

Optimization of an intervention targeting the intersection of alcohol use and sexual risk behavior among college students

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An important health issue

College students have high rates of STIs

Sexual risk-taking is common

- Inconsistent condom use
- Multiple concurrent partners
- Casual sex (hook-ups)

Alcohol use is associated with

- Increase in number of partners and hook-ups
- Decrease in condom use

Numerous factors of influence

Proximal factors

- Perceived norms
- Expectancies
- Perceived benefits
- Self-efficacy

Contextual factors

- Gender
- Relationship status
- Campus environment

Few interventions target the intersection

Combine separate components

Personalized normative feedback

Most are in online format

Limitations

- Diversity of students (race/ethnicity)
- Only sexually active students

What is the goal of itMatters study?



To engineer an optimized online intervention to prevent sexually transmitted infections among college students

- Aimed uniquely at the intersection of alcohol use and sexual risk behaviors
- Every component of itMatters has an empirically detectable effect
- Effectiveness of itMatters approaches that of facilitator-delivered interventions

How we are going to develop itMatters?



The multiphase optimization strategy (MOST)

What is MOST?

An engineering inspired framework for building more effective and efficient interventions

- Systematic
- Efficient
- Focused on the clear objective of optimizing the intervention

Three phases:

- Preparation
- Optimization
- Evaluation via RCT

Preparation phase

Develop online modules for six components

- Knowledge
- Descriptive norms
- Injunctive norms
- Expectancies
- Perceived benefits
- Self-efficacy

Example module

TRANSCRIPT

DESCRIPTIVE NORMS 01: Welcome to Descriptive Norms

it Matters
Have Fun. Be Smart. Be Safe.

Exploring Your Perceptions



Let's consider the power of our perceptions.
But how *accurate* are our perceptions?

Audio controls: play/pause, progress bar, volume, and navigation buttons (PREV, NEXT).

Optimization phase

Recruit 4 schools

- Public universities, including in rural settings
- Historically black colleges and universities

Randomize students to experimental condition

Collect data

- Baseline, immediate follow-up, and 1-month post intervention

Optimization phase cont.

