CTN-NE

Northeast Node of the National Drug Abuse Treatment Clinical Trials Network

Grant # UG1DA040309
National Institute on Drug Abuse (NIDA)
National Institutes of Health (NIH)

NIDA NATIONAL INSTITUTE ON DRUG ABUSE

Center for **Technology** and **Behavioral Health**

Innovate · Evaluate · Disseminate

The CTN

A research partnership that includes National Institute on Drug Abuse (NIDA), researchers, and community-based providers.

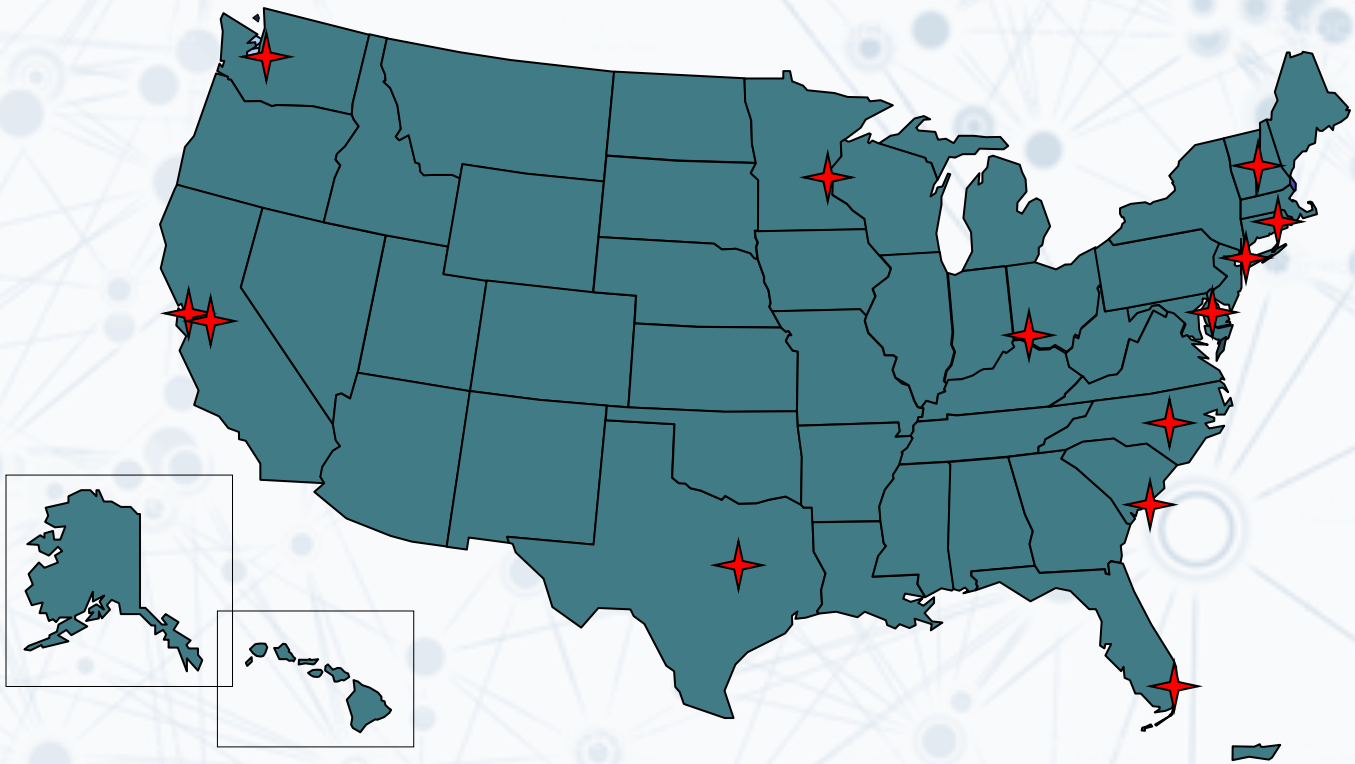
Goal: develop, evaluate, and disseminate new prevention and treatment options for substance use disorders in community-based settings.

www.ctnnortheastnode.org

Twitter @NEnodeCTN

Facebook.com/ctnnortheastnode

National Drug Abuse Treatment Clinical Trials Network 2015-2020



Mid-Atlantic Node
The Johns Hopkins University
Friends Research Institute, Inc.

Ohio Valley Node
University of Cincinnati

Mid-Southern Node
Duke University

Pacific Northwest Node
University of Washington

Florida Node Alliance
University of Miami
Columbia University

Texas Node
Univ. of Texas, Southwestern Med

New England Consortium
McLean Hospital
Yale University

Southern Consortium Node
Medical University of S. Carolina

Western States Node
UCSF
OR Health & Science University

Greater New York Node
New York State Psychiatric Institute
New York University

Northeast Node
Dartmouth College

Northstar Node
Minneapolis Medical Research Fdn.
University of Minnesota

Health Systems Node
Kaiser Foundation Research Institute
UCSF
Group Health Research Institute

The Northeast Node

- Launched in the fall of 2015
- 40+ partners in Vermont, New Hampshire, and Maine
  - Includes over 400 adult and/or adolescent general medical care partners, as well as other clinical, quality improvement, policy, regulatory and payer partners
- Administrative Team housed at Dartmouth College's Center for Technology and Behavioral Health (CTBH), an NIH P30 "Center of Excellence"

www.c4tbh.org

PARTNERS OF THE NE NODE

- Penobscot Community Health Center, Maine
- Dartmouth CO-OP Practice-based Research Network
- Community Health Accountable Care LLC
- Maine Primary Care Association
- New Hampshire Hospital Association/Foundation for Healthy Communities
- Department of Vermont Health Access (State Medicaid Authority), Blueprint
- Pediatrics at Dartmouth-Hitchcock Medical Center
- Family Medicine practice at Dartmouth-Hitchcock Medical Center
- MaineHealth
- NH, ME, and VT Departments of Health and Human Services
- Bi-State Primary Care Association
- Vermont Alcohol & Drug Abuse Programs
- Maine Office of Substance Abuse and Mental Health Services
- Beacon Health Strategies
- New Hampshire Bureau of Drug and Alcohol Services
- Area Health Education Centers
- New Hampshire Citizens Health Initiative
- Maine Quality Counts
- …and More!!!

CTN-NE OBJECTIVES

- Support and grow a research agenda with a focus on trials that leverage technology-based tools and/or have a priority focus on youth –
  - leadership and advisory roles within the national CTN
- Develop and test strategies for the integration of SUD treatment into mainstream medical care
- Facilitate research on innovative technologies (e.g., mobile, web) to improve SUD treatment
- Generate evidence-based SUD treatments using varied experimental approaches

EXAMPLE PRIORITY AREAS

- Prevention and Treatment of Opioid Use Disorders
- Prevention & Treatment of Cannabis Use Disorders
- Embedding/Using Validated SUD Measures in EHRs
- Adolescent SUD Prevention and Treatment
- Leveraging Technology Across the Care Continuum

OUR TEAM

Node Administration
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Using Technology to Advance Understanding, Prevention, and Treatment of Adolescent Substance Use Disorders

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ATTC Conference

Lebanon, NH

July 20, 2016

Center for Technology and Behavioral Health

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CTN NE Node

ADHERE: Addiction and Health Research

GEISEL SCHOOL OF MEDICINE

ACKNOWLEDGMENTS

- Lisa Marsch
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- Bethany McLeman
- Andrea Meier
- Jacob Borodovsky

Disclosures

- NIH-NIDA grants support my salary

Psychosocial Treatments "Work"

- Cognitive Behavior Therapy / Relapse Prevention / Coping Skills Training
- Motivational Enhancement Therapy (MET)
- Combo: MET/CBT
- Community Reinforcement Approach
- 12-Step Facilitation (self-help group engagement)
- Contingency Management (use of Incentives)
- Mindfulness
- Continuing Care (sessions, telephone, check-ups)
- Individual, Group
- Weekly, IOP, Partial

Adolescents
Specific Psychosocial Treatments Work

Multiple types of family-based and group / individual behavioral efficacious interventions (Hsiao & Walker, 2016; Belendiuk & Riggs, 2014; Hogue et al., 2014; Winters 2014; Tanner-Smith et al. 2013)

- **Waldron et al. - FFT, CBT, CBT/FFT**
- **Liddle et al. - MDFT**
- **Henggeler et al. - MST**
- **Dennis et al.; Godley et al.- MET/CBT, ACRA. FSN**
- **Santisteban et al., Szapocznik et al. - BSFT**
- **Stanger, Budney et al. - MET/CBT+CM**

