



Re-Envisioning Tailoring: New Directions for Designing and Evaluating Tailored eHealth Interventions

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Specific Aims:

- spark interest in discovering new ways to optimize the effects of tailoring while doing so in a cost-effective way,
- discuss tailoring in the context of designing eHealth interventions, and
- introduce a proposed model for designing more effective eHealth interventions.



Why eHealth?

- the web is a “hybrid channel”
- broad reach of mass media
- persuasive capabilities of interpersonal media
- messages can be widely disseminated yet personalized



Advantages of eHealth technologies



Stiff Joints Making You Feel Old?

Get tips and tricks to bend your way out of joint pain

10 Signs You Need a Makeover

Have a Bad Habit or Two?
If any of the following sounds familiar to you, chances are your body is craving a lifestyle makeover. [More](#)

Say Goodbye to Belly Flab

Say Hello to Flatter, Tighter Abs
Swap your jelly belly for some lean, mean stomach muscles by using these 9 simple tricks. [More](#)

Tip of the Day

Extra-Virgin Olive Oil: Something to Remember
Need another reason to make olive oil a staple in your diet? If its antioxidant-giving, inflammation-busting, and cell-defending powers aren't enough, maybe its potential to fight Alzheimer's disease will win you over. Researchers have discovered a compou [More](#)

What's Your Risk?

It's Breast Cancer Awareness Month
Calculate your short- and long-term risk of breast cancer and get a better understanding of your own risk factors. [More](#)

How Old Does Your Body Think You Are?

Take the New, Improved Test!

Take the RealAge Test and get your FREE Grow Younger Plan!

With AARP online tools and resources.

[LEARN MORE](#)

65 Health Tests and Tools

Get personalized advice on:

[Blood Pressure](#)

Tools for Patient Education

Skills Building



Exercise Queue

- SIDE TAPS AND DL
- FLY AB COMBO
- LYING CHEST PRESS
- SQUAT PROGRESSION

Warm Up: Side Taps and Digs
Target area: Full Body
Tools: None

Primary Muscles

- SHOULDERS
- BACK
- CORE
- GLUTES
- QUADRICEPS
- HAMSTRINGS

Key Elements

- HEAD: Facing forward
- SHOULDERS: Square
- ABS: Up and in

00:15 / 02:44

EMPOWERMENT TOOLS

BMI CALCULATOR
Body Mass Index
Current BMI: **19.93**
[update](#)

ADBR CALCULATOR
Avg. Daily Burn Rate
kCal / day: **2160.06**
[update](#)

TDR CALCULATOR
Total Daily Req.
Min Protein grams: **108**
[update](#)

[See All Empowerment Tools](#)

WORKOUT CALENDAR

<< October 2011 >>

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Tracking and Monitoring Tools



5k

Week 1 Day 1

5-minute warmup, then alternate 60 seconds of jogging with 90 seconds of walking for 20 minutes.

Duration: 30 minutes

0:00 elapsed 5:00 0 to next 30:00 remain

Start Ready

1.1 1.2 1.3

Music Couch to 5k Stretches

The first workout. Start here.



Social Support

Cessation Programs

Tobacco Free Florida

HOW TO GET INVOLVED [QUITLINE](#) FOLLOW US [facebook](#) BECOME A FAN

I DON'T USE TOBACCO, I'VE CHOSEN TO BE FREE I USE TOBACCO, BUT I WANT TO BE FREE ABOUT TFF SCHEDULE & EVENTS

Online counseling « **Quitline** » Phone counseling 1-877-822-6669
Click to enroll Call now

It's easy to enroll in our program, choose what works best for you and contact us

Call the Florida Quitline for free counseling, nicotine patches or gum, and more. Or recommend the Quitline to someone you know who wants to beat their addiction for good.

Click here to download our Quitline brochure English | Español

RECOMMEND SOMEONE

[f](#) [t](#) [e](#)

The Florida you need

Each year, the more try, but those with a smokeless an

eHealth on a shoe-string budget

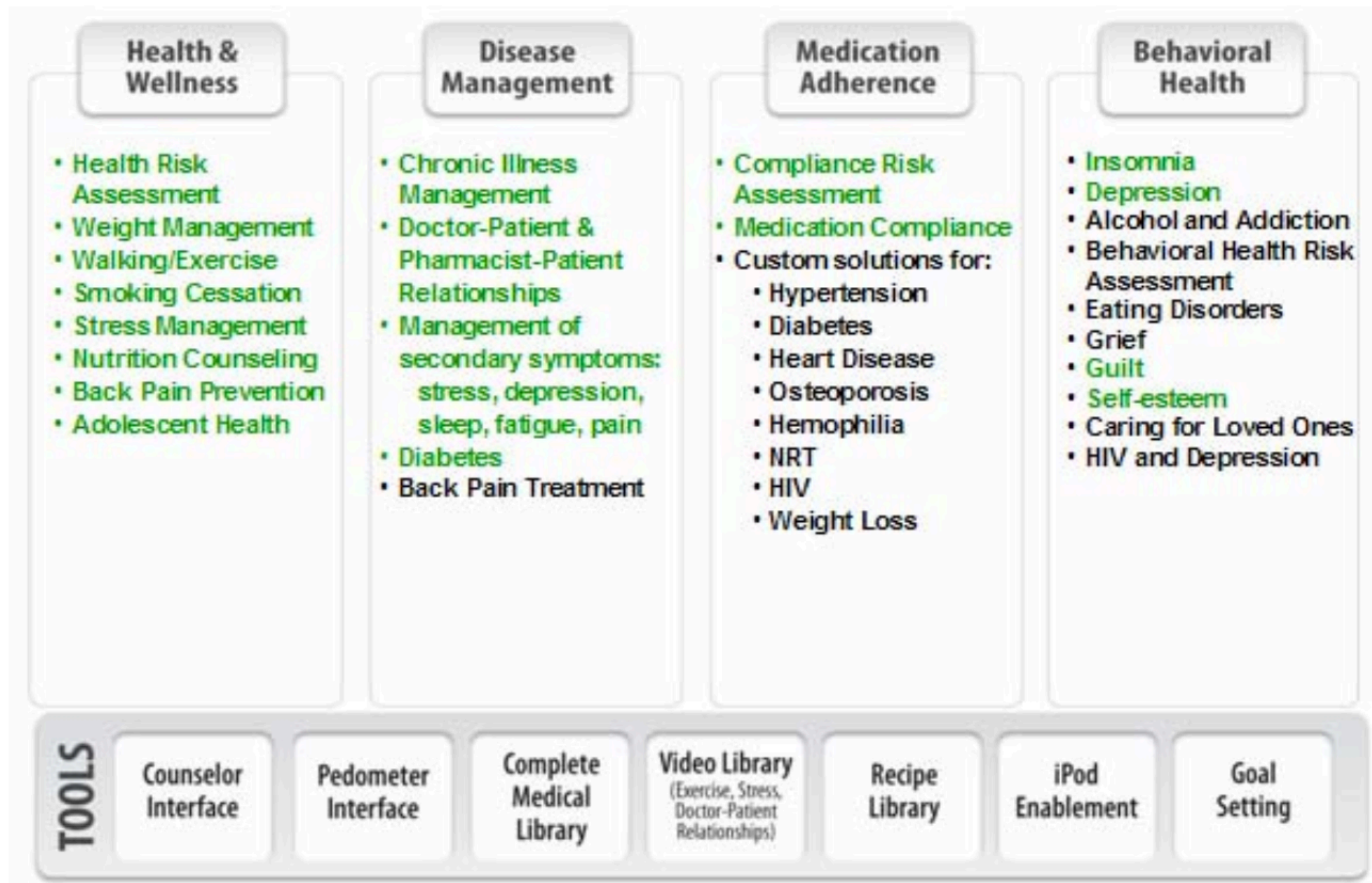


Circa 2007 ;-)