Conduct a factorial screening experiment

Assess effect of component on proximal mediator

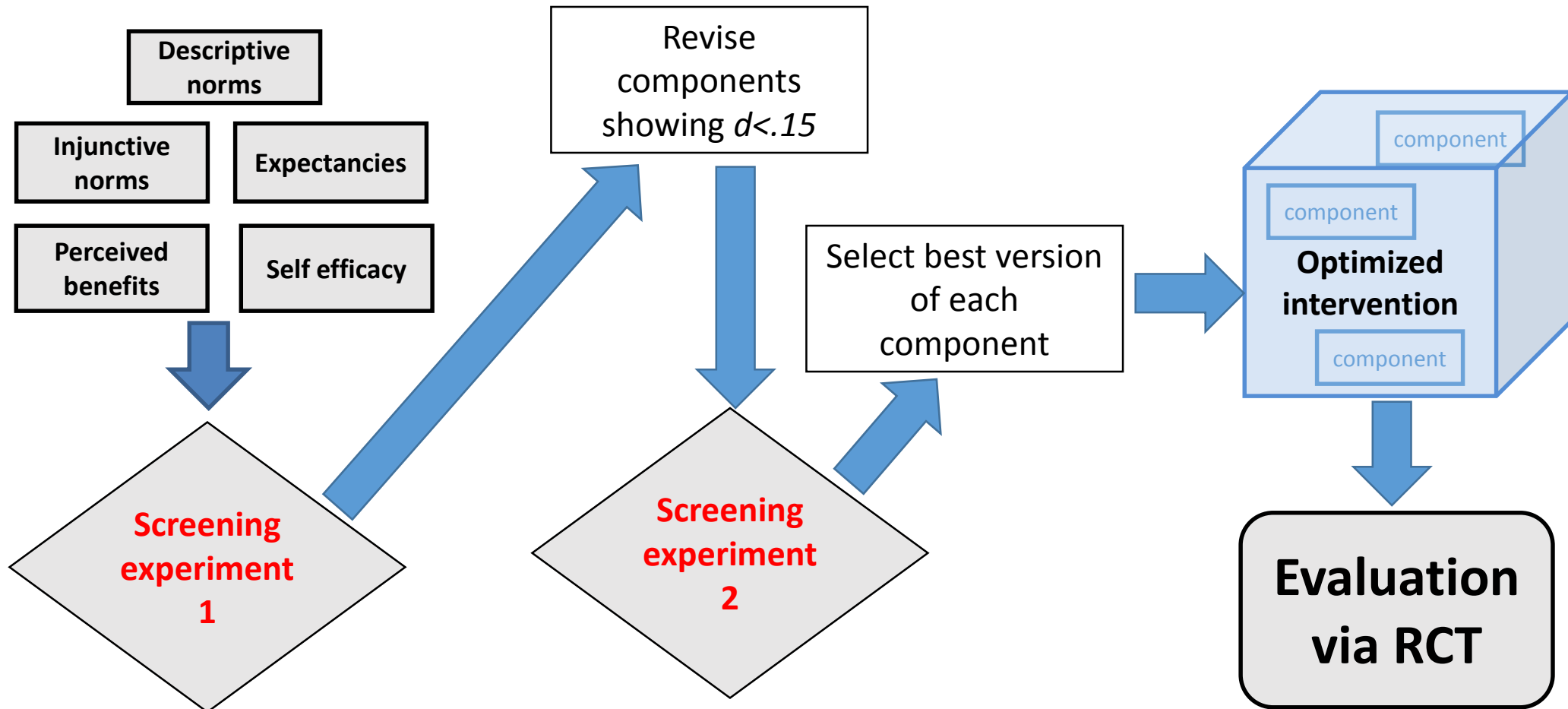
Any component that has $d < .15$ will be revised

- d is a standardized measure of treatment-control difference

Conduct a second screening experiment

Best version of each will form optimized intervention

itMatters applied to MOST



Evaluate optimized intervention compared to delayed control condition

- Use same participating universities
- Randomize students to experimental condition
- Assess long-term outcomes (i.e., behaviors, STIs)

Using MOST to develop an online intervention targeting the intersection of alcohol and sex

- Targeting students when risk behaviors are most prevalent
- Using an iterative approach to optimization