Treatment "Works" Caveats

Caveat 1: Treatment Fidelity / Integrity Matters

Therapist / Counselors / Clinician

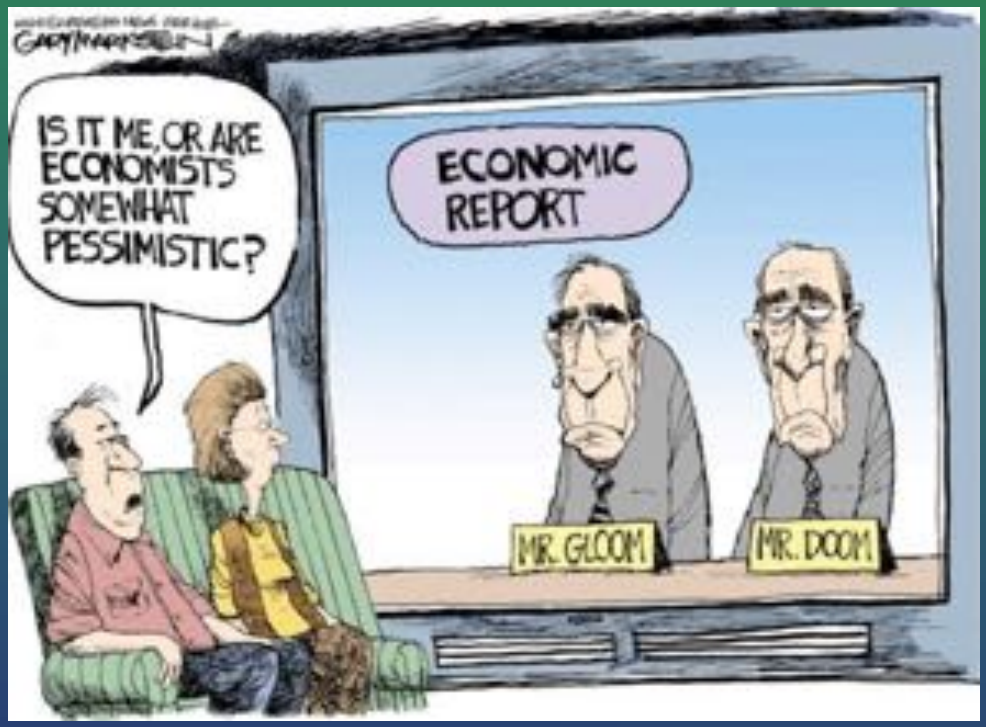
- Quality of Delivery

Program Structure

- treatment duration, length of sessions
- incentives: magnitude, type, schedule

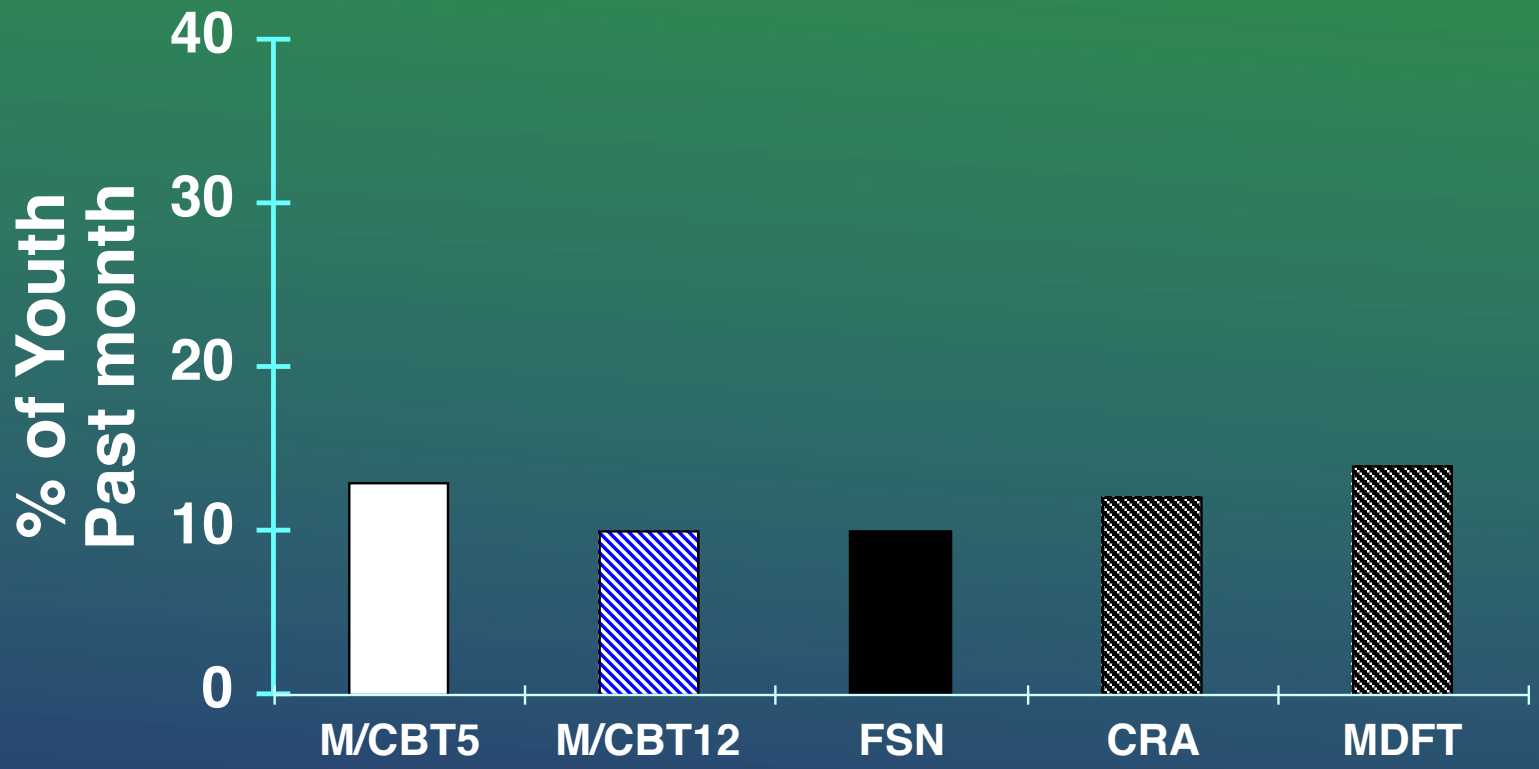
Treatment "Works" Caveats

Caveat #2: **Outcomes are Not Optimal**



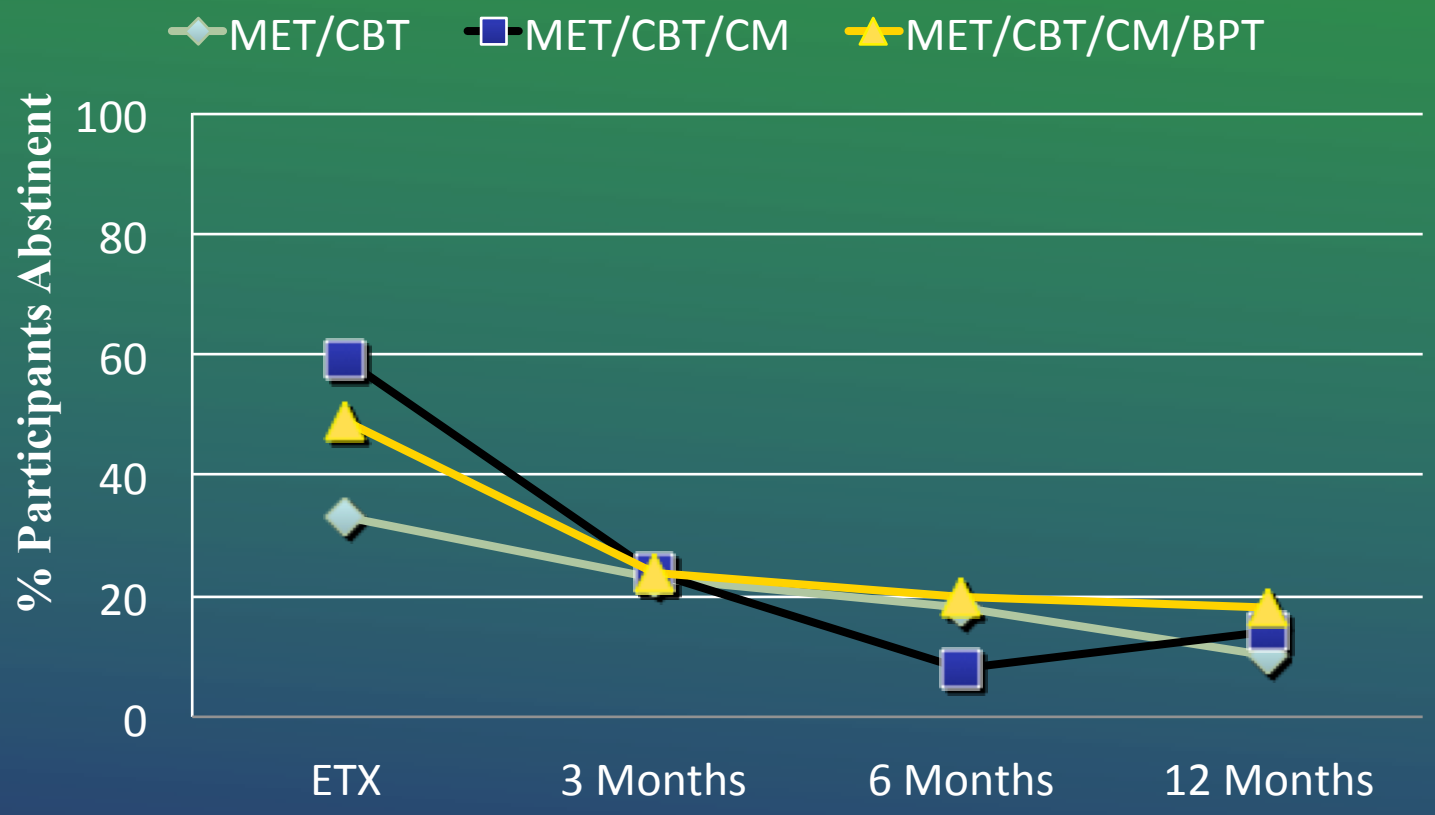
CYT Adolescent Study
Abstinence at Discharge

(Dennis et al., 2004)



Contingency Management

(Stanger et al., 2015)



Treatment “Works” Caveats

Caveat #3: Not Available / Accessible

- Evidence-based programs are lacking

It’s an Evidence-Based World


Yeah yeah...I know your therapist has no lines. But is she evidence-based?
DAHLIA CHANG LCSW
Brain-Based
Mindfulness
Reprocessing
BE HERE NOW!

Current Status

We have and are developing effective treatments, but….

Much Room for Improvement in Outcomes

- Initiation of Abstinence / Reduction of Use
- Maintenance of Positive Effects

Limited Access and Availability

- efficacious treatments not available
- integrity/fidelity of treatment delivery
- cost (e.g., incentive programs, therapy)
- resistance to seeking treatment

How Do We Improve?

Behavioral and Neuro-science Provide Targets

- Genetics
- Target Mechanisms: Impulsivity/Delay Discounting
- Brain Function: cognitive training, TMS, EFT
- Innovative Incentive Programs
- Focus on Concurrent Substance Use
- Target Non-responders
- Improve Social Support
- **Utilize Technology**

Promise of Applying Technology to Behavioral Health

- The digital landscape of Internet and mobile technologies has transformed our society (e.g., in finance, retail, travel, and social relations).

- Technologies can also enable new models of behavioral health care both within and outside of formal systems of care, while increasing the quality and reach of care and reducing costs.

- Applications for clinical populations (e.g., substance use, mental health, medication-taking) as well as prevention/wellness promotion (e.g., "quantified self movement" of behavioral tracking to increase self-knowledge via data)

Promise of Applying Technology

Impact the spectrum of health and wellness, ranging from assessment, prevention, treatment, recovery support, and care coordination

Assessment / Monitoring Tools: increase standardization and accuracy of data collection, enhance access to hard to reach populations, advance study and understanding of behavioral phenomena, in a wide array of settings in real time.

Interventions: e.g., prevention interventions; behavior therapies; self-learning and - management tools, games, wearable sensors (GPS, activity, speech), incentive systems

Therapeutic support: Engage consumers and care networks (e.g., decision support systems, social media)

Training tools for clinicians

Promise of Applying Technology

Reach: Offer promise for enabling widespread dissemination of evidence-based interventions targeting health behavior.

Quality: Deliver care with fidelity, ensuring delivery of evidence-supported care

Personalization: Responsive to each individual's profile of needs, preferences, culture, level of cognitive functioning, etc.

Engagement: Enable individuals (and optionally an extended support network) to play leading roles in their care

TBIs for Adult SUD and Mental Illness Literature is Quite Large (All Reviews)

Sijbrandj, et al. 2016: PTSD

Ashford et al. 2016: Anxiety

Spijkerman et al., Mindfulness to improve MH

Nicholas et al., 2016: mobile apps for bipolar

Bakker et al., 2016: smartphone apps for MH

Gulliver et al. 2015: tobacco

Davies et al., 2014; depression, anxiety, wellness

Litvin, 2013: SUD

Marsch et al, 2012; 2014: SUD

Dallery et al 2015: Mechanisms of Change

Marsch et al., 2014: Edited book: Beh Healthcare and Tech

Andrews et al., 2010: anxiety and depression

Naslund et al., 2015: SMI

Promise of Applying Technology

Research has demonstrated that technology tools can:

- be highly useful and acceptable to diverse populations
- have a large impact on health behavior and outcomes
- produce outcomes comparable to, or better than, clinicians
- increase quality, reach, and personalization of care
- be cost-effective
- responsive to individuals' health behavior over time

Models of Implementation

Adjunct / Supplement: Deliver specific components or enhance delivery of specific components.

- "Clinician-extender" model: extend reach by offering additional resources either within or outside of their direct interchange with the clinician

Replacement (partial): Digital-delivered treatment may replace a portion of their typical interaction with clients with a technology-based intervention (e.g., deliver CBT components)

Stand Alone / Full Replacement: No clinician involvement; treatment completely delivered by computer.

Hybrids:

Adolescent Literature: Sparse

Marsch & Borodovsky (2016) --- only review?

Prevention

- *Climate Program* (web-based, school setting: Newton et.al 2009)
- *HeadON* (web-based, 6-8th and 3-5th grade: Marsch et al. 2006)
- *VAMOS / RealTeen* (web-based, home-based: Schwinn et al., 2016; Schinke et al., 2015)

Adolescent Literature: Sparse

Treatment Approaches

- *Therapeutic Education System* (web-based HIV prevention in context of Tx: Marsch et al. 2015; 2011)

- *StepUp* (web-based: Acosta et al., under review)

- *Using EMA to prompt, remind, trigger*

  - ESQYIR (educating /supporting inquisitive youth in recovery)

    mobile phone app: aftercare recovery support (EMA); text messaging (Gonzales et al., 2014, 2015)

  - MOMENT (Schrier et al., 2014)

  - SMARTPHONE (ACHESS for teens: Dennis et al., 2014)

Examples

HeadOn: Drug Abuse Prevention: Grades 3-5 & 6-8

Smartphone EMA/EMI applications

Therapeutic Education System - HIV prevention for Adolescents with SUDs

Ongoing Projects / Ideas

HeadOn: Making Good Choices for Grades 3-5

preventionsciencemedia.com

- How to Establish & Maintain Healthy Relationships
  - *How to be Assertive*
  - *Dealing with Stress*
  - *Making Good Friends*
- General Decision-Making Skills
  - *Setting & Reaching Goals*
  - *Communicating Effectively*
  - *Understanding Advertisements*
- Consequences of Substance Use
  - *Effects of Cigarettes*
  - *Consequences of Drug Use*
  - *Refusing Drugs*


HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox
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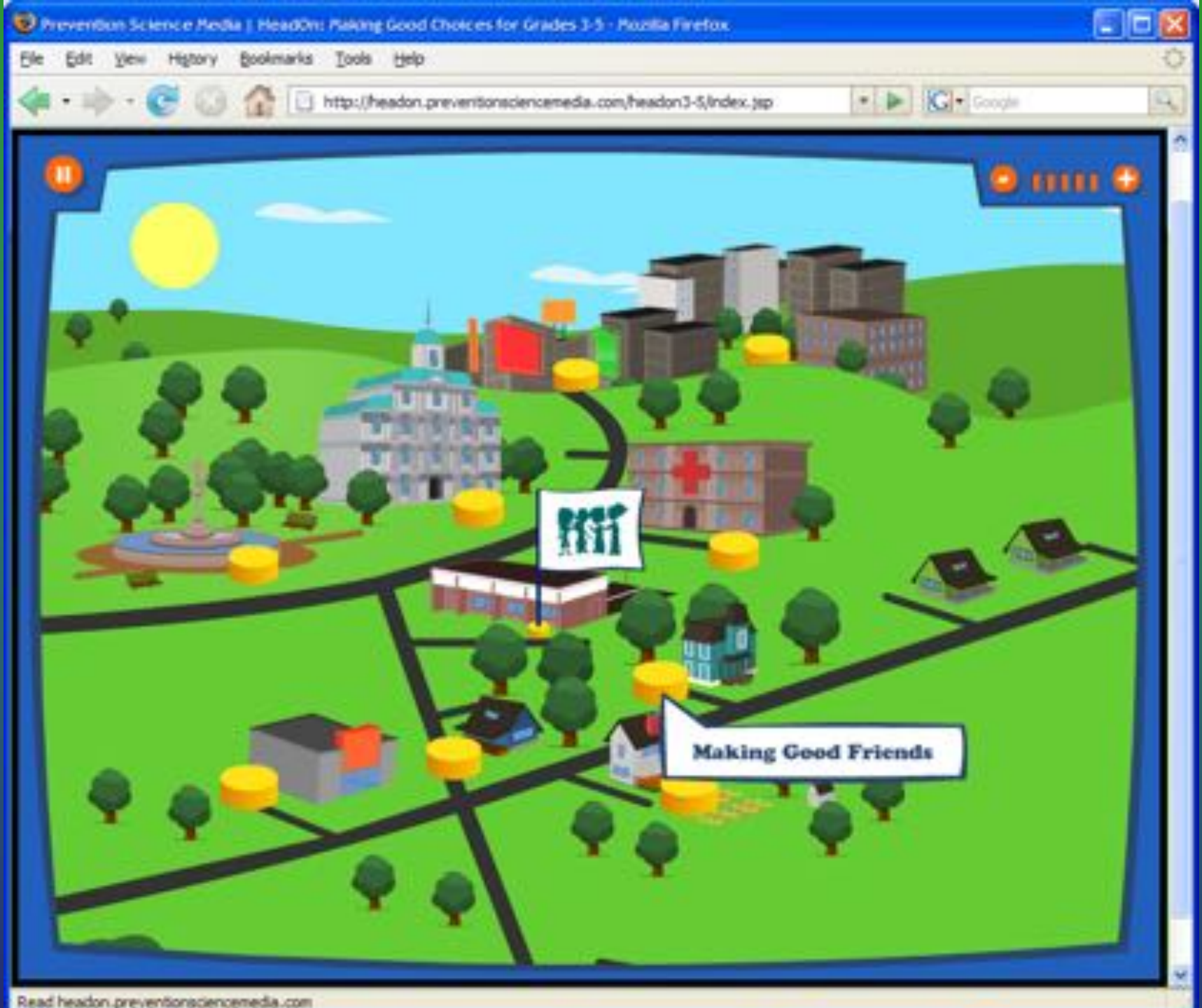
http://www.healthsim.com/goodchoices/
HEADON
Making Good Choices
Let's Go!
Read www.healthsim.com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http://headon.preventionsciencemedia.com/headon3-5/index.jsp
Making Good Friends
Read headon.preventionsciencemedia.com


HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox
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http://www.healthsim.com/goodchoices/
Effects of Smoking
heart beats faster
bad breath
stained teeth
red eyes
poor sense of smell
cough a lot
bad habit
black lungs
0/9
The Effects of Cigarettes on Your Body
Transferring data from www.healthsim.com...

HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.healthelm.com/goodchoices/

QUIZ

TIME:

Which of the following is true if a person is addicted to cigarettes?

A. It is easy to stop smoking at any time.

B. Smoking becomes a habit that is hard to break.

C. You never feel like you want to smoke.

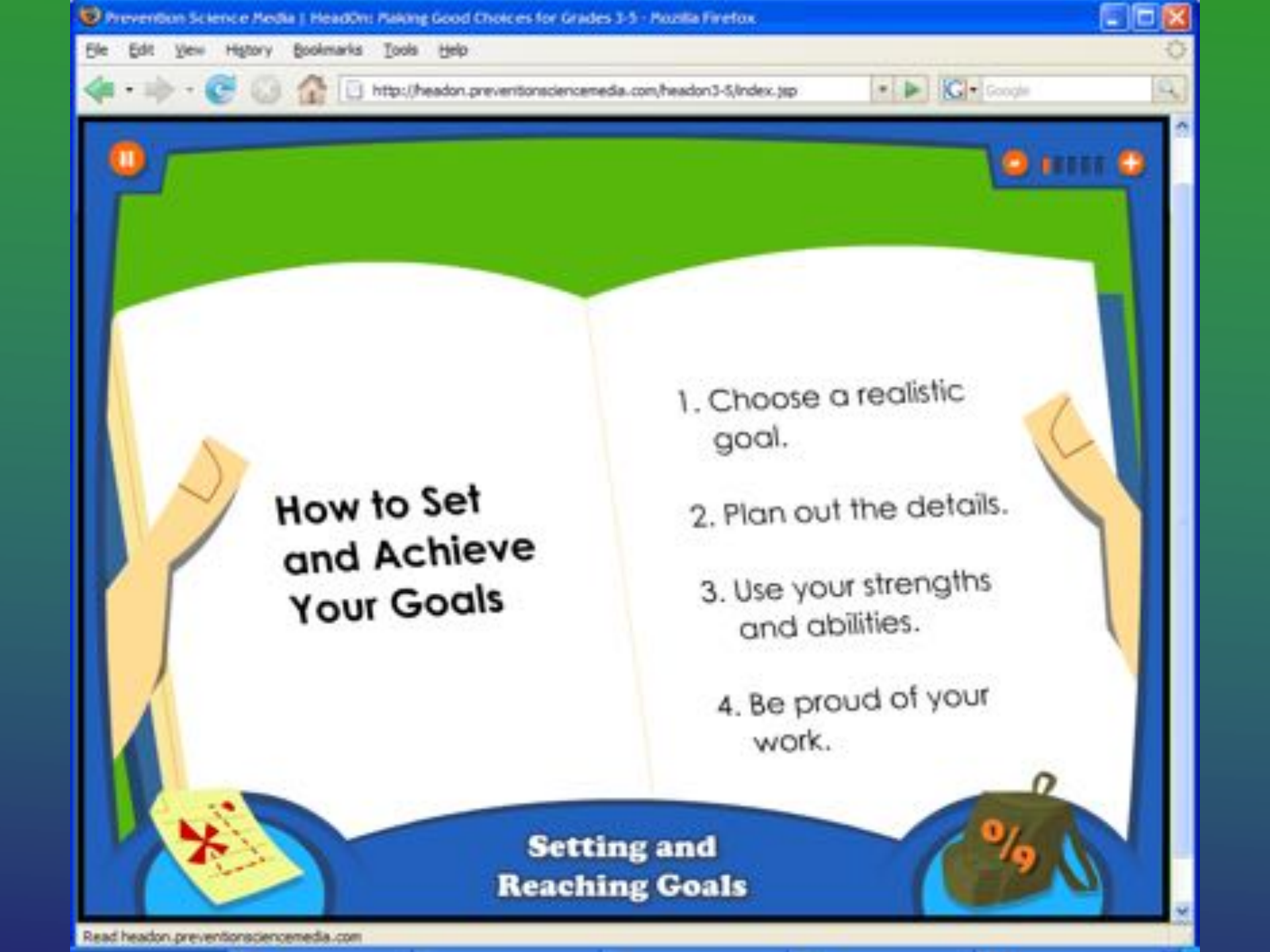
D. You never feel like you need to smoke.