Big budget projects

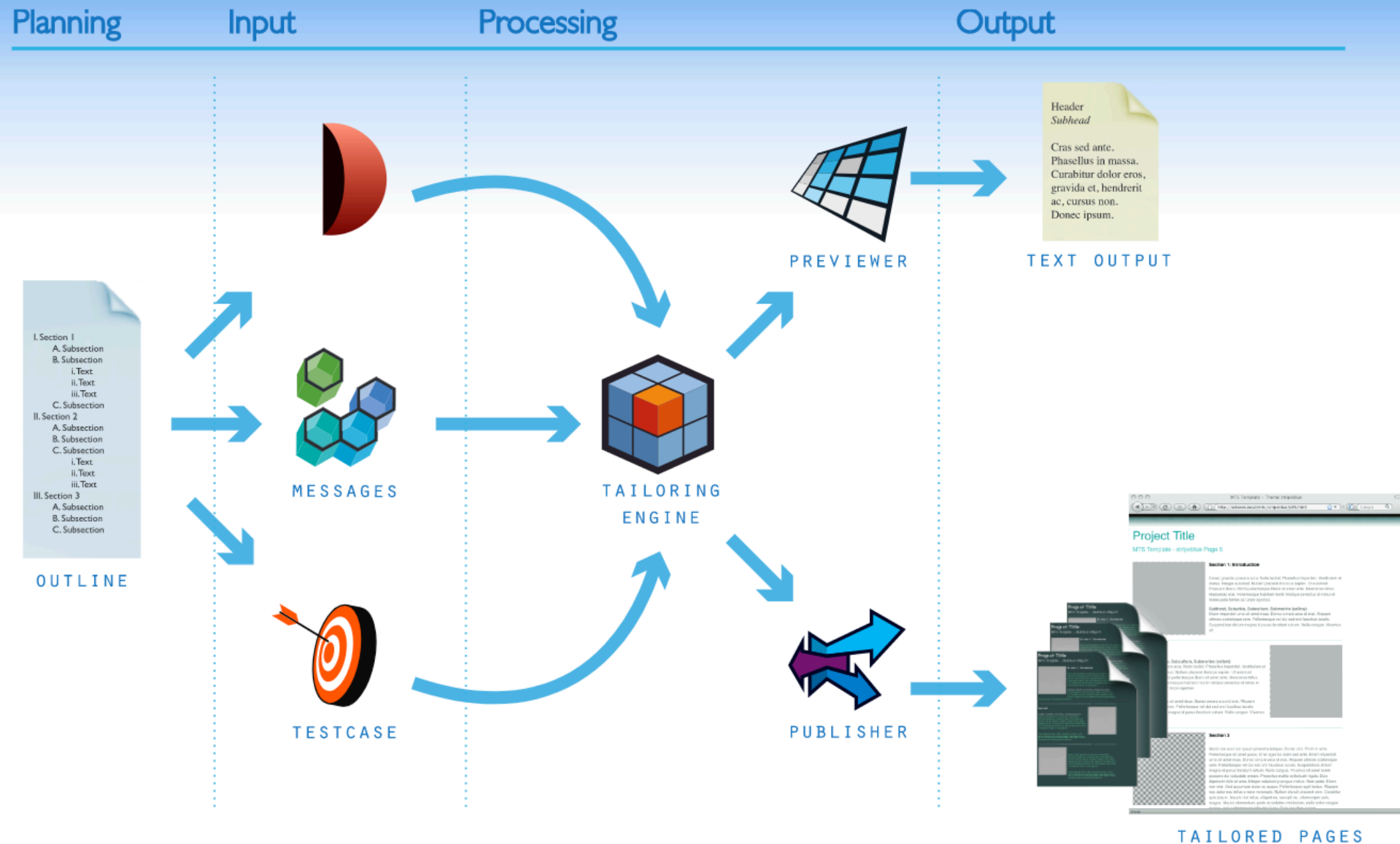


HealthMedia® Care™ for Diabetes
The Complete Diabetes Management Approach



Michigan Tailoring System

The Black Box Tailoring Engine



MTS Publishing Tool

The screenshot displays the MTS Publishing Tool interface. On the left is a Project Explorer pane showing a tree structure with folders like 'DictionaryDe', 'MessageDem', 'SleepWell', 'Message', 'Sleep', 'Publishe', 'Test', 'Test', 'Surveys', 'Test Cas', 'Utilities', and 'SleepWe'. Below this is a Control Panel with fields for 'Current Project: SleepWell', 'Dictionary: SleepWell', 'Testcase: Amanda', and 'Message: SleepWell'. The main window shows a web page titled 'SleepWell' with the subtitle 'What You Can Do For Better Sleep'. The page features a photo of a man and a video player overlay with a play button. The video player has a progress bar and a volume control. The page content includes a section titled 'John was tired of being tired.' followed by text about sleep issues and a section titled 'One Thing You Can Do This Week' with advice on changing routines. The status bar at the bottom indicates 'There was one error opening the page. For more information, choose Activity from the Window menu.' and shows the file path 'SleepWell/Publisher/Test1_01/Testcase_Adam/Page1_Barriers.html' and '20M of 22M'.

Barriers

file:///Users/jnderry/SleepWell/Publisher/Test1_01/Testcase_Adam/Page1_Barriers.html

FunSize 12 UM Facebook Yahoo! Mail Mac Wines Weather UM Work

SleepWell

What You Can Do For Better Sleep

John was tired of being tired.

If there's one thing I've learned, is that you can teach an old dog new tricks. Even an old tired one like me. Besides, one can only take so many bad jokes about travel and bags under the eyes. There was no denying that I had been feeling pretty wiped out, but who doesn't? But when I realized that I fell asleep half way through the last 4 movies I went to see...well, that helped trigger the final alarm to change things up.

After keeping a sleep diary for a few weeks and reading some stuff online, I realized that at least one of my problems stemmed from the fact that I was going to bed pretty stressed out. Most every night, the house, the bills - you name it, I was thinking about it. Something needed to change.

So I took action. I wrote down a few ideas that I thought might help, then picked the one that just felt right. I bought a package of big sticky notes and put them by the bed. Then, whenever something either kept me up or woke me up, I wrote it down. If a new topic popped into my head, I used a new sticky note. It totally helped. I stopped spending all night focusing on what I had to remember in the morning and instead, woke up with a list of things I needed to take care of. Don't get me wrong, there are still some tough nights because of other things. But one step at a time.

One Thing You Can Do This Week

Adam, it can be hard to dedicate time to changing routines and things around your home for the sake of sleep. You may wonder if the changes are realistic or if you will feel more rested when all is said and done. Only time will tell how changes will impact your sleep. Before you begin to make any changes though, let's look at how ready you are to change.

We asked you how confident you feel about being able to improve your sleep routine. You picked 6 (1 is "not at all confident" and 10 is "very confident"). It sounds like you're somewhere in the middle. Take a minute to think about why you chose this number. Why did you choose 6 instead of a lower number? What would it take to move you to a higher number?

Let's take a closer look at two issues that can make it difficult for you to get a good night's sleep. Each issue has two tips that may help you make a change for the better. Pick one tip from either issue that you feel most comfortable trying this week and go for it. Make sure to write comments in a sleep diary so you can track what helps and what doesn't.

ISSUE: I've got too much on my mind.

There was one error opening the page. For more information, choose Activity from the Window menu.

SleepWell/Publisher/Test1_01/Testcase_Adam/Page1_Barriers.html

20M of 22M

Reverse-Engineering

- How are tailored web-based behavior-change interventions operationalized?
- Are tailored web-based interventions effective?
- What makes tailored web-based behavior change interventions effective?



Systematic Review

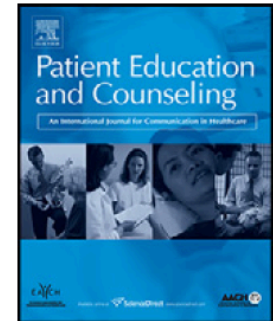
Patient Education and Counseling 74 (2009) 156–173



Contents lists available at [ScienceDirect](#)

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou



Review

Computer-tailored health interventions delivered over the web: Review and analysis of key components

Mia Liza A. Lustria^{a,*}, Juliann Cortese^b, Seth M. Noar^c, Robert L. Glueckauf^d

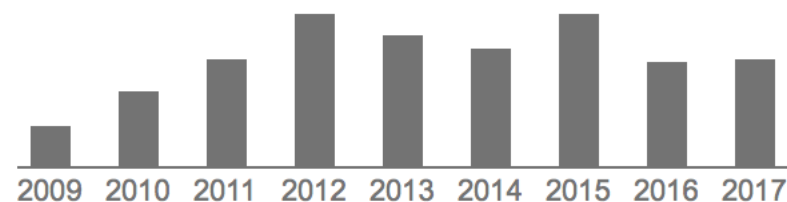
^a College of Information, Florida State University, 270 Louis Shores Building, Tallahassee, FL 32306-2100, United States

^b Department of Communication, Florida State University, United States

^c Department of Communication, University of Kentucky, United States

^d Department of Medical Humanities and Social Sciences, College of Medicine, Florida State University, United States

Totaal aantal
citaties



Scholar-artikelen

[Computer-tailored health interventions delivered over the Web: review and analysis of key components](#)

MLA Lustria, J Cortese, SM Noar, RL Glueckauf - Patient education and counseling, 2009

Geciteerd door 447 [Verwante artikelen](#) [Alle 12 versies](#)

Strategies Used in Web-Based Behavior Change Interventions

166

M.L.A. Lustria et al. / Patient Education and Counseling 74 (2009) 156–173



Fig. 2. Organizing heuristic for strategies used in computer-tailored online behavioral interventions.