Acknowledgments



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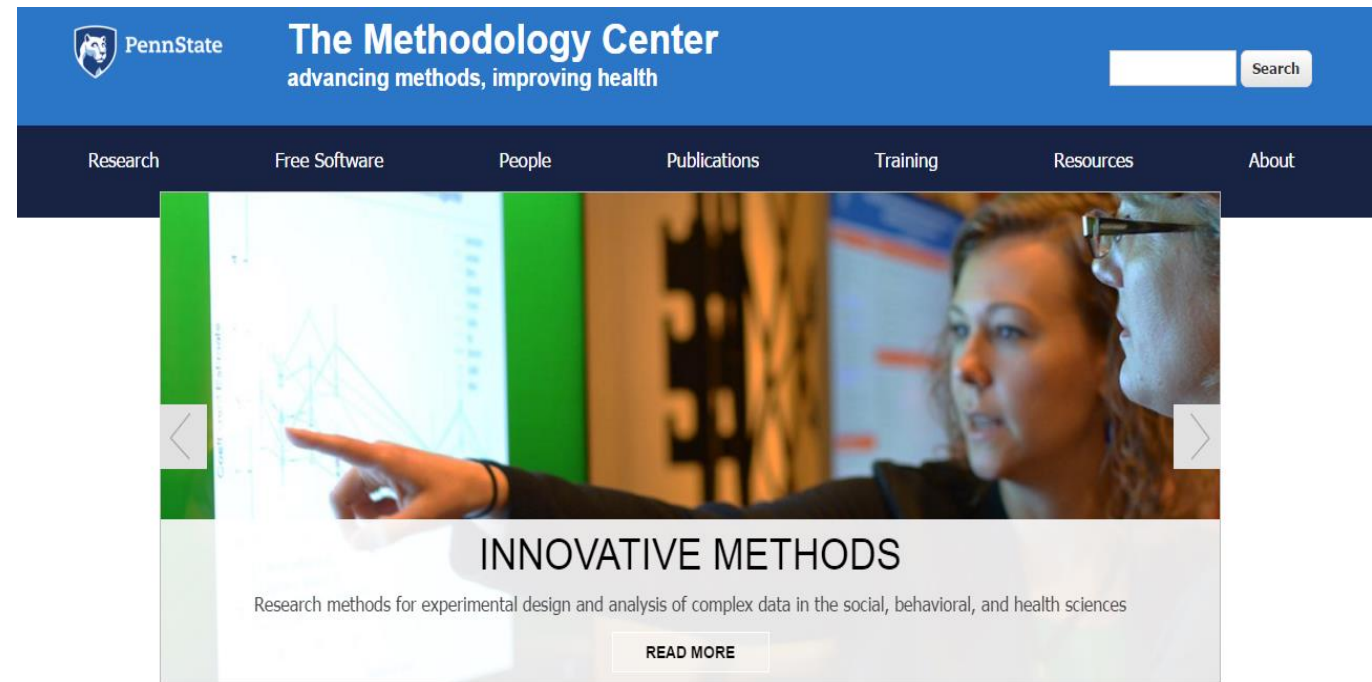
Subcontract to UNCG: David Wyrick, Amanda E. Tanner, Jeff Milroy

Thank you!



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Visit Methodology Center
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<http://methodology.psu.edu>



Extra slides



Experimental conditions from 2⁵ factorial experiment

Experimental Conditions in 2 ⁵ Factorial Design						
Condition Number	Intervention Components					
	KNOW	DNORMS	INORMS	EXPECT	BENEFITS	SELFEFF
1	Include					√
2	Include					
3	Include				√	√
4	Include				√	
5	Include			√		√
6	Include			√		
7	Include			√	√	√
8	Include			√	√	
9	Include		√			√
10	Include		√			
11	Include		√		√	√
12	Include		√		√	
13	Include		√	√		√
14	Include		√	√		
15	Include		√	√	√	√
16	Include		√	√	√	
17	Include	√				√
18	Include	√				
19	Include	√			√	√
20	Include	√			√	
21	Include	√		√		√
22	Include	√		√		
23	Include	√		√	√	√
24	Include	√		√	√	
25	Include	√	√			√
26	Include	√	√			
27	Include	√	√		√	√
28	Include	√	√		√	
29	Include	√	√	√		√
30	Include	√	√	√		
31	Include	√	√	√	√	√
32	Include	√	√	√	√	

Descriptive norms

- Correct misperceptions about alcohol-induced sexual risk behaviors
- Strategy: Personalized feedback comparing prevalence to own behaviors

Injunctive norms

- Correct misperceptions about the acceptability of sexual behaviors with alcohol use
- Strategy: Personalized feedback perceptions of approval to actual approval

Outcome expectancies

- Decrease expectations of positive outcomes of alcohol-induced sexual risk behaviors (e.g., increased sexual enjoyment) and increase expectations of negative (undesired) outcomes of alcohol-induced sexual risk behaviors
- Strategy: use version of bar lab study

Perceived benefits

- Increase perceptions of perceived benefits of using protective behavioral strategies
- Strategy: Valuation of reducing risk of STI

Self efficacy to use protective behavioral strategies

- Increase self-efficacy to use protective behavioral strategies during sexual encounters; raise awareness of personal & situational factors that may influence appraisal of sex potential & risk; use of strategies (e.g., condom negotiation skills) to reduce harm
- Strategy: Know boundaries, have a plan, and practice

Knowledge (everybody gets)

- Increase knowledge about alcohol impairment, how to put on a condom use skills, STIs
- Strategy: Decisional balance activity