0/9

The Effects of Cigarettes on Your Body

Read www.healthelm.com


Prevention Science Media | HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://headon.preventionsciencemedia.com/headon3-5/index.jsp
FizzPop
REAL Cola
Have a blast with BLAST!
BLUE ICE
Understanding Advertisements
0/9
Read headon.preventionsciencemedia.com


Prevention Science Media | HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox
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http://headon.preventionsciencemedia.com/headon3-5/index.jsp
How to Set and Achieve Your Goals
1. Choose a realistic goal.
2. Plan out the details.
3. Use your strengths and abilities.
4. Be proud of your work.
Setting and Reaching Goals
Read headon.preventionsciencemedia.com


Prevention Science Media | HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox
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http://headon.preventionsciencemedia.com/headon3-5/index.jsp
HOW TO MAKE A GOOD DECISION
• FIRST, weigh both sides.
• Then, decide to STOP or GO.
Simply say NO.
Leave the scene.
Suggest a better idea
Change the subject.
Refusing Drugs
0/9
Read headon.preventionsciencemedia.com


Information
Communicating
Effectively
0/9


Prevention Science Media | HeadOn: Making Good Choices for Grades 3-5 - Mozilla Firefox
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http://headon.preventionsciencemedia.com/headon3-5/index.jsp
QUIZ
TIME:
What does it mean to be assertive?
A Yelling at another person if they aren't listening to you
B Saying what you really think and not doing things just because others want you to do them
C Doing things because others want you to do them
D Going along with whatever others are doing
0/9
How to be Assertive
Transferring data from headon.preventionsciencemedia.com...

HeadOn 3-5 Evaluation

- Marsch et al. conducted a multi-site, school based evaluation with 3rd, 4th & 5th graders (n=457), comparing:

  Group A: *HeadOn*: *Making Good Choices*

  Group B: *Life Skills Training* (a demonstrably efficacious educator-delivered intervention)

  Group C: *No-intervention Control group*

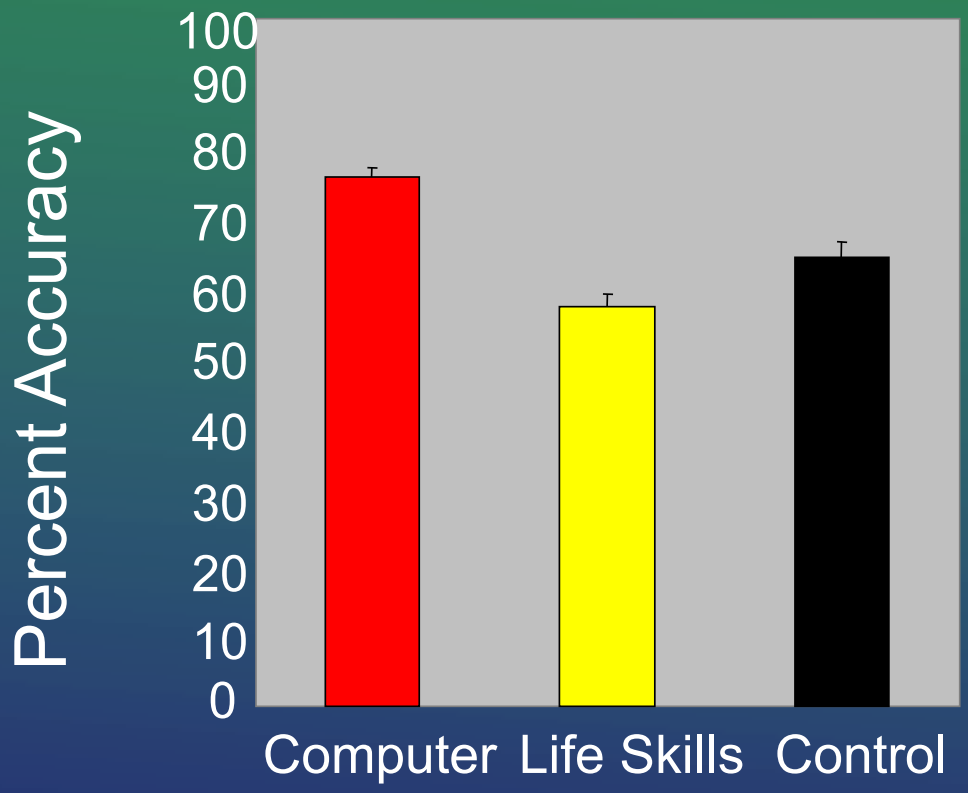
- Both active interventions were delivered across approx. 8 sessions (30-45 mins./session) during the course of the school year.
- Assessments were conducted before/after interventions.

Participant Characteristics

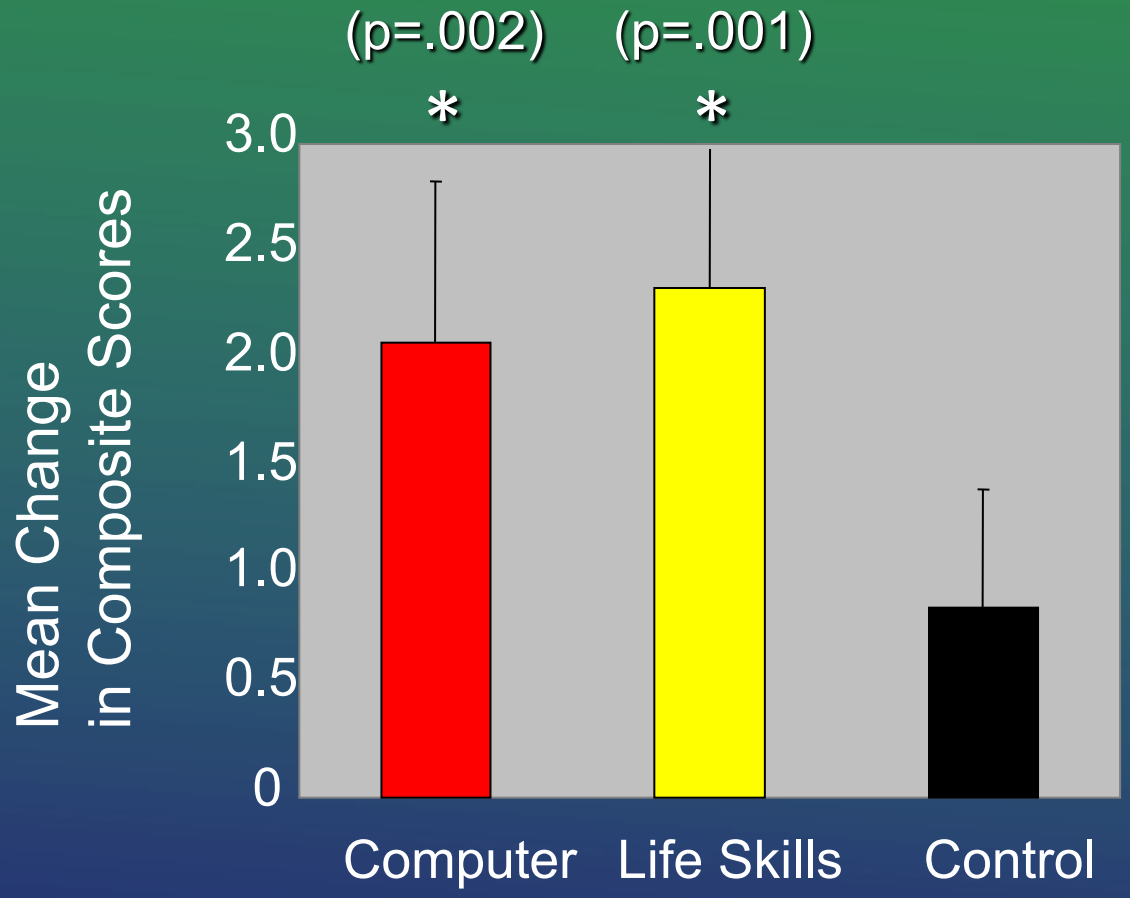
	Computer (n=186)	Life Skills (n=165)	Control (n=106)
% Male	53.4%	49.3%	44.4%
Mean (SEM) Age (yrs)	9.28 (.97)	9.9 (.84)	9.4 (1.0)
% Living w/two Parents	75.9%	74.2%	72.7%
% Caucasian	18.7%	15.2%	12.0%
% Black	14.5%	3.5%	13.0%
% Asian	39.2%	40.0%	39.1%
% Other	27.1%	38.6%	33.7%
% Hispanic	28.7%	30.2%	12.4%