Meta-Analysis



Journal of Health Communication
International Perspectives



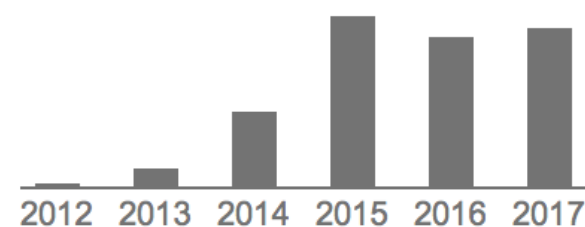
ISSN: 1081-0730 (Print) 1087-0415 (Online) Journal homepage: <http://www.tandfonline.com/loi/uhcm20>

A Meta-Analysis of Web-Delivered Tailored Health Behavior Change Interventions

Mia Liza A. Lustria , Seth M. Noar , Juliann Cortese , Stephanie K. Van Stee ,
Robert L. Glueckauf & Junga Lee

Totaal aantal
citaties

Geciteerd door 202



Scholar-artikelen

[A meta-analysis of web-delivered tailored health behavior change interventions](#)

MLA Lustria, SM Noar, J Cortese, SK Van Stee... - Journal of health communication, 2013

Geciteerd door 202

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Results

- Web-based tailored interventions effected significantly greater improvement in health outcomes as compared with control conditions both at:
 - posttesting, $d = .139$ (95% CI = .111, .166, $p < .001$, $k = 40$), and
 - at follow-up, $d = .158$ (95% CI = .124, .192, $p < .001$, $k = 21$)

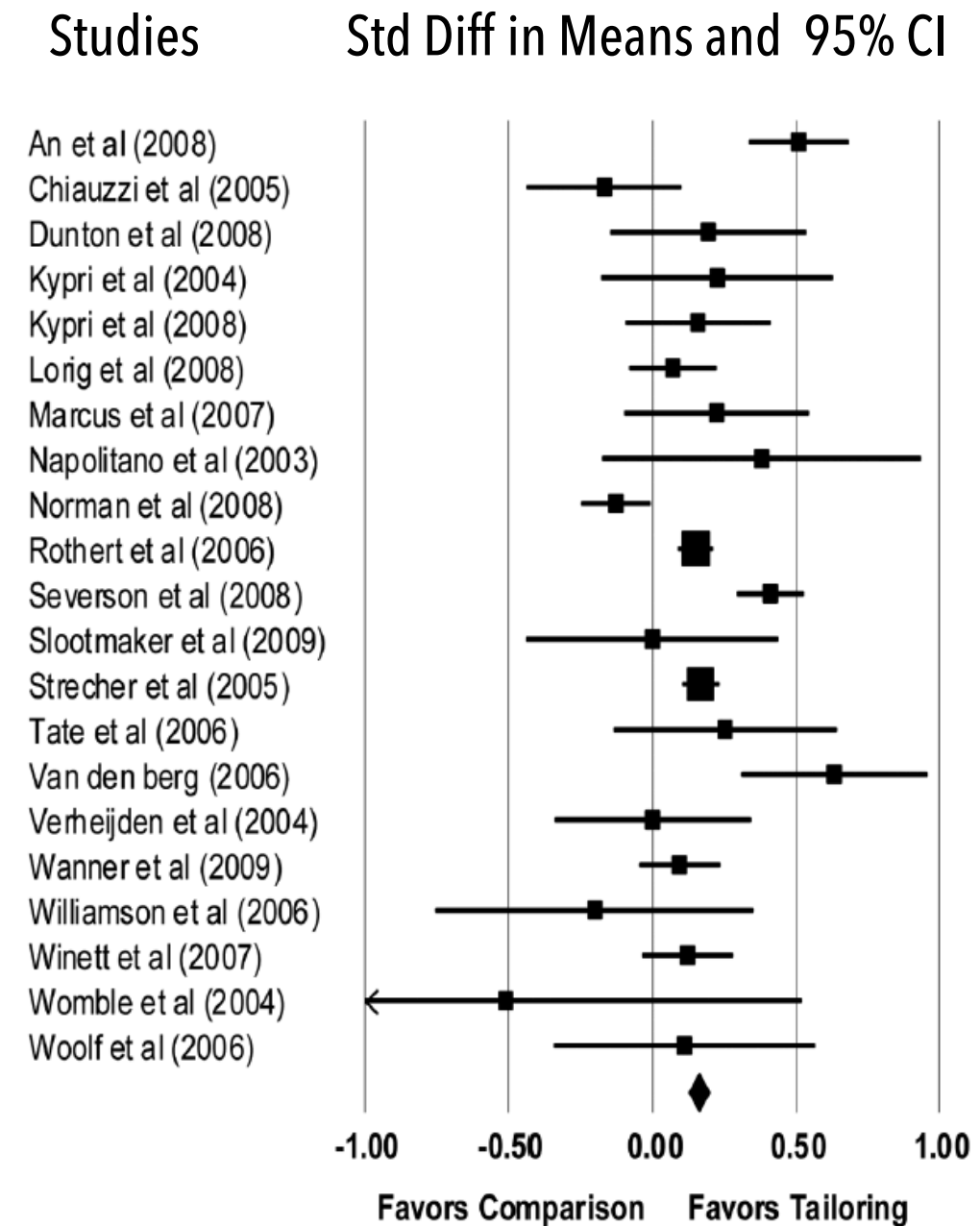


Figure 3. Forest plot displaying effect sizes and 95% confidence intervals for the 21 studies reporting long-term effects.

Message Processing & Tailoring



A model of tailoring effects

A model of tailoring effects: A randomized controlled trial examining the mechanisms of tailoring in a web-based STD screening intervention.

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Database: PsycARTICLES

Journal Article

[Lustria, Mia Liza A.](#) [Cortese, Juliann](#) [Gerend, Mary A.](#) [Schmitt, Karla](#) [Kung, Ying Mai](#) [McLaughlin, Casey](#)

Citation

Lustria, M. L. A., Cortese, J., Gerend, M. A., Schmitt, K., Kung, Y. M., & McLaughlin, C. (2016). A model of tailoring effects: A randomized controlled trial examining the mechanisms of tailoring in a web-based STD screening intervention. *Health Psychology, 35*(11), 1214-1224.

<http://dx.doi.org/10.1037/hea0000399>

Health Psychology

Editor Kenneth E. Freedland,
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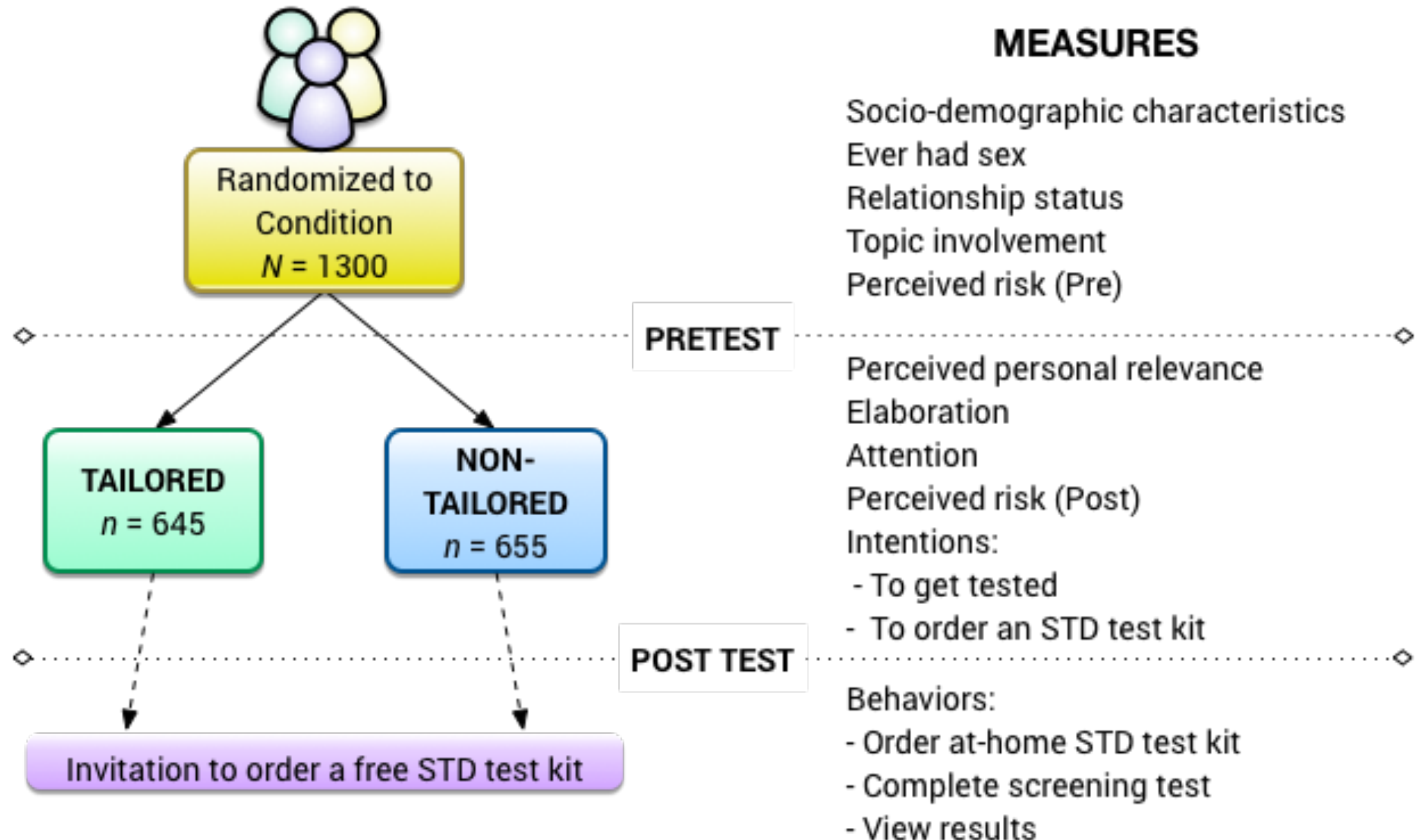
RU @ Risk?

