Dep* 2013; 132(3), 646–53.
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Works in Progress

Marsch

- **Step Up** – targets adolescents with SUD
- **Pop4Teens** – targets prescription opioid misuse prevention

Levy

- **Take Good Care** – targets alcohol use in youth with chronic medical conditions

Summary

- In person:
 - All three models have demonstrated efficacy
 - Reductions in alc/tob/MJ all seen
 - Pragmatic trials, implementation studies and comparative effectiveness needed
- Technology-based:
 - Promising
 - Practical given low demand on provider time
 - Very limited exportation outside of trials