Post-Intervention Drug Abuse Prevention Knowledge

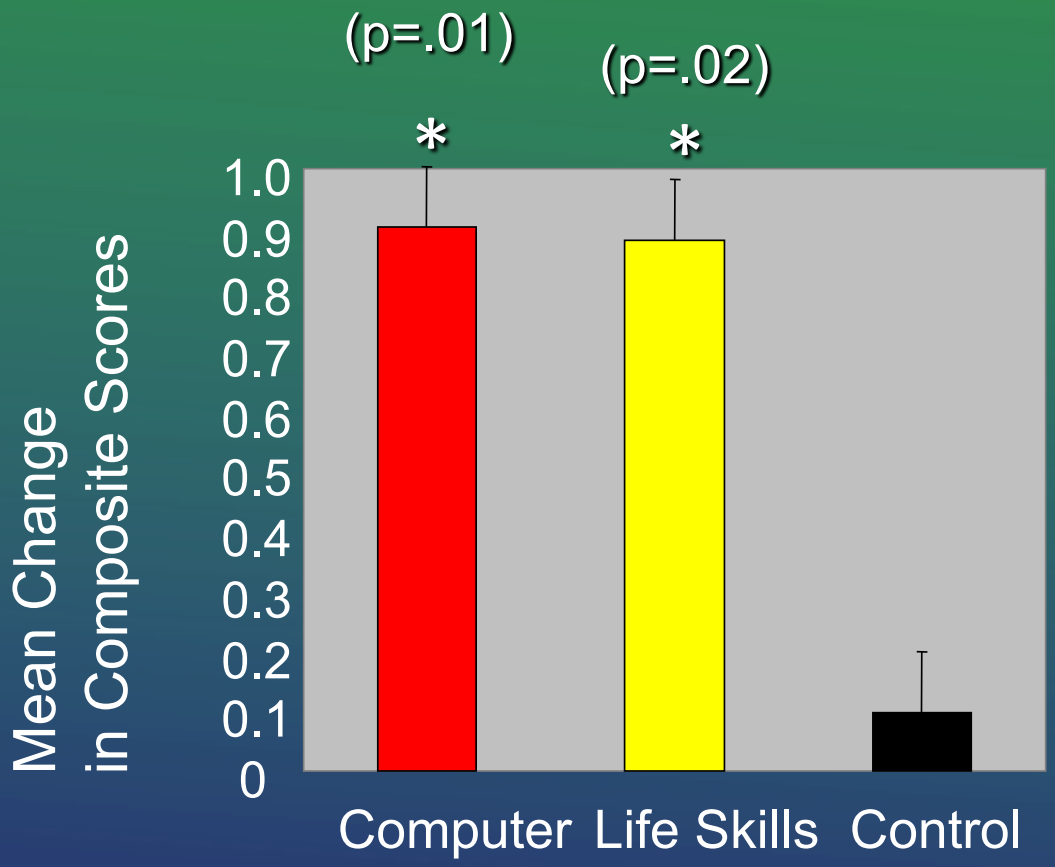
$(F_{(2, 393)} = 27.43: p < .0001)$



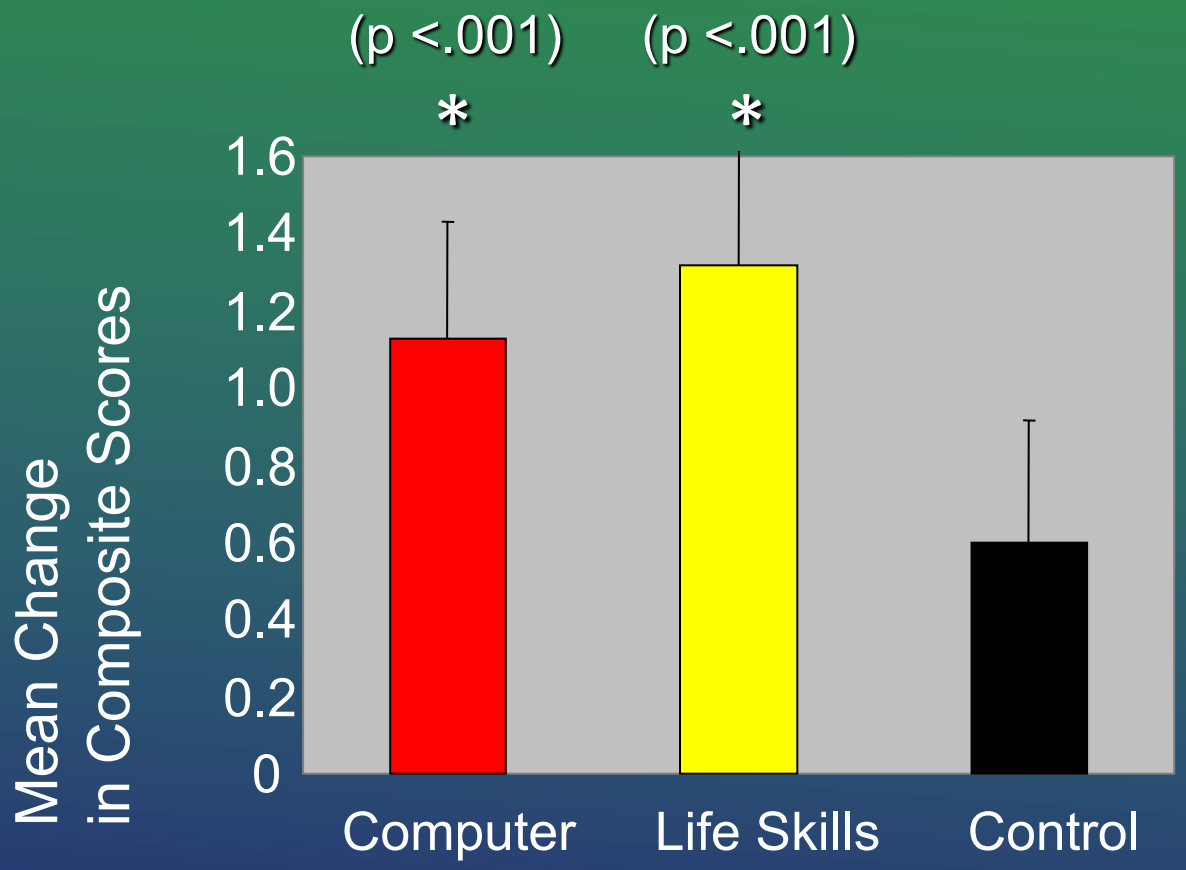
Negative Attitudes Toward Substances



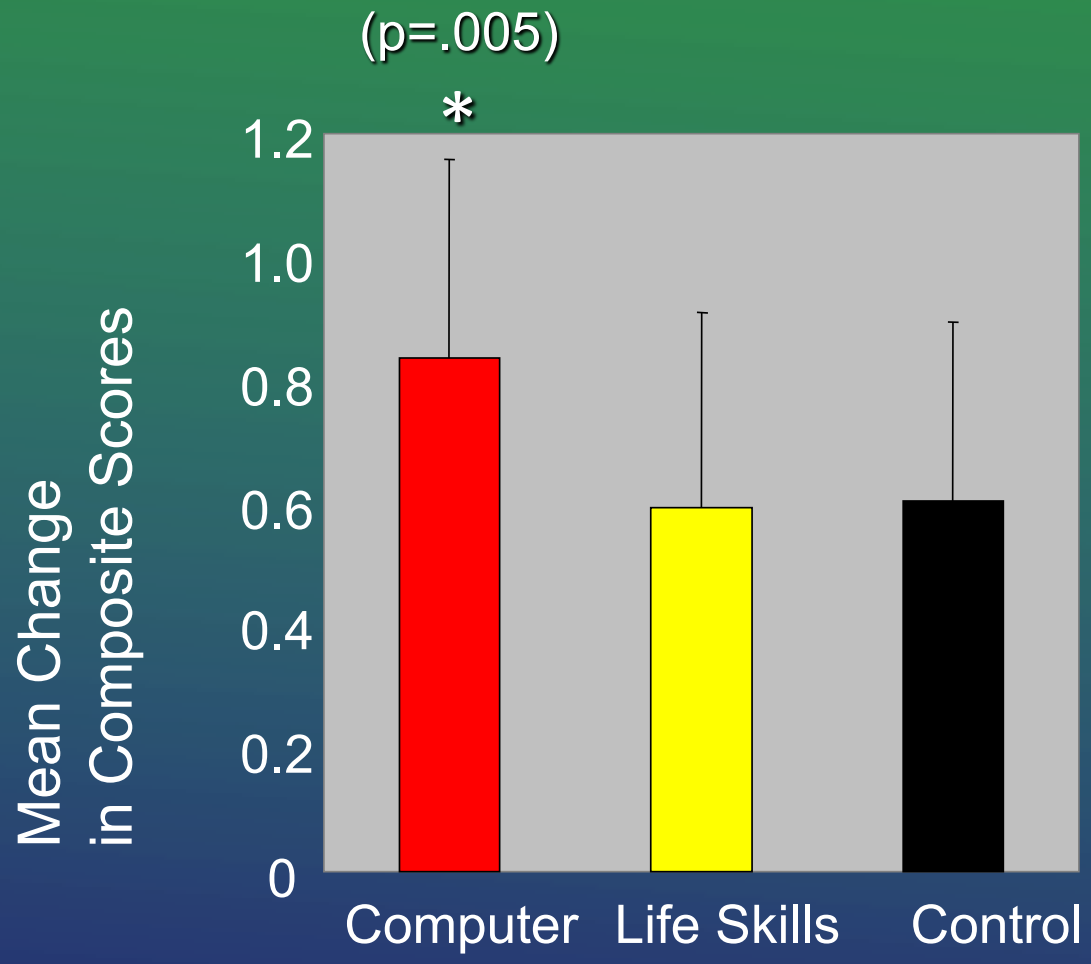
Decision-Making Skills



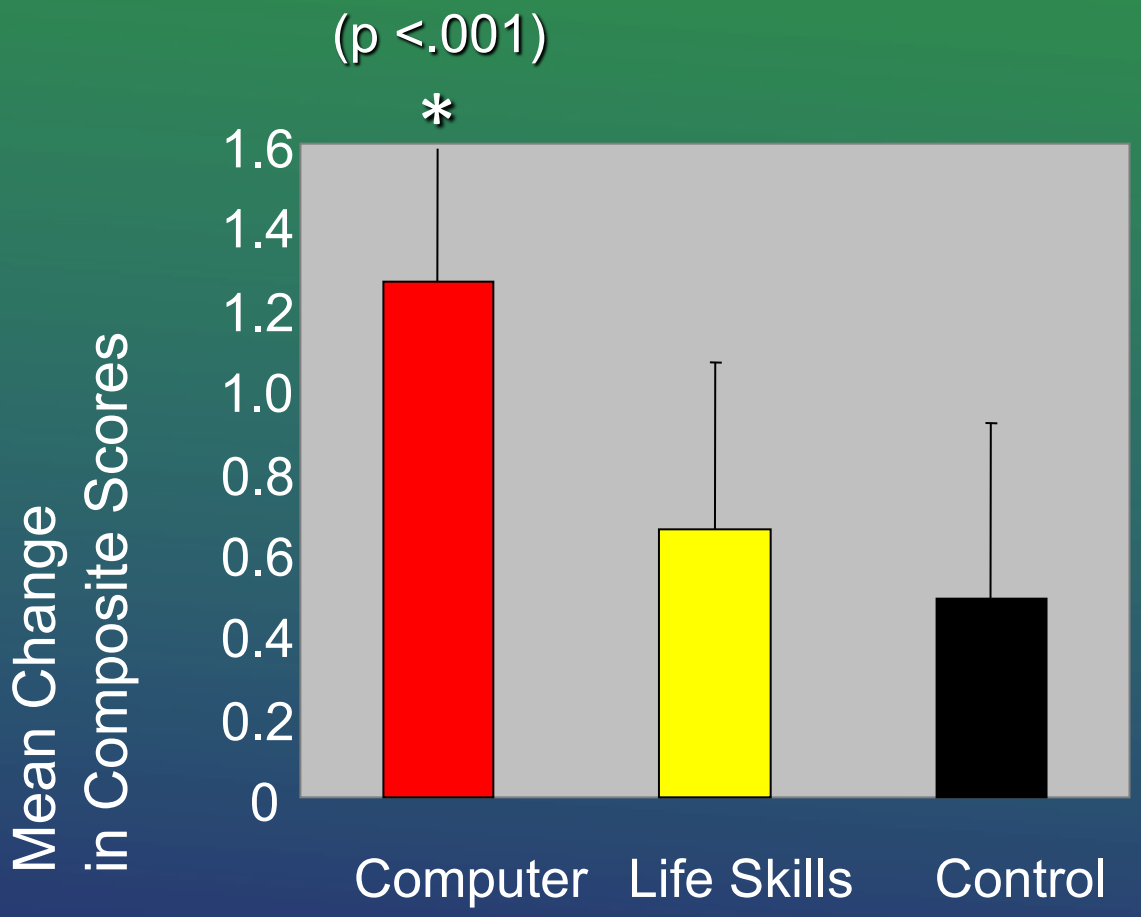
Critical Thinking About Advertisements



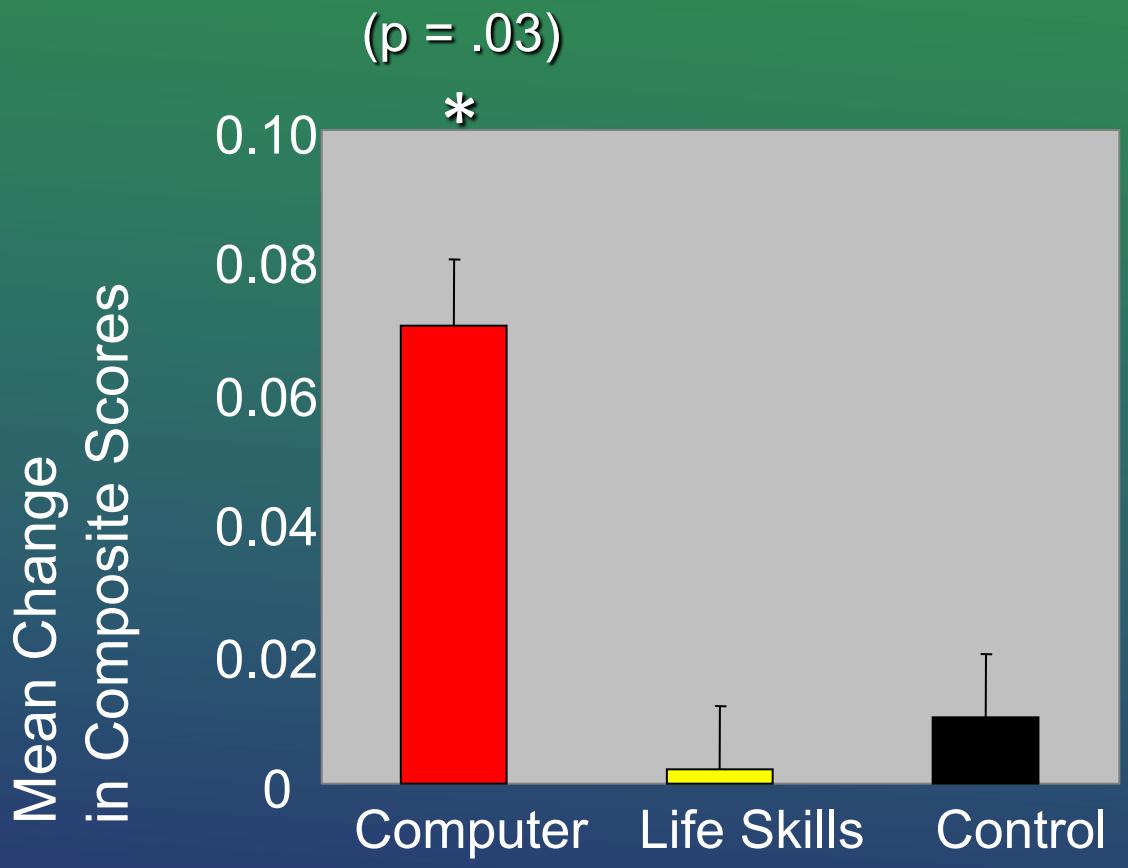
Communication Skills



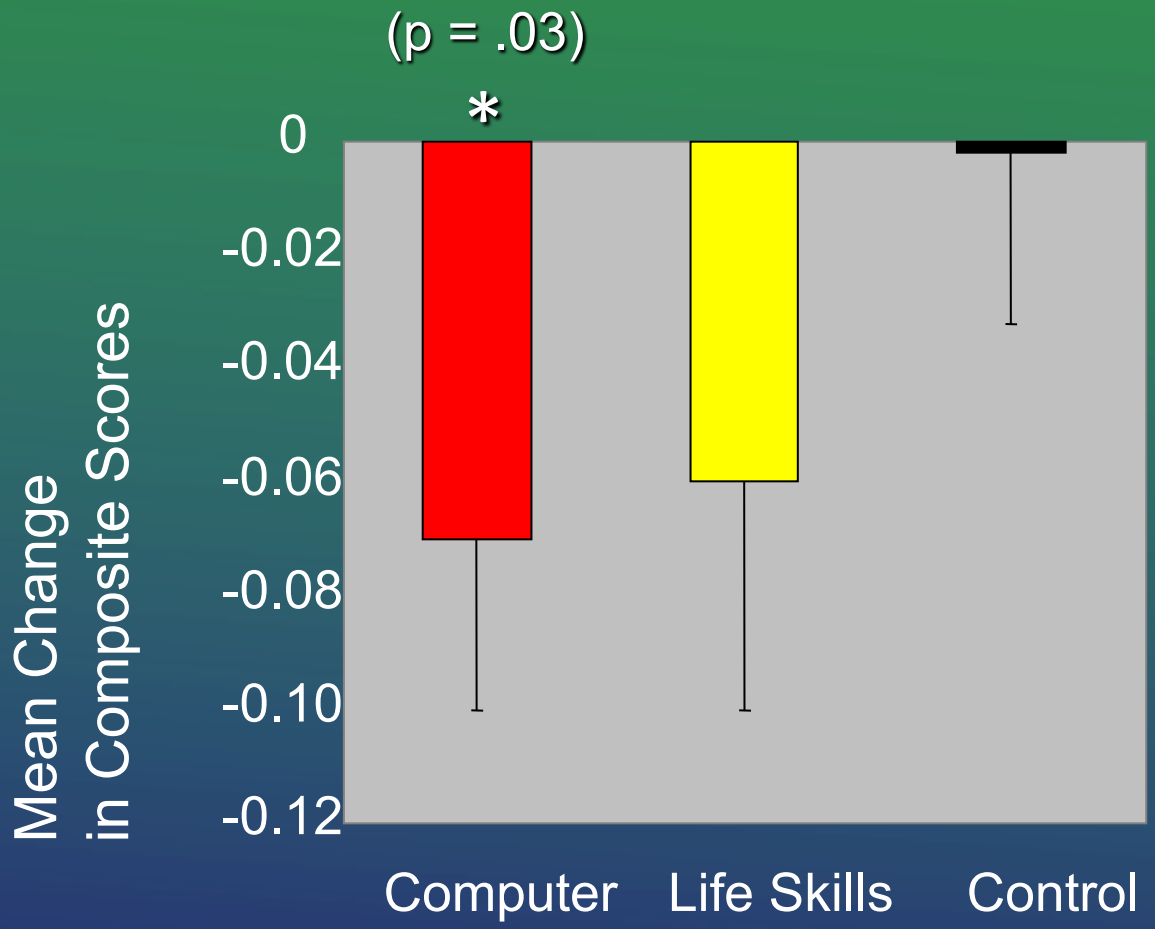
Stress Management Skills



Self-Esteem Scores

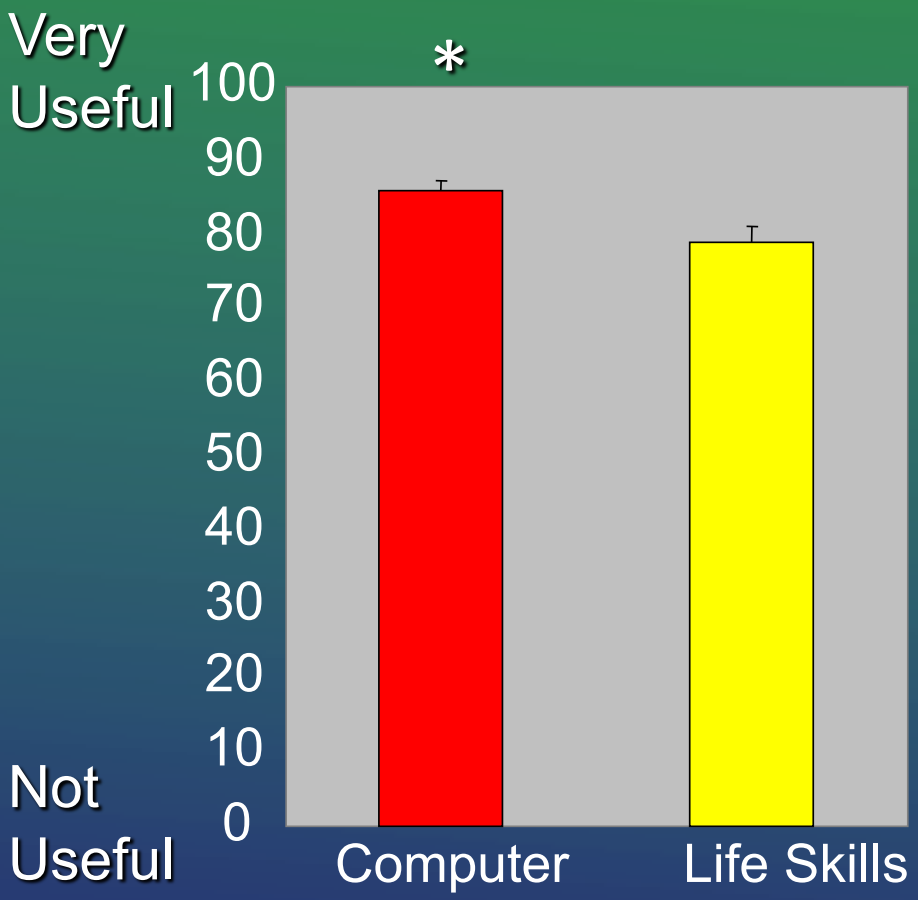


Impulsivity Scores



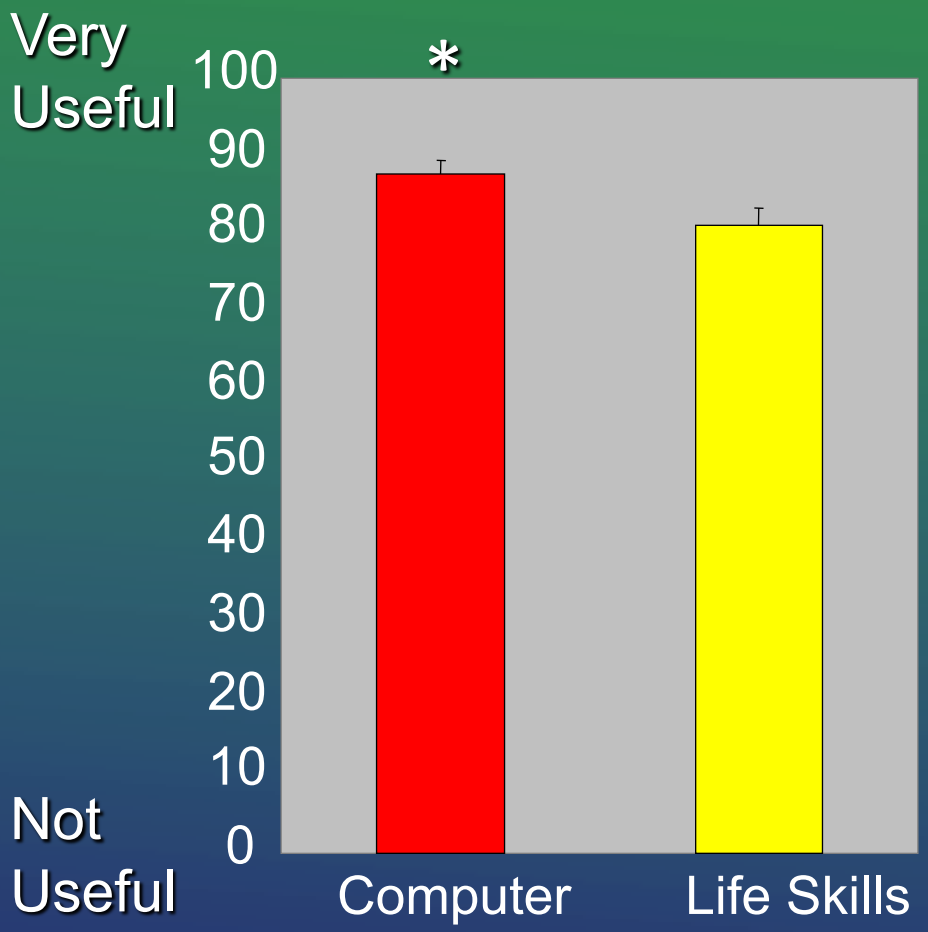
How *Useful* Was the Program?