A dialog about your health.



- ◎ Main Objective: Encourage self-assessments of risk and promote STD testing among young adults
- ◎ Intervention: Tailored, web-based intervention and STD test kit ordering system
- ◎ Collaborators: FSU College of Communication & Information, College of Medicine, School of Nursing, Student Health Center; DOH; GenProbe
- ◎ Funding: FSU-CRC; CON Internal Grant; GenProbe

Research Design



Results of RCT

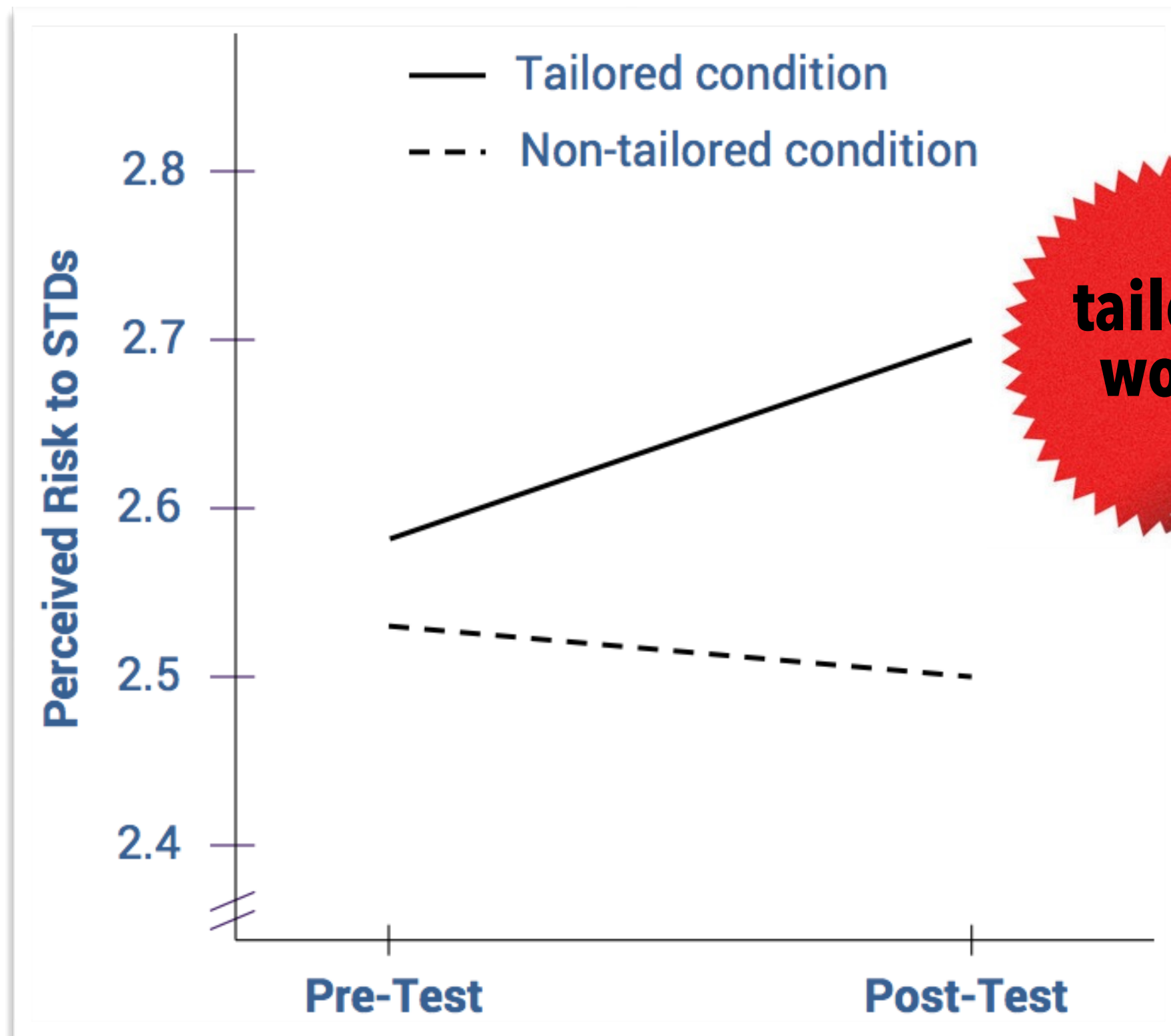
Table 2 Means and standard deviations of all study scales for participants in the tailored vs. non-tailored condition

	Total Sample <i>M</i> (<i>SD</i>)	Tailored Cond. <i>M</i> (<i>SD</i>)	Non-Tailored Cond. <i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
<i>Pre-Test Measures</i>						
Topic Involvement	6.07 (1.35)	6.03 (1.37)	6.10 (1.34)	.88 ^a	.381	-0.05
Perceived Risk	2.56 (1.33)	2.59 (1.35)	2.53 (1.30)	-.70 ^b	.482	.05
<i>Post-Test Measures</i>						
Perceived Personal Relevance	2.93 (1.07)	3.18 (1.11)	2.69 (1.05)	-8.26 ^b	.000	.45
Perceived Risk	2.60 (1.42)	2.70 (1.45)	2.49 (1.37)	-2.66 ^a	.008	.15
Attention	3.14 (.91)	3.30 (.91)	2.97 (.88)	-6.57 ^b	.000	.37
Elaboration	3.45 (.86)	3.56 (.86)	3.35 (.85)	-4.48 ^b	.000	.25
Behavioral Intentions	2.82 (1.25)	2.96 (1.26)	2.67 (1.23)	-4.21 ^b	.000	.23

^a *df* = 1297, ^b *df* = 1298

tailoring
works!

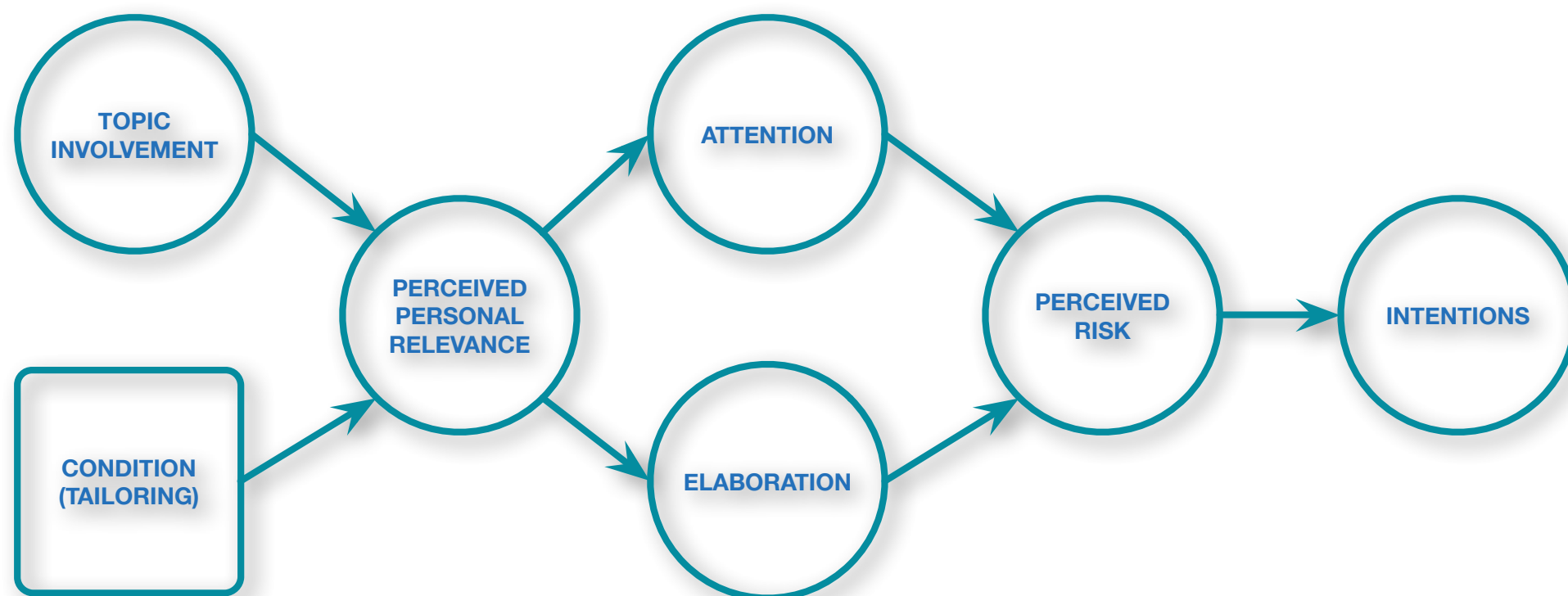
Perceived Risk Pre and Post



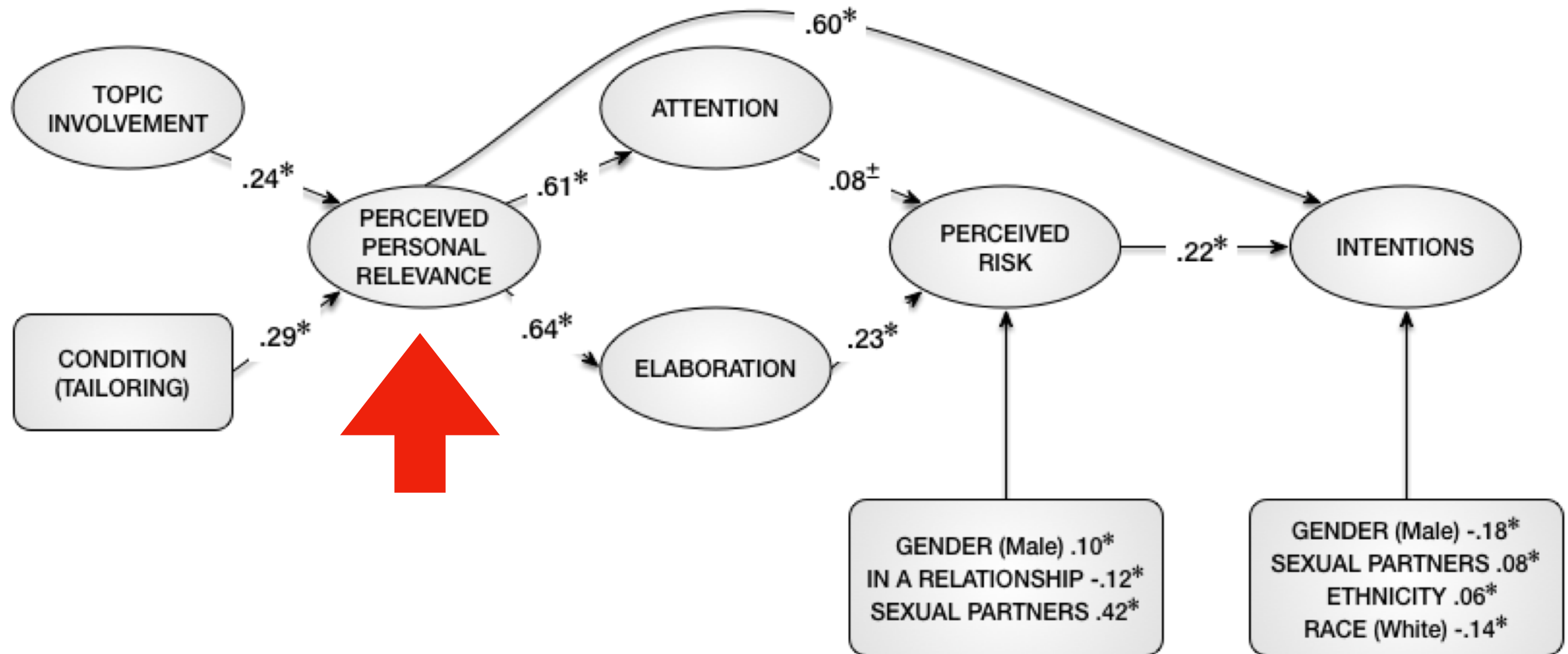
**tailoring
works!**

Hypotheses

- Tailoring contributes to greater perceived personal relevance which enhances attention and elaboration of the message leading to greater perceptions of risk and intentions to order an STD test kit.
- People who are more involved in the topic are also more likely to find the info more personally relevant.



Model of Tailoring Effects



* $p < .05$; $^{\pm} p < .10$ **Model Fit:** $\chi^2(375) = 1134.28, p < .001$; CFI=.96; RMSEA=.04, SRMR=.06

Figure 2. Structural equation model depicting perceived relevance, attention, and elaboration as mediators of the effects of tailoring on perceived risk and behavioral intentions