($t_{(282)} = 2.56$; $p = .01$)



How *useful* do you think the program would be *as part of drug abuse prevention* for elementary school kids?

($t_{(278)} = 2.79$; $p = .005$)



ESQYIR

(Educating & Supporting Inquisitive Youth in Recovery)
Gonzales et al., 2014, 2015

Mobile phone technology (EMA and text messaging) to help youth maintain sobriety after leaving treatment.

Text message content and delivery schedule are programmed based on focus group data from youth in substance use treatment programs.

Text messages = self-monitoring, recovery tips, social support resource information

ESQYIR

Gonzales et al., 2014, 2015

METHOD

N=80 12-24 year olds who completed outpt or residential treatment

Owned mobile phones with texting capability

ESQYIR vs Standard Care (referral to 12-step facilitation)

Daily self-monitoring texts, a daily wellness recovery tip, and substance abuse education and social support resource information on weekends

ESQYIR

Gonzales et al., 2014, 2016

4 pm texts: monitoring questions (EMA) to assess current challenges (e.g. mood, confidence, stress issues, substance use, support activity).

Provide a numeric responses that are classified under a risk of relapse category and sent specific text messages

Automated feedback messages (a pool of over 600 messages): positive appraisal, motivational/inspirational, stress management tips, and coping advice based on pre-determined system rules linked to numeric response values.

ESQYIR RESULTS

Gonzales et al., 2014, 2016

- significantly less likely to use their primary drug

- significantly less substance use problem severity

- significantly more likely to engage in extracurricular recovery behaviors

ESQYIR RESULTS
Gonzales et al., 2014

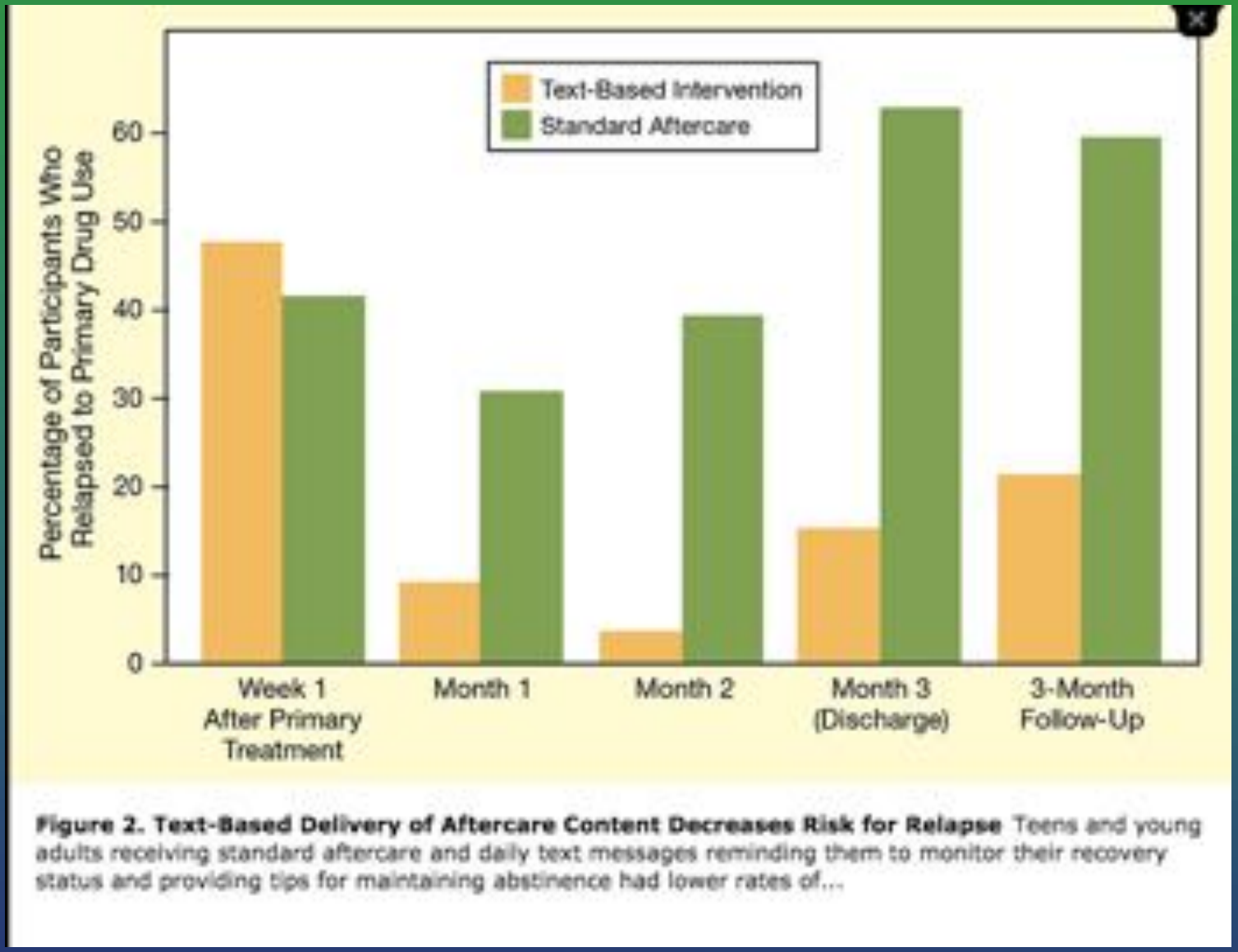
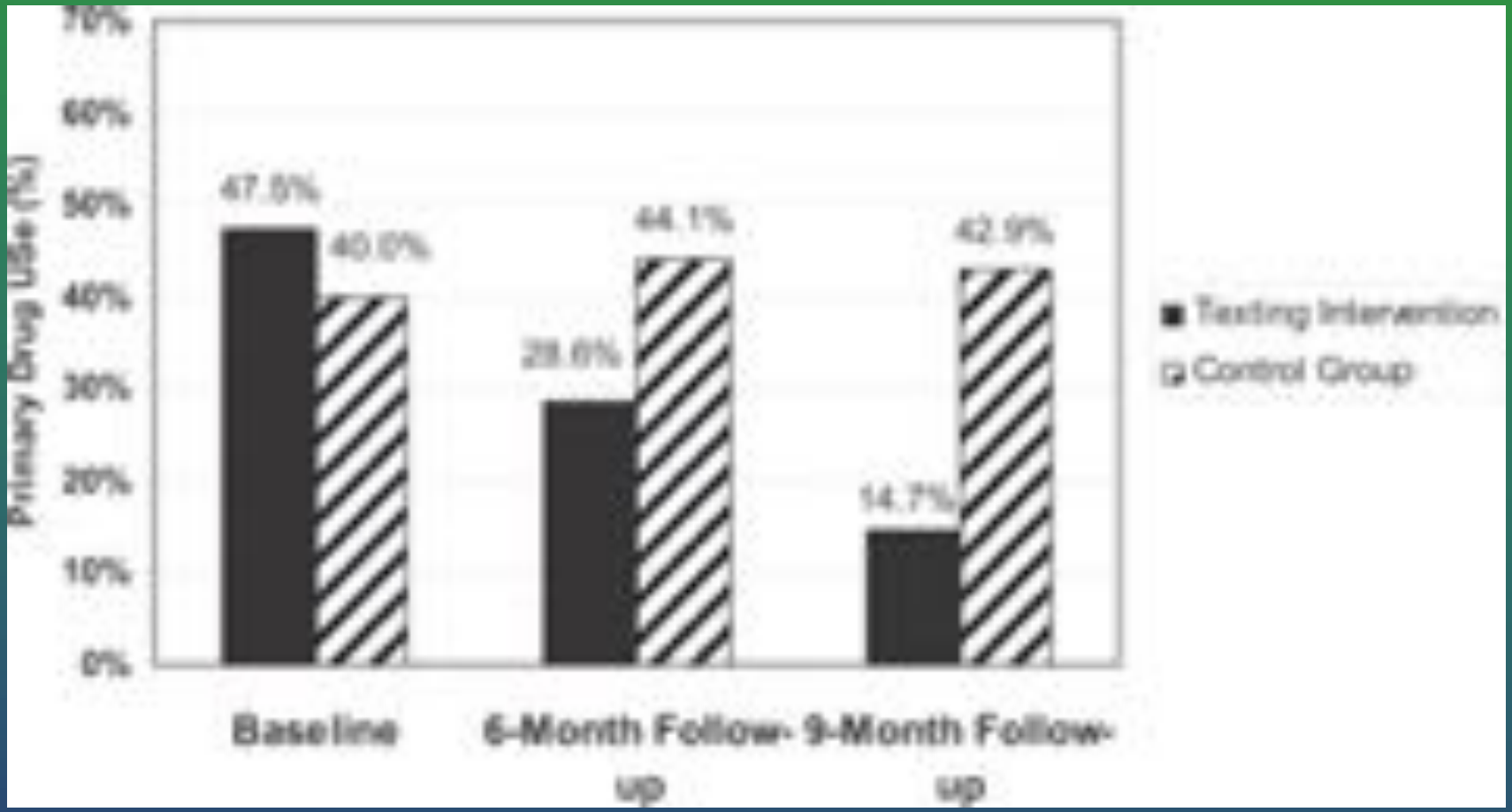


Figure 2. Text-Based Delivery of Aftercare Content Decreases Risk for Relapse Teens and young adults receiving standard aftercare and daily text messages reminding them to monitor their recovery status and providing tips for maintaining abstinence had lower rates of...

Youth recovery outcomes at 6 and 9 months



The American Journal on Addictions
Volume 25, Issue 1, pages 62-68, 21 DEC 2015 DOI: 10.1111/ajad.12322
http://onlinelibrary.wiley.com/doi/10.1111/ajad.12322/full#ajad12322-fig-0001

Smartphones for Recovery Support

Dennis et al., 2015

Pilot Study for Teens Discharged from Residential Tx (n=29)

Rationale: only 18% of the youth discharged from publicly funded treatment receive aftercare; even fewer access recovery support services

** **Use smartphones to**

(1) teach teens how to better self-monitor risk and protective factors; and

(2) provide immediate interventions that remind them of their motivation for recovery, prompting them to seek support from others, distract themselves from urges or cravings, and connect with others in prosocial ways

Smartphones for Recovery Support

Dennis et al., 2015

Method:

- Provided with phones, unlimited data and the study Apps
- Complete 2-3 minute EMA 6 times per day
- Suite of EMIs
- Meet with staff twice per week and provide urine specimen
- Earn $50 week for completing all tasks

- Miss more than 2 EMAs per day leads to staff contact

Smartphones for Recovery Support
Dennis et al., 2015

Suite of Apps (Gustafson et al. 2014):
ACHESS software: collect, time stamp, record, integrate data

- EMAs asked:
  - Who were you with? Where were you?
  - What were you doing? What were you feeling?
  - Rate the extent to which each factor:
    made you want to drink, use drugs, or supported recovery
  - To report on use, craving & pain levels, exposure to drugs

Smartphones for Recovery Support

Dennis et al., 2015

Suite of Apps:

- **EMIs**
  - Recovery support (discussion groups, support team, reach out to others via text, listen to recovery stories, meeting locator, linking to sponsor)

  - Relaxation (guided relaxation, playing games, listening to music, learn/reading, physical exercise)

  - Recovery motivation (motivational text messaging, recovery words, recovery profiles and pictures)

  - Social networking (Facebook, contacting friends)

Smartphones for Recovery Support

Dennis et al., 2015

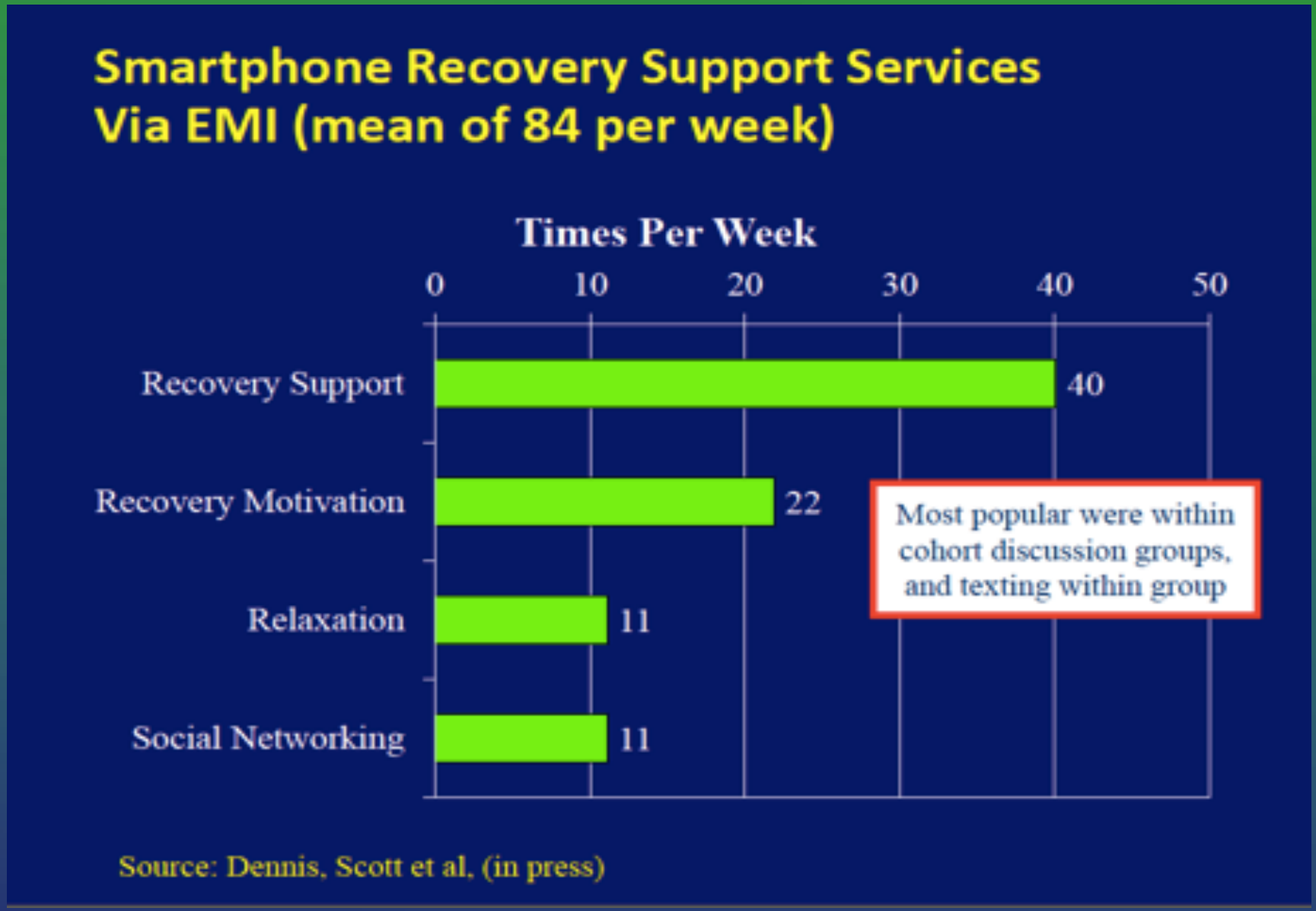
RESULTS

- 29 of the 32 completed 6 week study;