LESSONS

LEARNED

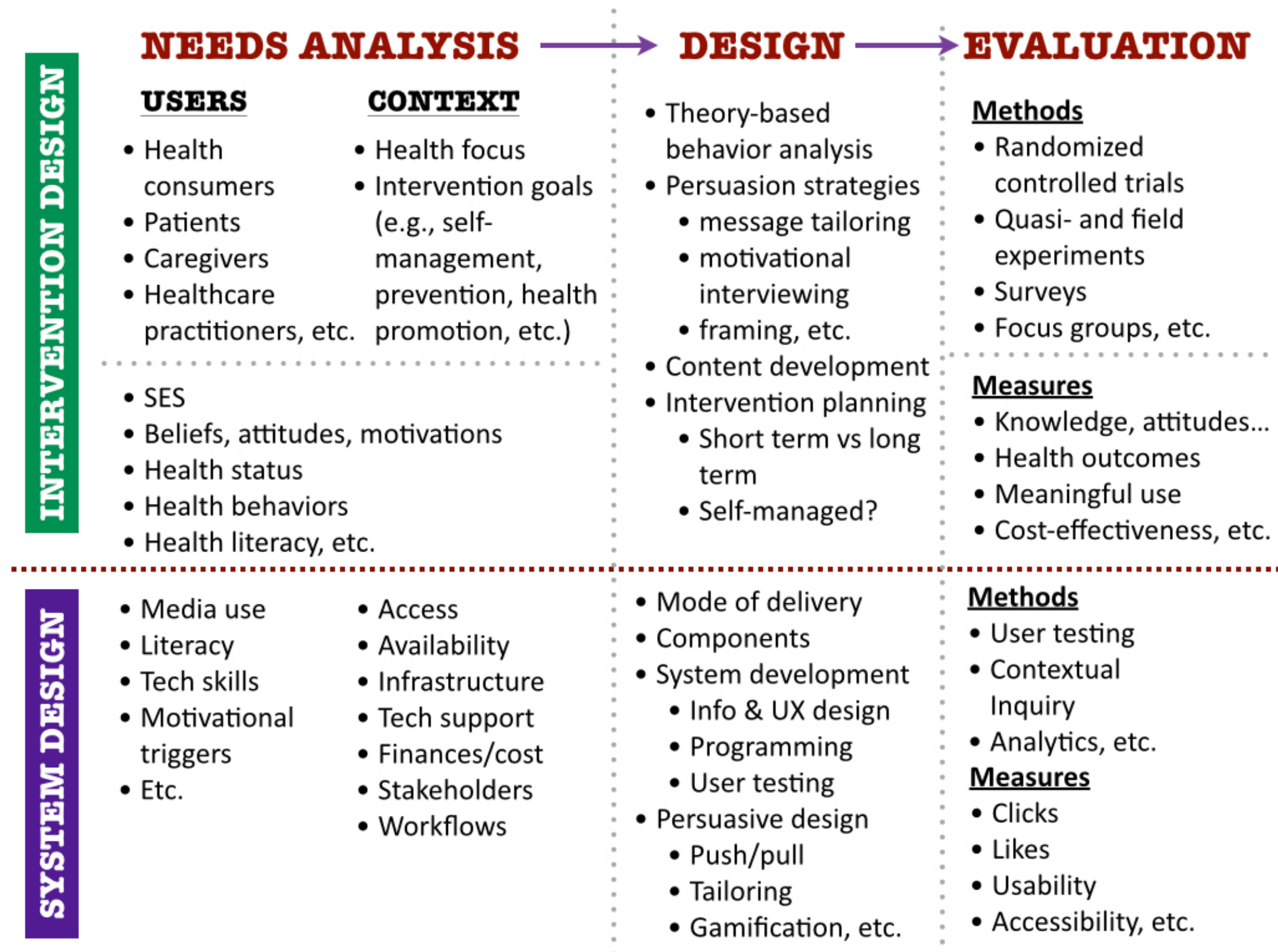


Designing eHealth Interventions

- eHealth interventions vary - most have multiple components
- Tailored eHealth interventions are effective but with only small to medium size effects
- How can we optimize design?



Transdisciplinary Approach for Designing and Evaluating eHealth Interventions (Lustria, 2017)



Living with Diabetes



<https://youtu.be/Fp4uiyXtiSQ>

How do we make eHealth interventions more persuasive?

- **Perceived relevance** is a key mechanism of tailoring
- How else can we enhance perceived relevance?
 - Placebo tailoring
 - Other tailoring modes
 - Narratives
 - Video/Visuals
 - Evaluative vs normative feedback
 - System vs user-initiated tailoring



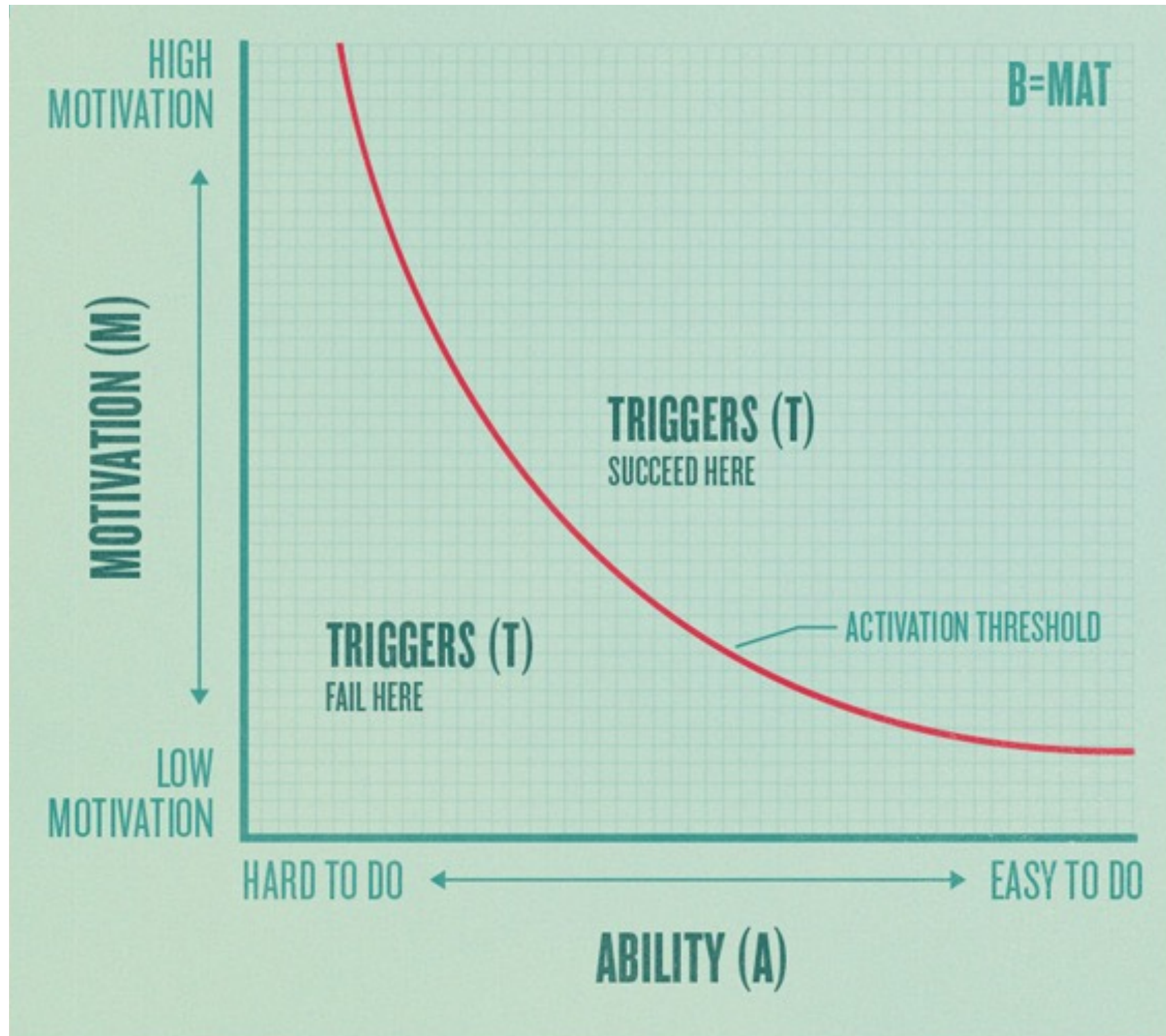
Other ways to optimize persuasiveness

“PERSUASIVE TECHNOLOGY is technology that is designed to change attitudes or behaviors of users through persuasion and influence, but NOT through coercion.”

- B.J. Fogg, 2002



Optimizing Technology for Persuasion



FOGG'S BEHAVIOR MODEL

MOTIVATORS

pleasure/pain
hope/fear
social acceptance/
rejection

ABILITY
or Simplicity Factors

time
money
physical effort
brain cycles
social deviance
non-routine

TRIGGERS

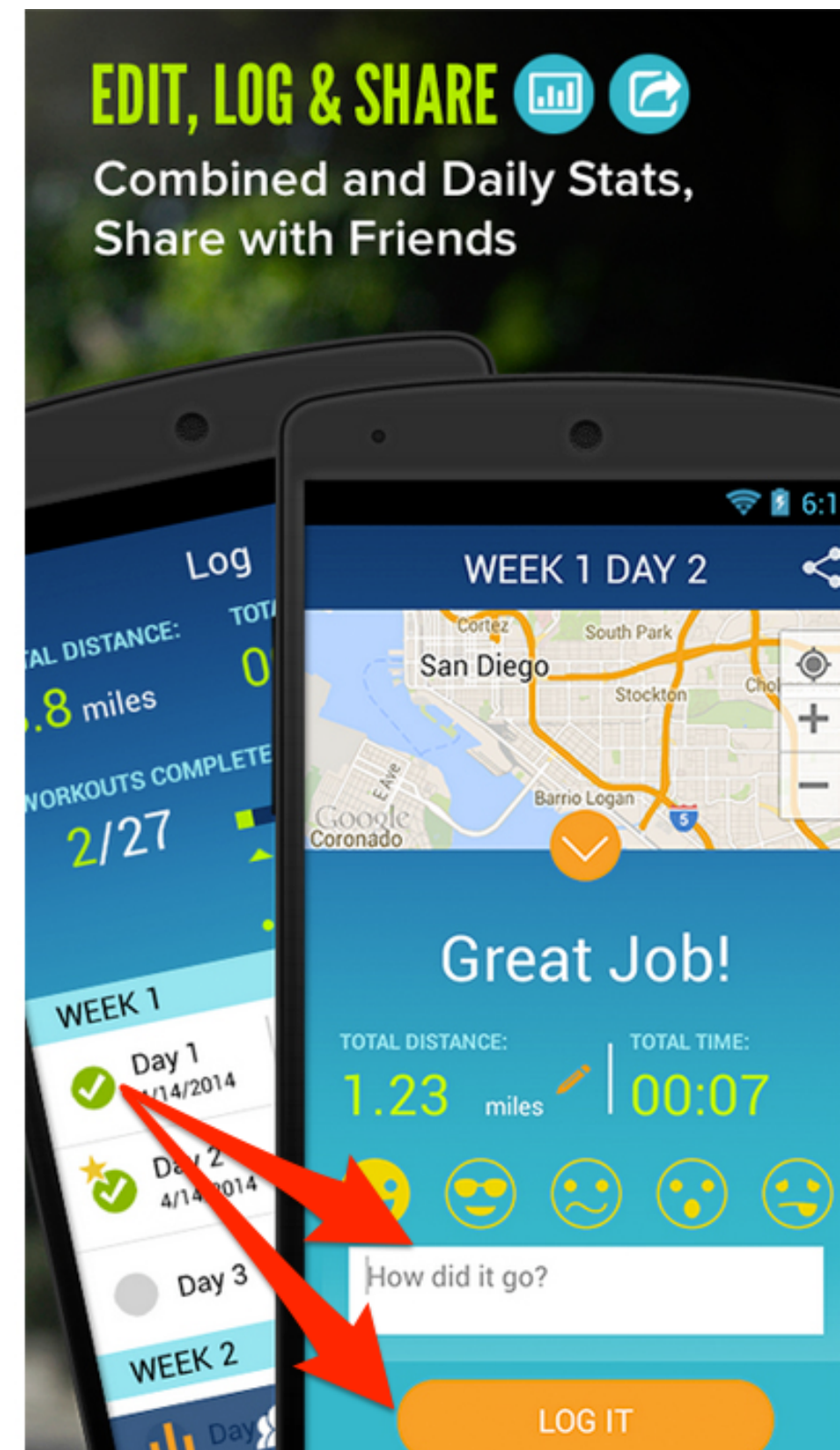
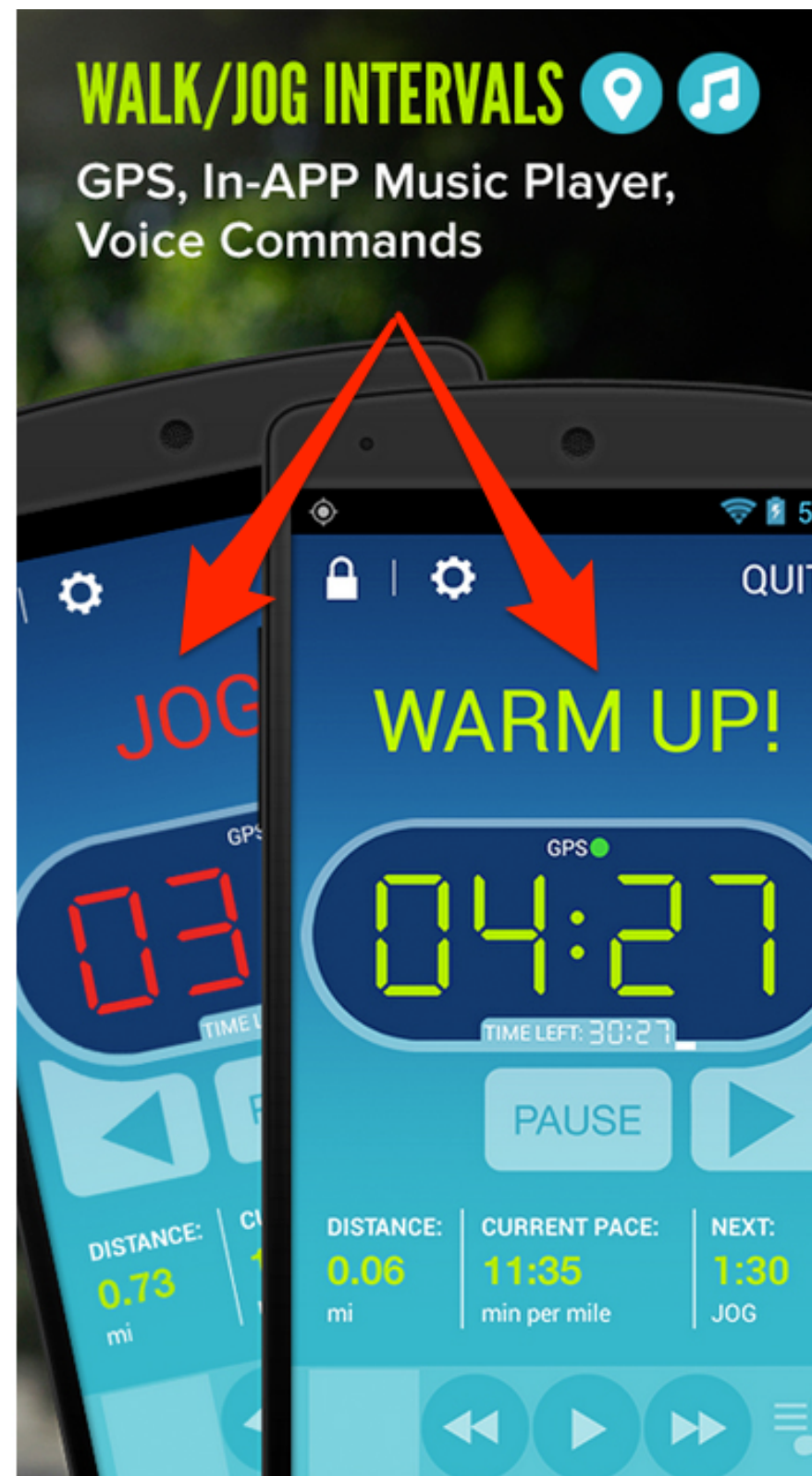
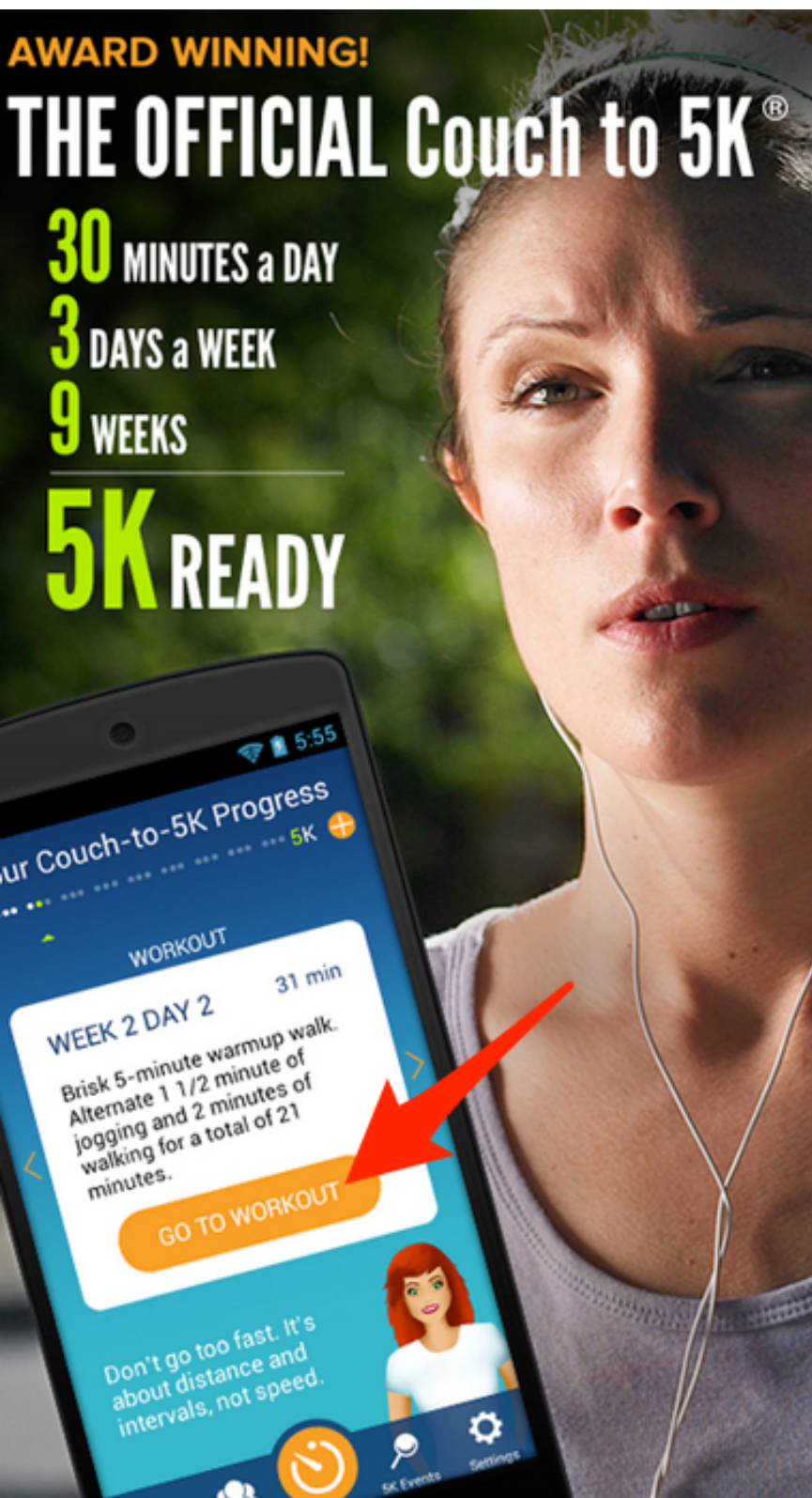
facilitator
spark
signal