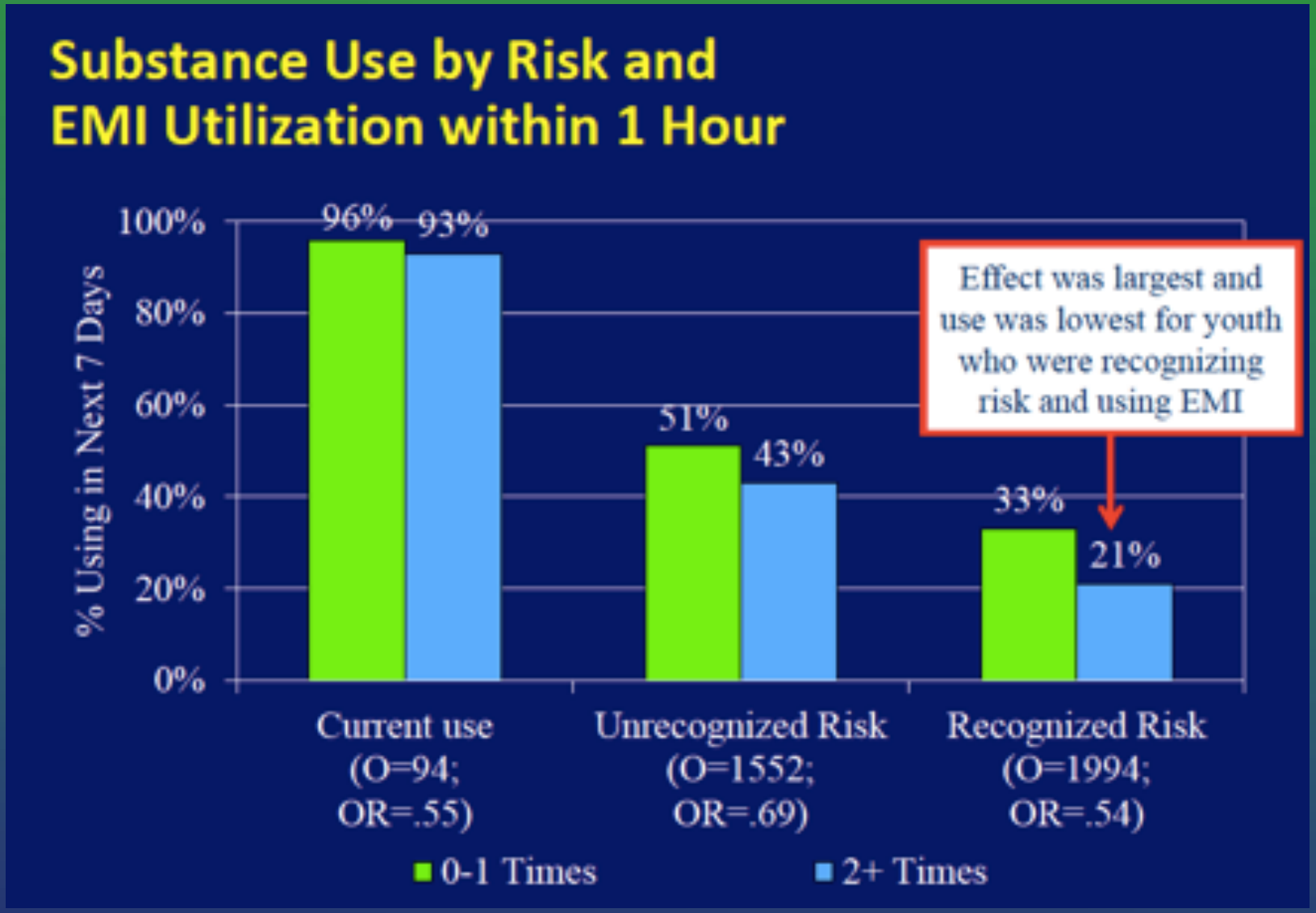
- 87% of EMAs completed

- On average, accessed an EMI on 162 occasions per week

RESULTS
Dennis et al., 2015



RESULTS
Dennis et al., 2015



SUMMARY / CONCLUSIONS

- Using smartphones is feasible for recovery support
- Initial impression is that EMA / EMI combo can identify risk level and potentially mitigate / reduce risk when used
- These teens used the program at a high level
- But –
  - Highly motivated, self-select sample
  - Only 6 weeks long
  - Incentives to use
  - No comparison condition
- Randomized trial with 400 teens is ongoing!

The Therapeutic Education System (TES) for Substance Abuse & HIV

TES is an interactive, behavioral therapy intervention for SUDs, grounded in the Community Reinforcement Approach, CBT, Contingency Management, HIV Prevention

Employs informational technologies of demonstrated effectiveness

Available on multiple platforms (including web-based desktop computers, Android smartphones, iPhones, iPads, etc.).

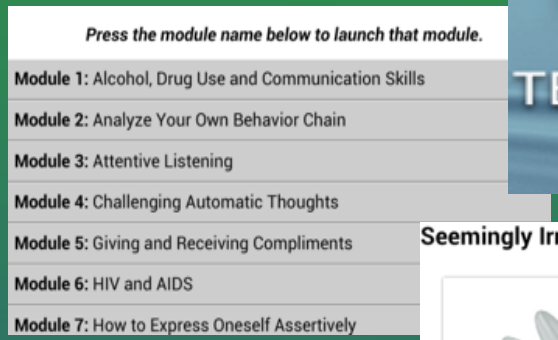
Therapeutic Education System (TES)

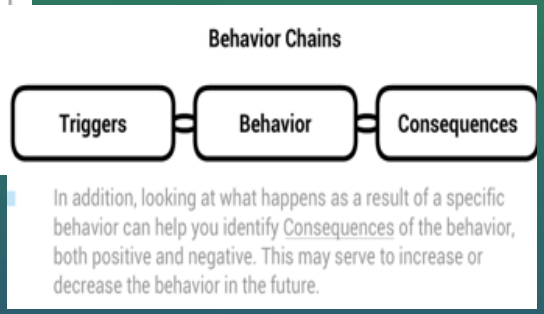
- composed of over 70 interactive modules grounded in the efficacious Community Reinforcement Approach
- self-directed & includes a Training Module
- customize for individualized treatment plan
- evidence-based program modules on skills training, interactive exercises and homework
- electronic reports of patients'
- track earnings of incentives
- new content can be readily added

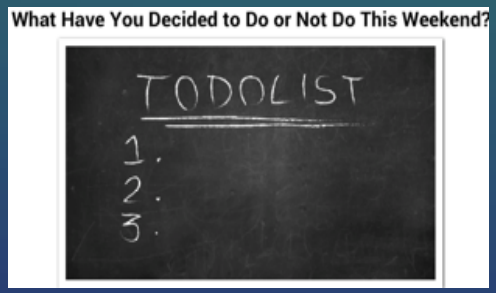
List of Module Topics in Therapeutic Education System (TES)

1 Training Module
2 What is a Functional Analysis?
3 Conducting a Functional Analysis
4 Self-Management Planning
5 Drug Refusal Skills Training
6 Awareness of Negative Thinking
7 Managing Negative Thinking
8 Managing Thoughts About Using
9 Managing Negative Moods and Depression
10 Introduction to Problem Solving
11 Effective Problem Solving
12 Progressive Muscle Relaxation Training
13 Receiving Criticism
14 Seemingly Irrelevant Decisions
15 Other Drug Use
16 Coping with Thoughts About Using
17 Introduction to Assertiveness
18 How to Express Oneself in an Assertive Manner
19 Introduction to Anger Management
20 How to Become More Aware of the Feeling of Anger
21 Coping with Anger
22 Introduction to Relaxation Training
23 Progressive Muscle Relaxation Generalization
24 Introduction to Giving Criticism
25 Steps for Giving Constructive Criticism
26 Receiving Criticism
27 Giving and Receiving Compliments
28 Sharing Feelings
29 Vocational Counseling
30 Naltrexone
31 Limited Alcohol Use
32 Financial Management
33 Insomnia
34 Time Management
35 Relationship Counseling Part 1
36 Relationship Counseling Part 2
37 Relationship Counseling Part 3
38 Alcohol and Disulfiram
39 Communication Skills
40 Nonverbal Communication
41 Social Recreational Counseling
42 Attentive Listening
43 HIV and AIDS
44 Sexually transmitted infections (STIs)
45 Hepatitis
46 Sexual transmission of HIV and STIs
47 The Female Condom
48 Birth control use and HIV and STIs
49 Drug Use, HIV and Hepatitis
50 Alcohol use and risk for HIV, STIs and hepatitis
51 Getting Tested for HIV, STIs and Hepatitis
52 Finding More HIV, STI and Hepatitis Information
53 Negotiating Safer Sex
54 Decision-Making Skills
55 Identifying/managing triggers for risky sex
56 Identifying and Managing Triggers for Risky Drug Use
57 Increasing-Self-Confidence in Decision Making
58 Taking Responsibility for Choices
59 Living with Hep C: Managing Treatment, Promoting Health
60 Living with Hep C: Coping Skills
61 Living with HIV: Coping skills and managing stigma
62 Living with HIV: Comm. skills for disclosing HIV status
63 Living with HIV: Managing treatment and medications
64 Living with HIV: Drug use and Immune System
65 Living with HIV: Daily routines to promote health

Sample Screens from TES







TES with Adolescents For HIV Prevention

Marsch et al., 2015

Compared to a Prevention Specialist:

Significant and comparable increases in:
- HIV/disease-related knowledge,
- condom use self-efficacy and skills,

Significant and comparable decreases in:
- HIV risk behavior.

Adolescents rated TES as easier to understand

TES with Adolescents For HIV Prevention

Marsch et al., 2015

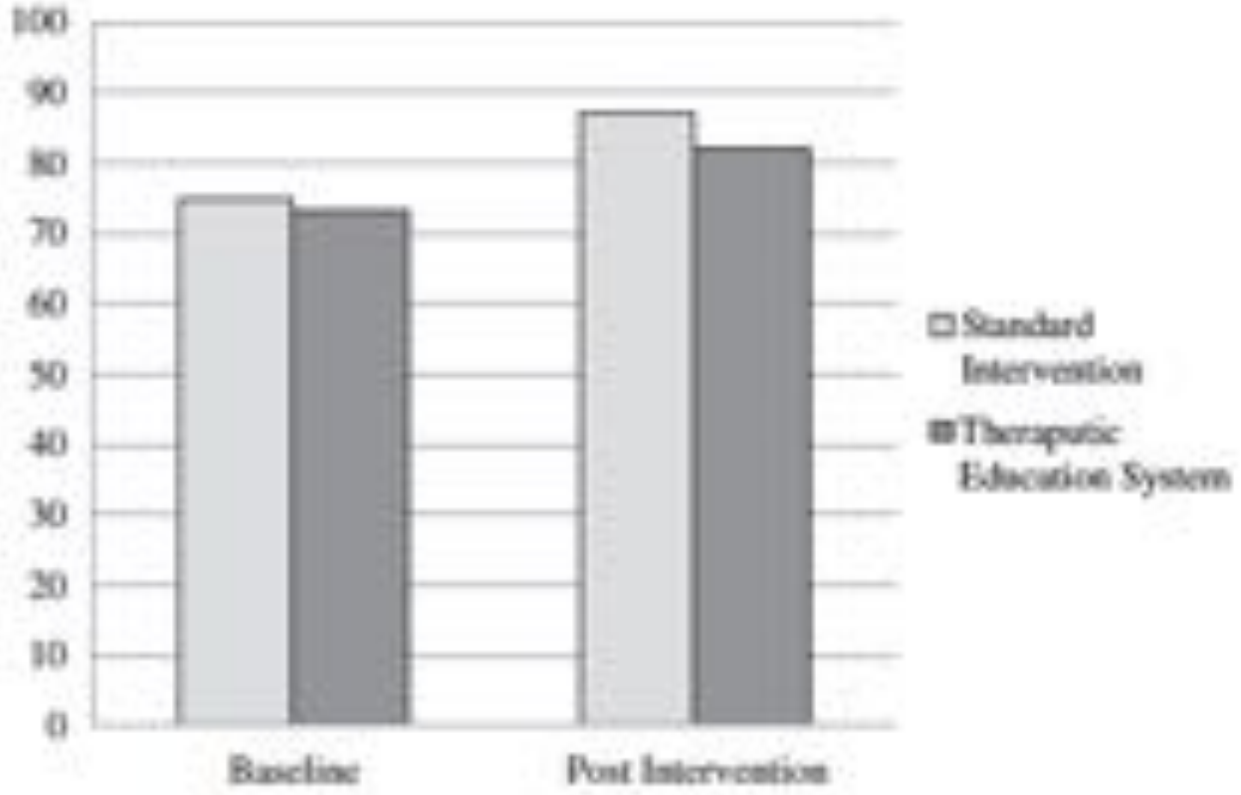
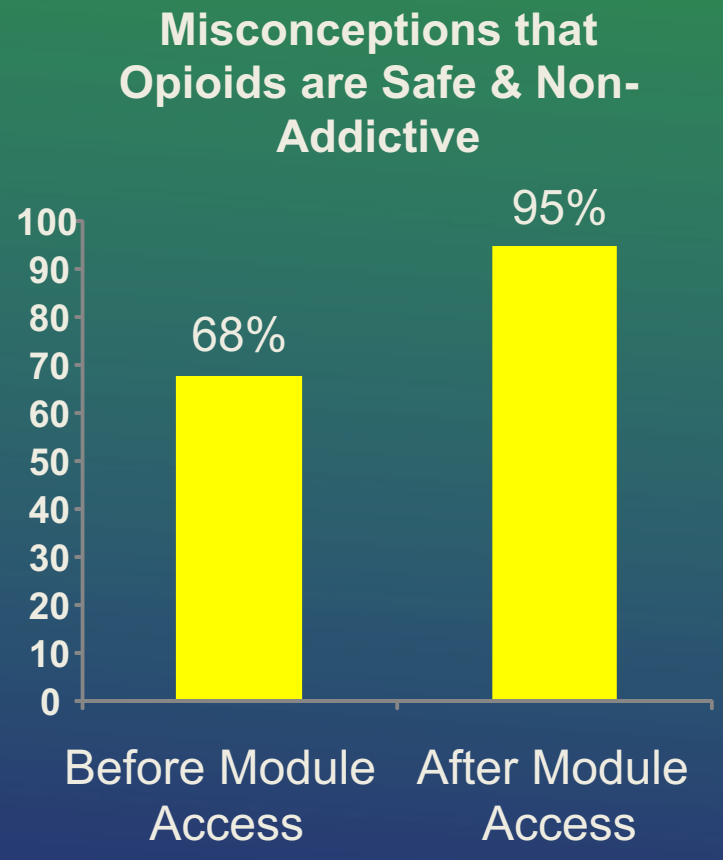


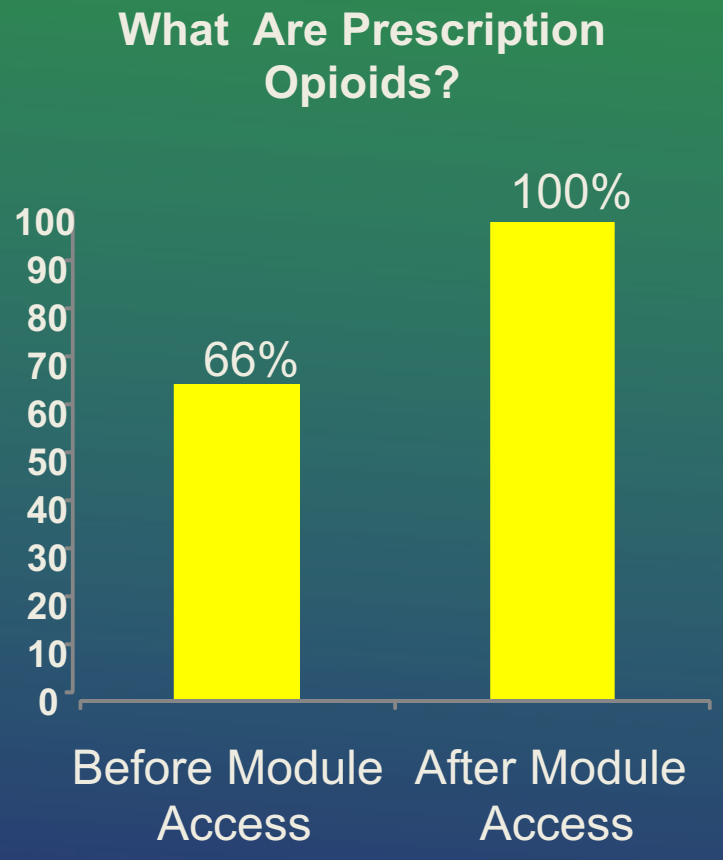
Fig. 2. Comparison of percentage of correct answers on the HIV and hepatitis knowledge measure pre- and post-intervention.