Ingredients

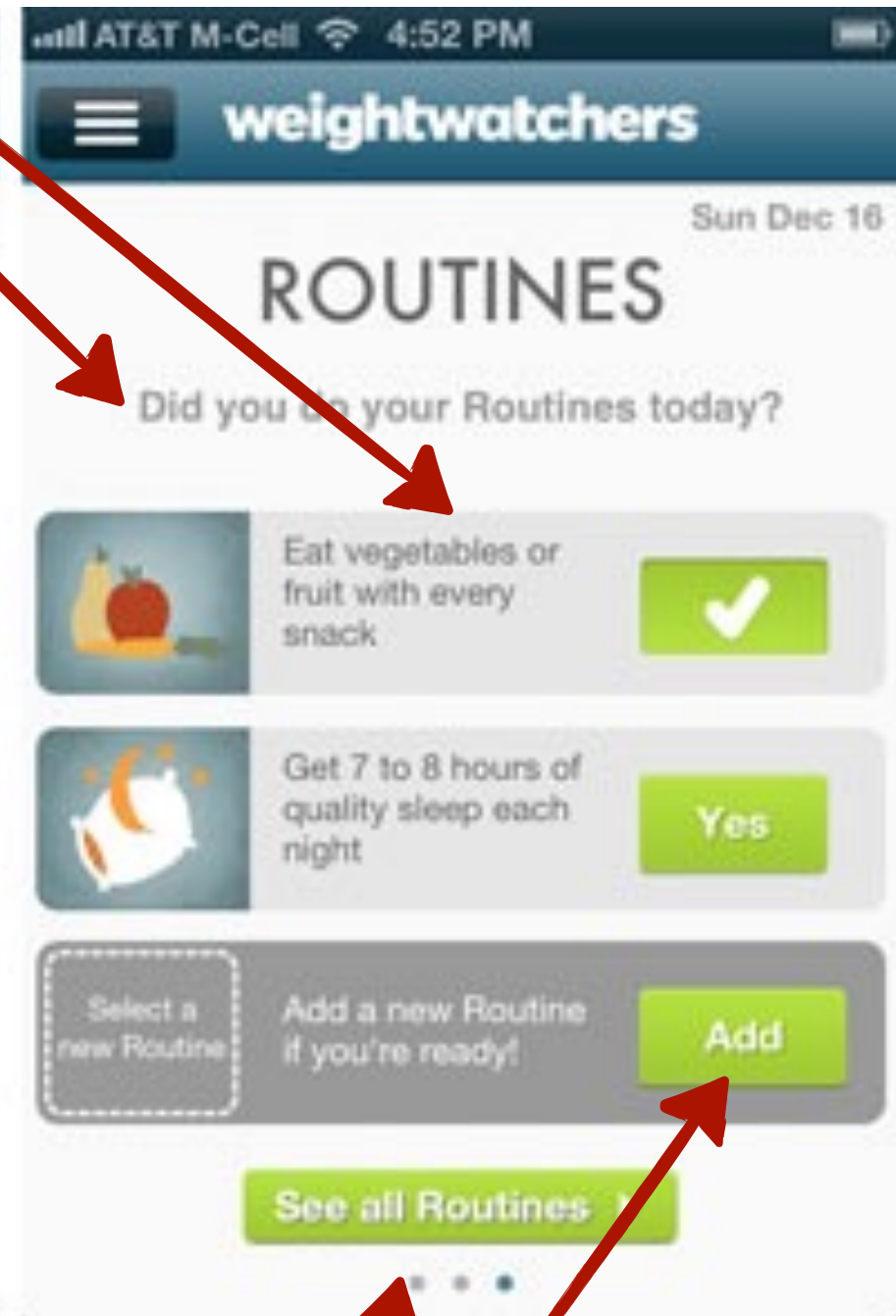
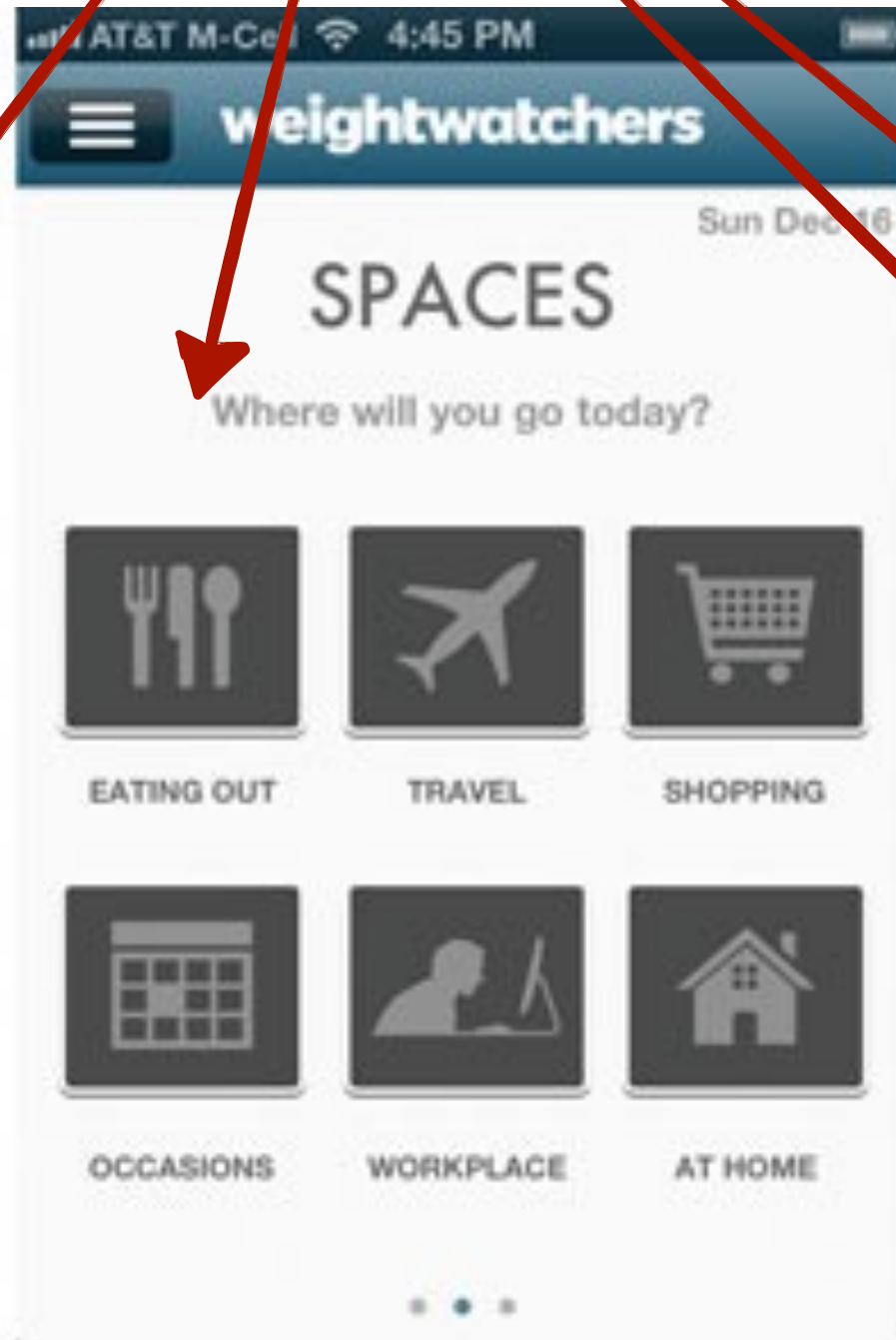
- Find out what **MOTIVATES** people
- Increase **ABILITY** or decrease obstacles
- Train or educate them?
- Make things simpler to do
- **TRIGGER** the behavior
 - Put hot triggers in the path of motivated people



Example of triggers



triggers



triggers

triggers

Questions?