Web-based Prescription Opioid Prevention Program for High School-Aged Youth

Feedback Sessions:

Percent Accuracy on Knowledge Tests





Randomized Controlled Trial

- All recruitment, intervention delivery and data collection will take place online
- 400 Adolescents (12-17 yrs) randomized to (1) web-based Rx Prevention Program or (2) NIDA Peer Rx Program
- Complete 1-2 program sections 2x per week
- Assessments at baseline and 3- and 6-months post-intervention
- We will examine attitudes, intentions, knowledge, perceived risk, behavior

Newest Endeavor: square2

Square2® offers science-based self-regulation monitoring and health behavior change tools via an integrated platform to a wide array of populations.

Square2 Systems is informed by over $40 million in NIH-funded research.

Square2 is the a mobile platform that employs the fundamental principles behind the science of behavior change to a broad array of populations based on their goals, needs, and preferences and independent of diagnosis, “disease” or “disorder.

[https://www.square2.co].

square2

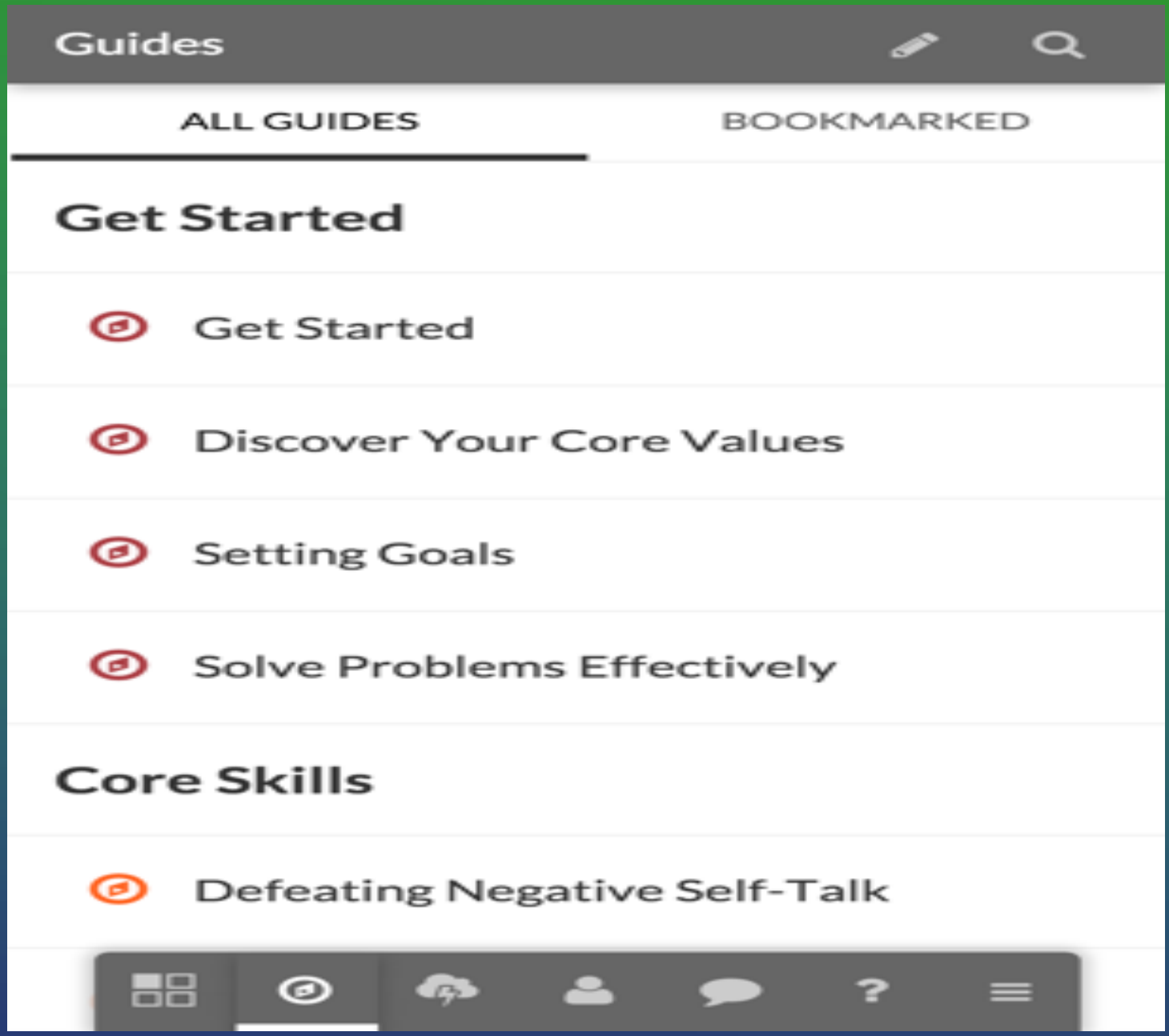
Discover your core values
Engage in a values sorting exercise to identify what's most important to you.

Identify your goals
Brainstorm, identify and refine your goals. Create and execute a plan of action.

Get and stay motivated to achieve your goals
You can track your progress toward your goals. Choose to share your progress with a personal support network.

Overcome obstacles, relapses, & setbacks along the way
Work through your problems. Learn new skills. Gain new understanding of your thoughts, feelings and behaviors to make them work for you.

Become the person you aspire to be.


Guides
ALL GUIDES
BOOKMARKED
Get Started
Get Started
Discover Your Core Values
Setting Goals
Solve Problems Effectively
Core Skills
Defeating Negative Self-Talk

Discover Your Core Values

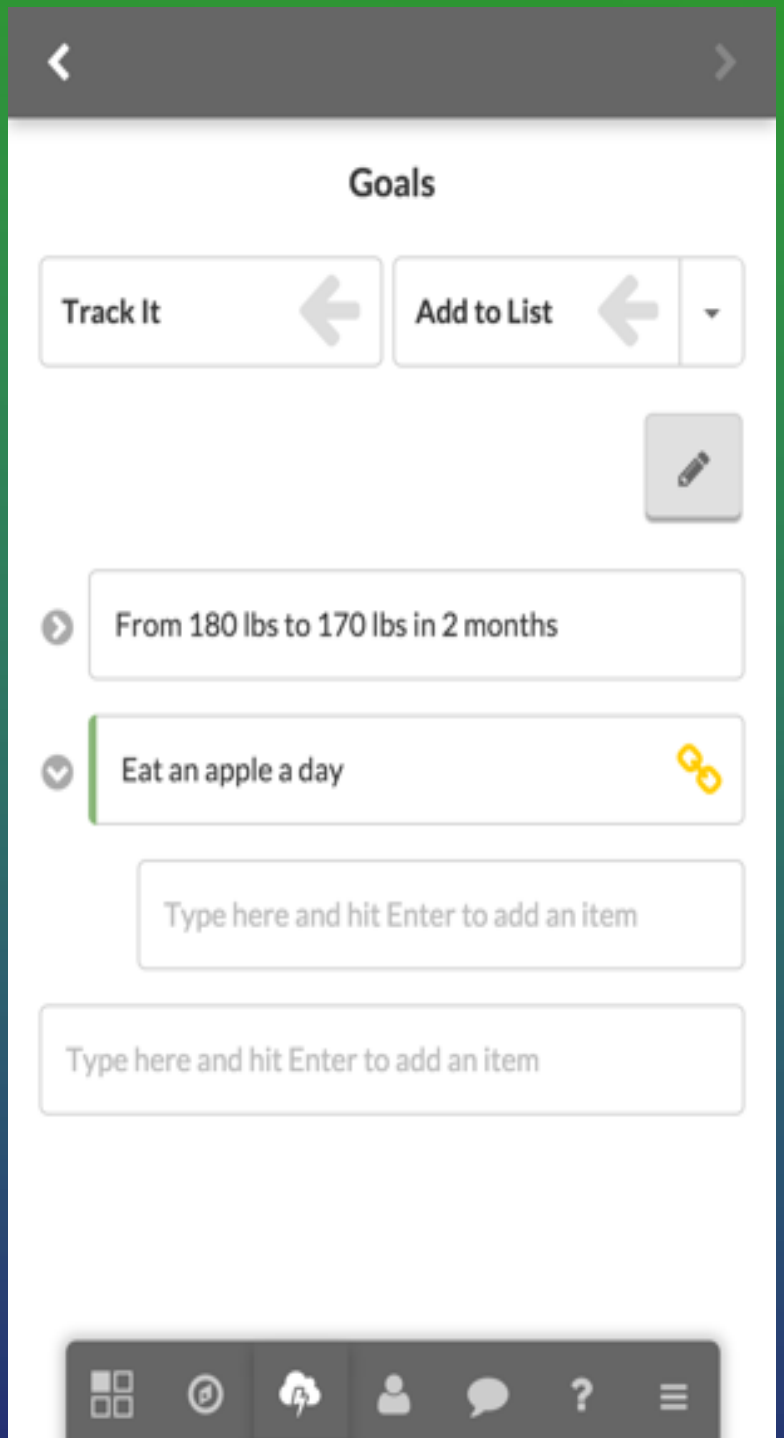
In this guide, you will engage in a values sorting exercise to discover what is most important to you. Clarifying your core values will help during Goal Setting and motivate you to persevere through tough times and setbacks.

Estimated time: ***5 minutes***

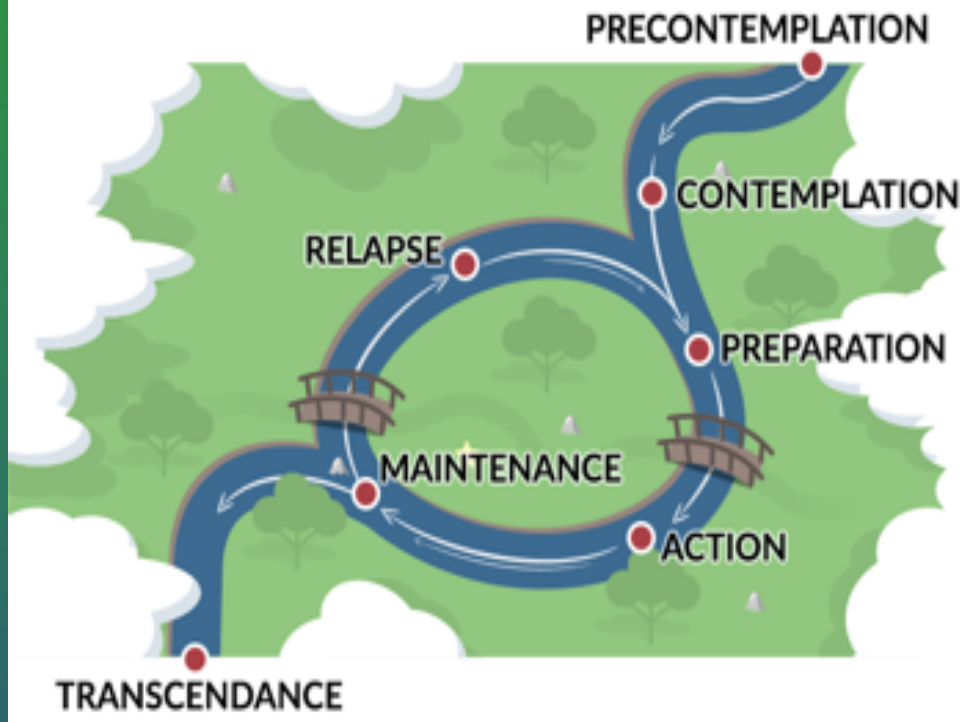
Set Your Goals

This guide is an introduction to setting goals. It will walk you through the process of creating Measures, Chains, and Lists, the core elements of Square2's goal tracking system.

Estimated time: ***15 minutes***


Goals
Track It
Add to List
From 180 lbs to 170 lbs in 2 months
Eat an apple a day
Type here and hit Enter to add an item
Type here and hit Enter to add an item

Stages of Change



Scientific research has shown that people usually progress through various stages as they make changes in their life.

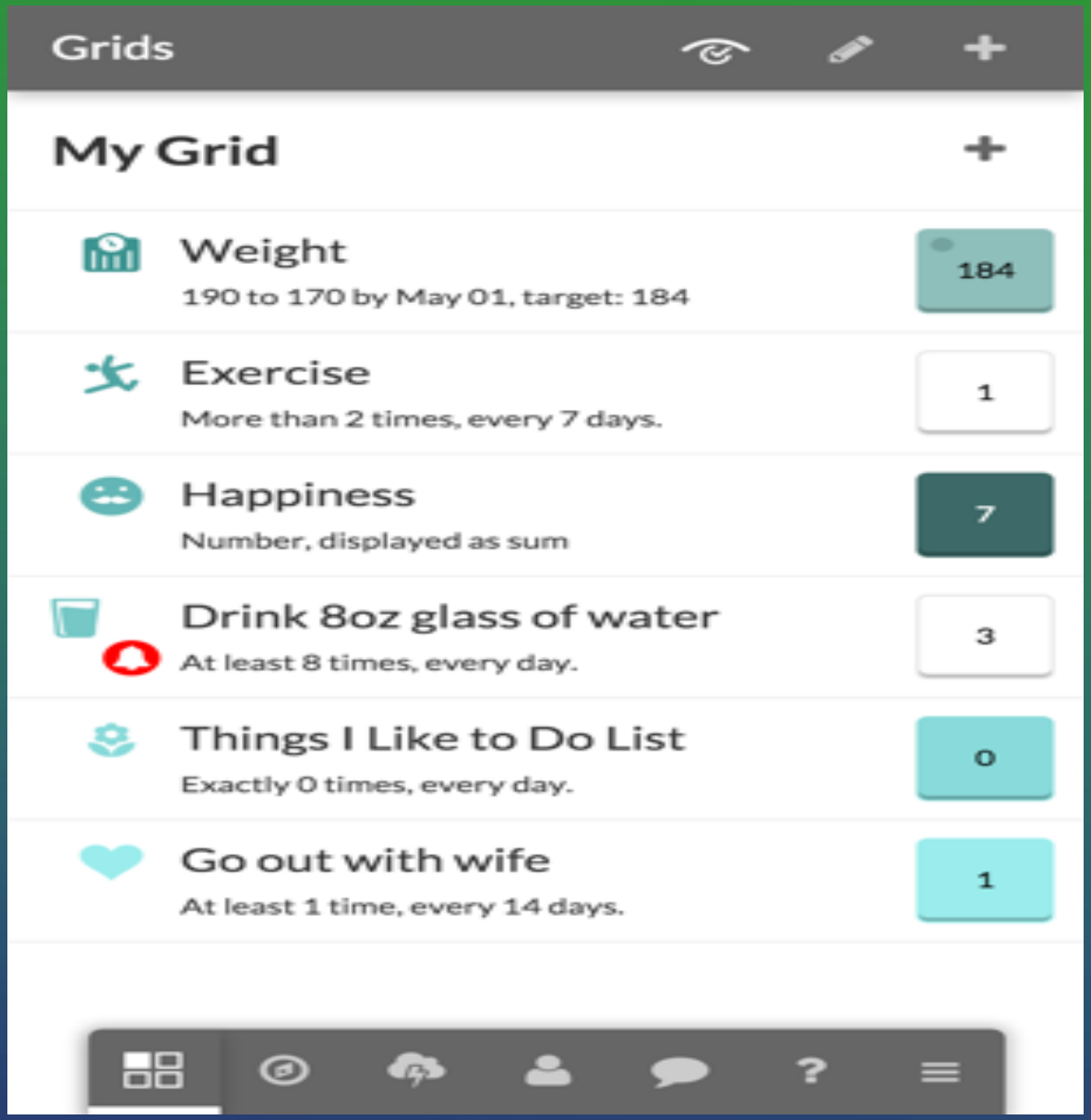
Making a change isn't a one-step process. Instead, people move through different stages to successfully change a behavior or achieve a goal.

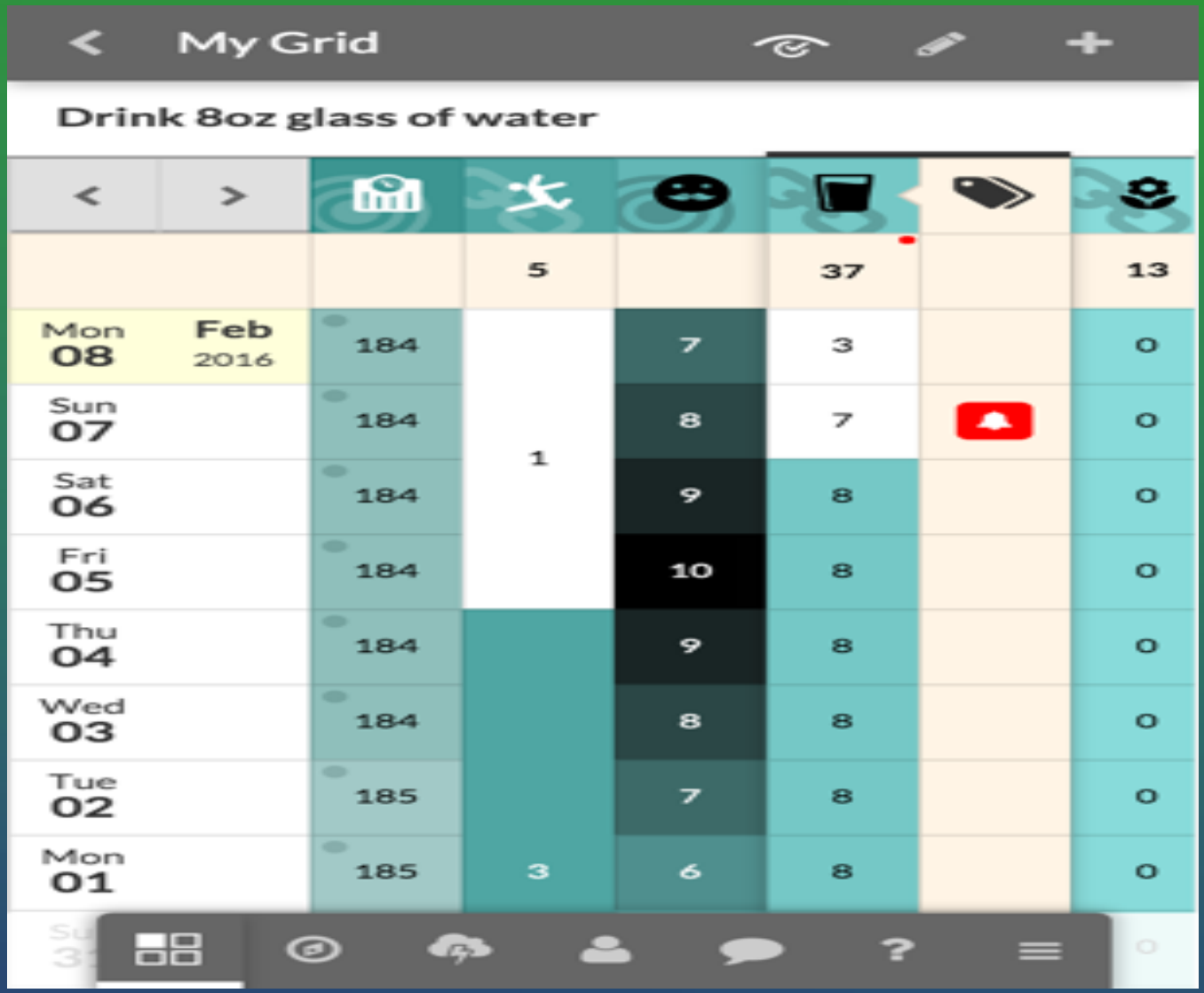
The "Stages of Change" model is a useful way to think about the process of change.

According to this model, there are six stages for changing a behavior, referred to as:

(1) Precontemplation
(2) Contemplation
(3) Preparation
(4) Action
(5) Maintenance
(6) Relapse

And a seventh stage that represents the completion of a change, Transcendence.


Grids
My Grid
Weight
190 to 170 by May 01, target: 184
184
Exercise
More than 2 times, every 7 days.
1
Happiness
Number, displayed as sum
7
Drink 8oz glass of water
At least 8 times, every day.
3
Things I Like to Do List
Exactly 0 times, every day.
0
Go out with wife
At least 1 time, every 14 days.
1


My Grid
Drink 8oz glass of water
5
37
13
Mon 08 Feb 2016
184
7
3
0
Sun 07
184
8
7
0
Sat 06
184
9
8
0
Fri 05
184
10
8
0
Thu 04
184
9
8
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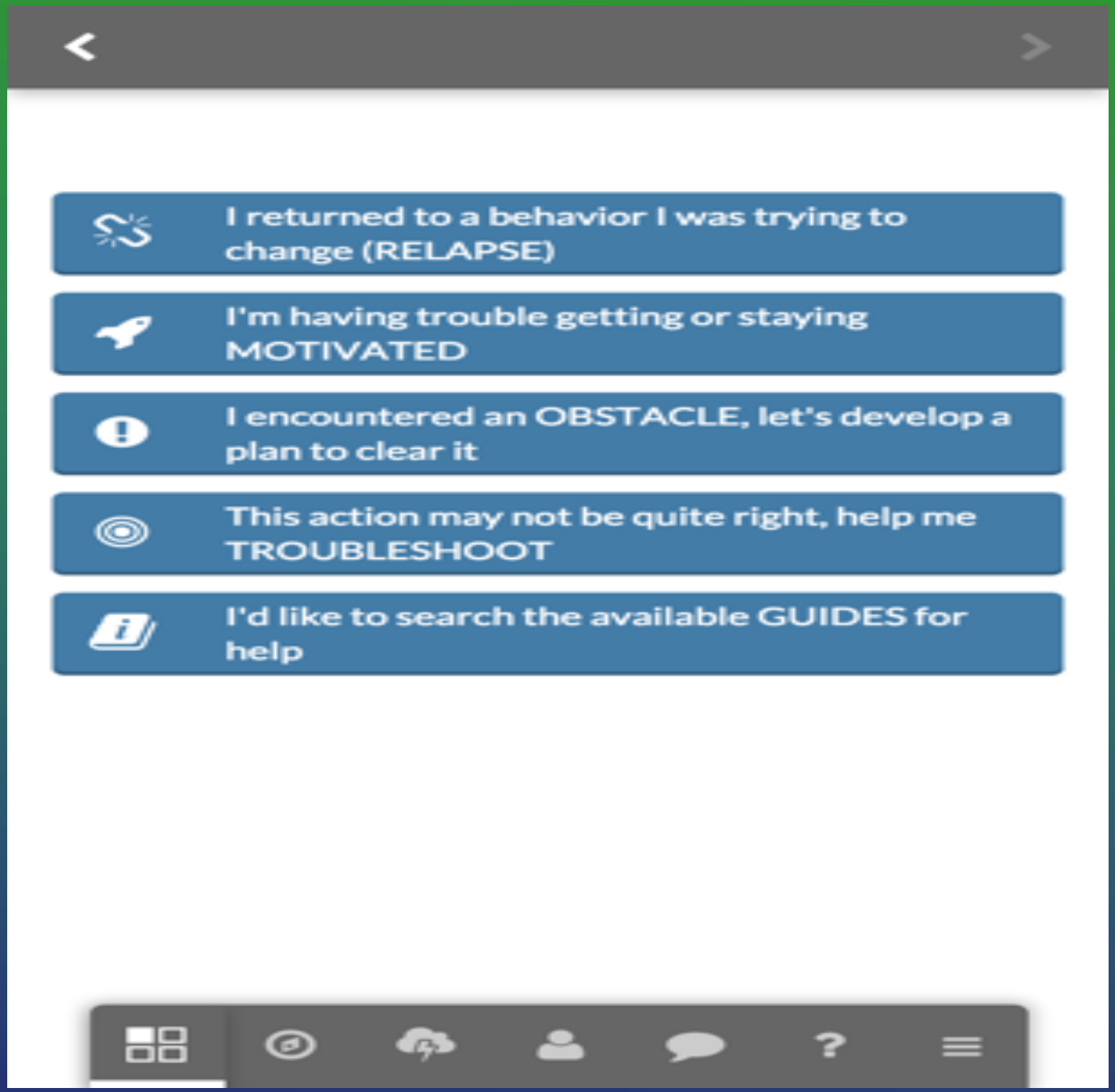
Tue 02
185
7
8
0
Mon 01
185
3
6
8
0
1


I returned to a behavior I was trying to change (RELAPSE)
I'm having trouble getting or staying MOTIVATED
I encountered an OBSTACLE, let's develop a plan to clear it
This action may not be quite right, help me TROUBLESHOOT
I'd like to search the available GUIDES for help

Home : Path

Improve my Outlook

Type here to add to your timeline

JAN 2015

Nice job, broheim. Keep it up, man.

10:31pm 01-03-15

Achievement: Happiness Scale >20!

8:30am 01-03-15

DEC 2014

We're so proud of you hunny! You're stronger than you know!
Check your mail, we sent you a care package.
Love, Mom

4:15pm 12-23-14

14 Days Unboken: I will not drink coffee after 3pm

3:22pm 12-23-14

You go. Preach it!

1:18pm 12-01-14

NOV 2014

It has been a really hard road so far, but I know I can make it!
Just look at my progress!

mHealth for Teen MJ use

- Adapt square2 for Adolescent Use
- Develop a Marijuana Use Guide

  (self-assessment, EMA and monitoring function, education)
- Target: **alternative school-based approach, offer interventions *that are voluntary and not labeled as treatment to* attract, engage, and effectively intervene with students with substantial cannabis and other substance use**
- Recruit high school students who use marijuana regularly
- Use incentives to monitor marijuana use and use other aspects of Square2

Transforming Adolescent SUD Care with Science-based Technology

Research to date underscores the promise and acceptability of technology-based interventions for adolescent substance use disorders

Opportunities for dissemination in schools, primary care, SUD treatment programs and direct to consumer

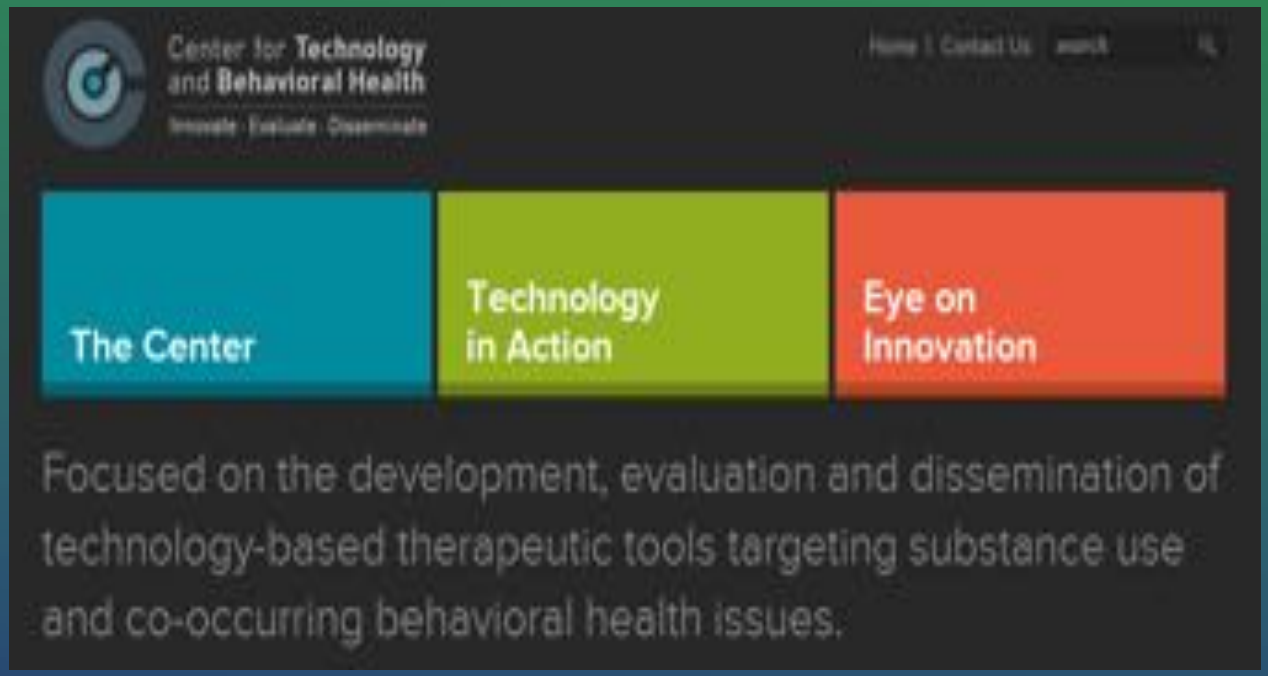
Can offer entirely new models to reach, engage and impact substance use among youth

How Science and Scientific Reporting Works

Center for Technology and Behavioral Health

P30 “Center of Excellence”

funded by the National Institute on Drug Abuse



www.c4tbh.org

Lisa A. Marsch, PhD Director (PI) (and Pilot Core Director

Cores:

- Treatment Development & Evaluation (Alan Budney, Director) - -
Dissemination &Implementation (Sarah Lord, Director)
- Emerging Technologies & Data Analytics (David Kotz, Director)
- Pilot (Lisa Marsch)

National "go-to" resource for diverse stakeholders:

--- centralized "toolkits" and "roadmaps" related to emerging technologies, innovative methodologies and analytics, and novel dissemination and implementation strategies related to technology-delivered behavioral health interventions ---

Challenge of Dissemination / Transportability

- Cost Effectiveness / Return on Investment
- Payor Systems
- Barriers related to beliefs about the Interventions
- Fidelity of Delivery / Personnel

Championing Innovation:

Developing an Effective Program in Your Community

Acknowledgements

NIH: National Institute on Drug Abuse,
NIMH, NICHD, NIDDR

ATTC

Dartmouth College and DHMC

Lisa Marsch, Michael Dennis, Jacob Borodovsky,
Bethany McLeman, Andrea Meier, Sonia Oren

Current Knowledge of Computerized Interventions for Substance Abuse

Consistent Findings

(1) Significantly better outcomes than minimal control conditions, but not other active legitimate interventions.

(2) Evidence strongest for adults (few studies with teens)

(3) More Intensive better than brief

(4) Human Contact: some contact better than none

(5) Offline perhaps better than on-line / on-site better than off-site

(Litvin, 2013)